

Bachelor of Commerce

BC - 601

MANAGEMENT ACCOUNTING



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AN INTRODUCTION TO MANAGEMENT ACCOUNTING	

Structure

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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 the accounting methods, systems and techniques which, coupled with special knowledge and ability, assist management in its task 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. It 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 costing, 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 prerequisite 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 flow statement, cash flow statement, stock reports and reports on orders in hand, etc. These reports are 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. In spite 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, making decisions, 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 on 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 technique, 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 advises 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 and 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

1.10 REFERENCES/SUGGESTED READINGS

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Lesson no. :02	
MANAGEMENT REPORTING	

Structure

- 2.0 Learning Objective
- 2.1 Introduction
- 2.2 Nature, Scope and Significance of Management Reporting
- 2.3 Types of Reports
- 2.4 Modes of Reporting
- 2.5 Check Your Progress
- 2.6 Summary
- 2.7 Keywords
- 2.8 Self-Assessment Test
- 2.9 Answers to Check Your Progress
- 2.10 References/Suggested Readings

2.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to

- Explain the nature, scope and significance of Management Reporting.
- Describe the various types of reports.
- Discuss the modes of reporting.



2.1 INTRODUCTION

Management reporting is an essential element of a comprehensive business planning and control system. A firm's success in addressing the challenges of highly competitive business environment and in attaining the objectives of effectiveness and efficiency depends not only on the quality of its basic resources like human, financial and technical but also on the quality of reports available to its management for decision making. In fact, clear, informative, timely reports on different facets of business are essential to assist the management in effective and efficient utilization of a firm's resources. Therefore, management reporting is recognized as essential activity for the success of an organization.

2.2 NATURE, SCOPE AND SIGNIFICANCE OF MANAGEMENT REPORTING

Management reporting as an integral part of management control system provides adequate business information to various levels of management in the form of reports and statements at regular intervals. Thus, the process of supplying adequate information to the management is known as management reporting. It is a formal system designed to ensure timely supply of pertinent information to the management for decision making. Since reporting falls within the scope of communication, many scholars believe that the words communication and reporting should be used interchangeably. Although there may be few characteristics common in them, yet they vary both in nature and scope. Reporting is upward feature whereas communication is both upward and downward.

The scope of management reporting system should not be restricted only to the generation and supply of reports but the said system should also help managers in understanding the significance and use of the information contained in the reports. Usually the company's executives themselves are not aware of specific information that would be useful for them in discharging their duties. Therefore, it is one of the basic tasks of the management accountant to make the internal executives understand the significance of diversified information in the success of decision making, covering various functional areas of the business. Further, research studies conducted in the recent past reveal that business executives generally fail not only to understand as how they could modify for augment existing reports to make them more advantageous for their business but also in judging whether a once useful report has become obsolete in part or in full because of a change in the business environment. Therefore, the



management accountant has to work closely with functional managers to make requisite modification and augmentation of the reports possible.

Once the need to review and revise the reporting system is recognized, it is still not easy for the company's own executives to undertake the task. A specialist is more apt to have the skill and experience needed to address the issues like nature of requisite data, sources of data, methods of collecting and analysing data and techniques for effectively organizing the data into a report. To attain this purpose, the management reporting system has to be flexible and adaptable to address the implications of the changing environment.

SIGNIFICANCE OF MANAGEMENT REPORTING

Most businesses today, large as well as small, depend on timely information available to the decision makers. In fact, information is recognized as most strategic resource for the organizations in the contemporary business which is highly dynamic and competitive. Managers are dependent on regular and pertinent information to perform the functions of business effectively and efficiently. Consequently, a suitable system of management reporting is considered a prerequisite for successful operation of the business. In fact, an effective management reporting system not only provides management with data for strategic and operational decisions but also alerts the management about the need for changes or at least the desirability of investigating such a need. Therefore, such a system not only signals the need for changes but also reflects the results of these changes once they are made and indicates the desirability of further action. Thus, management reporting is the instrument for making effective decisions and control. Further, it provides a chance to evaluate performance and suggests remedial actions if performance is not in tune with expectations.

Commenting on the significance of management reporting, Adrain McDonough, Director, Taylor Management Laboratory states that no other field offers such concentrated room for improvement as does information analysis. This view is further supplemented by the following observations of National Association of Accountants.

As an organization grows, management must rely to a greater extent upon information compiled, summarised and interpreted by the accounting department and other specialised functional groups in the company. Modern techniques for collecting, focusing and transmitting information to the management



have had an important place in making possible the efficient operation of large organizations needed to utilize the advances in scientific and engineering knowledge for producing better and less costly products. Even in small companies some systematic plan for collecting and presenting financial information is essential because management cannot personally observe and organize all the facts with respect to sales, costs and other aspects of a company's operations.

The above discussion brings to light an important fact that the flow of information in the form of reports and statement has become a prerequisite for the firms to perform managerial functions in the contemporary business world. The success of the management reporting system lies in the relevance of the information generated by the system to help functional manages in attaining organizational goals. The reports must present the information in a systematic manner to address the principles of completeness and consistency.

PRINCIPLES (CHARACTERISTICS) OF A GOOD REPORTING SYSTEM

A managerial report is a vehicle for carrying information to different levels of management in the organization. It is the responsibility of the management accountant to prepare the managerial report regularly and submit the same to the management so that the business affairs of the enterprise are effectively and efficiently controlled. However, the task of preparing a managerial report is not so easy, a management accountant has to take sufficient care in the preparation of the managerial report easy, a management accountant has to make sufficient care in the preparation of the managerial report to make it managerially effective and result oriented. A number of fundamental principles have been formulated for the effective use of reporting system. The important among them are listed below:

- The report should present true and fair view of the business affairs. The position as depicted by the report must be based on facts and figures. Every effort must be made to ensure that the whims and personal ideas of the management accountant may not jeopardize the reported material.
- The expected achievements from business activities must be stated in the report before such activities are carried out. The objectives of planning cannot be achieved effectively unless executors of the plans are aware of the scope of plans.



- A report should serve the basic purpose for which it is prepared. Further, it must be submitted in the form which best serves that purpose.
- A report must be relevant to the time and functions of the business enterprise. The responsibilities and obligations of the responsibility centre should be clearly defined and identified in the report.
- The report should be written in simple language and in a direct style. As far as possible, technical and scientific language should be avoided.
- The report must be prompt and timely prepared. Time is an important element in reporting particularly in control reports. However, the partial solution to the problem of timely reporting may be the use of 'Flash' reports.
- To make a managerial report self-contained to the extent necessary for decision making, supporting material/figures or other technical details must be attached with the report in the form of appendix. This abbreviates and speeds the presentation of the main ideas and allows more emphases to be placed on the data that belong to the body of the report.
- A report should be in a proper format and must contain appropriate content. It should have a suggestive title, headings, sub-headings and paragraph divisions. The contents of the report should perfectly serve the basic purpose of the report.
- The reporting system of the organization should be designed on the principle of management by exception. Consequently, reports should depict exceptional and abnormal matter.
- The report should contain only that material which is required for the purpose for which it is intended. However, there is a tendency among business firms to make managerial report so general as to cover all possible contingencies. Consequently, the report is so lengthy that its review is deferred or it burdens the executive with detail, thereby obscuring significant data which should command his attention. The result may be failure to take necessary action in time.
- The principle of consistency suggests that a good reporting system should follow a uniform set of procedure over a period of time for the collection and analysis of the economic and accounting data. However, this does not mean that the reporting system should not be improved



over the period of time by incorporating necessary changes in it. But the impact on business affairs as a result of a change in the reporting system should be disclosed in the report. Further, it is advisable to present information in a consistent manner to various levels of the management.

- A useful report should make as far as possible a clear distinction between controllable and uncontrollable costs.
- A report must be produced at a cost which is reasonable having regard to the possible benefits from the use of the report.

The above-mentioned principles serve as a guide to effective and efficient managerial reporting. However, a management accountant should not accept these principles as rigid rules of conduct. The main objective is to make each report purposeful.

2.3 TYPES OF REPORTS

The classification of reports differs from industry to industry and from firm to firm in the same industry depending upon the nature of business and the objectives for which information is required. However, the following broad classification of reports is commonly used in actual practice:

- external reports;
- internal reports;
- planning reports;
- control reports;
- formal reports; and
- informal reports.

External Reports

The reports meant for the external stakeholders of the business are known as external reports. The external stakeholders may include government agencies, investors, creditors, lenders, investigative agencies, and so on. Such reports are quite expensive and reveal detailed information about various activities of the business. These reports are prepared carefully and hence are costly and time consuming.



Though the business is not answerable to external stakeholders yet the Indian Companies Act has made it obligatory for all companies to publish their final accounts, that is, profit and loss account and balance sheet, for the information of general public and submit the same to the registrar of companies, as well as to the stock exchanges. This is done to save public from waste and unproductive investments.

Internal Reports

Internal reports are confidential reports which are prepared within the company for internal use only. These reports are prepared to meet the requirement of internal management and not for the use of external parties. Therefore, such reports are not designed in tune to any statutory standard but as per the needs of the internal managers. Internal reports typically are more detailed and are prepared more frequently than external reports. For the purpose of study and discussion, this category of reports can be further subdivided into three classes:

Statistical Reports: They are basically accounting reports which are submitted at periodical intervals. Such reports reveal a vital historical statistics concerning various activities of business. These comprise a significant portion of the financial and operating history of the enterprise. For the efficient operation of the business, regular accumulation of data is essential. In well-managed enterprise such reports are prepared monthly.

Special Reports: They need special requirements of the management. Such reports are prepared and submitted at a specific request of the management. Usually these reports are required to plan future action. Special reports pay more emphasis on such elements and subjects that seem important to management. Therefore, the form and contents of such reports vary from report to report depending upon the nature of the problem: Typical special reports can be sales analysis, replacement of capital investment, economic forecasts and price spread analysis. They are non-repetitive and mostly non-predictable.

Performance Reports: They generally show a combination of performance against standards plus extra allowances due to conditions that are beyond the control of the reports. Such reports, prepared on a monthly basis, follow a fairly standardized format. These reports help the management to facilitate internal control. A selected series of data related to specific responsibility centre are shown in performance reports. The performance reports attempt to compare actual results with goals or budgets.



They are designed to highlight both efficient and inefficient performance and identify a problem that demands a special report.

Performance reports must be designed to satisfy the requirements of a particular environment, however, in general certain relevant criteria for their design and application can be framed. Thus, performance reports should be :

- formulated in relation to organizational structure;
- designed to satisfy the principle of management by exception;
- repetitive and should cover short periods;
- specified, simple and understandable;
- prompt and prepared regularly;
- factual and correct; and
- suitable to meet the requirement of principle user.

Planning Reports

Planning reports contain the objectives and goals of the enterprise. Such reports serve as standards against which actual results can be measured. The best example of such reports can be budgets. The planning reports are not much popular among business firms.

Control Reports

Control reports serve as a controlling device to control different activities of an enterprise. Such reports take various forms and reach every management level. They range from records of routine transactions, through many levels of summarization and analysis to comparative and evaluative reports. Control reports reflect the deviation between budgeted and actual performance.

Formal Reports

Formal reports are designed as per the official format of the enterprise. The collection and analysis of data are made strictly as per the norms established for the purpose by the management. In the reporting of the data, formal reporting channels of the organization are engaged.

Informal Reports



Reports that do not contain official documents are referred to as informal reports. Informal reporting involves oral reporting or reporting through the use of notes or memorandum. This system of reporting pays no attention to the formal reporting system but patterns itself more to the particular needs at hand.

2.4 MODES OF REPORTING

The following modes of reporting are commonly used by business firms for managerial reporting:

Written statements

- Formal financial statements
- Tabulated statistics

Graphic/Diagrammatic presentation

- Charted figures
- Diagrams and picture

Oral Reporting

- Group conferences
- Conversation with individuals

Report Format

The format differs from report to report depending upon the nature, type and scope of report. However, the basic elements in the report format are:

Title Page Title page of the report tells the reader the subject studied, who conducted the study, and for whom the report was prepared. The title must be brief, catchy, and at the same time, state the topic of the study. If the report is confidential, it must be indicated on the cover page with the names of the executives who are to receive a copy of the report, if it is intended for limited circulation.

Preface The preface follows a title page. The users of managerial report usually require a short summary of the information at the top of the report which is covered under the head preface. It contains essential information like purpose, objectives and methods in outline with condensed recommendations and conclusions. This part of the report provides executives an opportunity to know the essentials of the report.



Table of Contents This part of the proposed format states the main divisions and sub-divisions of the report and the corresponding page number. For special reports, it may also include a list of tables and figures and the pages on which they can be located.

Text It contains the report message. It explains a complete set of information about the business affair. The text has direct impact on the management action. It explains in detail the ideas presented in the headline. In addition, pictures, charts and tables are used to make the text of the report meaningful.

Appendix The appendix normally precedes the text of the reports. This part covers the essential information considered redundant or too technical in the text section of the report.

MANAGERAL REPORTING BY EXCEPTION

Managerial reporting by exception is a means of using the familiar principle—management by exception, by concentrating attention on the significant exceptions to planned results. This is an increasingly popular technique that can be used by any company but tends to have special advantages in companies that use electronic data processing (EDP) for reporting and control. Under exception reporting review, all the available data are performed by employees at a lower level and the exceptions are noted by them for the attention of the management. This system of reporting has the following purposes and objectives:

- eliminate irrelevant information from reports;
- keep the management informed about the unexpected trends; and
- call the attention of higher management to such business areas which cannot be improved at lower levels.

A proper system of exception reporting differs from conventional reporting not only in content but also in timing. There is no fixed schedule for the preparation of the exception reports. Instead, it seeks to alert the management of significant development as soon as they take place, regardless of how little time has elapsed since the last report.

MANAGERAL REPORTS AND THEIR CONTROL

During past few years a huge change is observed in business data, economic conditions and organizational environment. Consequently, additional reports are required for continuous evaluation



which results in an increased cost of report preparation, lessening its utilization due to complexity and duplication of various reports.

Further, business statistics in recent years reveal that there has been significant increase in reporting costs of the firms as compared to the benefits arising from the actions taken on the basis of contents of the reports. A modest percentage reduction in reporting costs can have a significant effect upon a company's profit. Therefore, it is the responsibility of a management accountant to identify the areas of cost reduction in reporting.

Perhaps the first step in cutting cost is to review each report and ask how much of it or if any of it is really needed. In other words, does the report's contribution to profit exceed the cost of preparation? The next question about each report is whether all executives receiving this report really need it or whether the number of copies could be reduced. In direct terms there is the cost of extra copies and filing space and effort to be saved. Indirectly, the company can save by cutting the time an executive spends reading reports not pertaining to his functions. An unscientific but rather effective way of finding whether an executive really needs a particular report is to continue to produce the report but stop sending it to him for a while and see if he complains. Certain reports are based on tradition more than anything else. At the same time, the reason for some reports is merely to provide a defense against possible criticism, rather than for constructive action. It is not possible to say that all reports based primarily on tradition or defensive motives can be eliminated. But there is certainly much opportunity in this area for appropriate cost cutting by a strong minded and objective individual. All abovementioned measures can be put to action with the help of 'Master Report Control Schedule' which attempts to analyse and compare essential elements of the different reports. The Master Report Control Schedule may consist of the following elements:

- Brief description of the report;
- Number of copies prepared;
- Preparation procedure;
- Purpose of report;
- Name of executives to whom report is to be circulated;
- The retention period;



- Frequency of the report; and
- Cost of the report.

Further Master Report Control Schedule attempts to find answers to the following questions:

- Is this report necessary?
- Can it be condensed and combined with other reports?
- Are all data pertinent and relevant to the reports purpose and use?
- Is the report being successfully used in making decisions?

2.5 CHECK YOUR PROGRESS

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

1. Management reporting is an essential element of a comprehensive business planning and control system.
2. Information is not recognized as most strategic resource for the organizations in the contemporary business which is highly dynamic and competitive.
3. The flow of information in the form of reports and statement has become a prerequisite for the firms to perform managerial functions in the contemporary business world.
4. A managerial report is a vehicle for carrying information to top level of management in the organization.

B. Fill in the blanks:

1. The report should present true and _____ view of the business affairs.
2. The report should be written in simple language and in a _____ style.
3. _____ reports are confidential reports which are prepared within the company for internal use only.
4. Performance reports must be designed to satisfy the requirements of a particular _____.

2.6 SUMMARY

Management reporting constitutes an essential element of a comprehensive business planning and control system. Management reporting is that part of management control system which provides adequate business information to various levels of management in the form of reports and statement at



regular intervals. A managerial report is a vehicle for carrying information to different levels of management in the organization. The report should present true and fair view of the business affairs. The expected achievements from the business activities must be stated in the report before such activities are carried out. A report should serve the basic purpose for which it is prepared. A report must be relevant to the time and functions of the business enterprise. The reports meant for the external stakeholders are known as external reports. Internal reports are confidential reports which are prepared within the company for internal use only. These reports are prepared to meet the requirement of internal management and not for the use of external parties. Statistical reports are basically accounting reports which are submitted at periodical intervals. Reports that need the special requirements of the management are known as special reports. Performance reports generally show a combination of performance against standards plus extra allowances due to conditions that are beyond the control of the reports. Control reports serve as a controlling device to control different activities of an enterprise. Reports that do not contain official documents are referred to as informal reports.

2.7 KEYWORDS

External Reports: The reports meant for the external stakeholders of the business are known as external reports.

Planning Reports: These reports contain the objectives and goals of the enterprise.

Control Reports: Control reports serve as a controlling device to control different activities of an enterprise.

2.8 SELF-ASSESSMENT TEST

1. What do you mean by management reporting? Discuss its importance in modern business.
2. Explain the principles of a good reporting system.
3. 'Reporting is one of the main duties of a management accountant.' Comment.
4. Discuss the various managerial reports prepared by business firms in actual practice.
5. What do you understand by internal reports? How are they different from external reports?
6. Discuss the suitable measures to control managerial reports.

**2.9 ANSWERS TO CHECK YOUR PROGRESS**

- A.
1. True
 2. False
 3. True
 4. False
- B.
1. fair
 2. direct
 3. Internal
 4. environment

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Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :03	
MANAGEMENT INFORMATION SYSTEM	

Structure

- 3.0 Learning Objectives
- 3.1 Introduction
- 3.2 Meaning of MIS
- 3.3 Information Needs of Management
- 3.4 Designing an MIS
- 3.5 Check Your Progress
- 3.6 Summary
- 3.7 Keywords
- 3.8 Self-Assessment Test
- 3.9 Answers to Check Your Progress
- 3.10 References/Suggested Readings

3.0 LEARNING OBJECTIVES

After going this lesson, you will be in a position to

- Define management information system and explain the information needs of management.
- Explain the step in designing the management information system.

3.1 INTRODUCTION



In order to perform the control function effectively, managers need information. Only with accurate and timely information can managers monitor progress toward their goals and turn plans into reality. Without the right type of information, managers cannot stay on track or anticipate potential problems or decide corrective actions. However, information is useful only when it is relevant, accurate, timely and of right quantity. In order to provide such information to managers, a formal system for the collection, processing, storage and retrieval of data is required.

3.2 MEANING OF MIS

MIS is a formal system for providing management with accurate and timely information necessary for decision-making. The system provides information on the past, present and projected future and on relevant events inside and outside the organisation. It may be defined as a formalised and structured system for providing information to managers on a regular basis to assist them in their functions of planning and control. MIS is a planned and integrated system for gathering relevant data, converting it into the right information and supplying the same to the concerned executives. The basic objective of MIS is to provide the right information to the right people at the right time.

An MIS may be described as an input-process-output system. Inputs of an MIS are the data collected from various sources inside and outside the organisation. Input element of MIS collects data from the organisation and its environment. Processes refer to the conversion of data into relevant information and storage of the information. Storage element maintains a data base in the form of historical records, forecasts, plans, standards, decision, rules, models, etc. Outputs imply the information supplied to managers. A variety of information is provided to support the decision-making activities of management. Continuous control over the performance of MIS is necessary to ensure that the system meets effectively and efficiently the information needs of management.

Objectives of MIS

The goals of an MIS are to implement the organizational structure and dynamics of the enterprise for the purpose of managing the organization in a better way and capturing the potential of the information system for competitive advantage.

Following are the basic objectives of an MIS –



- **Capturing Data:** Capturing contextual data, or operational information that will contribute in decision making from various internal and external sources of organization.
- **Processing Data:** The captured data is processed into information needed for planning, organizing, coordinating, directing and controlling functionalities at strategic, tactical and operational level. Processing data means:
 - making calculations with the data
 - sorting data
 - classifying data and
 - summarizing data
- **Information Storage:** Information or processed data need to be stored for future use.
- **Information Retrieval:** The system should be able to retrieve this information from the storage as and when required by various users.
- **Information Propagation:** Information or the finished product of the MIS should be circulated to its users periodically using the organizational network.

Characteristics of MIS

Following are the characteristics of an MIS:

- It should be based on a long-term planning.
- It should provide a holistic view of the dynamics and the structure of the organization.
- It should work as a complete and comprehensive system covering all interconnecting subsystems within the organization.
- It should be planned in a top-down way, as the decision makers or the management should actively take part and provide clear direction at the development stage of the MIS.
- It should be based on need of strategic, operational and tactical information of managers of an organization.
- It should also take care of exceptional situations by reporting such situations.
- It should be able to make forecasts and estimates, and generate advanced information, thus providing a competitive advantage. Decision makers can take actions on the basis of such predictions.



- It should create linkage between all sub-systems within the organization, so that the decision makers can take the right decision based on an integrated view.
- It should allow easy flow of information through various sub-systems, thus avoiding redundancy and duplicity of data. It should simplify the operations with as much practicability as possible.
- Although the MIS is an integrated, complete system, it should be made in such a flexible way that it could be easily split into smaller sub-systems as and when required.
- A central database is the backbone of a well-built MIS.

Role of MIS

An MIS contributes towards effective management in the following ways:

1. **Facilitates Planning.** Sound MIS helps to improve the quality of plans by providing relevant information for sound decision-making. Due to increase in the size and complexity of organisations, managers have lost personal contact with the scene of operations. MIS keeps them aware of changes in the environment of business. It quantifies relationship among variables which can be projected to forecast future trends. Need for MIS has increased with the growing turbulence in the environment.
2. **Reduces Information Overload.** A sound management information system converts the vast amount of data into summarised form and thereby avoids the confusion which may arise when managers are flooded with detailed facts.
3. **Improves Decentralisation.** Decentralisation of authority can be successful when there is a system for monitoring operations at lower levels. MIS can be effectively used for measuring performance and making necessary changes in the organisational plans and procedures. It identifies and meets separate needs of all units in a decentralised set up without duplication of efforts.
4. **Assists Coordination.** MIS is an integrated approach to planning and control. It facilitates integration of specialised activities by keeping each department aware of the problems and requirements of other departments. It links all decision centres in the organisation.
5. **Simplifies Control.** Management information system serves as a linking pin between managerial planning and control. It enhances the ability of management to evaluate and improve performance.



Widespread use of computers has increased the data processing and storage capabilities and reduced the cost. It has made information handling easier.

A management information system performs the following functions:

- (i) Assembling. It implies finding and collecting data.
- (ii) Processing. It means classifying, analysing, summarising and editing the data.
- (iii) Storage and retrieval. It refers to indexing, coding, filing and location of information whenever necessary.
- (iv) Evaluation. It implies determining the usefulness of processed data in terms of accuracy and relevance.
- (v) Dissemination. It means supplying the required information at the right time and right place.

3.3 INFORMATION NEEDS OF MANAGEMENT

The design of the MIS must take into account the information needs of various management levels. At the top management level basic goals and overall policies are laid down. This level is concerned mainly with strategic planning. For example, the strategic planning activities of top management primarily involve future interaction between the organisation and its external environment. Therefore, strategic information such as population growth, market analyses, technological developments, Government policies, etc. is required at the top level. This information should not be overly detailed but should be sufficiently broad in scope to indicate trends. Information sources for strategic planning lie outside the organisation. This type of information is obtained with the aid of decision support systems (DSS).

At the middle management level, information is required for management control. Middle-level managers such as departmental heads are concerned with the current and future performance of their units. Therefore, they need aggregate (summarised) information on the sales, profits, etc. of their units. Such information is available from both within the organisation as well as from sources outside the organisation. For example, financial data for budgets and ratio analysis are available from the company's records. However, market data can be collected through special surveys and reports from outside the organisation. Top-level managers also require management control information. But this



information must be more detailed, narrower in scope and more accurate than the information required for strategic planning. It should also be generated at more frequent intervals because the time horizon of decisions is shorter.

At the supervisory level of management, operational control is exercised. Production scheduling, cost and credit control, etc. are examples of operational control. Therefore, detailed information on a daily and weekly basis is required. Inventory reports, operating costs, production rates, etc., are examples of such information. Such information is available from within the organisation.

3.4 DESIGNING AN MIS

The following are the steps in designing a computer-based MIS:

1. A Preliminary survey and problem definition stage. First of all, a thorough assessment of the organisation's strategic goals and capabilities is made. The external factors relevant to the organisation's functions are, also assessed. It is necessary to analyse the decisions for which information is required. The needs of every level and functional area must be considered. From this analysis and assessment the information system needed by the organisation can be defined.
2. A conceptual design stage. An analysis of the current information system is made to determine alternative information system designs with specific performance requirements. These alternatives are then evaluated against the organisation's objectives, capabilities and information needs. An initial MIS design is selected. At this stage, tasks are delegated, information on the design is communicated to employees, and the plan for a training programme is conceived.
3. A detailed design stage. Once the conceptual plan is formulated, performance specifications of the new MIS can be developed. This is the stage when the actual system or collecting, storing, transmitting and retrieving information is developed. Components, programming, flow-charting and databases are designed. A model of the system is created, tested, refined and reviewed until it meets the specific level of performance.
4. A final implementation stage. The formal requirements for the system are determined. The logistics of space allocations, equipment additions and forms designs are worked out and enacted. The training programme is launched. Design and testing of software for the MIS are completed. The organisation's



data bases are entered into the system. After a series of final checks, the MIS is ready for implementation.

In addition to the above stages, it is necessary to periodically review the system. Once the system is implemented, deficiencies may arise and the system may have to be adapted to the changing needs and environment of the organisation. It is, therefore, necessary to build and implement control procedures that can detect and remove deficiencies in the system.

Problems in Installation of MIS

Dickson and Simmons point out that an MIS can be resisted by the members of the organisation. The system may create fear of losing jobs among clerical staff, supervisory staff may fear that now they will be evaluated more closely and frequently. Operating executives may become anxious that the MIS will lead to more centralised decision-making.

The frustrations associated with the implementation of a new MIS may manifest themselves in several ways:

- (a) Aggression: The people may hit back at the system and may even sabotage it by using equipment incorrectly, by putting incomplete information into the system, or by actual destruction of hardware or software.
- (b) Projection. It is the psychological mechanism of blaming difficulties on someone or something else. When employees blame the MIS for problems caused by human error or other factors unrelated to the system, projection is taking place.
- (c) Avoidance. It occurs when individuals defend themselves by withdrawing from or avoiding a frustrating situation. Managers may avoid the system by ignoring its output in favour of their own information sources.

Operating executives generally feel the maximum impact of a new MIS. These executives have little control over the information. This loss of control can be a source of anxiety to operating executives. A computerised MIS may make it easier for top managers to increase their control over operating managers. It may also eliminate or significantly alter some middle-level and first line jobs.



The operating executives may manifest all the psychological reactions (aggression–fight the system, avoidance–ignore the system and projection–blame the system for failure caused by other factors.)

A computerised MIS does not affect the top managers significantly. But if the MIS has been oversold to top management, it may cause disappointment when the expectations from the system are not realised. The political and non-rational system of the organisation may affect the design and implementation of the new MIS. The information needs differ from one managerial level to another. The information most useful to top management may be perceived as a threat by middle managers because such information facilitates the evaluation of divisional performance. Once the system is installed, managers may adopt different stances towards the new MIS.

Whether and to what extent an MIS will be resisted will depend on the following factors:

- (i) Disruption of established departmental boundaries. The establishment of a new MIS often results in changes in several units of the organisation. For example, inventory and purchasing departments may be merged to make use of the MIS efficiently. Such changes may be resisted by departmental members, who may resent having to change the way they do things or the people with whom they work.
- (ii) Disruption of the informal system. The informal communication network may be disrupted as a new MIS alters communication patterns. If organisation members prefer some of the earlier information mechanism for gathering and distributing information, they may resist the more formal channels set up for the system.
- (iii) Specific individual characteristics. People with many years of service with the organisation know how to get things done in the existing system. They may tend to resist change more tenaciously than newer people who have been with the organisation for a comparatively short period of time and who do not have as large an investment in organisational know-how and relationships.
- (iv) The organisational culture. If top management maintains open communication, deals with grievances, and in general establishes a culture with high trust throughout the organisation, there is likely to be less resistance to the installation of a new MIS. However, if top managers are isolated or aloof from other organisation members, or if the organisational culture supports inflexible behaviour, then effective implementation of the MIS is less likely to be hindered.



(v) The way change is implemented. The manner in which changes are designed and implemented affects the amount of resistance the changes will encounter. In general, when managers and subordinates make change decisions together, the change is more likely to be accepted.

Guidelines for Making MIS Effective

The following measures will help in making an MIS successful:

1. **User Orientation.** The MIS must be user oriented in both design and implementation. If the system's output fails to meet the users' needs, MIS will not be successful. MIS design staff should be rewarded for fulfilling user needs as well as for meeting project deadlines.
2. **Participation.** The design and implementation of MIS should not be left entirely to technical experts or specialists. Users (operating managers) should be included in the design teams. Users know what information is needed, when it is needed and how it will be used. Unless operating managers have a decisive voice in the design of the MIS, the information system may fail to provide needed information while simultaneously over-loading them with useless information. Co-operation between the operating managers and system designers is necessary. Therefore operating managers, should have a major say in the items to be included, the disposition of information, and possible job modifications.
3. **Communication.** The aims and characteristics of the MIS should be closely defined and communicated to all members of the design team as well as to users. This task is very difficult because the character of an MIS evolves as it is being designed and implemented. However, without a clear understanding of the system's basic objectives and characteristics, team members and users will have Constant differences of opinion.
4. **Proper Staffing.** An MIS cannot be successful if the staff involved in it is not competent and dedicated. Proper education, training and orientation of MIS staff are, therefore, essential. A training programme for managers and MIS operators is important for two reasons. Without training and written instructions for the operation and use of the MIS, the organisation will be at a loss when experienced personnel leave. Moreover, operators must understand the information needs of managers at different levels. Similarly managers need to understand how the MIS operates so that they can control it rather than letting it control them.



5. **Cost Benefit Analysis.** In order to keep the MIS on track and on budget, designers need to specify how the system will be developed. This includes schedules of time required for different steps, milestones to be reached and budgeted costs. If managers justify the design and installation of a new system on a cost-benefit basis, cost overruns are less likely to occur. Cost of an MIS can be reduced by using available software, wherever possible, rather than developing in house software. Costs can also be checked by stressing relevance and selectivity instead of share quantity. What managers need is relevant information rather than maximum information.

6. **Motivation,** A new MIS may modify a manager's job to the point where old methods of performance evaluation no longer apply. Therefore, an MIS that calls for new evaluation procedures needs to be supplemented with incentives to encourage both high performance and acceptance of the system. The new methods must be clearly explained so that managers will know how their accomplishments will be measured and rewarded.

7. **Pretesting.** In spite of co-operation between managers and system designers important factors may be overlooked. It is, therefore, necessary to pretest the system before installation. Omissions and problems will show up during the test period. The system should be implemented segment by segment. Such phased installation allows operational testing and problem solution.

8. **Review and Revision.** Even with great care in design and installation, an MIS may not fit the needs of users as closely as desired, either because it is difficult to use or because it does not supply all the required information. Therefore, the system should be critically reviewed from time to time. Such review may reveal certain deficiencies of the system in a changing environment. Suitable steps should be taken to remove the deficiencies and to keep the system up to date.

9. **Security.** While designing and implementing a control system, the issue of security must be considered. In order to ensure security the equipment may be placed in safe and supervised areas and by constructing password and read-only files. While the protection of main frame configurations is usually adequate, security for microcomputer systems is lacking in many organisations. Such organisations tend to be ignorant of the risks involved and often neglect appropriate security measures.

Types of Information Systems

There are several types of information systems, each with unique characteristics and each designed for specific uses. These are described below:



1. Transactions Processing Systems (TPS). These systems evolved as natural extensions of accounting activities and deal with an organisation's daily transactions. Computers are used to record, sort, and process data. These are also called electronic data processing systems (EDP). These are useful for repetitive data and simple calculations. For example, a computerised payroll system allows rapid collection of labour hours, accurate calculation of customer billings and automatic preparation of payroll cheques.

Transactions processing systems are now well established. They are distinct from other information systems as they are not specifically used to assist managers with decisions. They simply streamline data efficiently providing accurate and timely transactions. Their results are oriented towards efficient transactions not decision-making reports.

2. Office Automation Systems (OAS). These systems comprise information technologies designed to improve office productivity. Their main purpose is to reduce the clerical burden of office administration. Office information technology comprises of computerised word processing, electronic mail networks, telecommunications equipment, electronic file systems, and support equipment such as facsimile (fax) machines. With computer systems linking company purchasing offices and suppliers, paperless purchasing has also become feasible.

A sub-system of OAS is electronic data interchange (EDI) which allows information with predetermined formats to be exchanged electronically between end users. EDI is very useful where timely information is vital or huge reductions in paperwork can be realised. Among the latest advances in OAS is integrated telecommunications. An American company has developed a voice activated system that electronically traces a caller's voice, matching a voice print with customer records to verify that a long distance call is being made by an authorised credit card holder. Soon office managers will be able to trace, verify and record long distance calls, update telephone billing and control credit card use with OAS.

3. Decision Support Systems (DSS). These are based on standalone microcomputers or work stations that allow managers to access central data bases without direct assistance of information system staff. By employing application software, managers can do their own analyses and create their own reports. With the spread of microcomputers and desktop work stations, DSS has become popular. For example, a securities analyst can call up a client's account, access stock market information, tap into network data



bases, stimulate invest transaction, and perform a variety of portfolio evaluations without disturbing his colleagues. DSS permits less structured use of databases as special decision needs arise.

Decision support systems are also called executive support systems (ESS) when they are configured to support the unstructured decisions typical at higher levels of management. Most DSS systems are constrained by their small memories and limited data storage capacities. They also tend to be slow compared to powerful main frame systems. Despite these limitations DSS are useful tools for helping managers make better decisions. The individuality of DSS also allows managers to work after office hours at their own place.

Since the DSS is an outgrowth of the MIS there are basic similarities between them. They are both computer-based and designed to supply information to managers. But DSS differs from MIS in important respects. First, a DSS is geared to information manipulation while an MIS is geared to data storage and retrieval. Secondly, a DSS help managers make non-routine decisions in unstructured situations. An MIS, on the other hand, emphasises standard, periodical reports and cannot respond well to non-routine, unstructured or adhoc situations.

A decision support system is an inter-active computer system that is easily accessible to and operated by non-computer specialists to assist them in planning and decision-making functions. While DSS may differ in their emphasis on data access and modelling function, there is an over-riding emphasis in all such systems on user accessibility to data for decision-making. This applicability permits managers to simulate problems using formal mathematical models and to test the outcomes of various alternatives for reaching the best possible decisions.

There are several advantages of a DSS. A DSS is operated directly by its users. When they require access to information, they can immediately consult their own On-line system without having to wait for results from the MIS department. Once, managers call up the required data through a DSS, they can manipulate it directly, asking questions and reformatting the data to meet their specific needs without having to explain what they want to MIS staff. Managers can thus be certain that they will get the information they need when they need it. In addition, direct manipulation of data has the advantage of greater security for sensitive information. With the help of DSS, managers can make non-routine decisions in unstructured situations. As DSS users have direct access to information and can perform some of the data management functions themselves, conflicts between system staff and data users are



reduced. An ideal DSS solicits input data needed from the user and then prompts the user to consider all key decision points. DSS software can support such organisational functions as marketing, production, and finance as well as many other decision making areas.

A DSS may, however, create certain problems. As managers have a direct access to data, the MIS staff may have fears that their influence and control over information resources will be reduced. With every manager using his own DSS, there may be a proliferation of unauthorised and incompatible private files. Some MIS staff may fear that data will become an individual resource rather than an organisation one.

4. Client/Server System (C/SS). A client/server system is a network that allows distributed computing among network users yet retains full access to central mainframe file server. It is an extension of network and distributed computing concepts. However, a CISS goes much further than sharing access between a central file server and distributed work stations. A true C/SS allows applications to move off the mainframe so that software and data are not merely shared but actually decentralised. A C/SS, by definition, allows any person with a work station to communicate with any other person with a work station.

There are two server constraints on implementing a C/SS in its pure form. First, the technology exists but is limited to hard-wired systems. Secondly, allowing applications to move off the file server threatens software and data security. Nevertheless, many companies are implementing C/SS with methods to maintain security.

5. Expert Systems (ES). These software programmes mimic the human thought process by using models of expert decisions and the extensive knowledge stored in their data bases. Although ES programmes are still in their infancy, breakthrough programming has already created operating systems that perform analysis and monitoring activities. The heart of an ES is its ability to pose 'if-then' questions and computer generated solutions. For example, American Express Banking Corporation uses ES to automatically analyse credit applications and to monitor customer credit card spending limits.

The main Constraint of expert systems is that 'if..then' scenarios are limited to information put into tile system by human beings. Computers still do not think, they only process information. Expert systems are, however, able to access huge amounts of data and hundreds of separate data bases, with extra-ordinary speed to create new amalgamations of information. These new configurations of



information are self-generated, and this unusual feature of ES is what differentiates it from other systems.

3.5 CHECK YOUR PROGRESS

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

1. Information is useful only when it is relevant, accurate, timely and of right quantity.
2. The basic objective of MIS is to provide the right information only.
3. Information or processed data need to be stored for future use.
4. A decentralized database is the backbone of a well-built MIS.

B. Fill in the blanks:

1. Need for MIS has increased with the growing turbulence in the _____.
2. MIS is an integrated approach to planning and _____.
3. At the _____ level, information is required for management control.
4. Operating executives generally feel the _____ impact of a new MIS.

3.6 SUMMARY

Management Information System (MIS) is the use of information technology, people, and business processes to record, store and process data to produce information that decision makers can use to make day to day decisions. MIS is a collection of systems, hardware, procedures and people that all work together to process, store, and produce information that is useful to the organization. The goals of an MIS are to implement the organizational structure and dynamics of the enterprise for the purpose of managing the organization in a better way and capturing the potential of the information system for competitive advantage. MIS provides systematic and analytical information necessary to all level of managers. It helps managers to take right decision at the right time.

3.7 KEYWORDS

MIS: It is a formal system for providing management with accurate and timely information necessary for decision-making.

Processing: It means classifying, analyzing, summarizing and editing the data.



Dissemination: Supplying the required information at the right time and right place.

3.8 SELF ASSESSMENT TEST

1. What is a management information system? Discuss its role in management control.
2. Explain the information needs of various levels of management.
3. How will you design and install a management information system?
4. Explain the main problems in the installation of a management information system.
5. Suggest guidelines for making a management information system more effective.
6. Describe and discuss the main types of management information systems.

3.9 ANSWERS TO CHECK YOUR PROGRESS

- A.
1. True
 2. False
 3. True
 4. False
- B.
1. environment
 2. control
 3. middle management
 4. maximum

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Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :04	
ANALYSIS OF FINANCIAL STATEMENTS-I (COMPARATIVE STATEMENTS, COMMON SIZE STATEMENTS AND TREND ANALYSIS)	

Structure

- 4.0 Learning Objectives
- 4.1 Introduction
- 4.2 Meaning of Analysis and Interpretation
- 4.3 Objectives, Importance and Limitations of Financial Analysis
- 4.4 Methods of Analysis and Interpretation
 - 4.4.1 Trend Analysis
 - 4.4.2 Comparative Financial Statements
 - 4.4.3 Common-size Statement
 - 4.4.4 Funds Flow Analysis
 - 4.4.5 Ratio Analysis
 - 4.4.6 Cash Flow Statement
- 4.5 Check Your Progress
- 4.6 Summary
- 4.7 Keywords
- 4.8 Self-Assessment Test
- 4.9 Answers to Check Your Progress
- 4.10 References/Suggested Readings



4.0 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.

4.1 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.

4.2 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 is Rs.18,000 and Net Sales are worth Rs.90,000. At the same time the gross profit of the next firm is Rs.30,000 and net sales worth Rs.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.”

4.4 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, proprietary 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 its 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 from Rs.40,000 to Rs.80,000 shows that sales has doubled, In case of other firm increase of sales from Rs.1,00,000 to Rs.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.

4.4 METHODS OF ANALYSIS AND INTERPREATION

Following are the methods of analysis and interpretation of financial statements:

4.4.1 Trend Analysis

4.4.2 Comparative Financial Statements

4.4.3 Common-size Statement

4.4.4 Funds Flow Analysis

4.4.5 Ratio Analysis

4.4.6 Cash Flow Statement

4.4.1 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 (31 st 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

31 st March	Sales (Rs.)	Increase/Decrease in comparison to 2011	Increase or decrease in (%) in comparison to 2011 $\frac{\text{Increase/Decrease}}{\text{Sales for the base year}} \times 100$
2011	1,50,000	—	—



2012	1,80,000	+30,000	–20%
2013	1,30,500	–19,500	–13%
2014	1,65,000	+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
	Rs.	Rs.	Rs.
Sales	1,50,000	1,30,000	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 = $\frac{\text{Current Year}}{\text{Base year}} \times 100$

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 conclusion only 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, bills receivable 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 from Rs.400 to Rs.800 while the other expense may increase from Rs.8,000 to Rs.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.

4.3.2 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:

$$\% \frac{\text{Amount in fourth column}}{\text{Amount in second column}} \times 100$$

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)

	31 st Mar. 2014 Rs.(000)	31 st 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	
Gross Profit (a)				$\frac{100}{500} \times 100 = 20.00$
Operating Expenses:	350	500	+150	$\frac{150}{350} \times 100 = 42.88$
General and Administrative Expenses				$\frac{10}{100} \times 100 = 10$
Selling Expenses	100	110	+10	
Total Operating Exp. (b)	90	100	+10	$\frac{10}{90} \times 100 = 11.11$
Operating Profit (a-b)	190	210	+20	$\frac{20}{190} \times 100 = 10.53$
Less: Interest Paid	160	290	+130	$\frac{130}{160} \times 100 = 81.25$
Net Profit before tax	30	40	+10	$\frac{10}{30} \times 100 = 33.33$
Less: Income tax				
Net Profit after tax	130	250	+120	$\frac{120}{130} \times 100 = 92.31$
	80	90	+10	$\frac{10}{80} \times 100 = 12.5$
	50	160	+110	$\frac{110}{50} \times 100 = 220$



Interpretation

1. Gross Profit: If 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)	<u>5,87,000</u>	<u>6,92,000</u>
Variation of Goods in Processes of Stock		
Opening of Year	13,000	14,000
Closing of Year	14,000	16,000
(b)	<u>1,000</u>	<u>2,000</u>
Cost of Goods Manufactured (a-b)	<u>5,86,000</u>	<u>6,90,000</u>

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 be 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 of 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..... 2014 and 2015)

Particulars	Previous Year 2014	Current Year 2015	Absolute Changes (Increase or Decrease)	Percen- tage Change
I. EQUITY AND LIABILITIES	Rs.	+	Rs.	Rs.
1. Shareholders' Funds:		Rs.		
(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		<u>300</u>	<u>250</u>
Total (1+2+3)		<u>7,000</u>	<u>5,000</u>
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		<u>300</u>	<u>200</u>
Total (1+2)		<u>7,000</u>	<u>5,000</u>

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)

	31 st Mar. 2014	31 st 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)	<u>5,000</u>	<u>7,000</u>	<u>2,000</u>	$\frac{2,000}{5,000} \times 100 = 40$
Total Assets (a+b+c)	4,000	5,000	1,000	$\frac{1,000}{4,000} \times 100 = 25$
LIABILITIES:				
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)	<u>5,000</u>	<u>7,000</u>	<u>2,000</u>	$\frac{2,000}{5,000} \times 100 = 40$
Total Liabilities (a+b)				

Interpretation



1. Short-term Financial Position: The working capital has increased from Rs. 1,150 to Rs. 1,400 and current ratio has also increased. The previous current ratio was 5.6 ($1,400 \div 250$) whereas present current ratio is 5.67 ($1,700 \div 300$) 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 have increased by 20%.

2. Long-term Financial Position: The statements show that fixed assets have increased by Rs. 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.

4.4.3 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 are Rs.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)	<u>40,000</u>	<u>60,000</u>
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	<u>28,000</u>	<u>45,000</u>

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	10,000	$\frac{10,000 \times 100}{4,20,000} = 2.38$	12,000	$\frac{12,000 \times 100}{4,50,000} = 2.67$
Exp.	5,000	$\frac{5,000 \times 100}{4,20,000} = 1.19$	5,000	$\frac{5,000 \times 100}{4,50,000} = 1.11$
Ad. Expenses				
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	<u>28,000</u>	<u>6.66</u>	<u>45,000</u>	<u>10.00</u>

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	<u>20,000</u>	<u>38,000</u>	1,000	
Administrative Expenses			<u>11,000</u>	<u>1,00,000</u>
Financial Expenses				<u>1,00,000</u>
Selling and Distribution Expenses				
Net Profit during the year				

Solution:

Cost of goods sold = Net Sales – Gross Profit

$$= 2,00,000 - 1,17,000$$

$$= \text{Rs.} 83,000$$

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)	<u>1,17,000</u>	<u>58.50</u>
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)	<u>1,00,000</u>	<u>50.00</u>
Net Profit for the year (a-b)		

INTERPREATION

- 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 be 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		<u>1,10,000</u>
2. Current Liabilities:		<u>3,50,000</u>
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		<u>3,50,000</u>
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	1,10,000	31.43
(b)	<u>3,50,000</u>	<u>100.00</u>
Total Liabilities		
(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	<u>3,50,000</u>	<u>100.00</u>
(b)		
Total Assets (a+b)		

$$\text{Formula \%} = \frac{\text{Individual item of Liabilities / Assets side}}{\text{Total Liabilities / Assets}} \times 100$$



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 are Rs.2,10,000.

The detailed discussions on Funds Flow Statement, Cash Flow Statement and Ratio Analysis has been made in the following lessons.

4.5 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.

4.6 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.

4.7 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.

4.8 SELF-ASSESSMENT TEST

- The following Statement of Profit and Loss of Bhatia Ltd. are given for two financial years 2014 and 2015.

	31 st March, 2014	31 st 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.

- 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)		<u>50,000</u>	<u>30,000</u>
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		<u>50,000</u>	<u>30,000</u>
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.

	31 st March 2014	31 st 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)	<u>2,32,000</u>	<u>2,84,000</u>
	88,000	1,28,000
Administrative Exp.	84,000	72,000
Selling Expenses	4,800	3,200
Interest Charges	<u>1,76,800</u>	<u>2,03,200</u>
Gross Profit (b)	55,200	80,800
Net Profit before Income Tax	<u>27,600</u>	<u>40,400</u>
(a-b)	<u>27,600</u>	<u>40,400</u>
Less: Income Tax @ 50%		
Net Profit after Income Tax		



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)	<u>1,05,000</u>	<u>1,85,000</u>
Operating Expenses:		
Selling & Distribution Exp.	23,000	24,000
Administrative Expenses	12,700	12,500
Total Exp. (b)	<u>35,700</u>	<u>36,500</u>
Operating Income (a-b)	<u>69,300</u>	<u>1,48,500</u>
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	<u>68,750</u>	<u>1,54,610</u>

4.9 ANSWERS TO CHECK YOUR PROGRESS

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

4.10 REFERENCES/SUGGESTED READINGS



1. Ravi M. Kishore: Advanced Management Accounting; Taxmann Publications Pvt. Ltd., New Delhi.
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Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :05	
ANALYSIS OF FINANCIAL STATEMENTS-II (RATIO ANALYSIS)	

Structure

- 5.0 Learning Objectives
- 5.1 Introduction
- 5.2 Meaning, Types and Nature of Ratio Analysis
- 5.3 Precautions, importance and limitations for the use of Ratios
- 5.4 Classification of Ratios
 - 5.4.1 Profitability Ratios
 - 5.4.2 Activity or Turnover Ratios
 - 5.4.3 Financial Position Ratios
 - 5.4.4 Leverage Ratios
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- 5.7 Keywords
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- 5.9 Answers to Check Your Progress
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5.0 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.

5.1 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.”

5.2 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: 5,000 or 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.,

$$\begin{aligned}\text{Gross Profit Ratio} &= \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{12,500}{50,000} \times 100 = 25\%\end{aligned}$$

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., $1,25,000 \div 25,000$.

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 understanding 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.

5.3 PRECAUTIONS, IMPORTANCE AND LIMITATIONS FOR THE USE OF RATIOS

The calculation of ratio may not be difficult but their use is 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 precautions 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 in 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 not 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 future forecasting. They indicate the future prospects. The ratios can also serve as a basis for preparing 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 proprietary 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 to know whether financial position of the concern warrants their payments at a specified time or 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 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.

5.4 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:

5.4.1 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:

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

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 understood 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 gross margin 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:

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

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:

$$\text{Operating Net Profit} = (\text{Gross Profit} + \text{Operating Income} - \text{Operating Expenses})$$

Net operating ratio can be calculated by using the following formula:

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

(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:

$$1. \text{ Operating Ratio} = \frac{\text{Cost of goods sold} + \text{Operating Expenses}}{\text{Net Sales}} \times 100$$

OR

$$2. \text{ Operating Ratio} = 100 - \text{Net Profit Ratio}$$

Where,

$$(a) \text{ Cost of goods sold} = (\text{Opening Stock} + \text{Purchases} + \text{Direct Expenses} + \text{Manufacturing Expenses} - \text{Closing Stock})$$

OR

$$= \text{Sales} - \text{Gross Profit}$$

$$(b) \text{ Operating expenses} = \text{Administrative Expenses} + \text{Selling and Distribution Expenses} + \text{Financial Expenses}$$

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:

$$= \frac{\text{Manufacturing Expenses}}{\text{Net Sales}} \times 100$$

(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:

$$= \frac{\text{Selling \& Distribution Exp.}}{\text{Net Sales}} \times 100$$

(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 capital employed will be Rs.90,000.

2. Net Capital Employed: The term 'net capital employed' comprises the total assets 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 to the 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

$$= \text{Closing Capital Employed} - 1/2 \text{ of profit earned during the year}$$

(c) Average Capital Employed

$$= \text{Opening Capital Employed} + 1/2 \text{ of Profit earned during the year.}$$

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, capital 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	<div style="border-top: 1px solid black; border-bottom: 3px double black; width: 100px; margin: 0 auto;"></div>

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:

$$\text{Return on Capital Employed} = \frac{\text{Net Profit (before Interest and Tax)}}{\text{Capital Employed}} \times 100$$

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 of return 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:

$$\text{Return on Proprietors Funds} = \frac{\text{Net Profit after Interest \& Tax}}{\text{Proprietor's Funds}} \times 100$$

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., $40 \div 10$), 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:

$$\begin{aligned} \text{Pay out Ratio} &= \frac{\text{Equity Dividend}}{\text{Net Profit after tax, Interest and Preference Dividend}} \times 100 \\ &= \frac{\text{Dividend per Equity Share}}{\text{Earning per Share}} \times 100 \end{aligned}$$

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

$$= \frac{\text{Net Assets}}{\text{No. of Equity Shares} + \text{Pref. Shares}}$$

OR

$$= \frac{\text{Net Assets}}{\text{No. of Equity Shares}}$$

OR

$$= \frac{\text{Shareholders' Fund}}{\text{No. of Equity Shares} + \text{Pref. Shares}}$$

(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		<u>20,000</u>	
Revenue from Operations (Net Sales)		5,00,000	
Add: Other Income:			
Non-operating Income		<u>5,000</u>	
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	<u>10,000</u>		
	3,45,000	2,55,000	
Less: Closing Stock	<u>90,000</u>	80,000	
Administration Expenses		30,000	
Selling & Distribution Expenses		10,000	
Finance Expenses		<u>5,000</u>	
Other Non-operating Expenses			<u>3,80,000</u>
Net Profit during the year			<u>1,25,000</u>

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.

$$1. \quad \text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Net Sales}} \times 100$$

$$= \frac{2,45,000}{5,00,000} \times 100 = 49\%$$

$$2. \quad \text{Operating Ratio} = \frac{\text{Cost of Goods Sold} + \text{Operating Exp.}}{\text{Net Sales}} \times 100$$

$$= \frac{2,55,000 + 1,20,000}{5,00,000} \times 100$$

$$= \frac{3,75,000}{5,00,000} \times 100 = 75\%$$

Where,

$$(i) \quad \text{Cost of Goods Sold} = (\text{Selling Price} - \text{Gross Profit})$$

$$= (5,00,000 - 2,45,000) = \text{Rs.} 2,55,000$$

Cost of Goods Sold = (Opening Stock + Purchases + Carriage + Wages + Factory Rent – Closing Stock)

$$= (75,000 + 2,50,000 + 5,000 + 5,000 + 10,000 - 90,000)$$

$$= \text{Rs.} 2,55,000$$

$$(ii) \quad \text{Operating Expenses} = (\text{Administration Exp.} + \text{Selling Exp.} + \text{Financial Exp.})$$

$$= (80,000 + 30,000 + 10,000) = \text{Rs.} 1,20,000$$

3. Expenses Ratios:

$$(i) \quad \text{Administration Expenses Ratio}$$

$$= \frac{\text{Administration Exp.}}{\text{Net Sales}} \times 100$$

$$= \frac{80,000}{5,00,000} \times 100 = 16\%$$

$$(ii) \quad \text{Selling and Distribution Exp. Ratio}$$

$$= \frac{\text{S. \& D. Expenses}}{\text{Net Sales}} \times 100$$

$$= \frac{30,000}{5,00,000} \times 100 = 6\%$$



$$\begin{aligned} \text{(iii) Finance Exp. Ratio} &= \frac{\text{Finance Expenses}}{\text{Net Sales}} \times 100 \\ &= \frac{10,000}{5,00,000} \times 100 = 2\% \end{aligned}$$

$$\begin{aligned} \text{(iv) Other Non-Operating Exp. Ratio} &= \frac{\text{Other Non-operating Exp.}}{\text{Net Sales}} \times 100 \\ &= \frac{5,000}{5,00,000} \times 100 = 1\% \end{aligned}$$

$$\begin{aligned} \text{4. Operating Net Profit Ratio} &= \frac{\text{Operating Net Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{1,25,000}{5,00,000} \times 100 = 25\% \end{aligned}$$

$$\begin{aligned} \text{5. Net Profit Ratio} &= \frac{\text{Net Profit}}{\text{Net Sales}} \times 100 \\ &= \frac{1,25,000}{5,00,000} \times 100 = 25\% \end{aligned}$$

6. Fixed Revenue Expenses and Sales Ratio

$$\begin{aligned} \text{(Factory Rent)} &= \frac{\text{Fixed Revenue Exp.}}{\text{Net Sales}} \times 100 \\ &= \frac{10,000}{5,00,000} \times 100 = 2\% \end{aligned}$$

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

$$\text{For 2011} = \frac{4,00,000}{10,00,000} \times 100 = 40\%$$

$$\text{For 2012} = \frac{7,00,000}{14,00,000} \times 100 = 46.67\%$$

(b) $\text{Net Operating Profit Ratio} = \frac{\text{Net Operating Profit}}{\text{Net Sales}} \times 100$

$$\text{For 2011} = \frac{3,00,000}{10,00,000} \times 100 = 30\%$$

$$\text{For 2012} = \frac{5,00,000}{15,00,000} \times 100 = 33.33\%$$

(c) $\text{Net Profit Ratio} = \frac{\text{Net Profit}}{\text{Net Sales}} \times 100$

$$\text{For 2011} = \frac{3,10,000}{10,00,000} \times 100 = 31\%$$

$$\text{For 2012} = \frac{5,10,000}{15,00,000} \times 100 = 34\%$$

(d) $\text{Operating Ratio} = \frac{\text{Cost of Sales} + \text{Ope. Exp.}}{\text{Net Sales}} \times 100$

$$\text{For 2011} = \frac{6,00,000 + 1,00,000}{10,00,000} \times 100 = 70\%$$



$$\text{For 2012} = \frac{8,00,000 + 2,00,000}{15,00,000} \times 100 = 66.67\%$$

$$(e) \quad \text{Return on Total Resources} = \frac{\text{Net Profit before Tax}}{\text{Total Assets}} \times 100$$

$$\text{For 2011} = \frac{3,10,000}{10,00,000} \times 100 = 6.2\%$$

$$\text{For 2012} = \frac{5,10,000}{55,00,000} \times 100 = 9.27\%$$

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 $\left\{ \frac{1,00,000 \times 100}{50} \right\}$	2,00,000
+ Interest on Debentures $\left\{ \frac{6,00,000 \times 10}{100} \right\}$	60,000
	<u><u>Rs. 2,60,000</u></u>

2. Capital Employed

$$\begin{aligned}
 &= [(\text{Fixed Assets} + \text{Current Assets}) - (\text{Current Liabilities} + \text{Depreciation})] \\
 &= [(5,00,000 + 8,00,000) - (3,00,000 + 1,00,000)] \\
 &= [(13,00,000 - 4,00,000)] \\
 &= \text{Rs. } 9,00,000
 \end{aligned}$$

$$\begin{aligned}
 \therefore \text{Return on Capital Employed} &= \frac{\text{Net Profit before Tax and Interest}}{\text{Capital Employed}} \times 100 \\
 &= \frac{2,60,000}{9,00,000} \times 100
 \end{aligned}$$



$$= 28.89\%$$

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:

$$1. \quad \text{Earning Per Share} = \frac{\text{Net Profit - Tax and Pref. Dividend}}{\text{No. of Shares}}$$

$$= \frac{7,10,000^*}{30,000} = \text{Rs.}23.67$$

*Working Note:

Profit before Tax	Rs. 20,00,000
Less: Tax 60%	12,00,000
	<hr/> 8,00,000
Less: Pref. Divi. $\left\{ \frac{10,00,000 \times 9}{100} \right\}$	90,000
	<hr/>
N/P after Tax & Dividend	<u><u>7,10,000</u></u>



$$2. \quad \text{Book Value per Share} = \frac{\text{Equity Shareholder's Fund}}{\text{No. of Equity Shares}}$$

$$\therefore \text{Book value per Share} = \frac{51,00,000^{**}}{30,000} = \text{Rs. } 170.30$$

**Working Notes:

	Rs.	Rs.
Equity Share Capital		30,00,000
Reserve (Opening)		20,00,000
Profit	7,10,000	
Less: Proposed Dividend		
$\frac{30,00,000 \times 20}{100}$	<u>6,00,000</u>	<u>1,10,000</u>
		<u>51,10,000</u>

$$3. \quad \text{Price Earning Ratio} = \frac{\text{Market Price Per Share}}{\text{Income per Share}}$$

$$= \frac{200}{23.67} = \text{Rs. } 8.45$$

$$4. \quad \text{Capitalisation Ratio} = \frac{\text{Earning Per Share}}{\text{Market Price per Share}} \times 100$$

$$= \frac{23.67}{200} \times 100 = 11.84\%$$

$$5. \quad \text{Dividend Per Share} = \frac{\text{Dividend paid on Equity Share}}{\text{No. of Equity Shares}}$$

$$= \frac{6,00,000}{30,000} = \text{Rs. } 20$$

$$6. \quad \text{Payout Ratio} = \frac{\text{Dividend Per Share}}{\text{Earning Per Share}} \times 100$$

$$= \frac{20}{23.67} \times 100 = 8.45\%$$

$$7. \quad \text{Dividend Yield Ratio} = \frac{\text{Dividend Per Share}}{\text{Market Price of the Share}} \times 100$$

$$= \frac{20}{200} \times 100 = 10\%$$

5.4.2 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 and the 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

$$= \text{Net Sales} - \text{Gross Profit}$$

$$2. \text{Average Stock} = \frac{\text{Opening Stock} + \text{Closing Stock}}{2}$$

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:

$$\text{Total Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Total Assets (Actual)}}$$

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 of 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:



$$\text{Current Assets Turnover Ratio} = \frac{\text{Cost of Goods Sold or Net Sales}}{\text{Current Assets}}$$

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 shows the relationship between working capital and cost of goods sold or net sales. It is calculated as under:

$$\text{Working Capital Turnover Ratio} = \frac{\text{Cost of Goods Sold or Net Sales}}{\text{Net Working Capital}}$$

where,

$$\text{Net Working Capital} = (\text{Current Assets} - \text{Current Liabilities})$$

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:

$$\text{T.C.E.T. Ratio} = \frac{\text{Cost of Goods Sold or Net Sales}}{\text{G. Capital Employed or Total Actual Assets}}$$

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 sell 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,

$$1. \text{ Average Debtors} = \frac{\text{Opening Debtors} + \text{Closing Debtors}}{2}$$

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

$$1. \text{ Average Collection Period (per day)} = \frac{\text{Trade Receivables}}{\text{Net Credit Sales for the year}} \times 365$$

$$2. \text{ Average Collection Period (per week)} = \frac{\text{Trade Receivables}}{\text{Net Credit Sales}} \times 52$$

$$3. \text{ Average Collection Period (per month)} = \frac{\text{Trade Receivables}}{\text{Net Credit Sales}} \times 12$$



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 collection period 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:

$$\text{Creditors Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Amount Payable}}$$

Where,

1. Amount Payable = Creditors + Bill Payable

2. Average Amount Payable = $\frac{\text{Opening Balance} + \text{Closing Balance}}{2}$

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) = $\frac{\text{Average Trade Payable}}{\text{Net Credit Purchase}} \times 12$



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.

- Cost of Sales = Sales – Gross Profit

$$= 10,00,000 - 10,00,000 \times \frac{25}{100}$$

$$= 10,00,000 - 2,50,000 = \text{Rs. } 7,50,000$$
- Working Capital = Current Assets – Current Liabilities

$$= [(Debtors + Stock + B/R + P.P. \text{ Exp.})$$

$$- (Creditor + B/P + O/s \text{ Exp.})]$$

$$= [(2,50,000 + 1,80,000 + 80,000 + 60,000)$$

$$- (1,30,000 + 50,000 + 10,000)]$$

$$= [5,70,000 - 1,90,000]$$

$$= \text{Rs. } 3,80,000$$

∴ 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

$$\text{For 2011} = 40,000 + 2,55,000 - 65,000$$

$$= \text{Rs. } 2,30,000$$

$$\text{For 2012} = 65,000 + 3,40,000 - 50,000$$

$$= \text{Rs. } 3,55,000$$

2. Average Stock = $\frac{\text{Opening Stock} + \text{Closing Stock}}{2}$

$$\text{For 2011} = \frac{40,000 + 65,000}{2} = \text{Rs. } 52,500$$

$$\text{For 2012} = \frac{65,000 + 50,000}{2} = \text{Rs. } 57,500$$

3. Inventory Ratio = $\frac{\text{Cost of Sales}}{\text{Average Stock}}$

$$\text{For 2011} = \frac{2,30,000}{52,500} = 4.4 : 1 \text{ times}$$

$$\text{For 2012} = \frac{3,55,000}{57,500} = 6.2 : 1 \text{ times}$$

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 = $\frac{18,000+22,000}{2}$
 $= \frac{40,000}{2} = \text{Rs. } 20,000$
 2. Average B/R = $\frac{11,000+9,000}{2}$
 $= \frac{20,000}{2} = \text{Rs. } 10,000$
 3. Net Sales = Total Sale – Sales Return
 $= 2,00,600 - 600 = 2,00,000$
- \therefore Debt Collection Period = $\frac{\text{A. Debtors} + \text{A.B/R}}{\text{Net Sales}}$
 $= \frac{20,000 + 10,000}{2,00,000} \times 12$
 $= \frac{30,000}{2,00,000} \times 12 = 1.8 \text{ months.}$

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:

$$= \frac{\text{Average (Debtors+B/R)}}{\text{Net Credit Sales}} \times 52$$

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

$$\therefore 8 = \frac{x}{40,000}$$

or $x = \text{Rs.}3,20,000$

Profit on Cost of Goods Sold = 20% of Sales

If Sales = Rs.100, then Profit = Rs.20 and Cost = Rs.80 (100 – 20)

$$\therefore \text{Amount of Profit} = \frac{3,20,000}{80} \times 20 = \text{Rs. } 80,000$$

$$\begin{aligned} \text{(b) Debtors Turnover Ratio} &= \frac{\text{Net Credit Sales}}{\text{Average Debtors}} \\ &= \frac{29,836}{6,089} = 4.9 \text{ Times} \end{aligned}$$

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 $\left\{ \frac{1,116 \times 10}{100} \right\}$

$$\begin{aligned} \text{(c) Average Collection Period} &= \frac{\text{Debtors} \times 360}{\text{Credit Sales}} \\ \text{Credit Sales} &= \frac{24,00,000}{100} \times 20 = \text{Rs.}4,80,000 \\ \therefore \text{Average Collection Period} &= \frac{2,30,000}{4,80,000} \times 360 = 172.5 \text{ Days} \end{aligned}$$

(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).

$$\begin{aligned} \text{Amount of Sales} &= \frac{\text{Cost} \times 100}{80} \\ &= \frac{1,20,000 \times 100}{80} \\ &= \text{Rs.}1,50,000 \end{aligned}$$



5.4.3 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 arisen 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.

<i>Current Liabilities</i>	<i>Current Assets</i>
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 = $100 \times 2.5 = 250$

\therefore Working Capital = $250 - 100 = \text{Rs.}150$

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 $= \frac{250}{150} \times 60,000 = \text{Rs.}1,00,000$

and Current Liabilities = C.A. – W.C.

$$= 1,00,000 - 60,000 = \text{Rs.}40,000$$

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) Inadequate 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 show the real financial position of the concern. The inference drawn on such a ratio will be faulty and 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 cannot be 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 be 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:

$$\text{Absolutely Liquid Ratio} = \frac{\text{Cash in hand and bank} + \text{Short-term marketable Securities} + \text{Short-term Investments}}{\text{Liquid Liabilities}}$$

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,

$$\begin{aligned} \text{Shareholders' Funds} = & \text{Equity Share Capital} + \text{Pref. Share Capital} \\ & + \text{Reserves and Undistributed Profits} \\ & \text{Accumulated loss (i.e., Debit balance of P/L} \\ & \text{A/c, underwriting commission etc.)} \end{aligned}$$

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

$$\text{Debt Equity Ratio} = \frac{\text{Outsiders Funds}}{\text{Shareholder's Funds}}$$

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

$$\text{Long-term Debts to Shareholders Funds} = \frac{\text{Long-term Debt}}{\text{Shareholder's Funds}}$$

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:

$$\text{Capital Gearing Ratio} = \frac{\text{Equity Share Capital} + \text{Reserve \& Surplus}}{\text{Pref. Share Capital} + \text{Fixed Interest Bearing Loan}}$$

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:

$$\text{Long term Debt Capitalisation Ratio} = \frac{\text{Long-term Debt}}{\text{Total Capitalisation}}$$

where,

$$\begin{aligned} \text{Total Capitalisation} = & \text{Equity Share Capital} + \text{Pref. Share Capital} + \text{Reserves} \\ & \text{\& Surplus} + \text{Long-term Debt.} \end{aligned}$$

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 assets. 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 be 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:

$$\text{Fixed Assets Ratio to Shareholders Funds} = \frac{\text{Fixed Assets (after depreciation)}}{\text{Shareholders' Funds}}$$

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:

$$\text{Ratio} = \frac{\text{Current Assets}}{\text{Shareholder's Funds}} \text{ Or } \frac{\text{Current Assets}}{\text{Shareholders' Funds}} \times 100$$

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:

$$\text{Interest Coverage Ratio} = \frac{\text{N/P (before Interest \& Tax)}}{\text{Fixed Interest Charges}}$$

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 firm's 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:

$$\text{Preference Dividend Coverage Ratio} = \frac{\text{Net Profit After Interest and Tax}}{\text{Preference Dividend}}$$

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:

$$\text{Dividend and Profit Ratio} = \frac{\text{Dividends}}{\text{Total Profits}}$$

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:

$$\text{Reserve to Capital Ratio} = \frac{\text{Reserve}}{\text{Capital}}$$

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:

$$\text{Cash to Debt-Service Ratio} = \frac{\text{Annual Cash Flow before Interest \& Tax}}{\text{Interest} + \frac{\text{Sinking Fund Appropriation on Debt}}{1 - \text{Tax Rate}}}$$

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:

$$\text{Cash Position Ratio} = \frac{\text{Cash} + \text{Bank} + \text{Marketable Securities}}{\text{Current Liabilities}}$$

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)		<u>1,50,000</u>
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)		<u>1,50,000</u>

Solution.

$$1. \quad \text{Proprietary Ratio} = \frac{\text{Proprietor's Fund}}{\text{Total Assets}}$$

Where, Proprietor's Fund = Equity Share Capital + Pref. Share Capital + Reserve
Fund + Undistributed P/L

$$60,000 + 20,000 + 10,000 = \text{Rs. } 90,000$$

Or Proprietor's Fund = Total Assets – Outside Liabilities

$$= 1,50,000 - 60,000 = \text{Rs. } 90,000$$

$$\therefore \text{Proprietary Ratio} = \frac{\text{Proprietor's Fund}}{\text{Total Assets}}$$



$$= \frac{90,000}{1,50,000} = 1 : 1.67$$

2. Reserve Capital Ratio = $\frac{\text{Capital}}{\text{Reserve}}$

$$= \frac{60,000}{20,000} = 3 : 1$$

3. Debt-Equity Ratio = $\frac{\text{Outsider's Fund (Long-term)}}{\text{Shareholder's Funds}}$

$$= \frac{25,000}{90,000} = 1 : 3.6$$

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)		<u>2,00,000</u>
II. ASSETS:		
1. Non-current Assets:		
Fixed Assets:		80,000
2. Current Assets:		
Trade Receivables:	Rs.	
Debtors	70,000	80,000
B/R	<u>10,000</u>	
Cash and Cash Equivalents:	10,000	
Cash	<u>10,000</u>	20,000
Marketable Securities		20,000
Stock (Inventory)		<u>2,00,000</u>
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 = $\frac{\text{Proprietor's Fund} + \text{Long term Loans}}{\text{Fixed Assets}}$



$$= \frac{1,75,000}{80,000} = 2.19:1$$

4. Capital Gearing Ratio = $\frac{\text{Equity Share Capital}}{\text{Pref.Share Capital} + \text{Long term Loan}}$
- $$= \frac{1,00,000}{80,000} = 1.33 : 1$$
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:

$$\text{i.e., } \left[\frac{4.5}{1} - \frac{3}{1} = \frac{1.5}{1} \right]$$

(1) Current Ratio = 4.5 : 1

Acid-test Ratio = 3.0 : 1

$$(\text{Diff. Being Inventory}) = \frac{1.5}{1}$$

Let the Current Liabilities be x

$$\text{Therefore, } \frac{60,000}{x} = \frac{1.5}{1}$$

$$\text{or } x = \frac{60,000}{1.5}$$

or Current Liabilities = Rs. 40,000

$$(2) \text{ Liquid Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

$$\text{or } \frac{\text{Liquid Assets}}{\text{Current Liabilities}} = \frac{3}{1}$$

$$\text{or } \frac{\text{Liquid Assets}}{1,00,000} = \frac{3}{1}$$

or Liquid Assets = Rs. 3,00,000

Therefore, Current Assets = Liquid Assets + Inventory

$$= 3,00,000 + 50,000$$

$$= \text{Rs. } 3,50,000$$

(3) Shareholders' Equity (given) = Rs.2,00,000

$$\text{Total Assets} = \frac{2,00,000 \times 60}{100} = \text{Rs. } 1,20,000$$

$$\text{Assets Turnover} = \frac{\text{Sales}}{\text{Total Assets}}$$

$$\text{or } \frac{\text{Sales}}{1,20,000} = \frac{4}{1}$$

or Sales = Rs.4,80,000



Again, $\text{Inventory Turnover} = \frac{\text{Sales}}{\text{Inventory}}$

Or $\frac{4,80,000}{\text{Inventory}} = \frac{6}{1}$

or $\text{Inventory} = \frac{4,80,000}{6}$

or $\text{Inventory} = \text{Rs. } 80,000$

(4) Let the inventory at the beginning be x

Therefore, at the end it will be $1.5x$

$$\text{Inventory Turnover} = \frac{\text{Sales}}{\text{Average Stock}}$$

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 $x = \text{Rs. } 20,000$

Inventory at the beginning is Rs. 20,000

Therefore, at the end it will be $= 20,000 \times 1.5 = \text{Rs. } 30,000$

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
$$10 = \frac{10,000}{\text{Sales}} \times 100$$

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:

$$\text{Stock Velocity} = \frac{\text{Average Stock}}{\text{Cost of Goods Sold}}$$

$$\text{Cost of Goods Sold} = \text{Sales} - \text{G.P.}$$

$$= 10,00,000 - 1,00,000$$

$$= \text{Rs. } 9,00,000$$

\therefore
$$\text{Stock Velocity} = \frac{\text{Average Stock}}{\text{Cost of Goods Sold}}$$

or
$$\frac{6}{12} (9,00,000) = \text{A Average Stock}$$



$$\text{or} \quad \frac{54,00,000}{12} = \text{Average Stock}$$

$$\text{or} \quad 54,00,000 = 12 \times \text{Average Stock}$$

$$\text{or} \quad \text{Average Stock} = \frac{54,00,000}{12}$$

$$\text{or} \quad \text{Average Stock} = \text{Rs. } 4,50,000$$

Since opening and closing stocks are the same so the value of closing stock is Rs. 4,50,000.

3. Sundry Debtors:

$$\text{Debtors Velocity} = \frac{\text{Total Debtors}}{\text{Sales}}$$

$$\text{or} \quad \frac{3}{12} = \frac{\text{Debtors}}{10,00,000}$$

$$\text{or} \quad \frac{3}{12} (10,00,000) = \text{Debtors}$$

$$\text{or} \quad 3 \times 10,00,000 = 12 \times \text{Debtors}$$

$$\text{or} \quad \text{Debtors} = \frac{30,00,000}{12}$$

$$\text{or} \quad \text{Debtors} = \text{Rs. } 2,50,000$$

4. Sundry Creditors :

$$\text{Creditors' Velocity} = \frac{\text{Total Creditors}}{\text{Purchase}}$$

$$\text{Now,} \quad \text{Cost of Goods} = \text{Opening Stock} + \text{Purchase} - \text{Closing Stock}$$

$$\text{Or} \quad 9,00,000 = 4,50,000 + \text{Purchase} - 4,50,000$$

$$\text{or} \quad \text{Purchase} = \text{Rs. } 9,00,000$$

$$\therefore \quad \text{Creditors' Velocity} = \frac{\text{Total Creditors}}{\text{Purchase}}$$

$$\text{or} \quad \frac{3}{12} = \frac{\text{Total Creditors}}{9,00,000}$$

$$\text{or} \quad 27,00,000 = 12 \times \text{Total Creditors}$$



$$\text{or} \quad \text{Creditors} = \frac{27,00,000}{12}$$

$$\therefore \quad \text{Creditors} = \text{Rs. } 2,25,000$$

5.4.4 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 in 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

$$\text{Operating Leverage} = \frac{C}{\text{EBIT}}$$

Where,

$$\text{Marginal Contribution} = \text{Sales} - \text{Variable Cost}$$

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:

$$\text{Composite Leverage} = \text{Operating Leverage} \times \text{Financial Leverage}$$

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 $= \frac{\text{Marginal Contribution}}{\text{Earning before Interest and Tax}}$	$\frac{600}{150} = 4$	$\frac{660}{210} = 3.14$
2. Financial Leverage $= \frac{\text{Earning before Interest and Tax}}{\text{Earning before Tax}}$	$\frac{150}{100} = 1.50$	$\frac{210}{160} = 1.31$
3. Composite Leverage = Operating Leverage ×	$4 \times 1.5 = 6$	$3.14 \times 1.31 = 4.11$



5.5 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.

5.6 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.



5.7 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.

5.8 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
		Rs.	Rs.
1. EQUITY & LIABILITIES:			
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		<u>20,000</u>	60,000
Outstanding Expenses			<u>20,000</u>
			<u><u>4,00,000</u></u>
II. ASSETS:			
1. Non-current Assets:			
Fixed Assets:			
2. Current Assets:			
Trade Receivables:			
Total (1 + 2+ 3)			



Debtors		1,00,000	
Bills Receivables		40,000	1,40,000
Cash and Cash Equivalents:			
Cash at Bank			60,000
Total (1+2)			<u>4,00,000</u>

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 Rs.	Amount Rs.
Sales (Revenue from Operations)			
Add: Other Income:			8,50,000
Non-operating Incomes:			
Interest			
Profit on Sale of Shares		3,000	
Total Revenue		<u>6,000</u>	<u>9,000</u>
Less: Expenses:			8,59,000
Cost of Goods Sold:			
Opening Stock			
Add: Purchases			
Incidental Expenses			
Less: Closing Stock			
Operating Expenses:			
Selling and Distribution Exps.			
Administration Exps.			
Financial Exps.			
Non-operating Expenses:			
Loss on Sale of Assets:			
Net Profit during the year			

Balance Sheet(as at 31st March, 2013)

Particulars	Notes No.	Amount Rs.	Amount Rs.
1. EQUITY & LIABILITIES:			



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:			<u>1,30,000</u>
Total (1 + 2)			<u><u>4,80,000</u></u>
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			<u>30,000</u>
Total (1+2)			<u><u>4,80,000</u></u>

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 |

5.9 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

5.10 REFERENCES/SUGGESTED READINGS

1. S.N. Maheshwari: Cost and Management Accounting; Sultan Chand & Sons, New Delhi.
2. I.M. Pandey: Management Accounting; Vikas Publishing House (P) Ltd., Noida.
3. Ravi M. Kishore: Advanced Management Accounting; Taxmann Publications Pvt. Ltd., New Delhi.
4. M.Y. Khan & P.K. Jain: Theory and Problems of Management and Cost Accounting; McGraw-Hill Education (India) Ltd., Noida.
5. JawaharLal: Cost Accounting; McGraw-Hill Education (India) Ltd., Noida.





Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :06	
FUNDS FLOW STATEMENT	

Structure

- 6.0 Learning Objectives
- 6.1 Introduction
- 6.2 Meaning of Fund, Flow of Fund, Funds Flow Statement and Sources and Uses of Funds
- 6.3 Importance and Limitations of Funds Flow Statement
- 6.4 Technique of Funds Flow Statement
 - 6.4.1 Schedule of Changes in Working Capital
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- 6.6 Summary
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- 6.8 Self-Assessment Test
- 6.9 Answers to Check Your Progress
- 6.10 References/Suggested Readings



6.0 LEARNING OBJECTIVES

After reading this lesson, you will be in a position to

- Define the funds flow statement.
- Prepare a statement of changes in working capital
- Construct Funds Flow Statement.

6.1 INTRODUCTION

The technique of Fund-flow Analysis is widely used by the financial analysts, credit granting institutions and financial managers in performance of their jobs. It has become a useful tool in their analytical kit. This is because the financial statements, i.e., “Income Statement” (Statement of Profit and Loss) and the “Balance Sheet” have a limited role to perform. The balance sheet gives the summary of the assets and liabilities of an undertaking at a particular point of time. It reveals the financial status of the company. The assets side of a balance sheet shows the employment of resources of an undertaking while the liabilities side indicates its obligations, i.e., the manner in which these resources were obtained. The income statement (Statement of Profit and Loss) reflects the results of the business operations for a period of time. It contains a summary of expenses incurred and the revenue realised an accounting period. Both these statements provide the essential basic information on the, financial activities of a business but their usefulness is limited for analysis and planning purposes. These statements fail to report about the financial activities of the business. They do not point out summary regarding the sources and applications of funds generated during the period.

The balance sheet gives a static view of the resources (Liabilities) of a business and the uses (assets) to which these resources have been put at a certain point of time. It does not disclose the causes for changes in the assets and liabilities between two different points of time. The income statement, in a general way, indicates the resources provided by operations. But there are many transactions that take place in an undertaking and which do not operate through income statement. Thus, another statement has to be prepared to show the changes in the assets and liabilities from the end of one period of time to the end of another period of time. The analysis method which discloses this change is called “Fund Flow Statement”.



Thus, the Fund Flow Statement is a statement which shows the movement of funds and is a report of the financial operations of the business undertaking. It indicates various means by which funds were obtained during a particular period and the ways in which these funds were employed. In simple words, it is a statement of sources and applications of funds.

6.2 MEANING OF FUND, FLOW OF FUND, FUNDS FLOW STATEMENT AND SOURCES AND USES OF FUNDS

The word 'Fund' has different interpretations. In a narrow sense, it means cash only and a fund flow statement prepared on this basis is called a cash flow statement. Such a statement enumerates net effects of the various business transactions on cash and takes into account receipts and disbursement of cash.

We can make the term 'Fund' more clear by taking an example, stated below:

Let, Current Assets = Rs.75,000

Current Liabilities = Rs.40,000

$$\begin{aligned}\therefore \text{Fund} &= \text{Current Assets} - \text{Current Liabilities} \\ &= \text{Rs.75,000} - \text{Rs.40,000} \\ &= \text{Rs.35,000}\end{aligned}$$

In a broader sense, the term fund refers to many values in whatever form it may exist. Here fund means all financial resources, used in business whether in the form of men, material, money, machinery and others.

In a popular sense, the term 'fund', means working capital, i.e., the excess of current assets over current liabilities. The working capital concept of fund has emerged due to the fact that total resources of a business are invested partly in fixed assets in the form of fixed capital and partly kept in the form of liquid or near liquid form as working capital.

Thus, the concept of fund as working capital is the most popular one and in this chapter we shall generally refer to fund as working capital.

MEANING AND CONCEPT OF 'FLOW OF FUND'



The term 'flow' means movement and includes both 'inflow' and 'outflow'. The term 'flow of funds' refer to change of funds in a given period of time. Flow of funds is said to have taken place when any transaction makes changes in the amount of funds available before happening of the transaction. The change may be positive or negative. It means increase or decrease in the working capital. The transactions affecting the working capital may act as sources of funds or application of funds.

In business several transactions take place. Some of these transactions increase the funds while others decrease the funds. Some may not make any change in the funds position. In case a transaction results in increase of funds, it will be termed as a source of funds. For example, if the funds are Rs.25,000 and on account of a business transaction, say issue of shares worth Rs.5,000 they become Rs. 30,000. Here, issue of shares worth Rs.5,000 will be taken as a source of funds. In case a transaction results in decrease of funds it will be taken as an application of funds. For example, if the funds are Rs.25,000 and on account of a business transaction, say purchase of furniture worth Rs. 5,000, they stand reduced to Rs.20,000; the purchase of furniture will be taken as an application of funds. In case a transaction does not make any change in the funds position that existed just before the happening of the transaction, it is said that it is a non-fund transaction, For example, if the funds are Rs.25,000 and a fixed assets of Rs.5,000 is purchased by issuing shares of Rs.5,000, the funds position will not change, and, therefore, this transaction will be taken as a non-fund transaction.

MEANING OF FUNDS FLOW STATEMENT

Funds Flow statement is a technical device designed to highlight the changes in the financial position of the concern between two balance sheets. It depicts the sources, where from additional funds during the current year as compared to the previous year have been received and to what uses these funds have been applied.

According to Robert N. Anthony, "Funds flow statement describes the sources from which additional funds were derived and the uses to which these funds were applied."

According to the Institute of Chartered Accountant of India, "A statement of changes in financial position summaries for the period covered by it, the changes in the financial position including the sources from which funds were obtained by enterprises and the uses to which such funds were applied."



Thus, Funds flow statement is a statement which indicates various means by which the funds have been obtained during a certain period and the ways to which these funds have been used during that period. This statement is also called by other several names, viz.:

- (i) Statement of sources and application of funds
- (ii) Application of funds statement
- (iii) Statement of funds provided and applied
- (iv) Where got and where gone statement
- (v) Inflow-outflow of funds statement.

MAIN SOURCES AND USES OF FUNDS

The main sources of funds are:

- (1) Funds from Operations
- (2) Capital Issues
- (3) Issue of Debentures
- (4) Raising Loans
- (5) Sale of Fixed Assets, etc.

The main applications of funds are:

- (1) Purchase of Fixed Assets
- (2) Redemption of Pref. Shares or Debentures
- (3) Payment of Dividends
- (4) Payment of Taxes
- (5) Loss from Operations etc.

∴ Sources Less Application = Net increase/decrease in funds (W.C.)

- (a) If sources =Rs.50,000 and Application = Rs.40,000



then, Sources – Application = Net Increase in Working Capital

or Rs.50,000 – 40,000 = Rs.10,000

(b) If Sources = Rs.80,000 and Application = Rs.1,00,000

then, Application – Sources = Net decrease in Working Capital

or Rs.1,00,000 – Rs.80,000 = Rs.20,000

CURRENT AND NON-CURRENT (FIXED) ACCOUNTS

To understand flow of funds, it is essential to classify various accounts and balance sheet items into current and non-current categories:

List of Current and Non-Current Accounts

EQUITY & LIABILITIES		ASSETS	
1. Shareholder's Funds		1. Non-current Assets:	
Share Capital		Fixed Assets	
Equity Share Capital	√	(a) Tangible Assets	
Preference Share Capital	√	Land and Building	√
Redeemable Preference Share		Plant and Machinery	√
Capital	√	Furniture and Fitting	√
Reserve & Surplus:		(b) Intangible Assets	
Securities Premium Reserve	√	Goodwill	√
Share Forfeited A/c	√	Trade marks	√
Statement of Profit & Loss (Cr.)	√	Patent Rights	√
Capital Reserve	√	Other Non-Current Assets:	
Capital Redemption Reserve	√	Long-term Investment	
General Reserve	√	Discount on Issue of	
Dividend Equalisation Fund	√	Debentures	√
Insurance Fund	√	Development Expenses	√
Compensation Fund	√	Advertisement Suspense	√
Sinking Fund	√	Underwriting Commission	√
Investment Fluctuation Fund	√	2. Current Assets:	
Statement of Profit and Loss (Dr.)	√	Cash & Cash Equivalents:	



Preliminary Expenses		Cash in Hand	√	
2. Non-current Liabilities:		Cash at Bank	√	
Debentures	√	Bank Overdraft (√)		
Bonds Payable	√	Trade Receivables:		
Long-term Loans	√	Bills Receivable	√	
Provision for Depreciation against Fixed Assets	√	Sundry Debtors	√	√
Provision for Taxation	√	Short-term Loans	√	
Proposed Dividend	√	Temporary Investments	√	√
3. Current Liabilities:		Prepaid Expenses	√	
Trade Payables		Accrued Income	√	
Bills Payable √		Closing Stock of:		
Creditors	√	Work-in-Progress	√	
Outstanding Expenses	√	Finished Goods	√	
Dividend Payable	√	Raw Materials	√	—√—
Short-term Loans	√			
Provision against Current Assets	√			
Provision for Taxation	√			
Proposed Dividend	√			
Short-term Loans	√			

Note: Proposed Dividend and Provision for Taxation may be taken as a non-current liability or a current liability.

CURRENT AND NON-CURRENT ASSETS AND LIABILITIES

While study funds flow statement, one should clearly understand about current and non-current assets and liabilities. These terms have been specifically explained along with format of Balance Sheet and Statement of Profit & Loss in Companies Act, 2013. According to these explanations:

(1) Current Assets: An asset shall be classified as current when it satisfies any of the following criteria:



- (a) It is expected to be realised in, or is intended for sale or consumption in the company's normal operating cycle.
- (b) It is held primarily for the purpose of being traded.
- (c) It is expected to be realised within 12 months after the reporting date.
- (d) It is cash or cash equivalent.

In short, current assets include: (1) Current Investments, (2) Inventories, (3) Trade Receivables, (4) Cash & cash equivalents and (5) Short-term Loans and advances.

(2) Non-Current Assets: Non-current assets mean those assets which are held for more than one year. It is also known as long-term assets. It includes the following:

- (a) Fixed Assets: (i) Tangible assets like Land, Building, Plant, Furniture, Vehicles, Office equipment, Leasehold Property, etc. (ii) Intangible assets like Goodwill, Copyrights, Patents, License, Computer Software, etc.
- (b) Non-current Investment.
- (c) Deferred Tax Assets.
- (d) Long-term Loans & Advances.

(3) Current Liabilities: A liability shall be classified as current when it satisfies any of the following criteria:

- (a) it is expected to be settled in the company's normal operating cycle.
- (b) it is held primarily for the purpose of being traded.
- (c) it is due to be settled within 12 months after the reporting date.

In short, current liabilities include short-term borrowings, trade payables, unpaid dividends, outstanding expenses, proposed dividend, provision for taxation, current maturities of long-term debts.

(4) Non-current Liabilities: These liabilities include long-term borrowings (Bonds Debentures, Term Loans), deferred tax liabilities, long-term provisions and trade payables outstanding for more than 12 months.



Note: It should be noted that in the revised format of Balance Sheet one separate heading ‘Shareholders Fund’ is given which covers share capital and reserve & surplus. However, for funds flow statement transaction related to ‘Share Capital’ are also treated as transactions related to non-current liabilities.

TRANSACTIONS AFFECTING THE FLOW OF FUNDS

The following transactions will bring the change in the working capital (funds):

1. Current Assets and Fixed Assets: Whenever in any transaction one aspect affects the current assets and the other non-current assets, there is flow in the working capital. For example, when building is purchased for cash, non-current assets will increase and current assets will reduce without any corresponding change in current liabilities. So working capital will reduce. Similarly, if any fixed asset is sold, there is increase in current assets (without corresponding change in current liabilities) and reduction in non-current assets, so it will increase the working capital.

JOURNAL ENTRIES

- (i) Purchased Building for Cash

Building A/c	Dr. (Fixed Assets)
To Cash A/c	(Current Assets)

(There will be outflow of funds)

- (ii) Building Sold for Cash

Cash A/c	Dr. (Current Assets)
To Building A/c	(Fixed Assets)

(There will be inflow of funds)

2. Current Assets and Fixed Liabilities: If in any transaction, one aspect affects the current assets and other fixed liabilities, there will be flow of funds. For example, if equity shares are issued for cash, it will increase the cash without any corresponding increase in current liabilities, the working capital will increase.

3. Current Liabilities and Fixed Liabilities: If in any transaction, one aspect affects the current liabilities and the other fixed liabilities, there will be flow in the working capital. For example, if



Debentures are issued to the creditors, it will increase the fixed liabilities and decrease the current liabilities without any change in current assets, so there will be increase in the working capital.

4. Current Liabilities and Fixed Assets: If in any transaction, one aspect affects the current liabilities and the other fixed assets, there is flow in the working capital. For example, if building is purchased on credit, it will increase the Fixed Assets and also Current Liabilities (without any change in current assets), so there will be decrease in the working capital.

In short, it can be said that when one aspect is of fixed nature and the other of current nature, there will be flow in funds.

TRANSACTIONS THAT WILL NOT AFFECT THE FLOW OF FUNDS

The following transactions will not bring any change in the working capital and thus, there will be no flow in funds;

1. Current Assets and Current Liabilities: When in any transaction, one aspect affects the Current Assets and other Current Liabilities, there is no flow in funds. For example, if goods are purchased on credit, it will increase the stock (C.A.) and will also increase the creditors. So there will be no change in the working capital. Similarly, if cash is paid to creditors, it will decrease the current assets and decrease the current liabilities. Thus, there will be no change in working capital.

2. Fixed Assets and Fixed Liabilities: If in any transaction, one aspect affects the Fixed Assets and the other Fixed Liabilities, there will be no change in the working capital. For example, if building is purchased by the issue of equity shares, it will increase the fixed assets and fixed liabilities, but there will not be any change in working capital. Similarly, if debentures are converted into share capital, it will on the one hand increase the fixed liabilities and on the other hand decrease the fixed liabilities and there will be no effect on working capital.

From the above discussion we conclude:

1. When out of both aspects of a transaction one aspect belongs to non-current category and the other current category, i.e., one aspect is non-current asset or non-current liability on the other current asset or current liability, this will bring the flow in funds.



2. When both aspects of a transaction belong to non-current category or current category then, such transactions will not bring flow in funds.

6.3 IMPORTANCE AND LIMITATIONS OF FUNDS FLOW STATEMENT

Funds Flow Statement is a tool of managing working capital. It reveals the inflow of additional funds during the current year as compared to the previous year and also, the utilization of funds. It is a supplement to the financial statements. It has also reliable information for determining future line of action. The purposes or importance of preparing 'Funds Flow Statement' are:

(a) FOR MANAGEMENT

1. Effective Tool of Managing Working Capital: It is a technique to ascertain the funds received during the year and also a method to know the uses of these funds. Working capital, as we know is the excess of current assets over current liabilities. Here in this chapter, the term working capital means funds. In this way, 'Funds Flow Statement' depicts inflow and outflow of working capital.

2. Knowledge of change in the Working Capital: With the help of Fund Flow Statement, we can understand how much working capital has increased or decreased during the current year as compared to the previous year. We prepare schedule of changes in working capital, which shows net increase or decrease in the working capital.

3. Knowledge of Funds from Operation: Under Fund Flow Statement, we are in a position to know the funds from operation. Income statement (Statement of PIL) shows net income or net profit, which is calculated after debiting both operating and non-operating expenses and also after crediting operating and non-operating income. Funds from operation avoids non-operating expenses and non-operating incomes. In this way, funds from operating or trading transactions are separately available for Study and Analysis.

4. Knowledge as to the Payment of Current Liabilities out of Current Assets: It has been an accepted fact that all current liabilities must be paid out of current assets and for this, there must be sufficient current assets to meet current liabilities. In case current liabilities are paid out of non-current assets, it will be a fatal to the business. As non-current assets cannot be disposed off easily, so payment of current liabilities cannot be made, The business will have to suffer. It is also a wrong practice



because disposal of non-current assets such as building, machinery, furniture, etc. will mean that the firm can not last long.

5. Knowledge as to the Purchase of Fixed Assets out of Non-current Source: Fixed assets must be purchased out of non-current source, i.e., by issue of shares or debentures or by long-term loans. If fixed assets are purchased out of current sources the current assets will be exhausted and the payment of current liabilities will be difficult.

6. Knowledge of Supplementary Information: Funds Flow Statement is prepared to supplement financial statements. As financial statements are incapable to tell exactly and precisely about funds from operation, changes in working capital, sources and application of funds, so Funds Flow Statement is prepared to supply these information. These statements also show the financing and investing activities of the business.

7. Acts as a Process of Budgeting: Funds Flow Statement reveals the plus (+) and minus (–) points in the management of working capital. The management plans and budgets its future activities in such a way that weaknesses should be removed and good points should be strengthened.

8. Knowledge of Inflow of Funds: Sources side of the Funds Flow Statement shows where from and to what extent we have received funds from different sources. These Sources may be:

(i) Funds from operation

(ii) Decrease in working capital

(iii) Increase in share capital, debentures and loans

(iv) Sale of fixed assets

(v) Amount received from dividends, interest etc. By analysing the above receipts, we can understand the funds received from different sources. This will also reveal the funds received from current and noncurrent sources and we shall be able to plan our future operations in such a way that trading income should increase considerably.

9. Knowledge of Application of Funds: The application side of the funds flow statement shows the different purposes for which the funds have been used during the year. Funds may be utilised to meet:

(i) Losses from Operation.



- (ii) Increase in Working Capital.
- (iii) Decrease in share capital, debentures and loans.
- (iv) Purchase of fixed assets,
- (v) Payment of dividends, taxes, etc.

10. Formation of Dividend Policy: It helps in framing a suitable dividend policy and in bringing suitable changes in it. Sometimes the company has sufficient profits for dividend distribution but it may not be in a position to pay dividend due to lack of cash or liquid funds. In such a case dividend payment may be avoided. Such a situation is depicted only by Funds Flow Statement.

11. Use of Working Capital: It explains whether the working capital has been used to the maximum in business operations effectively or not. This statement also shows whether the firm has adequate working capital or inadequate working capital. It helps in the planning of the temporary investment of idle funds.

12. Allocation of Resources: A projected Funds Flow Statement helps the analyst in finding out how the management is going to allocate the resources for meeting the productive requirements of the business. The funds should be managed in such a way that the business may be in a position to make payment of interest and loan instalments as per the agreed schedule.

13. Comparative Study: Funds Flow Statement helps in comparing Balance Sheets and Profit and Loss Account. It acts as an important supplement to these statements because it explains the changes in the financial position during a financial year. It also explains the reasons of these changes.

14. It answers Intricate Queries: The financial analyst can find out answers to a number of intricate questions:

- (i) What is the overall credit worthiness of the enterprise?
- (ii) What are the sources of repayment of the loan taken?
- (iii) How much funds are generated through normal business operation?
- (iv) In what way the management has utilized the funds in the past and what are going to be likely uses of funds?

(b) FOR SHAREHOLDERS



Shareholders are interested in ascertaining the financial position of business. Funds Flow Statement helps them to find out:

- (i) Whether the business has enough funds to pay them dividends at reasonable rates?
- (ii) Whether the business is in a position to meet its present liabilities in time? and,
- (iii) Whether the management is making effective use of funds at their disposal?

(c) FOR FINANCIAL INSTITUTIONS

These days, banks and specialised financial institutions have been asking the business firms to submit a copy of the funds flow statements with their application for loans. They assess the credit worthiness of the institutions with these statements and decide whether loan should be granted or not, if granted then to what extent. A careful analysis of the Funds Flow Statement will help them in ascertaining:

- (i) Overall credit worthiness of the enterprise,
- (ii) The resources from which the enterprise will be in a position to make repayments of the loan taken, and
- (iii) Is the business generating sufficient funds from its normal business operations?

(d) FOR EMPLOYEES

The employees have also a stake in the business. Their growth and security of job depend upon the profitability of the firm which is directly related to effective utilisation of the funds by the enterprise. The employees can ascertain from the Funds Flow Statement regarding effective use of funds by the management during a particular period. The funds should be managed in a manner that the business is in a position to make payment of salaries to the employees in time besides meeting other business costs.

(e) FOR RESEARCHERS

Financial Researchers derive conclusions regarding the financial position of the enterprise by making detail study of the financial resources and their application made by the enterprise. The Funds Flow statement helps them in achieving this objective.



(f) FOR GOVERNMENT

The government also has to take some important decisions regarding industries. The government ascertains information regarding the different sources of capital employed in the industries by the study of Funds Flow Statement, which helps in capital control. By making of funds from operation, the government can take important decisions regarding the sales and pricing policy of the business.

LIMITATIONS OF FUNDS FLOW STATEMENT

Though Funds Flow Statement is a useful tool in the hands of financial manager to make certain analysis, it helps the management in solving many financial problems but it has certain imitations also which must be kept into mind, while using it. These limitations are as follows:

- 1. It ignores non-fund items:** Fund Flow Statement ignores non-fund transactions. Thus, it is a cruder device than the income statement and balance sheet.
- 2. Analysis of Past Data:** It is essentially historical in nature because it analysis what has happened in the past. Although, projected Funds Flow Statement may give an idea about future but it cannot be prepared with much accuracy.
- 3. Lack of Basic Information:** It does not introduce the original evidence of financial status or change. It rarely rearranges data appearing elsewhere in accounts.
- 4. Supplement:** It is not a substitute of Balance Sheet or Profit and Loss Account. provides only some additional information.
- 5. Limited Scope:** Scope of Funds Flow Statement is limited. It does not provide information about changes in cash, which is more important and relevant than working Capital.
- 6. Misleading:** The Funds Flow Statement may prove to be misleading. A heavy balance of working capital does not necessarily mean that the business has made large profits. Similarly, lower amount of working capital does not necessarily mean that business has suffered a heavy loss.

It may be noted that the above limitations of the Funds Flow Statement are seen because of inadequate exposure and knowledge to the user of the Funds Flow Statement. The experienced



professional or financial analyst uses the Funds Flow Statement as an important tool in his analytical kit.

6.4 TECHNIQUE OF FUNDS FLOW STATEMENT

Funds Flow Statement is a method by which we study changes in the financial position of a business enterprise between beginning and ending financial statements dates. Hence, funds flow statement is prepared by comparing two Balance Sheets and with the help of such other information derived from accounts as may be needed. Broadly speaking, the preparation of Funds Flow Statement consists of two parts:

1. Schedule of changes in working capital, and
2. Statement of sources and application of funds/ Fund Flow Statement.

6.4.1 SCHEDULE OF CHANGES IN WORKING CAPITAL

The statement that reveals the changes in working capital is called 'Schedule of Changes in Working Capital'. It is prepared with the help of only current assets and current liabilities. The changes in the amount of any current asset in the current year in comparison to that in the previous year result either in increase or decrease in working capital.

Rules for preparing the Schedule:

- (i) Increase in current asset will increase the working capital,
- (ii) Decrease in current asset will decrease the working capital,
- (iii) Increase in current liability will decrease the working capital, and
- (iv) Decrease in current liability will increase the working capital.

A proforma of schedule of changes in working capital is given on next page:

SCHEDULE OF CHANGES IN WORKING CAPITAL

(For the year ending 31st March...)

Particular	Previous Year	Current Year	Effect on Working Capital	
			Increase	Decrease
A. Current Assets:	Rs.	Rs.	Rs.	Rs.



Cash in Hand	—	—		
Cash at Bank	—	—		
Bills Receivable	—	—		
Sundry Debtors	—	—		
Temporary Investments	—	—		
Stock/Inventories	—	—		
Prepaid Expenses	—	—		
Accrued Incomes	—	—		
Total (A)	—	—		
B. Current Liabilities:				
Sundry Creditors	—	—		
Bills Payable	—	—		
Bank Overdraft	—	—		
Short-term Advances	—	—		
Outstanding Expenses	—	—		
Dividend Payable	—	—		
Proposed Dividend*	—	—		
Provision for Taxation*	—	—		
Total B	—	—		
Working Capital (A –B)				
Net increase or decrease in Working Capital				
	—	—	—	—

*May or may not be Current Liability

IMPORTANT POINTS

The following points should be noted while preparing schedule of changes in working capital:

1. When provision for tax and proposed dividend are treated as current liabilities, these should be shown in schedule of changes in working capital only and not elsewhere.
2. When provision for bad and doubtful debts is given in the asset side, then net debtors should be shown as current assets.
3. When provision for bad and doubtful debts is given in the liability side, it should be treated as current liability and gross value of debtors as current asset.
4. Investment should be treated as fixed assets in absence of clear information in the question.



5. While preparing the schedule of changes in working capital, only current assets and current liabilities from the balance sheets should be taken into account. Additional information pertaining to these current liabilities should be ignored unless these are not incorporated into books of accounts. For example, if provision for taxation is given in Balance Sheet and is treated as current liability and further amount of tax paid is given in adjustment, then it will not be taken into account or will be ignored.

Example 1.

From the following Balance Sheets of Amit Ltd. as on Dec. 31, 2013 and 2014, you are required to prepare a statement of changes in working capital.

31st Dec.

	2013 Rs.	2014 Rs.
Assets:		
Goodwill	10,000	5,000
Machinery	1,60,000	1,50,800
Furniture	10,000	9,000
Motor vehicles	30,000	24,000
Stock in hand	48,000	56,000
Sundry Debtors	20,000	32,000
Cash in hand	17,200	8,700
Bills Receivable	13,600	4,500
Advance Income Tax	18,000	22,000
Preliminary Expenses	<u>15,000</u>	<u>10,000</u>
	<u>3,41,800</u>	<u>3,22,000</u>
Liabilities:		
Equity Share Capital	1,00,000	1,00,000
9% Debentures	50,000	50,000
General Reserve	40,000	50,000
Bank Loan	45,000	26,000
Sundry Creditors	35,000	31,800
Bills Payable	9,800	17,200
Short-term Loan	50,000	30,000
Outstanding Exp.	12,000	9,000



Unclaimed Dividend	—	8,000
	<u>3,41,800</u>	<u>3,22,000</u>

Solution:**SCHEDULE OF CHANGES IN WORKING CAPITAL**(For the year ending 31st Dec., 2014)

Particular	Previous Year	Current Year	Effect on Working Capital	
			Increase	Decrease
A. Current Assets:	Rs.	Rs.	Rs.	Rs.
Cash in Hand	17,200	8,700	—	8,500
Sundry Debtors	20,000	32,000	12,000	—
Bills Receivable	13,600	4,500	—	9,100
Stock in hand	48,000	56,000	8,000	—
Advance Income Tax	18,000	22,000	4,000	—
Total (A)	<u>1,16,800</u>	<u>1,23,200</u>		
B. Current Liabilities:				
Sundry Creditors	35,000	31,800	3,200	—
Bills Payable	9,800	17,200	—	7,400
Short-term Loan	50,000	30,000	20,000	—
Outstanding Expenses	12,000	9,000	3,000	—
Unclaimed Dividend	—	8,000	—	8,000
Total B	<u>1,06,800</u>	<u>96,000</u>		
Working Capital (A – B)	10,000	27,200		
Net increase in Working Capital	17,200		—	17,200
	<u>27,200</u>	<u>27,200</u>	<u>50,200</u>	<u>50,200</u>

6.4.2 STATEMENT OF SOURCES AND APPLICATION OF FUNDS/ FUNDS FLOW STATEMENT

After the preparation of the schedule of changes in working capital, the statement of sources and applications of funds (Funds Flow Statement) is prepared. This statement is prepared with the help of non-current assets and the non-current liabilities and the other relevant information given in the problem.



The Funds Flow Statement is still in the process of development and as such no standard form of presentation has been adopted. The funds flow statement is usually presented in one of the following form:

- (i) Statement Form or Report Form.
- (ii) Account Form

SPECIMEN OF REPORT FORM OF FUNDS FLOW STATEMENT

FUNDS FLOW STATEMENT

(For the year ended ...)

Sources of Funds:	Rs.
Funds from Operations	—
Issue of Share Capital Including Premium	—
Raising of Long-term Loans	—
Receipt from partly paid shares, called up	—
Sales of Non-current Assets (fixed)	—
Dividend received	—
Sale of Investment (Long-term)	—
Total	<u>—</u>
Application of Funds:	
Funds lost in Operation	—
Redemption of Pref. Share Capital & Debentures	—
Repayment of Long-term Loans	—
Purchase of Fixed Assets	—
Purchase of Long-term Investments	—
Payment of Dividend*	—
Payment of Tax*	—
Total	<u>—</u>
Increase or Decrease in Working Capital**	—

** (i) When sources exceeds application, then there will be increase in working capital.

(ii) When Application exceeds sources, then there will be decrease in working capital.

SOURCES OF FUNDS

Following are the main sources of funds for the business:



1. Funds from Operations: Funds from operations are internal sources of funds. It refers to those funds which are generated in the business as a result of carrying out the operations during the year. Funds from operations are computed by adjusting the Net Profit figure from various non-fund expenses.

2. Issue of Share Capital: If shares are issued for cash, it is a source of fund. If shares are issued at premium, the amount of share premium, together with the capital amount shall become the source. If the shares are issued at discount the amount of capital as reduced by the amount of discount, shall be treated as the source. If the shares are issued against current assets, it is also a source of fund e.g., issue of shares for stock.

3. Issue of Debentures: Issue of debentures for cash or for current assets is a source of fund because debenture is a non-current item of liability.

4. Raising Long-term Loans: If long-term loans are raised, funds will increase. It is a source of funds. It may be in the form of long-term public deposits, mortgage loans etc.

5. Sale of Fixed Assets: When any fixed asset like land, building furniture, machinery, investment is sold, it would generate funds. The actual sale proceeds are to be taken as a source of fund.

6. Non-operating Incomes: Non-operating incomes such as dividend received, rent received, interest on investments, tax refunds etc. are the sources of funds and hence shown as the source of funds.

APPLICATION OF FUNDS

Following are the main application of funds:

1. Loss from Operation: Profit from operation is treated as source of funds, in the same way, loss from operations should be treated as an application of funds. Loss from operations results in an outflow of funds from business.

2. Redemption of Redeemable Preference Shares: When Redeemable Preference Shares are redeemed, it is an application of funds. If redemption is made at premium, it is also an application of funds.

3. Redemption of Debentures: Redemption of debentures (including premium on redemption) is also an application of funds.



4. Repayment of Long-term Loans: When long-term loans are paid, it is an application of funds since the working capital would be reduced.

5. Payment of Tax and Dividends: If the provision for tax and proposed dividends are treated as non-current liabilities, the payment of tax and payment of dividends (interim and final) are application of funds.

6. Amount withdrawn by Proprietors: If funds are withdrawn by proprietor for his personal use, it is an application of funds.

7. Purchase of Fixed Assets: When fixed assets such as land building, machinery furniture, long-term investments, etc. are purchased for cash they result in decrease of current assets.

CALCULATION OF FUNDS FROM OPERATION

Funds from operations of the business are the most important and major source of funds. But it must be remembered that funds from operations do not necessarily mean the profits as shown by the Profit and Loss Account of a firm because there are many non-fund or non-operating items which may have been either debited or credited to Statement of Profit and Loss. The examples of such items on the debit side of Profit and Loss Account are: Amortization of intangible assets and fictitious assets such as Goodwill, Preliminary Expenses and Discount on Issue of Shares or Debentures written off, Appropriation of Retained earnings, such as transfer to General Reserve etc. Depreciation and depletion, Loss on Sale of Fixed Assets, Payment of Dividend etc. The examples of such items on the credit side of the Statement of Profit and Loss are : Profit on Sale of Fixed Assets, Dividend received, Refund of Income Tax, etc.

The non-fund items are those which may be operational expenses but they do not affect funds of the business, e.g., for depreciation charged to Statement of Profit and Loss funds really do not move out of business. Non-operating items are those which although may result in the outflow of funds but are not related to the trading operations of the business such as loss on sale of machinery or payment of dividends. Funds from operations are computed by adjusting Net Profit figure from above various items.

There are two methods of calculating the funds from operations:



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

2. By starting with the Net Profit already calculated, add Non-operating Expenses (i.e., not relating to the business), such as Trade Marks, Preliminary Expenses, Patents, Goodwill, Loss on Sale of Assets, Provision or Reserve for any Asset or Expenses, Proposed Dividends; Non-cash item as depreciation and deduct those incomes which are not relating to business (i.e., non-operating incomes) such as profit on the sale of any fixed asset, dividend received, refund of tax etc. This can be done by preparing adjusted Statement of Profit and Loss (in 'T' form) or in the form of a statement, A specimen is given as follows:

Calculation of Funds from Operations

	Rs.
Closing balance of Statement of Profit and Loss or Retained Earnings (as given in the balance sheet)	—
Add: Non-Fund and non-operating items which have been already debited to Statement of Profit and Loss:	
1. Depreciation and Depletion	—
2. Amortization of fictitious assets and fictitious assets such as:	
(i) Goodwill	—
(ii) Patent Rights	—
(iii) Trade Marks	—
(iv) Preliminary Expenses	—
(v) Discount on Issue of Share and Debentures	—
3. Appropriation of Retained Earnings such as:	
(i) Transfer of General Reserve	—



(ii) Dividend Equalisation Fund	—
(iii) Transfer to Sinking Fund	—
(iv) Contingency Reserve etc.	—
4. Loss on Sale of Fixed Assets (Non-current Assets) such as:	
(i) Loss on Sale of Land and Building	—
(ii) Loss on Sale of Machinery	—
(iii) Loss on Sale of Furniture	—
(iv) Loss on Sale of Long-term Investments etc.	—
5. Dividend including interim Dividend	—
6. Proposed dividend (if not taken as current liability)	—
7. Provision for Taxation (if not taken as current liability)	—
8. Any other non-fund/non-operating items which have been debited to Statement of Profit and Loss	—
Total A	—
Less: Non-fund or Non-operating items which have already been credited to Statement of Profit and Loss:	
1. Profit or Gain from the sale of fixed assets such as:	
(i) Profit on Sale of Land and Building	—
(ii) Profit on Sale of Plant and Machinery	—
(iii) Profit on Sale of Furniture	—
(iv) Profit on Sale of Long-term Investments	—
2. Appreciation in the value of any fixed asset, if it has been credited to Statement of P/L.	—
3. Dividend received	—
4. Refund of Income Tax	—
5. Excess Provision transfer to Statement of P/L	—
6. Any other non-operating item which has been credited to Statement of Profit and Loss	—
7. Opening Balance of Statement of Profit and Loss or Retained Earnings (as given in balance sheet)	—
Total (B)	



Total A – Total (B) = Funds generated by Operations

–

Note: If there is no opening and closing balance of Profit and Loss is given, whereas, Net Profit for the year is given, then addition and subtraction will be done in Net Profit for the year to ascertain funds from operations.

Example 2.

From the following Profit and Loss A/c calculate the amount of funds from operations:

Dr.	Profit and Loss Account		Cr.
	Rs.		Rs.
To Operating Expenses	50,000	By Gross Profit	1,00,000
To Depreciation	25,000	By Gain on Sale of Furniture	10,000
To Loss on Sale of Plant	5,000		
To Preliminary Exp. (W. off)	2,000		
To Goodwill (written off)	8,000		
To Net Profit for the year	<u>20,000</u>		
	<u>1,10,000</u>		<u>1,10,000</u>

Solution: Calculation of Fund From Operation Accounting Form

Dr.	Adjusted Profit and Loss Account		Cr.
	Rs.		Rs.
To Net Profit for the year	20,000	By Non-Operating Income:	
To Non-Cash Expenses:		Gain on Sale of Furniture	10,000
Depreciation	25,000	By Funds from Operations	
Preliminary Exp. Written off	2,000	(Bal. Fig.)	50,000
Goodwill written off	8,000		
To Non-Operating Expenses:			
Loss on Sale of Plant	<u>5,000</u>		
	<u>60,000</u>		<u>60,000</u>

**Alternative Method:****Calculation of Funds from Operation**

		Rs.
Net Profit for the year		20,000
	Rs.	
Add: Depreciation	25,000	
Preliminary Expenses	2,000	
Goodwill Written off	8,000	
Loss on Sale of Plant	<u>5,000</u>	<u>40,000</u>
		60,000
Less: Gain on Sale of Furniture		<u>10,000</u>
	Funds from Operations	<u><u>50,000</u></u>

Example 3.

From the following Balance Sheets and additional information given, you are required to calculate funds from operations for the year 2015.

Particulars	2015	2014
1. EQUITY & LIABILITIES:		
1. Shareholder's Funds:		
Share Capital	1,50,000	1,00,000
General Reserve	30,000	30,000
Statement of Profit and Loss	22,000	20,000
2. Non-Current Liabilities:		
8% Debentures,	80,000	80,000
Provision for Tax	10,000	5,000
3. Current Liabilities:		
Creditors	58,000	65,000
	<u>3,50,000</u>	<u>3,00,000</u>
II. ASSETS:		
1. Non-current Assets:		
Land & Building	95,000	1,00,000
Plant & Machinery	90,000	80,000
Goodwill	10,000	20,000
Investments	10,000	
2. Current Assets:		
Stock	1,10,000	7,000
Trade Receivable (Debtors)	25,000	20,000
Cash	10,000	10,000
	<u>3,50,000</u>	<u>3,00,000</u>



Additional Informations:

1. During 2015 Dividend of Rs.15,000 were paid.
2. Depreciation written off on Plant and Machinery Rs.6,000 and Land and Building Rs.5,000.
3. Provision for Tax made during the year Rs.5,000.
4. Profit on sale of Machinery by Rs.2,000.

Solution:

Calculation of Fund from Operation

	Rs.	Rs.
Closing Balance of Profit as per Balance Sheet		22,000
Add: Non-cash Expenses:		
Depreciation	6,000	
Good-will Written-off (20,000 – 10,000)	10,000	
Add: Non-operating Expenses:		
Dividends	15,000	
Provision for Tax	<u>5,000</u>	<u>36,000</u>
		58,000
Less: Non-operating Incomes:		
Profit on Sale of Machinery	2,000	
Opening Balance of P/L	<u>20,000</u>	<u>22,000</u>
Funds from Operation	<u><u> </u></u>	<u><u>36,000</u></u>

6.4.3 IMPORTANT MATTERS TO BE CONSIDERED WHILE PREPARING FUNDS FLOW STATEMENT

1. PROVISION FOR TAXATION

While preparing a Funds Flow Statement, there are two options available regarding provision for taxation, i.e.,

- (a) As a current Liability,
- (b) An appropriation of Profits.



(a) As a Current Liability: Provision for Taxation may be considered as a current liability as it, generally, represents an immediate obligation of the company to pay tax to the government. When it is considered as current liability, provision for taxation will be shown in schedule of changes in working capital like all other current liabilities and no further treatment is required while preparing the Funds Flow Statement. In this case, there is no need to prepare the provision for Taxation Account and the payment of tax made during the year shall not be shown as an application of funds because in that case both the accounts involved for the payment of tax shall be current accounts, e.g., the entry for taxes paid during the year will be:

Provision for Taxation A/c	Dr.	(C. Liability)
To Cash/Bank A/c		(C. Assets)

Thus, it is clear from the above entry that only current accounts are involved and hence working capital (funds) is unaffected.

(b) As an Appropriation of Profits: When the Provision for Taxation is assumed to be an appropriation of profits and not as a current liability, then it will not be shown in the schedule of changes in working capital. Provision for taxation made during the year then shall be the appropriation of profits and will have to be added back while finding out funds from operations being a non-fund item. If an Adjusted Statement of Profit and Loss is prepared, provision for Taxation made during the year shall appear on the debit side for the same reasons. Moreover, the taxes paid during the year shall be an application of funds and will have to be shown in the application side of funds flow statement.

A provision for Taxation Account may have also be prepared in case of hidden information, i.e., when the provision for Taxation made during the year or the taxes paid during the year are not given.

However, the students may note that it is preferable to assume provision for Taxation as a Current Liability as generally it is an immediate obligation of the company to pay it to the government and it rarely represents an appropriation of profits.

We can make the above things more clear with the help of following examples:

Example 4.

Rs.



Provision for Taxation 1.1.2014 60,000

Provision for Taxation 1.1.2015 80,000

Additional Information: Income tax paid during the year Rs.50,000 you are required to find out the Provision for Tax made during the year and how will you deal with these items in Funds Flow Statement?

Solution.

(a) When Provision for Taxation is assumed to be Current Liability:

Statement of Changes in Working Capital

Particular	1.2.2014	1.1.2015	Effect on Working Capital	
			Increase	Decrease
	Rs.	Rs.	Rs.	Rs.
Current Liability				
Provision for Taxation	60,000	80,000	—	20,000

Treatment: Decrease in working capital Rs. 20,000 will be shown in sources side of Funds Flow Statement and in this case tax paid during the year Rs.50,000 will not be considered in Funds Flow Statement.

(b) When Provision for Taxation is assumed to be appropriation of Profits

Dr. Provision for Taxation Account Cr.

To Cash A/c (Tax Paid)	Rs. 50,000	By Balance b/d	Rs. 60,000
To Balance c/d	80,000	By Adjusted P/L A/c (Bal. figure) Provision made during the year	70,000
	<u>1,30,000</u>		<u>1,30,000</u>

Dr. Adjusted P/L Account Cr.

To Provision for Tax	Rs. 70,000		Rs. 60,000
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Funds Flow Statement

Source of Funds	Amount	Application of Funds	Amount
	Rs.	Payment of Tax	Rs. 50,000

**Example 5.**

	Rs.
Provision for Taxation 1.4.2014	50,000
Provision for Taxation 31.3.2015	75,000
,	

How these items will be dealt in Funds Flow Statement under both the assumptions?

Solution.

(a) When Provision for Taxation is assumed to be Current Liability

In this case, Provision for Taxation will be shown in the schedule of changes in working capital and Rs. 25,000 (75,000 – 50,000) will be considered as decrease in working capital which will be shown in the sources side of funds flow statement.

(b) When Provision for Taxation is assumed to be appropriation of profits:

Dr.		Provision for Taxation Account		Cr.	
		Rs.		Rs.	
To Cash (Tax Paid of 1.4.2014)		50,000	By Balance b/d	50,000	
To Balance c/d		7,000	By Adjusted P/L A/c (Bal. Fig.)	75,000	
		<u>1,25,000</u>		<u>1,25,000</u>	
Dr.		Adjusted P/L Account		Cr.	
		Rs.		Rs.	
To Provision for Tax		75,000		60,000	
Funds Flow Statement					
Source of Funds		Amount	Application of Funds		Amount
		Rs.	Tax Paid		Rs.
					50,000

2. PROPOSED DIVIDENDS

Whatever has been said about the “Provision for Taxation” is also applicable to “Proposed Dividends”. Proposed Dividend can also be dealt within two ways:



(a) As Current Liability: Proposed dividend may be taken as a current liability. Since declaration of dividends proposed by the directors are accepted in the share-holders meeting. Once the dividends are declared in the general meeting they will have to be paid within 30 days of their declaration. In case proposed dividend is taken as a current liability it will be shown in the schedule of changes in working capital. It will not be shown as an application of funds when dividend is paid later on.

(b) As Appropriation of Profits: Proposed dividend may simply be taken as an appropriation of profits. In such a case proposed dividend for current year will be added back to current year's profit in order to find out funds from operations, if such amount of dividends has already been charged to profits. Payment of dividends will be shown as an application of funds.

In any case, the students may note that the treatment of proposed dividend is much similar to the provision for taxation and it is also preferable to treat proposed dividend as a current liability because generally the dividends proposed by the directors are accepted as the shareholders in the annual general meeting and these become payable within a short period.

Example 6.

Extracts from the Balance Sheets:

	31.3.2014	31.3.2015
	Rs.	Rs.
Proposed dividend	40,000	60,000
Statement of Profit and Loss (Cr.)	1,60,000	1,80,000

Additional Information:

Dividend paid during the year Rs.30,000. Find out the sources and application of funds.

Solution:

Provision Dividend Account			
Dr.			Cr.
	Rs.		Rs.
To Cash (Dividend Paid)	30,000	By Balance b/d	40,000
To Balance c/d	60,000	By Adjusted Statement of P/L	50,000



	<u>90,000</u>	(Bal. Fig.)	<u>90,000</u>
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Dividend paid Rs.30,000 is an application of funds.

Dr.	Adjusted Statement of P/L		Cr.
	Rs.		Rs.
To Proposed Dividends	50,000	By Balance b/d	1,60,000
To Balance c/d	1,80,000	By Funds from Operation (Bal. Fig.)	70,000
	<u>2,30,000</u>		<u>2,30,000</u>

3. INTERIM DIVIDENDS

The term “Interim Dividend” denotes a dividend paid to the members of the company during a financial year, before the finalisation of annual accounts. The dividend paid or declared between the two annual general meetings is called interim dividend, which should be added back to the current year profit while calculating funds from operations. However, if the figure of profit is taken prior to the debit of interim dividend this adjustment is not required. The interim dividend is also an application of funds and has to appear on the application side of Funds Flow Statement.

4. PROVISION AGAINST CURRENT ASSETS

Provision against current assets, such as, provision for bad and doubtful debts, provision for loss on stock, etc. may be treated by any of the following methods:

(i) The opening and closing balance of provision against current assets should be deducted from the respective opening and closing balance of the concerned asset. The net amount of the current assets should then be shown in the schedule of changes in working capital. It does not require any further treatment in the funds flow statement.

(ii) The amount of the opening and closing balance of the current assets may be taken as gross in the schedule of changes in working capital, i.e., without deducting the amount of provision. But, then, the opening and closing balance of the provision against current assets shall have to be taken as current liability in the schedule of changes in working capital and it will not need any further treatment in the funds flow statement.



(iii) If excess provision has been created, it may be treated as an appropriation of profits and should be added back to current year profits while calculating funds from operations. The amount of excess provision will not be shown in the schedule of changes in working capital.

5. INVESTMENTS

While preparing Funds Flow Statement the treatment of Investments depends upon the nature, that they are current assets or non-current assets. If the investments represent surplus funds temporarily invested in short-term securities, they are to be considered as current assets. But, if investment are long-term, there should be treated as fixed assets.

(a) Temporary Investments: When the surplus funds are temporarily invested in marketable securities, they are treated as current assets and hence shown in the schedule of changes in working capital. Temporary investments do not require any further treatment while preparing Funds Flow Statement.

(b) Non-current Investments: If the investments are of non-current nature, these should not be shown in the schedule of changes in working capital. However, in this case an investment account should be prepared to find out the cost of investments purchased or sold during the year and the profit or loss on sale of such investments, if any. Sometimes, the investments are purchased cum-dividend and the pre-acquisition dividend received is credited to the investment account. If there is a loss on sale of such investments and it has been debited to Statement of Profit and Loss, it should be added back to current year profit while finding the same reason, if a profit on sale of investment has been credited to Statement of Profit and Loss, it should be deducted while finding out funds from operations. The sale proceeds of such investments are a source of funds.

Example 7.

The extracts of a balance sheet reveal that there is an opening balance of trade investments amounting to Rs. 25,000 and the closing balance of Rs. 35,000, Rs.5,000 by way of dividends have been received during the year including Rs.2,000 from pre-acquisition profits which have been credited to Investments Account.

You are required to find out the cost of Investments purchased during the year to be shown as an application funds:

Solution:



Dr.	Investment Account		Cr.
	Rs.		Rs.
To Balance b/d	25,000	By Dividend (Pre-acquisition)	2,000
To Cash (Purchase made during the year) (Bal. Fig.)	12,000	By Balance c/d	35,000
	<u>37,000</u>		<u>37,000</u>

2. Adjusted Statement of P/L Credit Side (5,000 – 2,000) = Rs. 3,000

3. Sources side of F.F. Statement Rs.5,000

6. INCREASE OR DECREASE IN CAPITAL

Since Trading Profits and Losses are usually transferred to Capital Account in the case of individual proprietorship, there may not appear Profit and Loss A/c balance in their balance sheets. In such case capital account should be prepared to find out the following information:

(i) Amount of drawing, or

(ii) Net profit earned during the year.

(i) When opening and closing balance of capital and net profit for the year is given:

Example 8.

The extracts of balance sheet of Mr.Sarkar reveals that the opening balance of capital in the business is Rs.1,25,000 and closing balance of capital is Rs.1,53,000. Net profit for the year is Rs.45,000.

You are required to prepare the capital account to find out the required item.

Solution:

Dr.	Capital Account		Cr.
	Rs.		Rs.
To Drawings in Cash (Bal. fig.)	17,000	By Balance b/d	1,25,000
To Balance c/d	1,53,000	By Net Profit for the year	45,000
	<u>1,70,000</u>		<u>1,70,000</u>



(ii) When opening and closing balance of capital and drawing made by the proprietor during the year is given:

7. INCREASE IN SHARE CAPITAL

Increase in share capital means issue of new share capital, whether preference or equity. Issue of shares is a source of funds as it constitutes in flow of funds. Even the calls received from partly paid shares constitute an inflow of funds. It should also be remembered that it is the net proceeds from the issue of share capital which amounts to a source of funds and hence in case shares are issued at premium, even the amount of premium collected shall become a source of funds. The same is true when shares are issued at discount, it will not be the nominal value of shares but the actual realisation after deducting discount that shall amount to inflow of funds. But sometimes shares are issued otherwise than in cash, the following rules must be followed:

- (i) Issue of shares or making partly paid shares as fully paid out of accumulated profits in the form of bonus shares is not a source of funds.
- (ii) Issue of shares for considerations other than current assets such as against purchase of land, machines, etc. does not amount to inflow of funds.
- (iii) Conversion of Debentures or loans into shares also does not amount to inflow of funds.

In all the three cases mentioned above, both the accounts involved are non-current and do not involve any current assets of funds.

Example 9.

Extracts of the balance sheet:	31.3.2014	31.3.2015
	Rs.	Rs.
Equity Share Capital	2,00,000	3,00,000

Additional Information: Equity shares were issued during the year against the purchase of machinery and stock for Rs.30,000 and Rs.20,000 respectively.

Prepare necessary account to find out sources.

Solution:

Dr.	Equity Share Capital Account	Cr.
------------	-------------------------------------	------------



To Balance c/d	Rs. 3,00,000	By Balance b/d	Rs. 2,00,000
		By Machinery	30,000
		By Stock (source of funds)	20,000
			50,000
	<u>3,00,000</u>	By Cash (issue for cash)	<u>3,00,000</u>

Treatment

1. Issue of share capital against Machinery is neither a source of funds nor application of funds because Machinery A/c and Share Capital A/c both are of non-current nature.
2. Issue of shares against stock is a source of funds and it will be shown in sources side of Funds Flow Statement.

8. REDEMPTION OF PREFERENCE SHARES

The company can redeem only redeemable Pref. Shares as per terms and conditions specified at the time of issue of such shares. Pref. Shares can be redeemed in the following manner:

- (i) At Premium: When Pref. Shares are redeemed at Premium, in such case excess amount of premium paid along with the face value of the shares will be a charge of Statement of Profit and Loss. The amount paid to Pref. Shareholders (including premium) will be treated as an application of funds.
- (ii) At Discount: When Pref. Shares are redeemed at discount, such discount gained on redemption will be credited to Statement of Profit and Loss. The actual amount paid to Preference Shareholders (excluding discount) will be shown as application. It should be remembered that if Pref. Shares are redeemed by conversion, in such case no amount will be shown in the funds flow statement because it will not involve outflow of funds.

Example 10.

Extracts of the balance sheet:	31.3.2014	31.3.2015
	Rs.	Rs.
8% Redeemable Pref. Share Capital	2,00,000	1,00,000

Additional Information: 8% Redeemable Pref. Share Capital were redeemed at 5% premium.

You are required to prepare necessary Account to show application of funds.

**Solution:**

Dr.	Redeemable Pref. Share Capital		Cr.
	Rs.		Rs.
To Bank (Redeemed) (Application of funds)		By Balance b/d	2,00,000
To Balance c/d	1,05,000	By Adj. Statement of P/L (premium)	
	1,00,000		5,000
	<u>2,05,000</u>		<u>2,05,000</u>

9. REDEMPTION OF DEBENTURES

Debentures of a company can be redeemed at Par, at Premium and at Discount.

Generally, redemption is made at Par or at Premium. The amount of Premium is charged from Statement of Profit and Loss. If Debentures are redeemed at discount, the amount of discount will be shown on credit side of Adj. Statement of Profit and Loss. Actual amount paid will be shown as an application in the funds flow statement.

When Debentures are redeemed by conversion, in such case, there will be no flow of funds. When Debentures are redeemed by purchase of own Debentures from market at lower rate, in such case, the amount of Profit on redemption shall be shown on credit side of Adjusted Statement of Profit and Loss.

Example 11.

The following information are extracted from the liability side of Balance Sheet of Kapoor Ltd.:

	31.3.2014	31.3.2015
	Rs.	Rs.
6% Debentures	2,00,000	1,00,000
Profit on Redemption of Debentures	—	5,000

Find out the amount of redemption (application) for the purpose of funds flow statement.

Solution:

Dr.	6% Debentures Account	Cr.
-----	-----------------------	-----



To Adjustment Statement of P/L	Rs. 5,000	By Balance b/d	Rs. 2,00,000
To Cash/bank A/c (Red.) (Application)	95,000		
To Balance c.d	1,00,000		
	<u>2,00,000</u>		<u>2,00,000</u>

10. PURCHASE OF BUSINESS

Sometimes continuing business is purchased by a company with its fixed assets and current assets. In such case purchase consideration is paid by way of issue of Share and Debentures. The following procedure should be adopted while preparing funds flow statement:

(1) Find the amount of Goodwill or Capital Reserve as follows:

$$\text{Goodwill} = \text{Purchase Consideration} - \text{Net Assets}$$

$$\text{Capital Reserve} = \text{Net Assets} - \text{Purchase Consideration}$$

Here,

Net assets means total assets acquired less liabilities taken over.

(2) Shares and Debentures issued against current assets is treated as sources of funds.

(3) Shares and Debentures issued against fixed assets involve no flow of funds, hence it is not shown in funds flow statement.

11. STOCK DIVIDEND AND CASH DIVIDEND

Stock Dividend: Dividend is paid to the shareholders in kind. In case of this form, the company issues its own shares to the existing shareholders in lieu of or in addition to cash dividend. Payment of stock dividend is popularly termed as 'Issue of Bonus Shares' in India. Stock dividend does not involve any cash outflow from the company.



Cash Dividend: The usual practice is to pay dividend in cash. This results in outflow of funds for a company. Cash dividend is paid only when company has adequate cash resources. Its treatment is made as follows:

- (1) Debit Side of Adjusted Statement of P/L.
- (2) Application Side of F. F. Statement.

12. ISSUE OF BONUS SHARES

Bonus shares means shares allotted by capitalisation of the reserves or surplus of a corporate enterprise. Thus, shares issued as bonus, free of charge are termed as bonus shares. The shareholders get extra shares without making any payment for them. Issue of bonus shares results in conversion of the company's reserves and surplus into share capital. Such shares are issued to the equity shareholders in proportion to their holdings of the Equity Share Capital of the company.

Issue of bonus shares does not affect the total capital structure of the company. Thus, there will be no flow of funds, if bonus shares are issued.

13. UNDER OR OVER VALUATION OF STOCK

Valuation of stock affects net profit of a concern. Sometimes it is valued below cost, it is known as under valuation of stock. The following points should be taken into consideration while preparing funds flow statement:

- (i) Undervaluation of Closing Stock:** When closing stock is valued at below cost, it results in decreasing the Profits, which does not involve any outflow of funds. It is, therefore shown on debit side of Adjusted Statement of Profit and Loss (Difference only).
- (ii) Overvaluation of Closing Stock:** When closing stock is valued at above cost, it results in decreasing the Profit which does not involve any outflow of funds. It is, therefore shown on the debit side of Adjusted Statement of Profit and Loss (Difference only).

14. FICTITIOUS ASSETS

If there are certain fictitious assets shown in the Balance Sheet as discount on issue of shares and debentures, preliminary expenses, underwriting commission, etc. then the balance to be written off to



the Adjusted Statement of Profit and Loss can be calculated by preparing the Fictitious Assets A/c. It will be prepared as follows:

Dr.	Fictitious Asset Account		Cr.
	Rs.		Rs.
To Balance c/d	—	By Adjusted Statement of Profit and Loss (Bal. Fig.)	—
		By Balance c/d	—
	<u>—</u>		<u>—</u>
	<u>—</u>		<u>—</u>

15. UNDISTRIBUTED RESERVE AND FUND

If there are any undistributed profits in the form of reserves and funds, the difference of reserves and funds will be shown on the debit or credit side of Adjusted Statement of Profit and Loss. If it increases, it will be shown on the debit side, if decreases will be shown on the current side.

The Account is prepared as under:

Dr.	Reserve Account		Cr.
	Rs.		Rs.
To Adjusted Statement of Profit and Loss A/c (Reserve utilised)	—	By Balance b/d	—
To Balance c/d	—	By adjusted Statement of Profit and Loss (New Reserve)	—
	<u>—</u>		<u>—</u>
	<u>—</u>		<u>—</u>

16 FIXED ASSETS

While preparing Funds Flow Statement, increase in non-current asset is treated as Purchase of Asset and decrease in non-current asset is treated either as Sale of Asset or Depreciation on it. Whether, decrease in non-current assets should be treated as sale or depreciation, it depends upon the nature of assets and the amount decreased thereon. If the amount decreased is more than 10% of the cost of assets (with reference to furniture), if it is more than 10% and 25% of the cost of assets (with reference to



Building and Plant and Machinery respectively) then it is better to consider it as sale of non-current assets and not as depreciation.

Sometimes, there are certain adjustments or transactions of sale and purchase of fixed assets which are given after two balance sheets, Under such circumstances, it is desirable to prepare accounts relating to such fixed assets and provision for depreciation account. The working of these accounts will be as follows:

(i) To find out the cost of fixed asset purchased, when there is no information regarding depreciation:

Example 12.

From the extracts of the Balance Sheets of Mr. X.

Opening balance of Land and Building Rs. 40,000. Closing balance of Land and Building Rs. 60,000. And there is no information regarding depreciation. Prepare Land and Building A/c.

Solution:

Dr.	Land and Building Account		Cr.
	Rs.		Rs.
To Balance b/d	40,000	By Balance c/d	60,000
To Cash Purchase (Bal. Fig.)	20,000		
	<u>60,000</u>		<u>60,000</u>

(ii) To find out the cost of fixed assets purchased, when the amount of depreciation is given:

Example 13.

From the extracts of the Balance Sheet of Mr. X

Opening balance of Land and Building	Rs. 50,000
Further, depreciation for the year amounted to	Rs. 80,000
Prepare Land and Building A/c.	Rs. 10,000

Solution:

Dr.	Land and Building Account	Cr.
-----	---------------------------	-----



	Rs.		Rs.
To Balance b/d	50,000	By Depreciation	10,000
To Cash Purchase (Bal. Fig.)	40,000	By Balance c/d	80,000
	<u>90,000</u>		<u>90,000</u>

(iii) To find out the amount of depreciation, when information regarding additional purchase of asset is given:

Example 14.

From the extracts of the Balance Sheet of Mr. X

Opening balance of Land and Building Rs. 30,000

Closing balance of Land and Building Rs.40,000

Further, purchase of Land and Building during the year is Rs.15,000. Prepare Land and Building A/c.

Solution:

Dr.	Land and Building Account		Cr.
	Rs.		Rs.
To Balance b/d	30,000	By Adj. P/L A/c	5,000
To Cash Purchase	15,000	(Depreciation) (Bal. Fig.)	
	<u>45,000</u>	By Balance c/d	40,000
			<u>45,000</u>

(iv) To find out sale value of fixed assets, when there is no information regarding depreciation:

Example 15.

From the extracts of the Balance Sheet of Mr. X

Opening balance of Land and Building Rs.40,000

Closing balance of Land and Building Rs.25,000

No further information regarding depreciation is given.

Solution:



Dr. Land and Building Account		Cr.	
To Balance b/d	Rs. 40,000	By Cash (Sales)* A/c (Bal. fig.)	Rs. 15,000
	<u>45,000</u>	By Balance c/d	<u>25,000</u>
			<u>40,000</u>

*If the difference of opening and closing balance of land and building i.e. Rs.15,000 is considered as depreciation, in such case, the ultimate effect on funds flow statement will remain the same, because Cash Sales Rs.15,000 recorded above is a source of funds and if it considered as depreciation then it will be shown in the debit side of Adj. Profit and Loss A/c and to that extent funds from operation will increase which will be shown in the sources side of funds flow statement.

(v) To find out the cost of fixed asset purchased, when opening balance of asset, closing balance of asset, depreciation for the year and profit or loss on assets sold is given:

Example 16.

From the extracts of Balance Sheet, Opening and Closing balances of Land and Building are Rs.2,50,000 and Rs.3,00,000 respectively. Depreciation during the year excluding on Assets Sold is Rs.10,000. During the year Land and Building costing Rs.20,000 (accumulated depreciation Rs.5,000) is sold for Rs.12,000.

Find out the Cost of Purchase of Land and Building.

Solution:

Dr. Land and Building Account		Cr.	
To Balance b/d	Rs. 2,50,000	By Adj. P/L A/c (Dep.)	Rs.
To Cash Purchase		(10,000 + 5,000)	15,000
(Bal. Fig.)	80,000	By Cash Sales	12,000
		By Adj. P/L A/c	
		(Loss on Sales)	3,000



		(20,000 – 5,000 – 12,000)	
		By Balance c/d	3,00,000
	<u>3,30,000</u>		<u>3,30,000</u>

(vi) To find out the cost of assets purchased, when opening and closing balances of asset are given after charging depreciation and opening and closing balances of provision for depreciation are given in adjustment.

Example 17.

Extracts of the Balance Sheets.

Balance Sheet

(As on.....)

Liabilities	31.3.2014	31.3.2015	Assets	31.3.2014	31.3.2015
	Rs.	Rs.		Rs.	Rs.
All Liabilities	40,000	43,000	Plant & Machinery (After depreciation)	40,000	43,000
	<u>40,000</u>	<u>43,000</u>		<u>40,000</u>	<u>43,000</u>

Provision for depreciation on Plant and Machinery stood Rs.13,500 on 31st March, 2014 and Rs.18,000 on 31st March, 2015.

Find out the Cost of Assets Purchased.

Solution:

Dr.	Provision for Depreciation on Plant and Machinery	Cr.
To Balance b/d	Rs. 18,000 <u>18,000</u>	By Balance b/d By Adj. P/L A/c (Bal. fig.) Rs. 13,500 4,500 <u>18,000</u>



Dr. Plant and Machinery Account		Cr.	
	Rs.		Rs.
To Balance b/d (40,000 + 13,500)	53,500	By Balance c/d (43,000 + 18,000)	61,000
To Cash Purchase (Bal. figure)	7,500		
	<u>61,000</u>		<u>61,000</u>

Note: In above example, the cost of opening balance and closing balance is not known, i.e., their balances are shown after depreciation, hence to find out the cost of opening and closing balance of asset opening balance of provision has been added back to opening balance of asset and closing balance of provision has been added back to closing balance of asset.

(vii) To find out the cost of asset purchased, when opening and closing balance of asset (before depreciation), opening and closing balance of provision for depreciation and profit or loss on sale of asset is given.

Example 18.

A machine costing Rs. 10,000 (accumulated depreciation Rs. 6,000) is sold for Rs. 2,500. The opening and closing balances of machinery are Rs. 2,45,000 and Rs. 2,65,000 respectively. Provision for depreciation (i.e. accumulated dep.) had Rs. 65,000 as opening balance and Rs. 85,000 as closing balance which are shown in the liability side of balance sheet. Find out the cost of machine purchased.

Solution:

Dr. Provision for Depreciation on Machinery Account		Cr.	
	Rs.		Rs.
To Machinery A/c (Dep. on Machinery Sold)	6,000	By Balance b/d	65,000
To Balance c/d	85,000	By Adj. P/L A/c (Bal. fig.)	4,500
	<u>91,000</u>		<u>91,000</u>



Dr. Machinery Account		Cr.	
	Rs.		Rs.
To Balance b/d	2,45,000	By Provision for Depreciation (on Machinery Sold)	6,000
To Cash Purchase (Bal. figure)	30,000	By Cash (sold)	2,500
	<u>2,75,000</u>	By Adj. P/L A/c (Loss on sold)	1,500
		By Balance c/d	2,65,000
			<u>2,75,000</u>

(viii) To find out the cost of asset purchased, when the opening and closing balance of asset (before depreciation), opening and closing balance of provision for depreciation (in adjustment), depreciation for the year and gain or loss on asset sold is given:

Example 19.

As per Balance Sheet of Mr. X, the Opening and Closing Balance (after depreciation) of Plant and Machinery are Rs. 4,26,000 and Rs.4,13,000 respectively. Provision for Depreciation on Plant and Machinery amounts to Rs.4,24,000 as on Opening Balance and Rs.4,11,000 as Closing Balance. Depreciation for the year amounted to Rs.66,000.

A machine was sold for Rs.20,000 at the time of sale the net book value of the machine was Rs.30,000 (Cost Rs.70,000 and Accumulated Depreciation Rs.40,000).

Find out the Cost of Assets Purchased.

Solution:

Dr. Provision for Depreciation on Machinery Account		Cr.	
	Rs.		Rs.
To Plant& Machinery (Dep. on asset sold)	40,000	By Balance b/d	4,24,000
To Adjusted P/L A/c (Excess Dep. Charged) (Bal. Fig.)	39,000	By Adj. P/L A/c (Dep. for the year)	66,000
To Balance c/d	4,11,000		
	<u>4,90,000</u>		<u>4,90,000</u>



Plant and Machinery Account			
Dr.			Cr.
	Rs.		Rs.
To Balance b/d (4,26,000 + 4,24,000)	8,50,000	By Provision for Depreciation on assets sold	40,000
To Cash Purchase (Bal. figure)	44,000	By Cash (asset sold)	20,000
		By Adj. P/L A/c (Loss) (70,000 – 40,000 – 20,000)	10,000
	30,000	By Balance c/d (4,13,000 + 4,11,000)	8,24,000
	<u>2,75,000</u>		<u>8,94,000</u>

6.4.4 IS DEPRECIATION A SOURCE OF FUNDS?

A big controversy has arisen during recent year whether provision for depreciation should be considered as a source of funds or not? Here both the aspects of this concept are analysed.

(a) Depreciation is not a source of Funds: Some people argue that depreciation is not a source of funds because neither the current assets nor the current liabilities are affected on providing depreciation, only the fixed assets and the current years profits are decreased by the amount of depreciation. For this, depreciation is charged to the Profit and Loss Account while the fixed assets account is credited with the amount of depreciation.

Since both Statement of Profit and Loss and the Fixed Assets Amount are non-current account, depreciation is a non-fund item and hence it can not be considered as a source of funds.

The depreciation is added back to the profits merely to determine the actual working capital flow from operations. Since the profits are ascertained after debiting the item 'depreciation' which does not affect the working capital. If the depreciation were a source of funds, all enterprises having shortage of funds could have improved their financial position by providing more and more depreciation.



As per the above discussion, depreciation is not a source of funds.

(b) Depreciation is a Source of Funds: On the other hand, there are some people who argue that depreciation is a source of funds and give the following arguments in support of their point of view:

(i) Most business expenses require an expenditure of cash but depreciation expense does not require cash at the time the expense amount is charged against income. So while charging the depreciation against the sale revenue of the firm, the firm is not paying cash to the outsiders. Thus, the firm saves the cash and thus it is a source of funds.

(ii) Depreciation is an item of cost deductible from income for tax purposes. Income tax liability is reduced by a charge of depreciation. Whatever money is saved by way of taxes on account of depreciation charge, can be treated as a source of funds. Thus, fund flow from depreciation is the opportunity saving of cash outflow through taxation.

(iii) If fixed assets are taken on hire, the management would have paid rent for it which has been saved on account of owning the asset, hence depreciation is a substitute charge in case of owning the asset, which could have resulted in an outflow in the form of rent, if fixed assets would have been taken on hire. This saving may be assumed as a source of funds.

(iv) In case of manufacturing concern, when current assets include closing inventories and the value of closing inventories includes the depreciation on fixed assets as an element of cost, depreciation acts as a source of funds in such a case.

Example 20.

From the following Balance Sheet of Ishu and Company Ltd. you are required to prepare the Statement of Change in Working Capital and Statement of Flow of Funds:

Ishu and Company Ltd.

(Balance Sheet as at 31st March.....)

Particulars	2015	2014
1. EQUITY & LIABILITIES:		
1. Shareholder's Funds:		



(a) Share Capital	85,000	80,000
(b) Reserve & Surplus		
Statement of Profit and Loss	24,500	14,500
2. Non-Current Liabilities:		
Mortgage	5,000	—
3. Current Liabilities:		
Trade Payables (Creditors)	5,000	9,000
Total (1 + 2 + 3)	<u>1,19,500</u>	<u>1,03,500</u>
II. ASSETS:		
1. Non-current Assets:		
Tangible Assets		
Land and Building	44,000	44,000
Plant	40,000	30,000
2. Current Assets:		
Inventories (Stock)	6,000	8,000
Trade Receivable (Debtors)	20,500	17,500
Cash at Bank	9,000	4,000
Total (1 + 2)	<u>1,19,500</u>	<u>1,03,500</u>

Solution:**Statement of Changes in Working Capital**

Particular	2014	2015	Effect on Working Capital	
			Increase	Decrease
Current Assets:	Rs.	Rs.	Rs.	Rs.
Stock	8,000	6,000	—	2,000
Debtors	17,500	20,500	3,000	—
Cash at Bank	4,000	9,000	5,000	—
	<u>29,500</u>	<u>35,500</u>		
Current Liabilities:				
Creditors	9,000	5,000	4,000	—
	<u>9,000</u>	<u>5,000</u>		
Net increase in Working Capital			—	10,000
			<u>12,000</u>	<u>12,000</u>

Calculation of Funds From Operation

Particulars	Rs.	Rs.
Statement of Profit and Loss (Balance)		
(24,500–14,500)		10,000



Add: Non-operating Expenses		—
Less: Non-operating Income		—
Funds From Operation		<u>10,000</u>

Example 21.

Following are the Balance Sheets of M/s Kalyani Ltd. as on 31st March, 2014 and 2015:

M/S Kalyani Ltd.

(Balance Sheet as at 31st March.....)

Particulars	Notes No.		2015		2014
1. EQUITY & LIABILITIES:					
1. Shareholder's Funds:					
(a) Share Capital			2,50,000		2,50,000
(b) Reserve & Surplus					
Statement of Profit and Loss			23,000		16,000
Reserve for contingencies			40,000		40,000
2. Non-Current Liabilities:					
5% Debentures,			70,000		90,000
3. Current Liabilities:					
Trade Payable					
Creditors					
Bills Payable		90,000		1,00,000	
Outstanding Expenses		<u>6,000</u>	96,000	3,000	1,03,000
Total (1 + 2 + 3)			<u>12,000</u>		<u>13,000</u>
II. ASSETS:			<u>4,91,000</u>		<u>5,12,000</u>
1. Non-current Assets:					
Land & Building			1,40,000		1,40,000
Machinery		80,000		62,000	
Depreciation Fund		<u>(44,000)</u>	36,000	<u>(40,000)</u>	22,000
2. Current Assets:					
Inventory (Stock)			1,16,000		92,000
Trade Receivable (Debtors)			53,000		77,000
Cash			80,000		80,000
Temporary Investment			64,000		1,00,000
Prepaid Expenses			<u>2,000</u>		<u>1,000</u>
Total (1 + 2)			<u>4,91,000</u>		<u>5,12,000</u>

Additional Information:



- 10% dividend was paid in cash.
- New machinery for Rs.30,500 was purchased but old machinery costing Rs.12,500 was sold for Rs.4,000 (accumulated depreciation were Rs.6,500)
- Rs.20,000 5% Debenture was redeemed by purchase from market @ Rs.96 for a debenture of Rs.100.
- Rs.36,000 Investment were sold at Bank value.

You are required to prepare a Statement of Changes in Working Capital and a Statement of Fund-Flow.

Solution: Working Notes:

1. Machinery Account

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance b/d	62,000	By Depreciation A/c	6,500
To Cash Purchase	30,500	By Cash A/c (Sales)	4,000
		By Adjusted Statement of P/L (Bal. fig.)	2,000
	<u>92,500</u>	By Balance c/d	80,000
			<u>92,500</u>

Dr. 2. Depreciation Fund Account Cr.

Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Machinery A/c	6,500	By Balance b/d	40,000
To Balance c/d	44,000	By Adjusted Statement of P/L	10,500
	<u>50,500</u>		<u>50,500</u>

Calculation of Funds from Operation

Particulars	Rs.	Rs.
Balance of Statement of Profit & Loss [Closing bal – opening bal] [23,000 – 16,000]		7,000
Add: Non-Operating/Non Cash Expenses:		
Depreciation		
Loss on Sale of Machinery [12,500 – 6,500 – 4,000]	10,500	
Dividend [10% of 2,50,000]	2,000	
	<u>25,000</u>	37,500
Less: Non-Operating Income:		
Profit on Redemption of Debenture		44,500



$\left[20,000 \times \frac{4}{100} \right]$		800
Funds from Operation		<u>43,700</u>

Statement of Changes in Working Capital
(For the year ending 31st March, 2015)

	2014	2015	Effect on Working Capital	
			Increase	Decrease
Current Assets:	Rs.	Rs.	Rs.	Rs.
Debtors	77,000	53,000	—	24,000
Temporary Investment	1,00,000	64,000	—	36,000
Stock	92,000	1,16,000	24,000	—
Prepaid Expenses	1,000	2,000	1,000	—
	<u>2,70,000</u>	<u>2,35,000</u>		
Current Liabilities:				
Sundry Creditors	1,00,000	90,000	10,000	—
B/P	3,000	6,000	—	3,000
O/s Expenses	13,000	12,000	1,000	—
	<u>1,16,000</u>	<u>1,08,000</u>		
Net Decrease in Working Capital			27,000	—
			<u>63,000</u>	<u>63,000</u>

Fund-Flow Statement
(For the year ending 31st March, 2015)

Sources	Amount	Application	Amount
	Rs.		Rs.
Sale of Machinery	4,000	Redemption of Debenture	
Funds from Operation	43,700	(20,000 – 800)	19,200
Net Decrease in Working Capital	27,000	Purchase of Machinery	30,500
		Dividend Paid	25,000
	<u>74,700</u>		<u>74,700</u>

Example 22

From the following Balance Sheet of Jai Hind Ltd. Prepare:

- Statement of Changes in Working Capital
- Fund-Flow Statement

Jai Hind Ltd.

1. A piece of land has been sold out in 2015 and the profit on the sales has been credited to capital Reserve A/c
2. A machine has been sold for Rs. 10,000. The written down value of the machine was Rs.12,000 and depreciation of Rs.10,000 has been written to Statement of P/L in 2015.



3. The investments are trade investments on which Rs.3,000 is received as dividend (including Rs.1,000 pre-acquisition profit). This profit has been credited to Investment A/c.
4. During the year 2015 Rs.20,000 was distributed as interim dividend.

Solution: Working Notes:

Dr. 1. Land & Building Account Cr.			
Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance b/d	2,00,000	By Cash (Sales Bal. Fig.)	50,000
To Capital Reserve	20,000	By Balance c/d	1,70,0000
	<u>2,20,000</u>		<u>2,20,000</u>
Dr. 2. Plant & Machinery Account Cr.			
Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance b/d	80,000	By Ad. Statement of P/L (Dep.)	10,000
To Cash Purchase	1,42,000	By Cash (Sales)	10,000
		By Statement of P/L	
		(Loss on Sales of Plant)	2,000
		By Balance c/d	2,00,000
	<u>2,22,000</u>		<u>2,22,000</u>
Dr. 3. Investment Account Cr.			
Particulars	Amount	Particulars	Amount
	Rs.		Rs.
To Balance b/d	20,000	By Dividend A/c (Pre-acquisition)	1,000
To purchase of Investment (Bal. Fig.)	11,0000	By Balance c/d	30,000
	<u>31,000</u>		<u>31,000</u>

Calculation of Funds from Operation(For the year ending 31st March, 2015)

Particulars	Rs.	Rs.
Balance of Statement of Profit & Loss [58,000 – 40,000]		
Add: Non-Operating Expenses/Non Cash Expenses:		
Goodwill written off	20,000	



Preliminary Expenses (written off)	5,000	
Depreciation on Plant/Machinery	10,000	
Loss on Sale of Plant	2,000	
Dividend	50,000	
Provision for Taxation	50,000	
Interim Dividend Paid	20,000	
General Reserve	<u>10,000</u>	<u>1,67,000</u>
Less: Non-operating Income:		1,85,000
Goodwill written off		
Dividend received of pre-acquisition	2,000	
(3,000 – 1,000)		<u>(2,000)</u>
Funds from Operation		<u><u>1,83,000</u></u>

Statement of Changes in Working Capital
(For the year ending 31st March, 2015)

	2014	2015	Effect on Working Capital	
			Increase	Decrease
Current Assets:	Rs.	Rs.	Rs.	Rs.
Cash in Hand	10,000	5,000	—	5,000
Cash at Bank	15,000	13,000	—	2,000
Bills Receivable	27,000	39,000	12,000	—
Debtors	1,40,000	1,70,000	30,000	—
Stock	<u>70,000</u>	<u>1,00,000</u>	30,000	—
Rs.	<u><u>2,62,000</u></u>	<u><u>3,27,000</u></u>		
Current Liabilities:				
Bills Payable	24,000	20,000	4,000	—
Creditors	21,000	43,000	—	22,000
O/s Expenses	<u>30,000</u>	<u>36,000</u>	—	6,000
Rs.	<u><u>75,000</u></u>	<u><u>99,000</u></u>		
Net Increase in Working Capital			—	41,000
		Rs.	<u><u>76,000</u></u>	<u><u>76,000</u></u>

Fund-Flow Statement
(For the year ending 31st March, 2015)

Sources	Amount	Application	Amount
	Rs.		Rs.
Fund From Operation	1,83,000	Dividend paid	42,000



Sales of L & B	50,000	Net Increase in Working Capital	41,000
Sales of P & M	10,000	Interim Dividend paid	20,000
Dividend received	3,000	Purchase of Plant	1,42,000
Issue of Equity Share Capital (45,000 – 3,50,000)	1,00,000	Redemption of Pref. Share Capital (1,00,000 – 50,000)	50,000
		Tax Paid	40,000
		Purchase of Investment	11,000
	<u>3,46,000</u>		<u>3,46,000</u>

6.5 CHECK YOUR PROGRESS

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

1. Funds Flow statement is a technical device designed to highlight the changes in the financial position of the concern between two balance sheets.
2. Whenever in any transaction one aspect affects the current assets and the other non-current assets, there is no in the working capital.
3. Fund Flow Statement ignores non-fund transactions.
4. The statement that reveals the changes in funds is called 'Schedule of Changes in Working Capital'.

B. Fill in the blanks:

1. Funds from operations are _____ sources of funds.
2. _____ denotes a dividend paid to the members of the company during a financial year, before the finalisation of annual accounts.
3. Issue of shares is a _____ of funds as it constitutes in flow of funds.
4. Valuation of stock affects _____ of a concern.

6.6 SUMMARY

Fund flow statements summarize a firm's inflow and outflow of funds. Simply put, it tells investors where funds have come from and where funds have gone. The statements are often used to determine whether companies efficiently source and utilize funds available to them. Fund flow statements are



prepared by taking the balance sheets for two dates representing the coverage period. The increases and decreases must then be calculated for each item. It is also important to zero out the non-fund based adjustments in order to capture only the changes that are accompanied by flow of funds. However, income accrued but received and expenses incurred but not received reckoned in the profit and loss statement should not be excluded from the profit figure for the fund flow statement. Fund flow statements can be used to identify a variety of problems in the way a company operates.

6.7 KEYWORDS

Fund from Operations: Income generated from only operations.

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

Fund Lost in Operations: Loss incurred in the operations.

Fund: Fund means working capital

Non-current Assets: Long-term assets.

Non-current Liabilities: Long-term financial resources.

Statement of changes in Working Capital: Enlisting the changes taken place in between the current assets and current liabilities of two different time horizons.

6.8 SELF ASSESSMENT TEST

1. What is Fund-Flow Statement? How is it prepared?
2. What do you understand by Fund-Flow Statement? Explain its managerial uses.
3. What is Fund-Flow Statement? Give the specimen of changes in the working capital and Funds-Flow Statement?
4. Calculate Funds from Operation from the following information:

Statement of Profit & Loss

Particulars	Rs.	Rs.
Revenue from Operations	6,20,000	



Add: Other Income:			
Commission Received		10,000	
Discount Received		25,000	
Rent received from tenant		68,000	
Profit on Sale of Plant		<u>1,07,000</u>	
Total Revenue			8,30,000
Less: Expenses:	Rs.		
Salaries	1,40,000		
Add: Outstanding	<u>30,000</u>	1,70,000	
Rent and Taxes	80,000		
Add: Outstanding	<u>4,000</u>	84,000	
Insurance	45,000		
Less: Prepaid	<u>(5,000)</u>	40,000	
Depreciation:			
Plant & Machinery	20,000		
Fixture & Fitting	6,500		
M. Car	<u>40,000</u>	66,500	
Printing & Stationery	10,000		
Add: Outstanding	<u>3,000</u>	13,000	
Advertisement		20,000	
Travelling Expenses		35,000	
Discount allowed to Customer		2,000	
Reserve for Bad Debts		14,000	
Discount on Issue of Debentures		2,000	
Underwriting Commission		6,500	
General Reserve		<u>25,000</u>	<u>4,78,000</u>
Net Profit before tax			3,52,000
Less: Provision for Income Tax			<u>(2,00,000)</u>
Less: Appropriation of Profits:			1,52,000
Proposed Dividend		20,000	



Preference	46,000	(66,000)
Net Profit during the year		<u>86,000</u>

5. The Balance Sheets of a Limited Company as 31st March, 2014 and 31st March, 2015 were as follows:

Limited Company

(Balance Sheet as at 31st March 2014-2015)

Particulars	Notes No.	2015	2014
1. EQUITY & LIABILITIES:			
1. Shareholder's Funds:			
(a) Share Capital		65,000	45,000
(b) Reserve & Surplus			
General Reserve		7,500	5,000
Statement of Profit and Loss		15,000	10,000
Preliminary Expenses		(500)	(1,000)
2. Non-Current Liabilities:			
Debentures		20,000	10,000
3. Current Liabilities:			
(Trade Payable) Creditors (1 + 2 + 3)		15,000	12,700
Total (1 + 2 + 3)		<u>1,22,000</u>	<u>81,700</u>
II. ASSETS:			
1. Non-current Assets:			
Fixed Assets:		83,000	46,700
2. Current Assets:			
Inventory (Stock)		13,000	11,000
Trade Receivable (Debtors)		19,500	18,000
Cash and Cash Equivalents:			
Cash		65,000	6,000
Total (1+2)		<u>1,22,000</u>	<u>81,700</u>

Prepare a Schedule of changes in Working Capital and Statement of Sources of Application of Funds.

6. From the following Balance Sheets of M/s Jayant Co. Ltd., prepare a Statement of Changes in Working Capital and the Fund-Flow Statement as on 31st March, 2014 and 2015:

M/s Jayant Co. Ltd.

(Balance Sheet as at 31st March, 2015)

Rs.in

Particulars	Notes No.		2015		2014
1. EQUITY & LIABILITIES:					
1. Shareholder's Funds:					



(a) Share Capital			3,50,000		3,00,000
(b) Reserve & Surplus					
General Reserve			1,50,000		1,00,000
Statement of Profit and Loss			70,000		60,000
Discount on Issue of Debenture			—		(5,000)
2. Non-Current Liabilities:					
Debentures			2,50,000		1,50,000
3. Current Liabilities:					
Trade Payable(Sundry Creditors)			1,10,000		75,000
Bills Payable			15,000		10,000
Total (1 + 2 + 3)			<u>9,45,000</u>		<u>6,90,000</u>
II. ASSETS:					
1. Non-current Assets:					
(a) Fixed Assets:					
Machinery (Tangible)	5,40,000			4,10,000	
Provision for Depreciation	(1,30,000)	4,10,000		(90,000)	3,20,000
Goodwill (Intangible)		80,000			1,00,000
(b) Investment		80,000			30,000
2. Current Assets:					
Inventory (Stock)			55,000		40,000
Trade Receivable (Debtors)			1,90,000		80,000
Cash and Cash Equivalents:					
Cash			<u>1,30,000</u>		<u>1,20,000</u>
Total (1+2)			<u>9,45,000</u>		<u>6,90,000</u>

During the year Investment costing Rs.30,000 were sold for Rs.28,000. A new machine was purchased for Rs.45,000 and the payment was made in fully paid shares.

7. Following are the Balance Sheets of Tinku and Co. Ltd. as on 31st March, 2014 and 2015:

Tinku and Co. Ltd.

(Balance Sheet as at 31st March, 2015)

Particulars	Notes No.		2015		2014
1. EQUITY & LIABILITIES:					
1. Shareholder's Funds:					
Capital			2,30,000		2,30,000
Statement of Profit and Loss			23,000		16,000
Reserve for Contingencies			60,000		60,000
2. Non-Current Liabilities:					
8% Debentures			70,000		90,000
3. Current Liabilities:					



Trade Payable (Sundry Creditors)			93,000		1,00,000
Outstanding Expenses			15,000		16,000
Total (1 + 2 + 3)			<u>4,91,000</u>		<u>5,12,000</u>
II. ASSETS:					
1. Non-current Assets:					
Fixed Assets:					
Tangible Assets					
Land and Building			1,00,000		1,00,000
Machinery	1,20,000			1,02,000	
Depreciation Fund	(44,000)		76,000	(40,000)	62,000
2. Current Assets:					
Inventory (Stock in-trade)			1,06,000		82,000
Trade Receivable (Sundry Debtors)			33,000		57,000
Short-time Investment			64,000		1,00,000
Cash and Cash Equivalents:					
Cash			1,00,000		1,00,000
Prepaid Expenses			12,000		11,000
Total (1+2)			<u>4,91,000</u>		<u>5,12,000</u>

Additional Information:

- 10% dividend was paid.
- New machinery for Rs. 30,000 was purchased but old machinery costing Rs.12,000 was sold for Rs.4,000, accumulated depreciation were Rs.6,000.
- Rs.20,000, 8% Debentures was redeemed by purchase from market @ Rs.96 for a debenture of Rs.100.
- Rs.36,000 Investments were sold at book value.

6.9 ANSWERS TO CHECK YOUR PROGRESS

- A.
- True
 - False
 - True
 - False
- B.
- internal
 - Interim Dividend
 - source
 - net profit



6.10 SUGGESTED READINGS

1. V.K. Saxena and C.D. Vashist: Cost and Management Accounting; Sultan Chand & Sons, New Delhi.
2. M.N. Arora: Cost and Management Accounting (Theory and Problems); Himalaya Publishing House, Mumbai.
3. S.N. Maheshwari: Cost and Management Accounting; Sultan Chand & Sons, New Delhi.
4. I.M. Pandey: Management Accounting; Vikas Publishing House (P) Ltd., Noida.
5. Ravi M. Kishore: Advanced Management Accounting; Taxmann Publications Pvt. Ltd., New Delhi.



Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :07	
CASH FLOW STATEMENT	

Structure

- 7.0 Learning Objectives
- 7.1 Introduction
- 7.2 Meaning, Objectives, Significance and Limitations of Cash Flow Statement
- 7.3 Difference between Cash Flow Statement and Funds Flow Statement
- 7.4 Classification of Cash Flows and Treatment of Special Items in Cash Flow Statement
 - 7.4.1 Preparation of Cash Flow Statement
- 7.5 Check Your Progress
- 7.6 Summary
- 7.7 Keywords
- 7.8 Self-Assessment Test
- 7.9 Answers to Check Your Progress
- 7.10 References/Suggested Readings

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 enterprise to 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 firm's 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 charges are ignored while calculating cash from operating activities.
- 6. Ignorance of Accounting Concept of Accrual Basis:** As cash flow statement is 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 prepared to summarise the causes of changes in the financial position of a business. However, following are 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 overdraft and increase in increase in overdraft.	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 SPECIAL 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 fact 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		
	<u>1,00,000</u>		<u>1,00,000</u>		

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		
	<u>50,000</u>		<u>50,000</u>		



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	
		<u>55,000</u>				<u>55,000</u>	

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.	
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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
	<u>90,000</u>	(Bal. Fig.)	<u>90,000</u>

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	Particulars	Amount
	Rs.		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			
	<u>37,000</u>				<u>35,000</u>
					<u>37,000</u>

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			
	<u>30,100</u>			<u>30,100</u>	

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	
To Cash (Drawings)	Rs. 17,000	By Balance b/d		Rs. 1,25,000	
To Balance c/d	1,53,000	By Net Profit for the year		45,000	
	<u>1,70,000</u>			<u>1,70,000</u>	

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. If 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.
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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
	<u>64,000</u>		<u>64,000</u>

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 or 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
	<u>7,50,000</u>
– Closing Stock	2,00,000
Cost of Goods Sold	<u><u>5,50,000</u></u>



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
	<u>7,50,000</u>
– Opening Stock	2,50,000
Value of Purchase	<u><u>5,00,000</u></u>

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 or 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 is 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 (Revenue 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	31-3-2015
	Rs.	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)	<u>4,000</u>	
Add: Outstanding at beginning	39,000	
Less: Outstanding at end	<u>5,000</u>	(34,000)
Less: Insurance Premium:		
Premium on accrual basis	5,000	
Add: Closing Balance of P.P. Ins. Premium	<u>1,500</u>	
	6,500	
Less: Opening balance of P.P. Ins. Premium	<u>1,500</u>	<u>5,000</u>
Net Cash Flow from Operating Activities		<u>46,000</u>

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:

Bal. of Statement of (65,000–60,000)		Rs. 5,000
Adjustments:		
Add: Transfer to General Reserve		35,000
Transfer to Dividend Equalisation Fund		22,000
Goodwill Written off		<u>10,000</u>
Operating Profit		72,000
Add: Decrease in Debtors		<u>47,000</u>
	Rs.	1,19,000
Less: Increase in Bills Receivables	(41,000)	
Increase in Prepaid Wages	(2,000)	
Decrease in Salary Outstanding	(18,000)	<u>(61,000)</u>



Cash flow from Operating Activities	<u>58,000</u>
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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 Rs.	2015 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:

- The piece of land was purchased out of surplus for investment purposes and let out. It realised Rs.50,000 as rent.
- Dividend received from Poonam Ltd. @ 12%.
- Patents written off to the extent of Rs. 30,000.
- Some part of patent was sold at a profit of Rs. 25,000.
- 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.
- 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



	<u>14,25,000</u>	By Balance c/d	<u>12,00,000</u>
			<u>14,25,000</u>

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)	<u>15,000</u>	By Balance c/d	<u>80,000</u>
	<u>2,40,000</u>		<u>2,40,000</u>

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.)	<u>1,00,000</u>		
	<u>2,50,000</u>		<u>2,50,000</u>

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
	<u>1,75,000</u>	By Balance c/d	<u>1,30,000</u>
			<u>1,75,000</u>

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	<u>4,25,000</u>	
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.	$\sqrt{\sqrt{}}$	
Net Cash Flow from Financing Activities		$\sqrt{\sqrt{}}$
Or		Or
Net Cash used in Financing Activities		$\sqrt{\sqrt{}}$

Example 12

From the following information, calculate cash flow from Financing Activities:

	Issued	Redeemed
	April, 2014	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**

	Rs.	Rs.
Cash received from issue of Equity Shares	Rs.	
Add: Premium received on issue of Equity Shares	2,50,000	
Cash received from issue of Debentures	<u>25,000</u>	2,75,000
Less: Discount on Issue of Debentures	1,50,000	
Less: Redemption of 12% Pref. Shares	<u>(3,000)</u>	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	<u>(10,000)</u>	<u>(4,95,500)</u>
Net Cash used in Financing Activities		<u><u>(73,500)</u></u>

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 31st March,)

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)		<u>47,26,000</u>	<u>41,47,000</u>

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		<u>5,91,000</u>

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 By Statement of P/L (Provision made during the year)		2,25,000
To Balance c/d	30,000			27,000
	<u>2,52,000</u>			<u>2,52,000</u>

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
	<u>22,06,000</u>	By Balance c/d		19,60,000
				<u>22,06,000</u>

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
	<u>2,30,000</u>	<u>2,47,000</u>		<u>2,30,000</u>	<u>2,47,000</u>

Additional Information:

- (1) During the year Machine costing Rs. 10,000 (accumulated depreciation Rs. 3,000) was sold 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	<u>1,50,000</u>	By Net Profit	<u>45,000</u>
	<u>1,70,000</u>		<u>1,70,000</u>

Dr.

2. Provision for Depreciation Account

Cr.

	Rs.		Rs.
To Machinery A/c (Dep. On Machinery Sold)	3,000	By Balance b/d	25,000
		By Ad. Statement of P/L	



To Balance c/d	<u>40,000</u>	(Dep. For the year)	<u>18,000</u>
	<u>43,000</u>		<u>43,000</u>

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)	<u>95,000</u>
	<u>1,05,000</u>		<u>1,05,000</u>

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	<u>65,000</u>	
Decrease in Stock	10,000	
Increase in Debtors	(22,000)	
Increase in Creditors	<u>7,000</u>	
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	<u>5,000</u>	
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	<u>(20,000)</u>	
Cash used in Financing Activities		<u>(35,000)</u>
Net Decreases in Cash Balance		(5,000)
Cash at the beginning of the period		<u>10,000</u>
Cash Balance at the end of the period		<u><u>5,000</u></u>

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:

	31 st 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 out 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
I. 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		<u>35,000</u>	<u>25,000</u>
Total (1 + 2 + 3)		<u><u>4,35,000</u></u>	<u><u>3,00,000</u></u>
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)		<u>4,35,000</u>	<u>3,00,000</u>

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)		<u>61,600</u>	<u>63,500</u>
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)		<u>61,600</u>	<u>63,500</u>

Additional Information:

- Sales in 2014-15 were Rs. 2,18,500.
- No dividend was paid by the company during the year.
- The changes in Building and Plant value are on account of depreciation changes for 2014-15.
- 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.
2. Deepak Jain: Cost & Management Accounting, Taxmann Publications Pvt. Ltd., New Delhi.
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5. Jawahar Lal: Cost Accounting; McGraw-Hill Education (India) Ltd., Noida.



Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :08	
MARGINAL COSTING	

Structure

- 8.0 Learning Objectives
- 8.1 Introduction
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- 8.3 Difference between Absorption Costing and Marginal Costing
- 8.4 Break-even Point, Profit Volume Ratio, Margin of Safety and Angle of Incidence
- 8.5 Check Your Progress
- 8.6 Summary
- 8.7 Keywords
- 8.8 Self-Assessment Test
- 8.9 Answers to Check Your Progress
- 8.10 References/Suggested Readings

8.0 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.



8.1 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.

8.2 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 increased or 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 (100×220)	22,000	
Fixed Cost	4,000	
	<u>Total Cost</u>	<u>26,000</u>
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	
	<u>26,220</u>	

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 to a 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,

$$\begin{aligned} TC &= FC + VX \\ &= 15,000 + (10 \times 500) \\ &= 15,000 + (5,000) \\ &= \text{Rs.}20,000 \end{aligned}$$

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. $15,000 \div 500$) 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:

$$\begin{aligned} \text{TC} &= \text{PC} + \text{VX} \\ &= 15,000 + (10 \times 1,000) \\ &= 15,000 + 10,000 \\ &= \text{Rs.25,000} \end{aligned}$$

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	<u>Rs.25</u>

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 decided 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 therefore avoids 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 strictly 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 be 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 too 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 cover 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 and standard 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 less 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 them into fixed and variable.

8.3 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 no 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 on 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.	<u>1,05,000</u>	<u>13.125</u>

Test of Equation: $TC = FC + VX$
 $= 20,000 + 13.125 \times 8,000 = 20,000 + 1,05,000$
 $= \text{Rs. } 1,25,000$

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)

$$\begin{array}{r}
 20,000 V + FC = 45,000 \\
 25,000 V + FC = 55,000 \\
 \hline
 \end{array}$$



$$\frac{-5,000}{V} = -10,000$$

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

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

$$TC = VX + FC$$

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

$$\text{or } 40,000 + FC = 45,000$$

$$\text{or } FC = 45,000 - 40,000$$

$$\therefore FC = \text{Rs.}5,000$$

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	<u>3,00,000</u>	<u>2,40,000</u>
Prime Cost	9,00,000	7,20,000
Overheads:		
Fixed	12,00,000	12,00,000
Variable	<u>4,50,000</u>	<u>3,60,000</u>



	Cost of Production	25,50,000	22,80,000
Add: Opening Stock (Finished Goods)		—	5,10,000
		<u>25,50,000</u>	<u>27,90,000</u>
Less: Closing Stock (Finished Goods)		5,10,000	—
	Cost of Sales	<u>20,40,000</u>	<u>27,90,000</u>
	Profit	<u>9,60,000</u>	<u>9,60,000</u>
Sales (1,20,000 × 25; 1,50,000 × 25) Rs.		<u><u>30,00,000</u></u>	<u><u>37,50,000</u></u>

Working Note:

Valuation of Stock:

$$(12,00,000 \div 1,50,000) = \text{Rs. } 8 + (\text{Rs. } 4 + \text{Rs. } 2 + \text{Rs. } 3), \text{ Variable} \\ = \text{Rs. } 17 \text{ p.u. Total Cost.}$$

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

$$= 30,000 \text{ unit} \times \text{Rs. } 17$$

$$= \text{Rs. } 5,10,000$$

II. Statement of Profit under Marginal Costing Method:

	2011	2012
	Rs.	Rs.
Sales (A)	<u>30,00,000</u>	<u>37,50,000</u>
Material	6,00,000	4,80,000
Wages	3,00,000	2,40,000
Variable Expenses	<u>4,50,000</u>	<u>3,60,000</u>
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
	<u>13,50,000</u>	<u>13,50,000</u>
Less: Closing Stock	<u>2,70,000</u>	—
Marginal Cost of Sales (B)	<u>10,80,000</u>	<u>13,50,000</u>
Contribution (A–B)	19,20,000	24,00,000
Less: Fixed Costs	<u>12,00,000</u>	<u>12,00,000</u>
Profit	<u><u>7,20,000</u></u>	<u><u>12,00,000</u></u>



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 \times (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:

$$\begin{aligned}
 &1,50,000 - 1,20,000 \times (\text{Rs.}8 + \text{Rs.}4 + \text{Rs.}2 + \text{Rs.}3) \\
 &= 30,000 \text{ units} \times \text{Rs.}17 \\
 &= \text{Rs.}5,10,000
 \end{aligned}$$

8.6 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 refers to 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:



$$\text{Sales} = \text{Variable Costs} + \text{Fixed Costs}$$

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-EVEN ANALYSIS

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 building or 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 are difficult to determine. For



example, there are various methods of calculating depreciation. It is not easy to decide 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 relevant range 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 bulk 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-even 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 decisions from 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 warns 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 are known. 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:

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

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

Where,

C = Contribution

OR



$$\text{B.E.P.} = \text{B.E.P in units} \times \text{SP}$$

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

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

OR

$$\text{B.E.P} = \text{Actual Sales} - \text{Margin of Safety}$$

Where,

FC = Total fixed Cost

VC = Total variable Cost

SP = Total selling price

C = Contribution

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

OR

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

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

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,

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

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:

$$\begin{aligned} \text{Composite B.E.P. in (Rs.)} &= \frac{\text{Total F.C.}}{\text{Composite P/V Ratio}} \\ &= \frac{\text{Total FC} \times \text{Total Sales}}{\text{Total Contribution}} \end{aligned}$$

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:

$$\begin{aligned}\text{B.E.P. (Units)} &= \frac{20,000}{20 - 12} \\ &= \frac{20,000}{8} = 2,500 \text{ Units.}\end{aligned}$$

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:

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

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:

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

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

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

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

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

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

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

When ratio has to be calculated in rate:

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

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

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:



$$\begin{aligned}\text{P/V Ratio} &= \frac{\text{Changes in Profit}}{\text{Changes in Sales}} \times 100 \\ &= \frac{(50,000 - 30,000)}{(3,00,000 - 2,00,000)} \times 100 \\ &= \frac{20,000}{1,00,000} \times 100 = 20\%\end{aligned}$$

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,

$$\text{Margin of Safety} = \text{Total Sales} - \text{Sales at BEP}$$

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:

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

$$\text{Contribution (p.u.)} = \text{SP} - \text{VC} = 20 - 4 = \text{Rs.16}$$

$$\begin{aligned} \text{B.E.P. (Units)} &= \frac{\text{FC}}{\text{Contribution (p.u.)}} \\ &= \frac{80,000}{16} = 5,000 \text{ units} \end{aligned}$$

$$\text{Margin of Safety (Units)} = \text{Sales (Units)} - \text{B.E.P. (Units)}$$

$$= 10,000 - 5,000 = 5,000 \text{ Units}$$

$$\begin{aligned} \text{B.E.P. in (Rs.)} &= \frac{\text{FC}}{\text{C.(p.u.)}} \times \text{SP (p.u.)} \\ &= \frac{80,000}{16} \times 20 = \text{Rs.1,00,000} \end{aligned}$$

$$\therefore \text{Margin of Safety (Rs.)} = \text{Actual Sales} - \text{Sales at B.E.P.}$$

$$= 2,00,000 - 1,00,000 = \text{Rs.1,00,000}$$

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.	<u>20</u>
Contribution p.u.	<u>10</u>

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

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

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

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

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

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

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

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

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:

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

Where,

FC = Fixed Cost (Total)

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



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

$$\begin{aligned}\therefore \text{B.E.P.} &= \frac{(5,40,000 + 2,52,000) \times 20}{20 - 14} \\ &= \frac{7,92,000 \times 20}{6} \\ &= \text{Rs.} 26,40,000\end{aligned}$$

or $\text{B.E.P. in units} = 26,40,000 \div 20$

$$= 1,32,000 \text{ Units}$$

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

$$\begin{aligned}\therefore \text{Desired Sales (units)} &= \frac{\text{FC} + \text{Desired Profit}}{\text{Contribution (p.u.)}} \\ &= \frac{7,92,000 + 60,000}{(\text{SP} - \text{VC}) \text{ p.u.}} \\ &= \frac{8,52,000}{6} \\ &= 1,42,000 \text{ Units}\end{aligned}$$

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.



8.5 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 _____.

8.6 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.

8.7 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.

8.8 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	<u>1,50,000</u>
Contribution	50,000
Less: Fixed Costs	<u>30,000</u>
Profit	<u><u>20,000</u></u>

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.

8.9 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

8.10 REFERENCES/SUGGESTED READINGS

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Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :09	
BUDGETARY CONTROL	

Structure

- 9.0 Learning Objectives
- 9.1 Introduction
- 9.2 Meaning and characteristics of Budget
- 9.3 Meaning, objectives, advantages, disadvantages, essentials, preliminaries and process of budgeting
 - 9.3.1 Meaning of Budgeting
 - 9.3.2 Difference between Forecast and Budget
 - 9.3.3 Objectives of Budgeting
 - 9.3.4 Advantages of Budgeting
 - 9.3.5 Disadvantages of Budgeting
 - 9.3.6 Essentials of Effective Budgeting
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 - 9.3.8 Process of Budget Making
- 9.4 Check Your Progress
- 9.5 Summary
- 9.6 Keywords
- 9.7 Self-Assessment Test
- 9.8 Answers to Check Your Progress
- 9.9 References/Suggested Readings



9.0 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.

9.1 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. 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.

9.2 MEANING AND CHARACTERISTICS OF BUDGET

A budget is a quantitative expression of a plan of action prepared in advance of the period to which it relates. It may be prepared for the entire organisation or for various departments 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 scarce 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 pre-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 been approved 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 be 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.

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



9.3.1 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”.

9.3.2 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.

9.3.3 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 an important role in control function of management.

9.3.4 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.

9.3.5 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 of judgement 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.

9.3.6 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 designed 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 built 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 also to participate in the function of budget preparation. Thus, a well defined organisation helps not only in the budget preparation but it also plays an 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. Motivational Approach: 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 employee member 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 is also used, it should be completely integrated with the budget programme, in respect of both budget 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.

9.3.7 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 be clearly 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 be so 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 in charge 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 submission of 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 compiles 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.

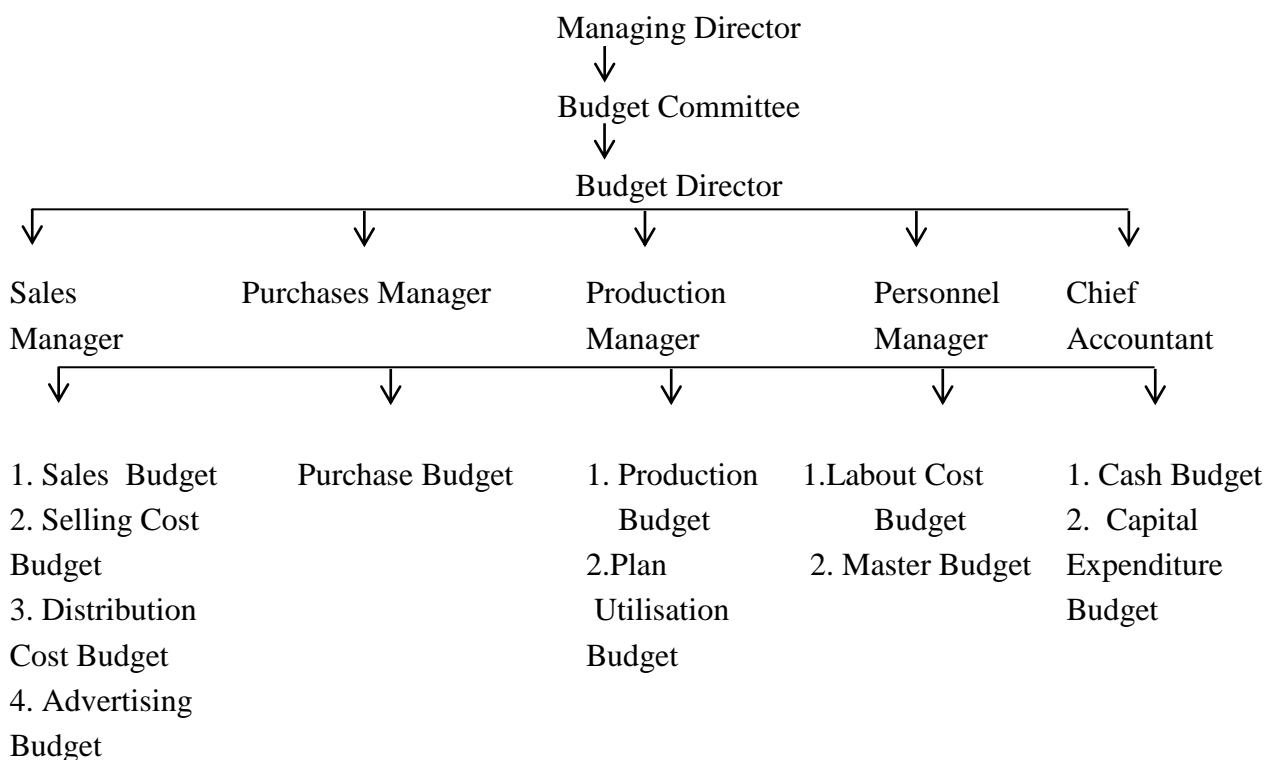
9. Organisation Chart: Proper organisation is essential for a successful budget system. An organisation chart should be prepared which clearly shows the plan of the organisation. Each member of management should know the exact scope of his authority and responsibility and his relationship to



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



9.3.8 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 number 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.

9.4 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.

9.5 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.



9.6 KEYWORDS

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

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

9.7 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.

9.8 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

9.9 REFERENCES/SUGGESTED READINGS

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Subject: Management Accounting	
Course code: BC 601	Author: Prof. M. C. Garg
Lesson no. :10	
TYPES OF BUDGETS AND THEIR PREPARATION	

Structure

- 10.0 Learning Objectives
- 10.1 Introduction
- 10.2 Classification of Budget
 - 10.2.1 Budgets on the Basis of Time
 - 10.2.2 Budgets on the basis of Function
 - 10.2.3 Budget on the basis of Flexibility
 - 10.2.4 Other Budgets
- 10.3 Check Your Progress
- 10.4 Summary
- 10.5 Keywords
- 10.6 Self-Assessment Test
- 10.7 Answers to Check Your Progress
- 10.8 References/Suggested Readings

10.0 LEARNING OBJECTIVES

After reading this lesson, you should be able to

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



10.1 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.

10.2 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.

10.2.1 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,

10.2.2 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 the preparation 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 be 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)				Total
	I Quarter	II Quarter	III Quarter	IV Quarter	
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 year 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)	<u>25,220</u>	<u>35,890</u>	<u>38,800</u>	<u>30,070</u>	<u>1,29,980</u>

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 produce 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 1st Quarter, 2013			
	X	Y	Z
Sales in quantity increase	20%	10%	10%
Sales price increase	Nil	10%	25%
Stock position on 1 st Jan., 2013:			
% of Jan. 2013 Sales	50%	50%	50%
Stock position on 31 st 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

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

	X
January	: 25,000 + 20% = 30,000
February	: 20,000 + 20% = 24,000
March	: 30,000 + 20% = 36,000
	Y

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	<u>90,000</u>	<u>9,00,000</u>	<u>99,000</u>	<u>21,78,000</u>	<u>33,000</u>	<u>16,50,000</u>

Where Value = Units \times 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	<u>27,000</u>	<u>30,000</u>	<u>38,000</u>

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	<u>30,250</u>	<u>33,000</u>	<u>44,250</u>

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	<u>11,000</u>	<u>11,000</u>	<u>10,500</u>

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
	<u>95,000</u>	<u>1,07,500</u>	<u>32,500</u>

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 so as to have an overall 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
		<u>78,000</u>
Less: Opening Stock	12,000	
	Budgeted Production	<u>66,000</u>

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	<u> </u>	<u>1,29,000</u>	<u>2,07,000</u>

*(i) $66,000 \times 2 = 1,32,000$ (ii) $66,000 \times 3 = 1,98,000$

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:

1. 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 of 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)	<u>65,000</u>
Semi-variable Overhead:	
Electricity	50,000
Repairs and Maintenance	5,000
Total (b)	<u>55,000</u>
Variable Overhead:	
Materials	10,000
Labours	30,000
Total (c)	<u>40,000</u>
Total Factory Overhead (a + b+ c)	<u>1,60,000</u>



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 may be 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 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, administration expenses will have to be reduced by discharging the services of some 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



department are 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 strategic 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 for requiring 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 but also for marketing and administration functions separately. The budget is prepared after 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 different asset 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 due to 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 sales, 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 for additional 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 be taken to make available the required amount on the most advantageous terms.
4. The importance of cash budget may be more in 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 cash 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 other part 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:

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

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

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

**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
	Rs.	Rs.	Rs.
Receipt			
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	<u>12,500</u>	<u>10,000</u>	<u>10,250</u>	<u>14,500</u>	<u>15,000</u>

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 $15,000 \times 1 = 15,000$

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)		<u>3,99,300</u>	<u>6,12,500</u>
II. ASSETS:			
1. Non-current Assets:			



(a) Fixed Assets:			
Plant and Machinery (at cost)		2,20,000	2,40,000
Accuvalated Depreciation		<u>(50,000)</u>	<u>(30,000)</u>
		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		<u>18,400</u>	<u>1,36,800</u>
Total (1+2)		<u><u>3,99,300</u></u>	<u><u>6,12,500</u></u>

Statement of Forecasted Profit and Loss

For the Budgeted year ended 31st March, 2013

Particulars	Notes	Amount	Amount
		Rs.	Rs.
Revenue from Operation (Gross Profit)			2,00,000
Add: Other Income:			
Profit on Sale on Investment etc.		2,000	
Interest		<u>10,000</u>	<u>12,000</u>
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		<u>8,000</u>	<u>43,000</u>
Profit before Taxes			1,69,000
Less: Income Tax			<u>(5,000)</u>
Net Profit after Taxes			1,64,000
Less: Appropriation of Profits:			
Dividend			<u>(10,000)</u>
Net Profit during the year			<u><u>1,54,000</u></u>

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		<u><u>1,36,800</u></u>

(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 form 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
	<u>8,00,000</u>
Less: Administrative, Selling and Distribution Expenses	14,000
Net Sales Revenue (a)	<u><u>Rs.7,86,000</u></u>
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
	<u>5,16,000</u>
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
		<u>5,49,000</u>
Fixed Expenses:		
Indirect Labour (500 × 12)	6,000	
Works Manager (400 × 12)	4,800	
Foreman	12,600	
Depreciation	3,600	27,000
	<u>Work Cost (b)</u>	<u>Rs. 5,76,000</u>
	<u>Expected Profit (a-b)</u>	<u>Rs. 2,10,000</u>

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 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

10.2.3 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 can be estimated with a fair 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	It is flexible and can be recasted quickly according to level of activity



		of output achieved.	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	<u>5,000</u>	50% Varying
	<u>1,25,000</u>	
Cost per unit	<u><u>25.00</u></u>	



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)	<u>82,000</u>	<u>65,600</u>	<u>98,400</u>
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)	<u>23,000</u>	<u>20,840</u>	<u>25,160</u>
Fixed Expenses:			
Depreciation	20,000	20,000	20,000
Total (C)	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>
Total Cost (A+B+C)	<u>1,25,000</u>	<u>1,06,440</u>	<u>1,43,560</u>
	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 is 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 government system 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 against these 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-allocation for 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 tool 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 flows 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, whereas under 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 Georgia by Mr. Jimmy Carter who was then the Governor of the State. When Mr. Carter later on became the President of the U.S.A., ZBB as a managerial tool has become increasingly popular since the early 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's 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 penny 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 managers 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 it avoids 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 of 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 rise 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.

10.3 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.



10.4 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.

10.5 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.

10.6 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:

- In case of deficit of funds within Rs. 10,000 arrangements can be made with the bank.
 - 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.
 - 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:

- Period of Credit allowed by suppliers and to customers one month (1 month).
- Lag in Payment of:
 - Wages 1/8 month,
 - Factory expenses 1 month,
 - 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)
	<u>1,00,400</u>	
Cost per Unit	<u>Rs. 20.08</u>	

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.

10.7 ANSWERS TO CHECK YOUR PROGRESS

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

10.8 REFERENCES/SUGGESTED READINGS



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3. M.N. Arora: Cost and Management Accounting (Theory and Problems); Himalaya Publishing House, Mumbai.
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