ACCOUNTING FOR MANAGEMENT
(BCM5B07)

STUDY MATERIAL

CORE COURSE

V SEMESTER

B.Com.

(2019 Admission)

UNIVERSITY OF CALICUT
SCHOOL OF DISTANCE EDUCATION
CALICUT UNIVERSITY P.O.
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School of Distance Education
University of Calicut

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BCM5 B07: ACCOUNTING FOR MANAGEMENT

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MODULE I

ACCOUNTING FOR MANAGEMENT- INTRODUCTION

Management accounting can be viewed as Management-oriented Accounting. Basically it is the study of managerial aspect of financial accounting," accounting in relation to management function". It is developed mainly to help the management in the discharge of its functions and for taking various decisions.

The Report of the Anglo-American Council of Productivity (1950) has also given a definition of management accounting, which has been widely accepted. According to it, "Management accounting is the presentation of accounting information in such a way as to assist the management in creation of policy and the day to day operation of an undertaking".

According to the Institute of Chartered Accountants of England and Wales "any form of accounting which enables a business to be conducted more efficiently can be regarded as Management Accounting "

The term management accounting is composed of 'management' and 'accounting 'It is the use of Accounting Information for discharging Management functions, especially planning and decision making.

FUNCTIONS OF MANAGEMENT ACCOUNTING

The basic function of management accounting is to assist the management in performing its functions effectively. The functions of the management are planning, organizing, directing and controlling. Management accounting helps in the performance of each of these functions in the following ways:

(i) Provides data: Management accounting serves as a vital source of data for management planning. The accounts and documents are a repository of a vast quantity of data about the past progress of the enterprise, which are a must for making forecasts for the future.

Modifies data: The accounting data required for managerial decisions is properly compiled and classified. For example, purchase figures for different months may be classified to know total purchases made during each period product-wise, supplier-wise and territory-wise.

(iii) Analyses and interprets data: The accounting data is analyzed meaningfully for effective planning and decision-making. For this purpose the data is presented in a comparative form. Ratios are calculated and likely trends are projected.

(iv) Serves as a means of communicating: Management accounting provides a means of communicating management plans upward, downward and outward through the organization. Initially, it means identifying the feasibility and consistency of the various segments of the plan. At later stages it keeps all parties informed about the plans that have been agreed upon and their roles in these plans.

(v) Facilitates control: Management accounting helps in translating given objectives and strategy into specified goals for attainment by a specified time and secures effective accomplishment of these goals in an efficient manner. All this is made possible through budgetary control and standard costing which is an integral part of management accounting.

(vi) Uses also qualitative information: Management accounting does not restrict itself to financial data for helping the management in decision making but also uses such information which may not be capable of being measured in

monetary terms. Such information may be collected form special surveys, statistical compilations, engineering records, etc.

SCOPE OF MANAGEMENT ACCOUNTING

Management accounting is concerned with presentation of accounting information in the most useful way for the management. Its scope is, therefore, quite vast and includes within its fold almost all aspects of business operations. However, the following areas can rightly be identified as falling within the ambit of management accounting:

(i) Financial Accounting: Management accounting is mainly concerned with the rearrangement of the information provided by financial accounting. Hence, management cannot obtain full control and coordination of operations without a properly designed financial accounting system.

(ii) Cost Accounting: Standard costing, marginal costing, opportunity cost analysis, differential costing and other cost techniques play a useful role in operation and control of the business undertaking.

(iii) Revaluation Accounting: This is concerned with ensuring that capital is maintained intact in real terms and profit is calculated with this fact in mind.

(iv) Budgetary Control: This includes framing of budgets, comparison of actual performance with the budgeted performance, computation of variances, finding of their causes, etc**.**

(v) Inventory Control: It includes control over inventory from the time it is acquired till its final disposal.

(vi) Statistical Methods: Graphs, charts, pictorial presentation, index numbers and other statistical methods make the information more impressive and intelligible.

(vii) Interim Reporting: This includes preparation of monthly, quarterly, half- yearly income statements and the related reports, cash flow and funds flow statements, scrap reports, etc.

(viii) Taxation: This includes computation of income in accordance with the tax laws, filing of returns and making tax payments.

(ix) Office Services: This includes maintenance of proper data processing and other office management services, reporting on best use of mechanical and electronic devices.

(x) Internal Audit: Development of a suitable internal audit system for internal control.

(xi) Management Information System [M IS]: Management Accounting serves as a centre for collection and dissemination of information. MIS is an essential part of Management Accounting.

MANAGEMENT ACCOUNTING AND FINANCIAL ACCOUNTING

Financial accounting and management accounting are closely interrelated since management accounting is to a large extent rearrangement of the data provided by financial accounting. Moreover, all accounting is financial in the sense that all accounting systems are in monetary terms and management is responsible for the contents of the financial accounting statements. In spite of such a close relationship between the two, there are certain fundamental differences. These differences can be laid down as follows:

(i) Objectives: Financial accounting is designed to supply information in the form of profit and loss account and balance sheet to external parties like shareholders, creditors, banks, investors and Government. Information is supplied periodically and is usually of such type in which management

is not much interested. Management Accounting is designed principally for providing accounting information for internal use of the management. Thus, financial accounting is primarily an external reporting process while management accounting is primarily an internal reporting process.

(ii) Analyzing performance: Financial accounting portrays the position of business as a whole. The financial statements like income statement and balance sheet report on overall performance or statues of the business. On the other hand, management accounting directs its attention to the various divisions, departments of the business and reports about the profitability, performance, etc., of each of them.

(iii) Data used: Financial accounting is concerned with the monetary record of past events. It is a post-mortem analysis of past activity and, therefore, out the date for management action. Management accounting is accounting for future and, therefore, it supplies data both for present and future duly analyzed in detail in the 'management language' so that it becomes a base for management action.

(iv) Monetary measurement: In financial accounting only such economic events find place, which can be described in money. However, the management is equally interested in non-monetary economic events, viz., technical innovations, personnel in the organization, changes in the value of money, etc. These events affect management's decision and, therefore, management accounting cannot afford to ignore them.

(v) Periodicity of reporting: The period of reporting is much longer in financial accounting as compared to management accounting. The Income Statement and the Balance Sheet are usually prepared yearly or in some cases half-yearly. Management requires information at frequent intervals and, therefore, financial accounting fails to cater to the needs of the management. In management accounting there

is more emphasis on furnishing information quickly and at comparatively short intervals as per the requirements of the management.

(vi) Precision: There is less emphasis on precision in case of management accounting as compared to financial accounting since the information is meant for internal consumption.

(vii) Nature: Financial accounting is more objective while management accounting is more subjective. This is because management accounting is fundamentally based on judgment rather than on measurement.

(viii) Legal compulsion: Financial accounting has more or less become compulsory for every business on account of the legal provisions of one or the other Act. However, a business is free to install or not to install system of management accounting.

COST ACCOUNTING AND MANAGEMENT ACCOUNTING

Cost accounting is the process of accounting for costs. It embraces the accounting procedures relating to recording of all income and expenditure and the preparation of periodical statements and reports with the object of ascertaining and controlling costs. It is, thus, the formal mechanism by means of which the costs of products or services are ascertained and controlled. On the other hand, management accounting involves collecting, analyzing, interpreting and presenting all accounting information, which is useful to the management. It is closely associated with management control, which comprises planning, executing, measuring and evaluating the performance of an organization. Thus, management accounting draws heavily on cost data and other information derived from cost accounting.

Today cost accounting is generally indistinguishable from the so-called management accounting or internal accounting because it serves multiple purposes. However,

management accounting can be distinguished from cost accounting in one important respect.

Management accounting has a wider scope as compared to cost accounting. Cost accounting deals primarily with cost data while management accounting involves the considerations of both cost and revenue. Management accounting is an all inclusive accounting information system, which covers financial accounting, cost accounting, and all aspects of financial management. But it is not a substitute for other accounting functions. It involves a continuous process of reporting cost, financial and other relevant data in an analytical and informative way to management.

We should not be very much concerned with boundaries of cost accounting and management accounting since they are complementary in nature. In the absence of a suitable system of cost accounting, management accountant will not be in a position to have detailed cost information and his function is bound to lose significance. On the other hand, the management accountant cannot effectively use the cost data unless it has been reported to him in a meaningful and informative form.

OBJECTIVES OF MANAGEMENT ACCOUNTING

The primary objective is to enable the management to maximize profits or minimize losses. The fundamental objective of management accounting is to assist management in their functions.

The other main objectives are:

1. Planning and policy formulation: planning is one of the primary functions of management. It involves forecasting on the basis of available information.
2. Help in the interpretation process: The main object is to present financial information. The financial information must be presented in easily understandable manner.

3. Helps in decision making: Management accounting makes decision making process more modern and scientific by providing significant information relating to various alternatives.
4. Controlling: The actual results are compared with pre determined objectives. The management is able to control performance of each and every individual with the help of management accounting devices.
5. Reporting: This facilitates management to take proper and timely decisions. It presents the different alternative plans before the management in a comparative manner.
6. Motivating: Delegation increases the job satisfaction of employees and encourages them to look forward. so it serves as a motivational devise.
7. Helps in organizing: "return on capital employed" is one of the tools if management accounting. All these aspects are helpful in setting up effective and efficient organization.
8. Coordinating operations: It provides tools which are helpful in coordinating the activities of different sections.

DISTINCTION BETWEEN FINANCIAL ACCOUNTING AND MANAGEMENT ACCOUNTING

Financial accounting is concerned with the recording of day to day transactions of the business. Management accounting is to provide the quantitative as well as the qualitative to the management.

FINANCIAL ACCOUNTING	MANAGEMENT ACCOUNTING
Objective	
It gives the periodical reports to owners, creditors and	Its assist the internal management.

government.	
Nature	
It concerned with historical records.	It concerned with future plans and policies.
Subject matter	
It deals the business as a whole.	It deals only a limited coverage.
Flexibility	
Here standards are fixed by external parties.	Standards are fixed by management itself.
Legal compulsion	
Statutory for every business.	Adopted on voluntary basis.
Periodicity of reporting	
The period is longer	Its prepared when its required.
Precision	
Transactions are very accurate.	Sometimes approximate figures are used.
Unit of account	
Recognizes whole business.	Results of the divisions.
Coverage	
Covers entire range of business in monetary items.	Non monetary items are considered.
Publication and audit	
Its very essential for the use of public	It.s for management only.
Accounting principles	
It has principles and conventions	No such principles.

LIMITATIONS OF MANAGEMENT ACCOUNTING

Management accounting, being comparatively a new discipline, suffers from certain limitations, which limit its effectiveness. These limitations are as follows:

1. Limitations of basic records: Management accounting derives its information from financial accounting, cost accounting and other records. The strength and weakness of the management accounting, therefore, depends upon the strength and weakness of these basic records. In other words, their limitations are also the limitations of management accounting.

2. Persistent efforts. The conclusions draws by the management accountant are not executed automatically. He has to convince people at all levels. In other words, he must be an efficient salesman in selling his ideas.

3. Management accounting is only a tool: Management accounting cannot replace the management. Management accountant is only an adviser to the management. The decision regarding implementing his advice is to be taken by the management. There is always a temptation to take an easy course of arriving at decision by intuition rather than going by the advice of the management accountant.

4. Wide scope: Management accounting has a very wide scope incorporating many disciplines. It considers both monetary as well as non-monetary factors. This all brings inexactness and subjectivity in the conclusions obtained through it.

5. Top-heavy structure: The installation of management accounting system requires heavy costs on account of an elaborate organization and numerous rules and regulations. It can, therefore, be adopted only by big concerns.

6. Opposition to change: Management accounting

demands a break away from traditional accounting practices. It calls for a rearrangement of the personnel and their activities, which is generally not like by the people involved.

7. Evolutionary stage: Management accounting is still in its initial stage. It has, therefore, the same impediments as a new discipline will have, e.g., fluidity of concepts, raw techniques and imperfect analytical tools. This all creates doubt about the very utility of management accounting.

RECENT TRENDS IN MANAGEMENT REPORTING

Reporting is the process of communicating of information to those who need such information relevant for decision making. Some trends in reporting are:

1. Financial reporting using IFRS

International Financial Reporting Standards [IFRS] is recognized as global financial reporting standards. From 1st April 2011 Indian Accounting Standards were merged with the new IFRS.IFRS ensures more transparency, consistency and uniformity in accounting policies.

2. Interim Reporting

Interim Reporting is the reporting of financial results of any period that is shorter than a fiscal year. SEBI guidelines require companies listed on Stock Exchanges to publish their financial results on quarterly basis.

3. Segmental Reporting [AS-7]

It is the reporting of the operation segments of a company in the disclosure accompanying financial statements. AS 17 requires to report a segment if it has at least 10% of the revenue, 10% of the profit or loss, or 10% of the combined assets of the company.

4. Corporate Governance Report

The SEBI regulates governance practices of companies

listed on Stock Exchanges. These regulations are notified under clause 49 of the Listing Agreements of Stock Exchanges. It prescribes the standards to be followed in the governance of the companies.

5. Reporting of Information Relating to Group Companies [AS 21]

AS 21 requires companies to prepare consolidated Financial Statements. It is the presentation of subsidiary companies. The objective of consolidation is to show the performance of the group as if it were a single entity. The inter group transactions are eliminated in the consolidated Financial Statements.

MODULE II

ANALYSIS AND INTERPRETATION OF FINANCIAL STATEMENTS

Meaning of Financial Statements

Financial Statements or Final Accounts are the summaries of financial accounts prepared periodically by a business. These are the end products of Financial Accounting. It includes the following:-

1. Income statement or Profit and Loss Account
2. Statement of Retained Earnings or Statement of Changes in Owner's Equity
3. Balance sheet or Position Statement
4. Fund flow statement
5. Cash flow statement

1. Income statement or Profit and Loss Account

The **income statement** is one of the major financial statements used by accountants and business owners. The income statement is sometimes referred to as the profit and loss statement (P&L), statement of operations, or statement of income. It is prepared according to the matching concept of accounting principle. It is a summary of all revenue expenses and incomes relating to an accounting period. The result of income statement is either net profit or net loss

Income Statement of X Ltd. For the year ended 31/03/2012

Gross Sales	
Less : Returns	

Net Sales	
Less :Cost of Goods sold	
Gross Profit	
Less: Operating expenses	
Operating Profit	
Add: Non Operating incomes	
Less :Non operating expenses	
Net Profit before tax	
Less ; Income Tax	
Net Profit after Tax	

2. Statement of Retained Earnings or Profit and Loss Appropriation Account

It explains changes in owners equity over the accounting period and discloses all appropriations made out of net profits during the period and net surplus added to capital or owners equity.

Statement of Retained Earnings for the year ended……

Net profit for the year

Less: Appropriations made out of profits

Dividend paid/ Drawings

Transfer to General Reserve

Transfer to Dividend Equalization fund Transfer to Sinking Fund

Add: Balance of profit carried forward from previous year

Balance Carried forward to Balance Sheet

3. Balance Sheet or Position Statement

It is a list of all balances of accounts left after preparing the Income Statement together with the balance of the income statement. It discloses the financial position of the business on the last day of the accounting period. Balance sheet always satisfies the accounting equation "shareholders Equity + Long term debt = Fixed assets + Working Capital "

4. Fund flow statements

It is a statement which discloses the sources and applications of funds or working capital. It explains reasons for changes in working capital during an accounting year. It is also known as statement showing changes in financial position prepared on working capital basis.

Cash flow statement

5 Cash flow statement

A cash flow statement discloses the movement in liquid cash between two balance sheet dates. The term cash includes cash in hand, cash at bank and cash equivalents like Government Securities, Treasury Bills etc.

FINANCIAL ANALYSIS

The term financial analysis also known as analysis and interpretation of financial statements refers to the process of determining financial strengths and weaknesses of the firm by establishing strategic relationship between the items of the balance sheet and profit and loss account and other operative date. It involves compilation and study of financial and operating data and the preparation and interpretation of measuring devices such as ratios, trends and percentages. The analysis and interpretation of financial statements being the last step in accounting which involves the presentation of information that will aid business executives , investors and

creditors. Interpretation and analysis of financial statements involves identifying the users of the accounts, examining the information, analyzing and reporting in a format which will give information for economic decision making.

It is a process of evaluating the relationship between component parts of a financial between component parts of a financial statement to obtain a better understanding statement to obtain a better under standing of a firm s position and performance.

Types of Financial Analysis

On the basis of the materials used and The modus operandi of analysis

The modus operandi of analysis

On the basis of materials used:

1. External analysis.
2. Internal analysis.

1. External analysis.

This analysis is done by outsiders who do not have access to the detailed internal accounting records of the business firm. (Investors, creditors, government agencies, credit agencies and general public.)

2. Internal analysis.

This analysis is conducted by persons who have access to the internal accounting records of a business firm. (Executives and employees of the government agencies which have statutory powers vested in them.)

On the basis of modus operandi:

1. Horizontal analysis.

Comparison of financial data of a company for several

years. The figures for this type of analysis are presented horizontally over a number of columns. The figures of the various years are compared with standard or base year. This type of analysis is also called Dynamic analysis as it is based on the data from year to year rather than on data of any one year.

2. Vertical analysis

It refers to the study of relationship of the various items in the financial statements of one accounting period. In this type of analysis the figures from the financial statement of a year are compared with a base selected from the same year's statement. It is also known as Static Analysis.

METHODS OR DEVICES OF FINANCIAL ANALYSIS

The basic limitation of financial statements comprising the balance sheet and income statement do not give all the information related to financial operations and performance of a firm. In fact, they are not sufficient for future financial planning and to find out the current performance of the firm. Hence there should be a proper analysis of these financial statements which will aid in financial analysis. The important figures and amounts in the financial statements and their relationship is the main area being concentrated in financial analysis. Financial statement analysis is a process involved in evaluating the relations that exist between component parts of financial statements so that a firm's position and performance is better understood.

Financial analysis is the process of selection, relation and evaluation and interpretation.

Steps in financial analysis:

1. Selecting the information relevant to the decision under consideration from the total information contained in the financial statements.

2. Arranging the information in a way to highlight significant relationships.
3. Interpretation and drawing of inferences and conclusions.

Tools of Financial Analysis:

Various tools and techniques are used for financial analysis. The most widely used tool is the ratio analysis. Given are the important tools of financial analysis:

- Comparative Financial Statement analysis or Horizontal Analysis
- Common Size Statement analysis or Vertical Analysis and
- Trend Analysis
- Funds flow analysis
- Cash flow Analysis
- Ratio Analysis
- Cost Volume Profit Analysis

1. Comparative Financial Statement Analysis

Comparative Financial Statement analysis provides information to assess the direction of change in the business. Financial statements are presented as on a particular date for a particular period. The financial statement Balance Sheet indicates the financial position as at the end of an accounting period and the financial statement Income Statement shows the operating and non- operating results for a period. But financial managers and top management are also interested in knowing whether the business is moving in a favorable or an unfavorable direction. For this purpose, figures of current year have to be compared with those of the previous years. In analyzing this way, comparative financial statements are prepared.

Comparative Financial Statement Analysis is also called as Horizontal analysis. The Comparative Financial Statement provides information about two or more years' figures as well as any increase or decrease from the previous year's figure and it's percentage of increase or decrease. This kind of analysis helps in identifying the major improvements and weaknesses. For illustration, if net income of a particular year has decreased from its previous year, despite an increase in sales during the year, is a matter of serious concern. Comparative financial statement analysis in such situations helps to find out where costs have increased which has resulted in lower net income than the previous year.

The comparative statement may show:-

1. Absolute figures [rupee amounts]
2. Changes in absolute figures .i.e, increase or decrease in absolute figures.
3. Absolute data in terms of percentages
4. Increase pr decrease in terms of percentages.

The two comparative statements are

1. Comparative Balance Sheet
2. Comparative Income Statement

1. Comparative Balance Sheet

A *comparative balance sheet* presents side-by-side information about an entity's assets, liabilities, and shareholders' equity as of multiple points in time. For illustration, a comparative balance sheet could present the balance sheet as of the end of each year for the past three years. The changes in periodic balance sheet items reflect the conduct of a business.

While interpreting comparative Balance sheets the interpreter has to note the following points:-

1. The current or short term financial position can be noticed by seeing the working capital in both the years. The increase in working capital will mean improvement in current financial position of the business but an increase in current asset followed by an increase in current liabilities of the same amount will not show any improvement in short term financial position.

2. The long term financial position can be analyzed by studying changes in fixed assets, long term liabilities and capital. Fixed assets should be financed from long term sources.

3. To study the profitability of the concern increase or decrease in retained earnings, various resources and surplus etc will help Illustration 1. The following are the Balance sheets of a concern for the years 2010 and 2011. Prepare a comparative Balance sheet and study the financial position of the concern.

Liabilities	2010	2011	Assets	2010	2011
Equity share capital	3000	4000	Land and Building	4000	4000
General reserve	3000	3000	Plant and Machinery	6500	8000
Profit & Loss A/c	1400	2660	Furniture	600	800
12% Debentures	5000	4000	Stock	1500	1200
Sundry Creditors	630	720	Debtors	300	400
Bills Payable	80	150	Cash at Bank	150	50
			Cash in Hand	60	80
	13110	14530		13110	14530

Solution:-

Comparative Balance sheets as on 31st March 2010 and 2011

Particulars	31/03/2010	31/03/2011	Increase/ (Decrease)	Percentage Increase/ (Decrease)
LIABILITIES				
Equity Share Capital	3000	4000	1000	33.33
General Reserve	3000	3000	-	-
Profit and Loss A/c	1400	2660	1260	90.00
Share Holders fund[A]	**7400**	**9660**	**2260**	**30.54**
12% Debentures	5000	4000	(1000)	(20)
Sundry Creditors	630	720	90	14.28
Bills Payable	80	150	70	87.50
Borrowed Funds [B]	**5710**	**4870**	**(840)**	**(14.71)**
Total Funds [A+B]	13110	14530	1420	10.83
ASSETS				
FIXED ASSETS				
Land and Building	4000	4000	-	-
Plant and Machinery	6500	8000	1500	23.07

Furniture	600	800	200	33.33
Total Fixed Assets [a]	**11100**	**12800**	**1700**	**15.32**
CURRENT ASSETS				
Stock	1500	1200	(300)	(20)
Debtors	300	400	100	33.33
Cash at Bank	150	50	(100)	(66.67)
Cash in Hand	60	80	20	33.33
Total Current Assets[b]	**2010**	**1730**	**(280)**	**(13.93)**
Total Assets [a+b]	13110	14530	1420	10.83

Comments:

Fixed Assets have increased moderately by 15.32% during 2011. Current Assets have also increased similarly except Cash at Bank which actually decreased by 66.67%.Total borrowed funds decreased during the year while shareholders funds increased by over 30% mainly due to issue of new shares and accumulation of profits. Overall financial position has improved satisfactorily during 2012.

2. Comparative Income Statement

A comparative income statement will consist of two or three columns of amounts appearing to the right of the account titles or descriptions. For illustration, the income statement for the year 2012 will report the amounts for each of the years 2012, 2011, and 2010. Comparative income statement is the part of financial statement analysis. This statement is made for analysis of company's revenue position. For making this

statement, we take two years income statement. We compare it's all figures. By comparing its all figures, we find increase or decrease in its all items. After this, we calculate % of increase or decrease by taking previous year as base year. It means, we divide increase or decrease figure by previous year figure. Following is the illustration of comparative Income statement.

Illustration 2

From the following information, prepare a comparative income statement of ABC Limited

	2007	2008
Sales	120% of cost of goods sold	150% of Cost of goods sold
Cost of goods sold	20,00,000	25,00,000
Indirect Expenses	10 percentage of Gross Profit	
Rate of income tax	50 percentage of Net Profit before tax	

Comparative Income Statement of ABC Limited

Particulars	2007	2008	Absolute Change	Percentage Change
Sales	2400000	3750000	1350000	56.25
Less: Cost of goods sold	2000000	2500000	500000	25
Gross Profit	400000	1250000	850000	212.50
Less :Indirect Expenses	40000	125000	85000	212.50
Profit before tax	360000	1125000	765000	212.50
Less: Income Tax	180000	562500	382500	212.50
Net Profit after Tax	180000	562500	382500	212.50

2. Common Size Statements

Common size statements examine the proportion of a

single line item to the total statement. For balance sheets, all assets are expressed as a percentage of total assets, while liabilities and equity are expressed as a percentage of total liabilities and shareholders' equity. Income statement items are expressed as a percentage of revenues, i.e, sales.

Common size analysis is sometimes called structural analysis because it examines the internal structure of the financial statements. For balance sheets, examining the asset side of things reveals how the firm has invested its capital to produce revenues. Examination of liabilities and equity reveals how the assets have been financed.

Common size income statements reveal how well management is able to translate sales into earnings. Comparisons over a number of years are important, since no one year can capture the full dynamics of a firm. They are also known as analytical percentages. Common size statements are of two types:

1. Common size Balance sheet
2. Common size Income statement

1. Common Size Balance sheet

A statement in which balance sheet items are expressed as the ratio of each asset to total assets and the ratio of each liability is expressed as a ratio of total liabilities is called common-size balance sheet. The common size balance sheet can be used to compare companies of differing size.

A *common size balance sheet* presents not only the standard information contained in a balance sheet, but also a column that notes the same information as a percentage of the total assets (for asset line items) or as a percentage of total liabilities and shareholders' equity (for liability or shareholders' equity line items).

Illustration 3

Prepare a Common size Balance sheet of XYZ from the following data

	2010	2011
Cash	1,200	900
Accounts receivable	4,800	3,600
Inventory	3,600	2,700
Total fixed assets	6,200	5,500
Total Assets	15,800	12,700
Current liabilities		
Accounts payable	2,400	1,800
Accrued expenses	480	360
Short-term debt	800	600
Long-term debt	9,020	7,740
Shareholders' equity	**3,100**	**2,200**
Total liabilities and equity	**15,800**	**12,700**

Common size balance sheet of XYZ Limited

	2010	2011	2010	2011
Current assets				
Cash	1,200	900	7.6%	7.1%
Accounts receivable	4,800	3,600	30.4%	28.3%
Inventory	3,600	2,700	22.8%	21.3%
Total current assets	**9,600**	**7,200**	**60.8%**	**56.7%**

Total fixed assets	6,200	5,500	39.2%	43.3%
Total Assets	15,800	12,700	100.0%	100.0%
Current liabilities				
Accounts payable	2,400	1,800	15.2%	14.2%
Accrued expenses	480	360	3.0%	2.8%
Short-term debt	800	600	5.1%	4.7%
Total current liabilities	**3,680**	**2,760**	**23.3%**	**21.7%**
Long-term debt	9,020	7,740	57.1%	60.9%
Total liabilities	**12,700**	**10,500**	**80.4%**	**82.7%**
Shareholders' equity	**3,100**	**2,200**	**19.6%**	**17.3%**
Total liabilities and equity	**15,800**	**12,700**	**100.0%**	**100.0%**

2. Common size Income statement

The items in Income statement can be shown as percentages of sales to show the relation of each item to sales. A significant relationship can be established between items of income statement and volume of sales. The increase in sales will certainly increase selling expenses and not administrative financial expenses. In case the volume of sales increases to a considerable extent, administrative and financial expenses may go up. In case the sales are declining, the selling expenses should be reduced at once. So a relationship is established between sales and other items in income statement and this relationship is helpful in evaluating the operational activities of the enterprise.

Common-size income statement is the type of income statements in which each item is reported as a reference to the

revenue of the company. This method is executed by converting all the items of the income statements as a reference to percentage of the revenue. This is a method used for the analysis purpose.

Illustration 4

Following are the Income statements of a company for the years ending Dec.31,2010 and 2011

	2010 (Rs. In '000)	2011 (Rs. In '000)
Sales	500	700
Miscellaneous Income	20	15
	520	**715**
Expenses		
Cost of Sales	325	510
Office expenses	20	25
Selling expenses	30	45
Interest	25	30
Net Profit	120	105
	520	**715**

Solution:

Comparative Income statements for the year ending

Particulars	2006	%	2007	%
Sales	500	100	700	100
Less: Cost of Sales	325	65	510	72.86
Gross Profit	175	35	190	27.14
Operating Expenses				
Office Expenses	20	4	25	3.58
Selling Expenses	30	6	45	6.42

Total Operating Expenses	50	10	70	10
Operating Profit	125	25	120	17.14
Miscellaneous Income	20	4	15	2.14
Total Income	145	29	135	18.28
Less :Non operating Expenses	25	5	30	4.28
Net Profit	120	24	105	15

Trend analysis

Trend means a tendency. It discloses the changes in financial and operating data between specific periods and makes it possible for the analysis to form opinion as to whether favorable or unfavorable tendencies are reflected by the accounting data. In the analysis of financial information, trend analysis is the presentation of amounts as a percentage of a base year.

If we want to see the trend of a company's revenues, net income, and number of clients during the years 2006 through 2012, trend analysis will present 2006 as the base year and the 2006 amounts will be restated to be 100. The amounts for the years 2007 through 2012 will be presented as the percentages of the 2006 amounts. In other words, each year's amounts will be divided by the 2006 amounts and the resulting percentage will be presented.

Illustration 5

Calculate the trend percentages from the following figures of X ltd. Taking 2004 as the base and interpret them.

Year	Sales	Stock	Profit before Tax [Rs. In lacs]
2004	1881	709	321
2005	2340	781	435
2006	2655	816	458
2007	3021	944	527
2008	3768	1154	672

Solution

TREND PERCENTAGES
(Base Year 2004=100)

		Sales	Stock		Profit Before Tax	
Year	Amount in Lakhs	Trend Percentage	Amount in Lakhs	Trend Percentage	Amount in Lakhs	Trend Percentage
2004	1881	100	709	100	321	100
2005	2340	124	781	110	435	136
2006	2655	141	816	115	458	143
2007	3021	161	944	133	527	164
2008	3768	200	1154	162	672	209

RATIO ANALYSIS

The ratio analysis is one of the powerful tools of financial analysis. It is the process of establishing and interpreting various ratios. It is with the help of ratios that the financial statements can be analyzed more clearly ad decisions made from such analysis.

Meaning of Ratio

A ratio is a simple arithmetical expression of the relationship of one number to another. It may be defined as the indicated quotient of two mathematical expressions. According to Accountant's Handbook by Wixon , Kell and Bedford, a ratio is an expression of the quantitative relationship between two numbers. In simple language ratio is one number expressed in terms of another and can be worked out by dividing one number into the other. A ratio can be expressed in the form of a fraction, number of times, percentage or in proportion.

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. It is not an end in itself and is only a means of better understanding of financial strengths and weakness of a firm. A ratio will be meaningful only when it is analysed and interpreted. The following are the four steps involved in ratio analysis.

1. Selection of relevant data from the financial statements depending upon the objective of the analysis.
2. Solution of appropriate ratios from the above data
3. Comparison of the calculated ratios with the ratios of the same firm in the past, or the ratios developed from

projected financial statements or the ratios of some other firms or the comparison with ratios of the industry to which the firm belongs.

4. Interpretation of the ratios.

Ratio analysis will be meaningful only when the analyst will consider the following factors while interpreting ratios:

1. Accuracy of financial statements
2. Clear about the objective or Purpose of analysis
3. Selection of appropriate ratios that suits the need of the analyst
4. Use of appropriate standards while analyzing ratios
5. Calibre of the analyst
6. Analyst should understand that the ratios provide only a base

Use and Significance of Ratio analysis

Mainly the persons interested in the analysis of the financial statements can be grouped under three heads (i) Owners or investors, (ii) Creditors and (iii) Financial executives. The importance of analysis varies materially with the purpose for which it is calculated. The primary information which seeks to be obtained from these statements differs considerable reflecting the purpose that the statement is to serve.

The significance of these ratios varies for these three groups as their purpose differs widely. These investors are mainly concerned with the earning capacity of the company whereas the creditors including bankers and financial institutions are interesting in knowing the ability of enterprise to meet its financial obligations timely. The financial executives are concerned with evolving analytical tools that

will measure and compare costs, efficiency, liquidity and profitability with a view to making intelligentdecisions.

{a} Managerial uses of Ratio analysis

1. Helps in decision making
2. Helps in financial forecasting and planning
3. Helps in communicating
4. Helps in co-ordination
5. Helps in control

{b}Utility to Share holders/ Investors

An investor is particularly interested to know about the Long term financial position and profitability position. 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.

{c}Utility to 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.

{d}utility to the Employees

The employees are also interested in the financial position of the concern especially profitability because their wage increases and amount of fringe benefits are related to the volume of profits earned by the concern.

{e}Utility to government

Government is interested to know the 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. Ratio analysis also serves this purpose.

{f}Tax audit requirements

Clause 32 of the Income tax Act requires that the business should calculate Gross Profit/turnover, Net Profit/turnover , stock in trade/ turnover and Material consumed/finished goods produced ratios.

LIMITATIONS OF RATIO ANALYSIS

The ratio analysis is one of the most powerful tools of financial management. Though ratios are simple to calculate and easy to understand, they suffer from some serious limitations.

1. 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 than help him in making any meaningful conclusion.
2. Lack of adequate standards. There are no well accepted standards or rules of thumb for all ratios which can be accepted as norms. It renders interpretation of the ratios difficult.
3. Inherent limitations of accounting. Like financial statements, ratios also suffer from the inherent weakness of accounting records such as their historical nature. Ratios of the past are not necessarily true indicators of the future.
4. Change of accounting procedure. Change in accounting procedure by a firm often makes ratio analysis misleading. E.g., a change in the valuation methods of inventories, from FIFO to LIFO increases the cost of sales and reduces considerably the value of closing stocks which makes stock turnover ratio to be lucrative

and an unfavorable gross profit ratio.

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 decision from ratios calculated from such financial statements. But it may be very difficult for an outsider to know about the window dressing made by the firm.

6. Personal bias Ratio 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. Incomparable. Not only industries differ in their nature but also the firms of the similar business widely differ in their size and accounting procedures etc. It makes comparison of ratios difficult and misleading. Moreover, comparisons are made difficult due to differences in definitions of various financial terms used in ratio analysis.

8. Absolute Figures Distortive. Ratios devoid of absolute figures may prove distortive as ratio analysis is primarily a quantitative analysis and not a qualitative analysis

9. Price level changes. While making ratio analysis, no consideration is made to the changes in price levels and this makes the interpretation of ratios invalid.

10. Ratios no substitutes. Ratio analysis is merely a tool of financial statements. Hence, ratios become useless if separated from the statements from which they are computed.

CLASSIFICATION OF RATIOS

The use of ratio analysis is not confined to financial

manger only. There are different parties interested in the ratio analysis for knowing the financial position of the firm for different purposes. In view of various users of ratios, there are many types of ratios which be calculated from the information given in the financial statements. The particular purpose of the use determines the particular ratios that might be used for financial analyses

Ratios can be classified on the basis of function, significant and statement of ratios or traditional classification of ratios.

On the basis of the functions performed ratios can be classified in to the following types :-

FUNCTIONAL CLASSIFICATION OF RATIOS

LIQUIDITY RATIOS	LONG TERM SOLVENCY AND LEVERAGE	ACTIVITY RATIOS OR ASSET MANAGEMENT RATIOS	PROFITABILITY RATIOS
[A]1.Current Ratio	Debt/Equity Ratio	Inventory Turnover Ratio	**In relation to Sales** 1.Gross Profit Ratio
2.Liquid(Acid) Ratio or Quick Ratio	Debt to total capital ratio	Debtors Turnover Ratio	2.Operating Ratio
3.Absolute Liquid or Cash ratio	Interest coverage Ratio	Fixed Assets turnover Ratio	3.Operating Profit Ratio
[B]1.Debtors turnover Ratio	Cash flow/Debt ratio	Total assets turnover ratio	4.Net profit Ratio
2.Creditors	Capital	Working capital	5.Expense Ratio

Turnover ratio	Gearing Ratio	Turnover ratio	
3.Inventory turnover ratio		Payables turnover ratio	**In relation to Investments** 1.Return on Investments
		Capital employed turnover ratio	2.Return on capital
			3.Return on Equity Capital
			4.Return on Total Resources
			5.Earnings Per share
			6.Price Earning ratio

ANALYSIS OF SHORT-TERM FINANCIAL POSITION OR TEST OF LIQUIDITY

The short term creditors of a company like suppliers of goods of credit and commercial banks providing short-term loans are primarily interested in knowing the company's ability to meet its current or short term obligations as and when these become due. The short term obligations of a firm can be met only when there are sufficient liquid assets. Therefore, a firm must ensure that it does not suffer from lack of liquidity or the capacity to pay its current obligations. Even a very high degree of liquidity is not good for the firm because such a situation represents unnecessarily excessive funds of the firm being tied up in current assets. Two types of ratios can be calculated for measuring short term financial position or short term solvency of the firm.

A. Liquidity Ratios B. Current assets movement or Efficiency Ratios

A. Liquidity Ratios

Liquidity refers to the ability of a concern to meet its current obligations as and when these become due. The short term obligations are met by realizing amounts from current, floating or circulating assets. The current assets should either be liquid or near liquidity. These should be convertible into cash for paying obligations of short term nature. The sufficiency or insufficiency of current assets should be assessed by comparing them with short term (current) Liabilities. If current assets can pay off the current liabilities, then liquidity position will be satisfactory. The important liquidity ratios include

1. Current ratio

Current ratio may be defined as the relationship between current assets and current liabilities. This ratio, also known as working capital ratio, is a measure of general liquidity and is most widely used to make the analysis of a short term financial position or liquidity of the firm. It is calculated by dividing the total of current assets by total of the current liabilities.

$$\text{Current ratio} = \frac{\textit{Current Assets}}{\textit{Current Liabilites}}$$

Current assets include cash and those assets which can be converted into cash within a short period of time, generally, one year, such as marketable securities, bills receivables, sundry debtors, inventories, work-in-progress etc. Prepaid expenses should also be included in current assets because they represent payments made in advance which will not have to be paid in ear future. Current liabilities are those obligations which are payable within a short period of generally one year

and include outstanding expenses, bills payable, sundry creditors, accrued expenses, short term advances, income tax payable, dividend payable, etc. Bank overdraft should also generally be included in current liabilities because it represents short term arrangement with the bank and is payable within a short period. But where bank overdraft is a permanent or long term arrangement with the bank, it should be excluded.

A relatively high current ratio is an indication that the firm is liquid and has the ability to pay its current obligations in time as and when they become due. An increase in current ratio represents the improvement in the liquidity position of the firm while a decrease in the current ratio indicates that there has been deterioration in the liquidity position of the firm. As a convention a minimum of 2: 1 is considered as the standard current ratio of a firm.

Illustration 1: On December 31, 2010 Company B had total asset of 150,000, equity of 75,000, non-current assets of 50,000 and non-current liabilities of 0,000. Calculate the current ratio.

Solution

To calculate current ratio, we need to calculate current assets and current liabilities first:

Current Assets = Total Asset − Non-Current Assets =150,000 − 50,000 = 100,000 Total Liabilities = Total Assets − Total Equity = 150,000 − 75,000 =75,000 Current Liabilities = 75,000 − 50,000 = 25,000

Current Ratio = 100,000 ÷ 25,000 = 4

Illustration 2

X Ltd. has a current ratio of 3.5:1 and quick ratio of 2:1. If excess of current assets over quick assets represented by stock is Rs. 1, 50,000, calculate current assets and current

liabilities.

Solution

Let Current Liabilities = x

Current Assets = 3.5x

And Quick Assets = 2x

Stock = Current Assets – Quick Assets

1,50,000 = 3.5x – 2x

1,50,000 = 1.5x

x = Rs.1,00,000

Current Assets = 3.5x = 3.5 × 1,00,000 = Rs. 3,50,000.

2. Quick Ratio

Quick ratio, also known as Acid Test Ratio or Liquid Ratio, is a more rigorous test of liquidity than the current ratio. The term liquidity refers to the ability of a firm to pay its short term obligations as and when they become due. Quick ratio may be defined as the relationship between quick/liquid 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 liquid assets include bills receivable, sundry debtors, marketable securities and short term or temporary investments. Prepaid expenses and Inventories cannot be termed as liquid asset because they cannot be converted into cash without loss of value. A ratio of 1:1 is considered as satisfactory quick ratio.

$$\text{Quick Ratio} = \frac{\textit{Quick/Liquid Assets}}{\textit{Current Liabilites}}$$

Illustration 3

Calculate the current ratio from the following information:

Working capital Rs. 9,60,000; Total debts Rs.20,80,000; Long-term Liabilities Rs.16,00,000; Stock Rs. 4,00,000; prepaid expenses Rs. 80,000.

Solution

Current Liabilities = Total debt- Long term debt

= 20,80,000 – 16,00,000

= 4,80,000

Working capital = Current Assets – Current liability

9,60,000 = Current Assets – 4,80,000

Current Assets = 14,40,000

Quick Assets = Current Assets – (stock + prepaid expenses)

= 14,40,000 – (4,00,000 + 80,000)

= 9,60,000

Current ratio = Current Assets / Current liabilities

= 14,40,000/4,80,000

= 3:1

Quick ratio = Quick Assets / Current liabilities

= 9,60,000/4,80,000

= 2:1

Illustration 4

Calculate quick ratio from the information

Stock Rs .60,000 ; Cash 40,000; Debtors 40,000; Creditors 50,000

Bills Receivable 20,000; Bills Payable 30,000; Advance Tax 4,000

Bank Overdraft 4,000; Debentures Rs. 2,00,000; Accrued interest Rs. 4,000.

Solution

Quick Assets	=	Current Assets – Stock – Advance Tax
Quick Assets	=	Rs. 1,68,000 – (Rs. 60,000 + Rs. 4,000) = Rs. 1,04,000
Current Liabilities	=	Rs. 84,000
Quick ratio	=	Quick Assets / Current Liabilities
	=	Rs. 1,04,000 : Rs. 84,000
	=	1.23:1

3. Absolute Liquid Ratio or Cash Ratio

Absolute Liquid Ratio is calculated by dividing Absolute Liquid assets by current Liabilities .Absolute Liquid Assets include cash in hand and at bank and marketable securities or temporary investments. The acceptable norm for this ratio is 50% or 0.5 :1 or 1 :2.

Illustration 5

Calculate Absolute Liquid ratio from the following information

Goodwill	50000	Cash at Bank	30000
Plant and machinery	400000	Inventories	75000
Trade investments	200000	Bank overdraft	70000
Marketable securities	150000	Sundry creditors	60000
Bills receivable	40000	Bills payable	90000
Cash in hand	45000	Outstanding expenses	30000

Solution

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilites}}$$

Absolute Liquid assets = Mark. Securities+ Cash in hand and at Bank

= 150000+45000+30000 = 225000

Current Liabilities = BOD + Creditors + B/P+O/S Expenses

= 70000+60000+90000+30000 = 250000

$$\text{Absolute Liquid Ratio} = \frac{\text{Absolute Liquid Assets}}{\text{Current Liabilites}} = \frac{225000}{250000} = 0.9$$

Practice Problems

1. Find out current ratio.

Gross Debtors Rs. 20,000; Provision for Bad debts Rs. 3,000; Bills receivable Rs. 13,000; Stock twice of net debtors; Cash in hand Rs. 16,000; Advance to suppliers Rs. 15,000; Creditors for goods Rs. 27,000; Bills payable Rs. 8,000; Outstanding expenses Rs. 15,000; Prepaid expenses Rs. 5,000 Investment (Long term) Rs. 12,000;

[Ans. Current Ratio 2:1]

2. Find out current liabilities when current ratio is 2.5:1 and current assets are Rs. 75,000.

[Ans. Current Liabilities Rs. 30,000]

3. The ratio of current assets (Rs. 6, 00,000) to current liabilities is 1.5:1. The accountant of this firm is interested in maintaining a current ratio of 2:1 by paying some part of current liabilities. You are required to suggest him the amount of current liabilities which must be paid for this purpose.

[Ans. Rs. 2, 00,000]

4. A firm had current liabilities of Rs. 90,000. It then acquired stock-in-trade at a cost of Rs. 10,000 on credit. After this acquisition the current ratio was 2:1. Determine the size of current assets and working capital after and before the stock was acquired.

[Ans. C.A. Rs. 2,00,000, Rs. 1,90,000; W.C. Rs. 1,00,000, Rs.1,00,000]

5. A Ltd. company has a current ratio of 3.5:1 and acid test ratio of 2:1. If the inventory is Rs. 30,000, find out its total current assets and total current liabilities.

[Ans. Current Assets Rs. 70,000; Current Liabilities Rs.20,000]

6. Given: Current ratio 2.8; Acid test ratio 1.5; Working capital = Rs.1,62,000.

Find out: Current assets;, Current liabilities; Liquid Assets.

[Ans. A) Rs. 2,52,000; (b) Rs. 90,000; (c) 1,35,000]

ANALYSIS OF SOLVENCY – SOLVENCY RATIOS

The term solvency refers to the ability of a firm to meet all liabilities in full in the event of liquidation. It is the long-term liquidity of the firm. The Balance sheet discloses the long term financial position in the form of sources and applications of long term funds in the business. The important measures of solvency and analysis of capital structure are

1. Debt-Equity Ratio

A firm uses both equity and debt for financing its assets. The ratio of these two sources of funds is turned as Debt Equity Ratio.

$$\text{Debt Equity Ratio} = \frac{\textit{Total borrowed funds}}{\textit{Owned funds}}$$

Total Borrowed funds include both long term and short term

borrowings or current liabilities. It is the aggregate of bonds, debentures, bank loans and all the current liabilities.

Owned funds include equity capital, preference capital and all items of reserve

and surplus.

The standard norm of Debt-Equity ratio is 2:1. It indicates that total borrowed fund can be two times of equity or owned funds. The intention is to maximize the return of equity share holders by taking, advantage of cheap borrowed funds.

2. Capital Gearing Ratio

This ratio indicates the relationship between fixed interest bearing securities and equity shareholders funds.

$$\text{Capital Gearing Ratio} = \frac{\text{Fixed Income bearing securites}}{\text{Equity Shareholders funds}}$$

Fixed income bearing securities are Debentures, Bonds and Preference shares.

Equity shareholders funds include Equity share capital and Reserves and Surpluses.

A firm is said to be highly geared when it uses more of fixed income bearing securities like bonds, debentures and preference share capital.. It indicates the risk perception of investors is high. If the ratio is less than one, the firm is said to be low geared. The position of creditors is more safe when the firm is low geared.

3. Propreitory ratio/ Equity Ratio

It is the ratio of shareholders funds to Total Assets of the firm. It indicates the relative contribution of owners or shareholders in financing total assets. This ratio is also called net worth to Total Assets Ratio. This ratio establishes the

relationship between shareholder's funds to total assets of the firm.

$$\text{Proprietary ratio/ Equity Ratio} \frac{Shareholders funds}{Total\ Assets}$$

Where shareholders funds = Equity share capital+ preference share capital+ undistributed profits+ reserves and surpluses

Total assets = Total resources of the concern

4. Solvency Ratio

It is the ratio of total borrowed funds to total assets (also equal to total liabilities). It indicates the relative contribution of outsiders in financing the assets of the firm. It is calculated as :-

$$\text{Solvency ratio} = \frac{Total\ Borrowed funds}{Total\ Assets}$$

Or Solvency Ratio = 100- Equity Ratio

A high ratio indicates that the firm is depending more on outsiders' funds in financing assets. The position of creditors is not safe in the event of winding up.

5. Ratio of Fixed assets to Net worth.

The ratio shows the relationship between net fixed assets and Net worth

$$\text{i.e, Ratio of Fixed assets to Net worth} = \frac{Net\ Fixed\ Assets}{Net\ Worth}$$

6. Funded Debt to capitalization

This ratio indicates the contribution of owners in financing fixed assets. If the ratio is less than one, it is considered as ideal. It means that the whole of fixed assets and a part of working capital are financed from shareholders funds. If the ratio is more than one, it means that a part of the

fixed assets is financed using borrowed funds.

$$\text{Funded Debt to capitalization} = \frac{\text{Long term debt}}{\text{Total Assets or Total Liabilites}}$$

Illustration 6

The following Balance sheets of ABC Limited is given. Calculate.

(a) Current Ratio

(b) Acid Test Ratio

(c) Debt- Equity Ratio

(d) Proprietary ratio

(e) Capital gearing ratio

(f) Fixed assets to shareholders Funds Ratio

Balance sheet as at 31st March 2012

Liabilities	Amount	Assets	Amount
Equity share capital	150000	Fixed Assets	150000
5% Preference share capital	20000	Inventory	50000
General Reserve	25000	debtors	25000
Profit and Loss A/c	20000	cash	90000
6% Debentures	55000		
Creditors	45000		
	315000		315000

Solution

(a) Current ratio = current assets / current liabilities = 165000/45000 = 3.67 :1

Current assets = inventory + debtors + cash = 50000 + 25000 + 90000 = 165000

b. Liquid ratio = liquid liabilities / current liabilities

Liquid assets -= current assets – inventory = 165000-50000 = 115000 Liquid ratio = 165000/45000 = 2.56 :1

c. debt equity ratio = outsiders funds / shareholders funds

Outsiders funds = debentures + creditors = 55000+45000 = 100000

Shareholders' funds = equity capital + preference capital + reserves+ profit and loss account

= 150000+20000+25000+20000 = 215000

Debt equity ratio = 100000/215000 = 0.46 :1 [d]Proprietary ratio = Shareholder's Funds / Total Assets Shareholder's Funds = 215000 / 315000 = 0.68 :1

$$\text{[e] Capital gearing ratio} = \frac{\textit{Fixed Income bearing Securities}}{\textit{Equity Shareholders fund}}$$

= 75000/195000 = 0.38 :1

$$\text{[f] Fixed assets to shareholders funds} = \frac{\textit{Fixed Assets}}{\textit{Shareholders fund}}$$

= 150000/215000 = 0.69 :1

Activity Ratios

Activity ratios, sometimes referred to as operating ratios or management ratios, measure the efficiency with which a business uses its assets, such as inventories, accounts receivable, and fixed (or capital) assets. The more commonly used operating ratios are the average collection period, the inventory turnover, the fixed assets turnover, and the total assets turnover.

These ratios indicate the efficiency of management in the use of resources, both short term and long term. The overall

performance of a company is evaluated on the basis of its ability to make sales using minimum resources. Turnover ratios reflect the speed at which assets are utilized in effecting sales. A higher turnover ratio means efficient use of funds by management in generating more sales. The important turnover ratios are :

1. Inventory turnover ratio
2. Debtors turnover ratio
3. Creditors turnover ratio
4. Total assets turnover ratio
5. fixed assets turnover ratio
6. Working capital turnover ratio

1. Inventory turnover ratio

Inventory Turnover: This ratio measures the number of times a company's investment in inventory is turned over during a given year. The higher the turnover ratio, the better, since a company with a high turnover requires a smaller investment in inventory than one producing the same level of sales with a low turnover rate. Company management has to be sure, however, to keep inventory at a level that is just right in order not to miss sales.

This ratio indicates the efficiency in turning over inventory and can be compared with the experience of other companies in the same industry. It also provides some indication as to the adequacy of a company's inventory for the volume of business being handled. If a company has an inventory turnover rate that is above the industry average, it means that a better balance is being maintained between inventory and cost of goods sold. As a result, there will be less risk for the business of being caught with top-heavy inventory in the event of a decline in the price of raw materials

or finished products.

$$\frac{\text{Cost of goods sold}}{\text{Inventory}}$$

Some companies calculate the inventory turnover by using sales instead of cost of goods sold as the numerator. This may be less appropriate because sales include a profit markup which is absent from inventory.

Inventory includes all types of stocks like raw materials, work in progress, finished goods, consumable stores, spares etc. Inventory turnover ratio is the relationship of cost of goods sold to average inventory. It is computed as:

Inventory turnover ratio = cost of goods sold/ average inventory

Cost of goods sold = net sales – gross profit

Cost of goods sold = opening stock +net purchases + direct expenses – closing stock

Average inventory = opening inventory +closing inventory/2

DEBTORS TURNOVER RATIO

A 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 following a liberal credit policy.

The effect of a liberal credit policy may result in tying up substantial funds of a firm in the form of trade debtors (or receivables). Trade debtors are expected to be converted into cash within a short period of time and are included in current assets. Hence, the liquidity position of concern to pay its short term obligations in time depends upon the quality of its trade debtors.

Debtors turnover ratio or **accounts receivable turnover**

ratio indicates the velocity of debt collection of a firm. In simple words it indicates the number of times average debtors (receivable) are turned over during a year.

Debtors Turnover Ratio = Net Credit Sales / Average Trade Debtors

The two basic components of accounts receivable turnover ratio are net credit annual sales and average trade debtors. The trade debtors for the purpose of this ratio include the amount of Trade Debtors & Bills Receivables. The average receivables are found by adding the opening receivables and closing balance of receivables and dividing the total by two. It should be noted that provision for bad and doubtful debts should not be deducted since this may give an impression that some amount of receivables has been collected. But when the information about opening and closing balances of trade debtors and credit sales is not available, then the debtors turnover ratio can be calculated by dividing the total sales by the balance of debtors (inclusive of bills receivables) given. and formula can be written as follows.

Debtors Turnover Ratio = Total Sales / Debtors

Accounts receivable turnover ratio or debtors turnover ratio indicates the number of times the debtors are turned over a year. The higher the value of debtors turnover the more efficient is the management of debtors or more liquid the debtors are. Similarly, low debtors turnover ratio implies inefficient management of debtors or less liquid debtors. It is the reliable measure of the time of cash flow from credit sales. There is no rule of thumb which may be used as a norm to interpret the ratio as it may be different from firm to firm.

Illustration 7

Credit sales 25,000; Return inwards 1,000; Debtors 3,000; Bills Receivables 1,000.

Calculate debtors turnover ratio

Debtors Turnover Ratio = Net Credit Sales / Average Trade Debtors

= 24,000 / 4,000

= 6 Times

Average Collection Period Ratio:

Average Collection Period. This ratio measures how long a firm's average sales remains in the hands of its customers. A longer collection period automatically creates a larger investment in assets.

The average collection period is calculated in two steps. The first step is calculating the average daily sales, which is done by dividing the total annual net sales by 365 days. The second step is dividing the average daily sales into accounts receivable.

$$\frac{\text{Accounts receivable}}{\text{average daily sales}}$$

The Debtors/Receivable Turnover ratio when calculated in terms of days is known as Average Collection Period or Debtors Collection Period Ratio.

The average collection period ratio represents the average number of days for which a firm has to wait before its debtors are converted into cash.

Following formula is used to calculate average collection period:

(Trade Debtors × No. of Working Days) / Net Credit Sales

Illustration 8

Credit sales 25,000; Return inwards 1,000; Debtors 3,000; Bills Receivables 1,000.

Calculate average collection period.

Solution:

Average collection period can be calculated as follows:

Average Collection Period = (Trade Debtors × No. of Working Days) / Net Credit Sales

4,000 × 360 / 24,000 = 60 Days

Debtors and bills receivables are added.

For calculating this ratio usually the number of working days in a year is assumed to be 360.

This ratio measures the quality of debtors. A short collection period implies prompt payment by debtors. It reduces the chances of bad debts. Similarly, a longer collection period implies too liberal and inefficient credit collection performance. It is difficult to provide a standard collection period of debtors.

Creditors / Accounts Payable Turnover Ratio:

This ratio is similar to the debtor's turnover ratio. It compares creditors with the total credit purchases.

It signifies the credit period enjoyed by the firm in paying creditors. Accounts payable include both sundry creditors and bills payable. Same as debtor's turnover ratio, **creditors turnover ratio** can be calculated in two forms, creditors turnover ratio and average payment period.

Following formula is used to calculate creditors turnover ratio:

Creditors Turnover Ratio = Credit Purchase / Average Trade Creditors

Average payment period ratio gives the average credit period enjoyed from the creditors. It can be calculated using the following formula:

Average Payment Period = Trade Creditors / Average Daily Credit Purchase Average Daily Credit Purchase= Credit Purchase / No. of working days in a year Or

Average Payment Period = (Trade Creditors × No. of Working Days) / Net Credit Purchase

(In case information about credit purchase is not available total purchases may be assumed to be credit purchase.)

The average payment period ratio represents the number of days by the firm to pay its creditors. A high creditor's turnover ratio or a lower credit period ratio signifies that the creditors are being paid promptly. This situation enhances the credit worthiness of the company. However a very favorable ratio to this effect also shows that the business is not taking the full advantage of credit facilities allowed by the creditors.

Fixed Assets Turnover: The fixed (or capital) assets turnover ratio measures how intensively a firm's fixed assets such as land, buildings, and equipment are used to generate sales. A low fixed assets turnover implies that a firm has too much investment in fixed assets relative to sales; it is basically a measure of productivity

$$\frac{Sales}{Fixed\ Assets}$$

Fixed assets turnover ratio is also known as sales to fixed assets ratio. This ratio measures the efficiency and profit earning capacity of the concern.

Higher the ratio, greater is the intensive utilization of fixed assets. Lower ratio means under-utilization of fixed assets. The ratio is calculated by using following formula:

Fixed assets turnover ratio turnover ratio is also calculated by the following formula:

Fixed Assets Turnover Ratio = Cost of Sales / Net Fixed Asset

If a business shows a weakness in this ratio, its plant may be operating below capacity and the manage should be looking at the possibility of selling the less productive assets.

Total Assets Turnover. This ratio takes into account both net fixed asset; and current assets. It also gives an indication of the efficiency with which assets are used; a low ratio means that excessive assets are employed to generate sales and/or that some assets (fixed or current assets) should be liquidated or reduced.

$$\frac{Sales}{Total\ Assets}$$

Working Capital Turnover Ratio:

Working capital turnover ratio indicates the velocity of the utilization of net working capital.

This ratio represents the number of times the working capital is turned over in the course of year and is calculated as follows:

Following formula is used to calculate working capital turnover ratio

Working Capital Turnover Ratio = Cost of Sales /

Net Working Capital

The two components of the ratio are cost of sales and the net working capital. If the information about cost of sales is not available the figure of sales may be taken as the numerator. Net working capital is found by deduction from the total of the current assets the total of the current liabilities.

Illustration 9

Cash	10,000
Bills Receivables	5,000
Sundry Debtors	25,000
Stock	20,000
Sundry Creditors	30,000
Cost of sales	150,000

Calculate working capital turnover ratio

Solution:-

Working Capital Turnover Ratio = Cost of Sales / Net Working Capital

Current Assets = 10,000 + 5,000 + 25,000 + 20,000 = 60,000

Current Liabilities = 30,000

Net Working Capital = Current assets – Current liabilities

= 60,000 − 30,000 = 30,000

So the working Capital Turnover Ratio = 150,000 / 30,000

= **5 times**

The working capital turnover ratio measures the efficiency with which the working capital is being used by a firm. A high ratio indicates efficient utilization of working capital and a low ratio indicates otherwise. But a very high working capital turnover ratio may also mean lack of sufficient working capital which is not a good situation.

PROFITABILITY RATIOS

Profitability ratios may be classified in to two types :

[a] operating profitability ratios

[b]overall profitability ratios

a. operating profitability ratios

In this type of analysis profit is related to the volume of operation or sales. The important measures of operating profitability are :

1. Gross profit ratio
2. Operating profit ratio
3. Operating ratio
4. Net profit ratio

1. Gross Profit Ratio (GP Ratio)::

Gross profit ratio (GP ratio) is the ratio of **gross profit to net sales** expressed as a percentage. It expresses the relationship between gross profit and sales.

The basic components for the ***solution of gross profit ratio*** are gross profit and net sales. Net sales mean those sales minus sales returns. Gross profit would be the difference between net sales and cost of goods sold. Cost of goods sold in the case of a trading concern would be equal to opening stock plus purchases, minus closing stock plus all direct expenses relating to purchases. In the case of manufacturing concern, it would be equal to the sum of the cost of raw materials, wages, direct expenses and all manufacturing expenses. In other words, generally the expenses charged to profit and loss account or operating expenses are excluded from the solution of cost of goods sold.

Following formula is used to calculate gross profit ratios:

[Gross Profit Ratio = (Gross profit / Net sales) × 100]

Illustration 10

Total sales = 520,000; Sales returns = 20,000; Cost of goods sold 400,000

Required: Calculate gross profit ratio.

Solution :

Gross profit = [(520,000 – 20,000) – 400,000]

= 100,000

Gross Profit Ratio = (100,000 / 500,000) × 100

= 20%

Gross profit ratio may be indicated to what extent the selling prices of goods per unit may be reduced without incurring losses on operations. It reflects efficiency with which a firm produces its products. As the gross profit is found by deducting cost of goods sold from net sales, higher the gross profit better it is. There is no standard GP ratio for evaluation. It may vary from business to business. However, the gross profit earned should be sufficient to recover all operating expenses and to build up reserves after paying all fixed interest charges and dividends.

Causes/reasons of increase or decrease in gross profit ratio:

It should be observed that an increase in the GP ratio may be due to the following factors.

1. Increase in the selling price of goods sold without any corresponding increase in the cost of goods sold.
2. Decrease in cost of goods sold without corresponding decrease in selling price.
3. Omission of purchase invoices from accounts.
4. Under valuation of opening stock or overvaluation of closing stock.

On the other hand, the decrease in the gross profit ratio may be due to the following factors.

1. Decrease in the selling price of goods, without

corresponding decrease in the cost of goods sold.

2. Increase in the cost of goods sold without any increase in selling price.
3. Unfavorable purchasing or markup policies.
4. Inability of management to improve sales volume, or omission of sales.
5. Over valuation of opening stock or under valuation of closing stock

Hence, an analysis of ***gross profit margin*** should be carried out in the light of the information relating to purchasing, mark-ups and markdowns, credit and collections as well as merchandising policies.

Net Profit Ratio (NP Ratio):

Net profit ratio is the ratio of net profit (after taxes) to net sales. It is expressed as percentage.

The two basic components of the ***net profit ratio*** are the net profit and sales. The net profits are obtained after deducting income-tax and, generally, non- operating expenses and incomes are excluded from the net profits for calculating this ratio. Thus, incomes such as interest on investments outside the business, profit on sales of fixed assets and losses on sales of fixed assets, etc are excluded.

Net Profit Ratio = (Net profit / Net sales) × 100

Illustration 11

Total sales = 520,000; Sales returns = 20,000;

Net profit 40,000

Calculate net profit ratio.

Solution:

Net sales = (520,000 – 20,000) = 500,000

Net Profit Ratio = [(40,000 / 500,000) × 100]

= 8%

NP ratio is used to measure the overall profitability and hence it is very useful to proprietors. The ratio is very useful as if the net profit is not sufficient, the firm shall not be able to achieve a satisfactory return on its investment.

This ratio also indicates the firm's capacity to face adverse economic conditions such as price competition, low demand, etc. Obviously, higher the ratio the better is the profitability. But while interpreting the ratio it should be kept in mind that the performance of profits also be seen in relation to investments or capital of the firm and not only in relation to sales.

Operating Ratio:

Operating ratio is the ratio of cost of goods sold plus operating expenses to net sales. It is generally expressed in percentage.

Operating ratio measures the cost of operations per Rs. of sales. This is closely related to the ratio of operating profit to net sales.

The two basic components for the solution of ***operating ratio*** are operating cost (cost of goods sold plus operating expenses) and net sales. Operating expenses normally include (a) administrative and office expenses and (b) selling and distribution expenses. Financial charges such as interest, provision for taxation etc. are generally excluded from operating expenses.

Operating Ratio = [(Cost of goods sold + Operating expenses) / Net sales] × 100

Illustration 12

Cost of goods sold is 180,000 and other operating expenses are

30,000 and net sales is 300,000.

Calculate operating ratio.

Solution:

Operating ratio = [(180,000 + 30,000) / 300,000] × 100

= [210,000 / 300,000] × 100

= 70%

Operating ratio shows the operational efficiency of the business. Lower operating ratio shows higher operating profit and vice versa. An operating ratio ranging between 75% and 80% is generally considered as standard for manufacturing concerns. This ratio is considered to be a yardstick of operating efficiency but it should be used cautiously because it may be affected by a number of uncontrollable factors beyond the control of the firm. Moreover, in some firms, non-operating expenses from a substantial part of the total expenses and in such cases operating ratio may give misleading results.

Operating profit Ratio or Operating Margin Ratio

The operating profit of a business is the profit after meeting all operating expenses incurred in the regular course of operations. It is a measure of operating efficiency of a business. The ratio is calculated by dividing operating profit or earnings before interest and taxes [EBIT] by Net Sales

$$\text{Operating profit Ratio} = \frac{\text{Operating profit or EBIT}}{\text{Net Sales}} \times 100$$

Expense Ratio:

Expense ratios indicate the relationship of various expenses to net sales. The operating ratio reveals the average total variations in expenses. But some of the expenses may be increasing while some may be falling. Hence, expense ratios are calculated by dividing each item of expenses or group of

expense with the net sales to analyze the cause of variation of the operating ratio.

The ratio can be calculated for individual items of expense or a group of items of a particular type of expense like cost of sales ratio, administrative expense ratio, selling expense ratio, materials consumed ratio, etc. The lower the operating ratio, the larger is the profitability and higher the operating ratio, lower is the profitability.

While interpreting ***expense ratio***, it must be remembered that for a fixed expense like rent, the ratio will fall if the sales increase and for a variable expense, the ratio in proportion to sales shall remain nearly the same.

Following formula is used for the solution of expense ratio:

Particular Expense = (Particular expense / Net sales) × 100

Illustration 13

Administrative expenses are 2,500, selling expenses are 3,200 and sales are 25,00,000.

Calculate expense ratio. Solution :

Administrative expenses ratio = (2,500 / 25,00,000) × 100

= 0.1%

Selling expense ratio = (3,200 / 25,00,000) × 100

= 0.128%

b. OVERALL PROFITABILITY RATIOS

It is the analysis of profitability in relation to the volume of capital employed or investment in the business. Management and shareholders are interested in ascertaining the return on capital employed, return on shareholders' funds etc. the important tests applied to measure overall profitability are :

1. Return on total assets

2. Return on capital employed
3. Return on shareholder's equity
4. Return on equity capital

Return on Shareholders' Investment or Net Worth Ratio:

It is the ratio of net profit to share holder's investment. It is the relationship between net profit (after interest and tax) and share holder's/proprietor's fund.

This ratio establishes the profitability from the share holders' point of view. The ratio is generally calculated in percentage.

The two basic components of this ratio are net profits and shareholder's funds. Shareholder's funds include equity share capital, (preference share capital) and all reserves and surplus belonging to shareholders. Net profit means net income after payment of interest and income tax because those will be the only profits available for share holders.

[Return on share holder's investment = {Net profit (after interest and tax) / Share holder's fund} × 100]

Illustration 14

Suppose net income in an organization is 60,000 where as shareholder's investments or funds are 400,000.

Calculate return on shareholders' investment or net worth

Return on share holders' investment = (60,000 / 400,000) × 100 = 15% This means that the return on shareholders' funds is 15 percent/Rs.

This ratio is one of the most important ratios used for measuring the overall efficiency of a firm. As the primary objective of business is to maximize its earnings, this ratio indicates the extent to which this primary objective of businesses being achieved. This ratio is of great importance to the present and prospective shareholders as well as the

management of the company. As the ratio reveals how well the resources of the firm are being used, higher the ratio, better are the results. The inter firm comparison of this ratio determines whether the investments in the firm are attractive or not as the investors would like to invest only where the return is higher.

Return on Equity Capital (ROEC) Ratio

In real sense, ordinary shareholders are the real owners of the company. They assume the highest risk in the company. (Preference share holders have a preference over ordinary shareholders in the payment of dividend as well as capital.

Preference share holders get a fixed rate of dividend irrespective of the quantum of profits of the company). The rate of dividends varies with the availability of profits in case of ordinary shares only. Thus ordinary shareholders are more interested in the profitability of a company and the performance of a company should be judged on the basis of return on equity capital of the company. Return on equity capital which is the relationship between profits of a company and its equity, can be calculated as follows:

Formula of return on equity capital ratio is:

Return on Equity Capital = [(Net profit after tax − Preference dividend) / Equity share capital] × 100

Equity share capital should be the total called-up value of equity shares. As the profit used for the solutions are the final profits available to equity shareholders as dividend, therefore the preference dividend and taxes are deducted in order to arrive at such profits.

Illustration 15

Calculate return on equity share capital from the following information:

Equity share capital): 1,000,000 ; 9% Preference share capital:

500,000; Taxation rate: 50% of net profit; Net profit before tax: 400,000.

Solution :

Return on Equity Capital (ROEC) ratio = [(400,000 − 200,000 − 45,000) / 1000,000)× 100]

= 15.5%

This ratio is more meaningful to the equity shareholders who are interested to know profits earned by the company and those profits which can be made available to pay dividends to them. Interpretation of the ratio is similar to the interpretation of return on shareholder's investments and higher the ratio better is.

Return on Capital Employed Ratio (ROCE Ratio)

The prime objective of making investments in any business is to obtain satisfactory return on capital invested. Hence, the return on capital employed is used as a measure of success of a business in realizing this objective.

Return on capital employed establishes the relationship between the profit and the capital employed. It indicates the percentage of return on capital employed in the business and it can be used to show the overall profitability and efficiency of the business.

Capital employed and operating profits are the main items. Capital employed may be defined in a number of ways. However, two widely accepted definitions are "**gross capital employed**" and "**net capital employed**". Gross capital employed usually means the total assets, fixed as well as current, used in business, while net capital employed refers to total assets minus liabilities. On the other hand, it refers to total of capital, capital reserves, revenue reserves (including profit and loss account balance), debentures and long term

loans.

Solution of Capital Employed:

Method--1. If it is calculated from the assets side, It can be worked out by adding the following:

1. The fixed assets should be included at their net values, either at original cost or at replacement cost after deducting depreciation. In days 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 cash in hand, cash at bank, sundry debtors, bills receivable, stock, etc.

4. To find out net capital employed, current liabilities are deducted from the total of the assets as calculated above.

Gross capital employed = Fixed assets + Investments + Current assets Net capital employed = Fixed assets + Investments + Working capital .

Working capital = current assets − current liabilities.

Method--2. Alternatively, capital employed can be calculated from the liabilities side of a balance sheet. If it is calculated from the liabilities side, it will include the following items:

Share capital:

Issued share capital (Equity + Preference)

Reserves and Surplus:

General reserve

Capital reserve

Profit and Loss account Debentures

Other long term loans

Some people suggest that average capital employed should be used in order to give effect of the capital investment throughout the year. It is argued that the profit earned remain in the business throughout the year and are distributed by way of dividends only at the end of the year. Average capital may be calculated by dividing the opening and closing capital employed by two. It can also be worked out by deducting half of the profit from capital employed.

Computation of profit for return on capital employed:

The profits for the purpose of calculating return on capital employed should be computed according to the concept of "capital employed used". The profits taken must be the profits earned on the capital employed in the business. Thus, net profit has to be adjusted for the following:

- Net profit should be taken before the payment of tax or provision for taxation because tax is paid after the profits have been earned and has no relation to the earning capacity of the business.
- If the capital employed is gross capital employed then net profit should be considered before payment of interest on long-term as well as short-term borrowings.
- If the capital employed is used in the sense of net capital employed than only interest on long term borrowings should be added back to the net profits and not interest on short term borrowings as current liabilities are deducted while calculating net capital employed.
- If any asset has been excluded while computing capital employed, any income arising from these assets should also be excluded while calculating net profits. For illustration, interest on investments outside business should be excluded.

- Net profits should be adjusted for any abnormal, non recurring, non operating gains or losses such as profits and losses on sales of fixed assets.
- Net profits should be adjusted for depreciation based on replacement cost, if assets have been added at replacement cost.

Return on Capital Employed=(Adjusted net profits / Capital employed)×100

Net profit before interest and tax minus income from investments.

Return on capital employed ratio is considered to be the best measure of profitability in order to assess the overall performance of the business. It indicates how well the management has used the investment made by owners and creditors into the business. It is commonly used as a basis for various managerial decisions. As the primary objective of business is to earn profit, higher the return on capital employed, the more efficient the firm is in using its funds. The ratio can be found for a number of years so as to find a trend as to whether the profitability of the company is improving or otherwise.

Return on Total Assets

Return on total Assets is also called Return on Investment or ROI. It is calculated by dividing operating profit by total tangible assets.

$$\text{Return on total Assets} = \frac{\text{Operating Profit}}{\text{Total Tangible Assets}} \times 100$$

A high ratio implies better overall performance of the business or efficient use of total assets

MARKET TEST RATIOS

Market test ratios are used by shareholders and investors to

evaluate the performance of a company in the market place. These ratios include

- Dividend Yield Ratio
- Dividend Payout Ratio
- Earnings Per Share (EPS) Ratio
- Price Earnings Ratio (PE Ratio)
- Coverage Ratios

Dividend Yield Ratio:

Dividend yield ratio is the relationship between dividends per share and the market value of the shares.

Share holders are real owners of a company and they are interested in real sense in the earnings distributed and paid to them as dividend. Therefore, *dividend yield ratio* is calculated to evaluate the relationship between dividends per share paid and the market value of the shares.

Following formula is used for the solution of dividend yield ratio:

Dividend Yield Ratio = Dividend Per Share / Market Value Per Share

Illustration 16

For illustration, if a company declares dividend at 20% on its shares, each having a paid up value of 8.00 and market value of 25.00.

Calculate dividend yield ratio:

Solution :

Dividend Per Share = (20 / 100) × 8

= 1.60

Dividend Yield Ratio = (1.60 / 25) × 100

= 6.4%

This ratio helps as intending investor is knowing the effective return he is going to get on the proposed investment.

Dividend Payout Ratio:

Dividend payout ratio is calculated to find the extent to which earnings per share have been used for paying dividend and to know what portion of earnings has been retained in the business. It is an important ratio because ploughing back of profits enables a company to grow and pay more dividends in future.

Following formula is used for the solution of dividend payout ratio

Dividend Payout Ratio = Dividend per Equity Share / Earnings per Share

A complementary of this ratio is **retained earnings ratio**. Retained earning ratio is calculated by using the following formula:

Retained Earning Ratio = Retained Earning Per Equity Share / Earning Per Equity Share

Illustration 17

Calculate dividend payout ratio and retained earnings from the following data:

Net Profit	10,000	No. of equity shares	3,000
Provision for taxation	5,000	Dividend per equity share	0.40
Preference dividend	2,000		

Payout Ratio = (0.40 / 1) × 100

= 40%

Retained Earnings Ratio = (0.60 / 1) × 100

= 60%

The payout ratio and the retained earning ratio are the indicators of the amount of earnings that have been ploughed back in the business. The lower the payout ratio, the higher will be the amount of earnings ploughed back in the business and vice versa. A lower payout ratio or higher retained earnings ratio means a stronger financial position of the company.

Earnings per Share (EPS) Ratio

Earnings per share ratio (EPS Ratio) is a small variation of return on equity capital ratio and is calculated by dividing the net profit after taxes and preference dividend by the total number of equity shares.

The formula of earnings per share is:

Earnings per share (EPS) Ratio = (Net profit after tax − Preference dividend) / No. of equity shares (common shares)

Illustration 18

Equity share capital (1): 1,000,000; 9% Preference share capital: 500,000; Taxation rate: 50% of net profit; Net profit before tax: 400,000.

Calculate earnings per share ratio.

Solution:

EPS = 1,55,000 / 10,000

= 15.50 per share.

The earnings per share is a good measure of profitability and when compared with EPS of similar companies, it gives a view of the comparative earnings or earnings power of the firm. EPS ratio calculated for a number of years indicates whether or not the earning power of the company has increased.

Price Earnings Ratio (PE Ratio)

Price earnings ratio (P/E ratio) is the ratio between market price per equity share and earning per share.

The ratio is calculated to make an estimate of appreciation in the value of a share of a company and is widely used by investors to decide whether or not to buy shares in a particular company.

Following formula is used to calculate price earnings ratio:

Price Earnings Ratio = Market price per equity share / Earnings per share

Illustration 18

The market price of a share is 30 and earnings per share is 5.

Calculate price earnings ratio.

Solution:

Price earnings ratio = 30 / 5

= 6

The market value of every one Rs. of earning is six times or 6. The ratio is useful in financial forecasting. It also helps in knowing whether the share of a company are under or overvalued. For illustration, if the earning per share of AB limited is 20, its market price 140 and earnings ratio of similar companies is 8, it means that the market value of a share of AB Limited should be 160 (i.e., 8 × 20). The share of AB Limited is, therefore, undervalued in the market by 20. In case the price earnings ratio of similar companies is only 6, the value of the share of AB Limited should have been 120 (i.e., 6 × 20), thus the share is overvalued by 20.

Price earnings ratio helps the investor in deciding whether to buy or not to buy the shares of a particular company at a particular market price.

Generally, higher the price earnings ratio the better it is. If the P/E ratio falls, the management should look into the causes that have resulted into the fall of this ratio.

Coverage Ratios

It includes interest coverage ratio, preference share dividend coverage ratio and equity dividend coverage ratio

Debt Service Ratio or Interest Coverage Ratio:

Interest coverage ratio is also known as **debt service ratio** or **debt service coverage ratio**.

This ratio relates the fixed interest charges to the income earned by the business. It indicates whether the business has earned sufficient profits to pay periodically the interest charges. It is calculated by using the following formula.

Interest Coverage Ratio = Net Profit before Interest and Tax / Fixed Interest Charges

Illustration 19

If the net profit (after taxes) of a firm is 75,000 and its fixed interest charges on long-term borrowings are 10,000. The rate of income tax is 50%.

Calculate debt service ratio / interest coverage ratio Solution:

Interest Coverage Ratio = (75,000 + 75,000 + 10,000) / 10,000

= 16 times

Income after interest is 7,5000 + income tax 75,000

The ***interest coverage ratio*** is very important from the lender's point of view. It indicates the number of times interest is covered by the profits available to pay interest charges.

It is an index of the financial strength of an enterprise. A high debt service ratio or interest coverage ratio assures the

lenders a regular and periodical interest income. But the weakness of the ratio may create some problems to the financial manager in raising funds from debt sources.

Preference share dividend cover = Profit after tax / Preference share dividend

Equity dividend cover = profit after tax – preference share dividend / equity share dividend

Capital Gearing Ratio

Closely related to solvency ratio is the **capital gearing ratio**. *Capital gearing ratio* is mainly used to analyze the capital structure of a company.

The term capital structure refers to the relationship between the various long-term form of financing such as debentures, preference and equity share capital including reserves and surpluses. Leverage of capital structure ratios are calculated to test the long-term financial position of a firm.

The term "capital gearing" or "leverage" normally refers to the proportion of relationship between equity share capital including reserves and surpluses to preference share capital and other fixed interest bearing funds or loans. In other words it is the proportion between the fixed interest or dividend bearing funds and non fixed interest or dividend bearing funds. Equity share capital includes equity share capital and all reserves and surpluses items that belong to shareholders. Fixed interest bearing funds includes debentures, preference share capital and other long-term loans.

[Capital Gearing Ratio = Equity Share Capital / Fixed Interest Bearing Funds]

Illustration 20

Calculate capital gearing ratio from the following data:

		1991	1992
Equity Share Capital	500,000		400,000
Reserves & Surplus			
Long Term Loans		300,000	200,000
6% Debentures		250,000	300,000
		250,000	400,000

Solution:

Capital Gearing Ratio 1992 = (500,000 + 300,000) / (250,000 + 250,000)

= 8 : 5 (Low Gear)

1993 = (400,000 + 200,000) / (300,000 + 400,000)

6 : 7 (High Gear)

It may be noted that gearing is an inverse ratio to the equity share capital.

Highly Geared----------Low Equity Share Capital

Low Geared----------High Equity Share Capital

Capital gearing ratio is important to the company and the prospective investors. It must be carefully planned as it affects the company's capacity to maintain a uniform dividend policy during difficult trading periods. It reveals the suitability of company's capitalization.

CONSTRUCTION OF FINANCIAL STATEMENTS FROM RATIOS

Ratios are worked out from financial statements ie, Profit and loss account and Balance sheet. In a reverse approach, one can prepare the Financial statements in a concise or summarized form from the ratios and additional information.

In order to prepare Balance sheet or Profit and Loss

account, students must have a clear idea regarding the contents of a typical balance sheet and profit and loss account. Using the given information and ratios students may work out the missing figures in a logical sequence.

Illustration 21

From the following information you are asked to prepare a Balance sheet

1. Current liabilities	100000
2. Reserves and surplus	50000
3. Bills payable	40000
4. Debtors	35000
5. Current ratio	1.75
6. Acid test ratio	1.15
7. Fixed assets to proprietors fund	0.75
8. Ratio of fixed assets to current assets	3

Solution:

Balance Sheet

liabilities	**Rs**	**assets**	**Rs**
Share capital	650000	Fixed assets	525000
Reserves and surplus	50000	Current assets	
Current liabilities		Stock	60000
Sundry creditors	60000	Debtors	35000
Bills payable	40000	Cash	80000
		Miscellaneous Expenditure [bal.fig]	100000
	800000		800000

1. Current assets

Current ratio = current assets / current liabilities = 1.75

Current assets = 1.75 x current liabilities = 1.75 x 100000

= 175000

2. Liquid assets

Acid test ratio = liquid assets / current liabilities = 1.15

Liquid assets = 1.15x current liabilities = 1.15 x 100000

= 115000

3. stock

Stock = current assets – liquid assets

175000-115000 = 60000

4. cash balance = current assets – [stock + debtors]

= 1750000-[60000+35000] = 80000

5. Fixed assets

Ratio of fixed assets to current assets = fixed assets / current assets = 3

Fixed assets = 3x current assets = 3x 175000 = 525000

6. Propreitors funds

Fixed assets to proprietors funds = fixed assets / proprietors funds = 0.75

Prop. Funds = fixed assets / 0.75 = 525000/0.75 = 700000

7. Share capital

Prop. Fund = s. capital + reserves and surplus

Share capital = prop. Funds – reserves and surplus = 700000-50000=650000

Sundry creditors = current liabilities – bills payable

= 100000-40000=60000

9. Miscellaneous expenditure

Balance on the asset side of balance sheet may be treated as miscellaneous expenditure

Illustration 22

Prepare a balance sheet from the following data

a. Current ratio	1.4
b. Liquid ratio	1.0
c. Stock turnover ratio	8 [based on closing stock]
d. Gross profit ratio	20%
e. Debt collection period	1.5 months
f. Reserves and surplus to capital	0.6
g. Fixed assets turnover ratio	1.6
h. Capital gearing ratio	0.5
i. Fixed assets to net worth	1.25
j. Sales for the year	Rs.1000000

Solution

1. Cost of sales

GP = 20% of sales = 1000000x20/100 = 200000

Cost of sales = sales –GP = 1000000-200000=800000

2. Closing stock

STR = Cost of sales/ closing stock = 8 times Closing stock = 800000/8 = 100000

3. Current assets and current liabilities

CR = 1.4 And LR = 1.0

Let current liabilities be x, current assets will be 1.4x and liquid assets will be 1.4x and liquid liabilities will be 1x

Stock = current assets – liquid assets

100000 = 1.4x-1x

0.4x = 100000

X = 100000/0.4 = 250000

Current liabilities = 250000

Current assets = 1.4x250000= 350000

4. Debtors

Debt collection period = debtors/credit sales x12 = 1.5

Debtors = 1000000x1.5/12 = 125000

5. Cash and bank

=liquid assets – debtors

LR = LA/CL = 1

Liquid assets are equal to current liabilities = 250000 Cash and bank = 250000-125000 = 125000

6. Fixed assets T/o ratio

= 1.6

Fixed assets = 800000/1.6= 500000

7. Net worth

Fixed assets /NW = 1.25

Net worth = 400000

8. Share capital

Res. And surplus to capital = 0.6

If capital is x reserves and surplus will be 0.6x and net worth will be 1.6x

400000= x+0.6x

X = 250000

Share capital = 250000

9. Reserves and surplus = 250000x0.6 = 150000

10. Long term debt

Capital gearing ratio =LT debt /Equity capl + R & S = 0.5

Long term debt = [250000+150000] x0.5 = 200000

Balance sheet

Liabilities	Rs.	Assets	Rs
Share capital	250000	Fixed asset	500000
Reserves and surplus	150000	Stock	100000
Long term debt	200000	Debtors	125000
Current liabilities	250000	Cash and bank balance	125000
	850000		850000

MODULE III
FUNDS FLOW STATEMENT

Balance sheet discloses the financial position at the end of the year and it is a static statement. The management is interested to know what changes occurs in the balance sheet figures between two balance sheet dates. The statement prepared to show changes in assets, liabilities and owners equity of a business are called statement of changes in financial position. These include Funds flow statement and cash flow statement. Statement of changes in financial position prepared on working capital basis is called funds flow statement and on cash basis is called cash flow statement.

Meaning of the term 'Fund'

In a narrow sense it means cash and in a broader sense it is capital or all financial resources of a business. But the fund is commonly used in its popular sense as working capital or net current assets. Thus for accounting purpose and for preparing funds flow statements , the term fund means working capital of the excess of current assets over current liabilities.

MEANING AND CONCEPT OF FLOW OF FUNDS

The term flow means movement and includes both inflow and outflow of fund. the term flow of funds means the transfer of economic values from one asset of equity to another. 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. In effect, transaction results in increase of funds are called inflow of funds and transaction which decreases funds are called outflow of funds. Further if a transaction does not changes the funds , it is

said to have no flow of funds. According to working capital concept of fund, the term flow of funds means movement of funds in the working capital. A transaction which increases the working capital is called inflow of funds and which decreases working capital is called outflow of funds.

Rule

The flow of fund occurs when a transaction changes on the one hand a non current account and on the other hand a current account and vice versa.

It means that a change in non current account followed by a change in another non current account or a change in a current account followed by a change in another current account will not result in the flow of fund.

Current and non current accounts

Current accounts

Current accounts are accounts of current assets and current liabilities. Current assets are those assets which are in the ordinary course of business can be or will be converted into cash within a short period of normally one accounting year Eg. Cash in hand and at bank, Bills receivable, sundry debtors, short term loans and advances inventories, prepaid expenses and accrued incomes

Current liabilities are those liabilities which are intended to be paid within the ordinary course of business within a short period of normally one accounting year out of the current assets or the income of the business. It includes sundry creditors, bills payable outstanding expenses bank overdraft etc.

Noncurrent assets are assets other than current assets and include goodwill land, plant and machinery furniture trademarks etc.

Noncurrent liabilities are liabilities other than current liabilities and include all other long term liabilities such as equity share capital debentures , long term loans etc.

To know whether a transaction results in flow of funds the following procedure can be applied

1. Analyze the transaction and find out the accounts involved
2. Make journal entry of the transaction
3. Determine whether the accounts involved in the transaction are current or non current
4. If both accounts are current, either current assets or liabilities, it doesn't result in flow of funds
5. If both accounts are noncurrent, either noncurrent assets or noncurrent liabilities, it doesn't result in flow of funds
6. If accounts involved are such that one is a current account while the other is a non current account, it results in flow of funds

Eg.1.cash collected from debtors

Cash A/c Dr

To Debtors A/c

Both cash and debtors a/c are current accounts and hence do not result in flow of funds. The transaction results in increase in cash and at the same time an equal decrease in debtors and thus do not result in change in working capital or funds

Eg.2.purchase of new machinery in exchange of old machinery

Here also both the accounts involved are non current accounts and do not result in flow of funds

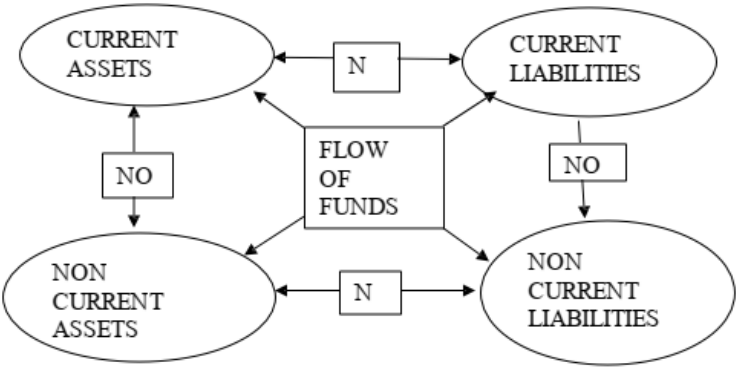
Eg.3.issue of shares for cash

Cash A/c Dr

To share capital

Here one account is current and the other is non current and results in flow of funds. Here cash increases without any increase in current liability and results in increase in working capital and thus results in flow of funds.

Flow of Funds



Meaning and definition of flow of funds

Fund flow statement is a method by which we study changes in financial position of an enterprise between beginning and ending financial statements. Funds flow statement may be defined as " a statement of sources and applications of funds is a technical devise designed to analyze the changes in financial conditions of business enterprise between two dates.

Difference between funds flow statement, balance sheet and income statement

Funds flow statement	Balance sheet
1.it is a statement of changes in financial position and hence is dynamic in nature	1. It is a statement of financial position on a particular date and is static in nature.

2.it shows the sources and uses of funds in a particular period of time	2.it depicts the assets and liabilities at a particular point of time
3. it is a tool of management for financial analysis and helps in making decisions	3. it is not of much help to management in making decisions
4. usually, schedule of changes in working capital has to be prepared before preparing FFS	4. No such schedule of changes in working capital is required. Rather profit and loss account is prepared.

Funds flow statement	Balance sheet
1.it highlights the changes in financial position of a business and indicates the various means by which funds were obtained during a particular period and the ways to which these funds were employed	1. it does not reveal the inflows and outflows of funds but depicts the items of expenses and income arrive at the figure of profit or loss
1. It is a complementary income statement. Income statement helps in the preparation of FFS	2. income statement is not prepared from FFS
3. While preparing FFS both capital and revenue items are considered	3. only revenue items are considered
4. there is no prescribed format for the preparation of FFS	4. It is prepared in a prescribed format.

USES, SIGNIFICANCE AND IMPORTANCE OF FUND FLOW STATEMENT

A funds flow statement is an essential tool for the financial analysis and is of primary importance to the financial management. The basis purpose of funds flow statement is to reveal the changes in the working capital on two balance sheet dates. It also describes the source from which additional working capital has been financed and the uses to which working capital has been applied. By making use of projected funds flow statement the management can come to know the adequacy or inadequacy of working capital even in advance. One can plan the intermediate and long term financing of the firm, repayment of long term debts, expansion of the business, allocation of resources etc.

The significance of funds flow statement are explained as follows:-

1. It helps in the analysis of financial operations
2. It gives answers to many questions like happening of net profit, proceeds of sale of shares etc.
3. It helps in the formation of a realistic dividend policy
4. It helps in the proper allocation of resources
5. It acts as a guide for future to the management.
6. It helps in appraising the use of working capital
7. It helps in knowing the overall credit worthiness of the firm
8. It states how much funds has been generated from operations during the year
9. It helps the management in framing financial policies like dividend policies, issue of shares etc.
10. Creditors and financial institutions who have lend money

to the firm can assess the financial strengths and repayment capacity based on funds flow analysis

LIMITATIONS OF FUNDS FLOW STATEMENT

1. The funds flow statement cannot substitute the income statement or balance sheet.
2. The interpretation of fund as working capital distorts the real change in financial position of a business
3. Preparation of funds flow statement requires a lot of workings and preparation of non current accounts.
4. Certain items like provision for tax and proposed dividend can be treated differently as current liability or noncurrent liability which gives misleading results regarding funds from operations
5. A statement of changes in financial position on cash basis [cash flow statement] is more informative and useful than the funds flow statement which is prepared on working capital basis

PROCEDURE FOR PREPARING A 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 statement dates. Hence the funds flow statement is prepared by comparing two balance sheets and with the help of such other information derived from the accounts as may be needed. Broadly speaking the preparation of FFS consists of two parts

1. Statement or schedule of changes in working capital
2. Statement of sources and application of funds

Statement or schedule of changes in working capital

Working capital means the excess of current assets over

current liabilities. Statement of changes in working capital is prepared to show the changes in the working capital between the two balance sheet dates. This statement is prepared with the help of current assets and current liabilities derived from the two balance sheets as

Working capital = Current assets - Current liabilities

So

- An increase in current assets increases the working capital
- The decrease in current assets decreases the working capital
- An increase in current liabilities decreases the working capital
- A decrease in current liabilities increases working capital

The total increase and the total decrease are compared and the difference shows the net increase or net decrease in working capital. It is worth nothing that schedule of changes in working capital is prepared only from current assets and current liabilities. The Net increase in working capital represents the application of funds and the Net decrease in working capital represents the source of fund

Illustration 1

Prepare a statement of changes in working capital from the following balance sheet. Of Manjit and co. Ltd.

Balance sheets as at Dec. 31

Liabilities	2010 [rs.]	2011 [rs.]	Assets	2010 [rs]	2011 [rs.]
Equity capital	500000	500000	Fixed assets	600000	700000
Debentures	370000	450000	Long term investments	200000	100000

Tax payable	77000	43000	Work in progress	80000	90000
Accounts payable	96000	192000	Stock in trade'	150000	225000
Interest payable	37000	45000	Accounts receivable	70000	140000
Dividend payable	50000	35000	Cash	30000	10000
	1130000	1265000		1130000	1265000

Solution

Schedule of changes in working capital

Particulars	2010 [Rs.]	2011 [Rs.]	Effect on working capital	
			Increase	Decrease
Current assets				
Cash	30000	10000		
Accounts receivable	70000	140000	70000	20000
Stock in trade	150000	225000	75000	
Work in progress	80000	90000	10000	
	330000	465000	34000	
Current liabilities				96000
Tax payable	77000	43000		8000
Accounts payable	96000	192000		
Interest payable	37000	45000		80000
Dividend payable	50000	35000	15000	
	260000	315000		
Working capital	70000	150000		
Net increase in working capital	80000			
	150000	150000	204000	204000

For the preparation of FFS, we have to prepare non current accounts to find out whether there is any source or application of funds. The fund from operation should also be find out in order to prepare the Funds flow statement.

Preparing Non Current Accounts

This is to ascertain the inflows or outflows of funds from non current accounts. In the preparation of non current accounts the general principle is that a decrease in non current assets or increase in non current liabilities results in an inflow of funds. Similarly, an increase in non current assets or decrease in non current liabilities results in an out flow of fund. This principle is subject to exceptions when additional information is given in the problem. It may relate to depreciation written off on assets, old assets discarded, intangible or fictitious assets written off , transfer to general reserve, bonus share issued etc.

Funds from operations

It means regular source of funds received from operations of the business. It is the cash operating profit of the business or the income from operations net of cash operating expense. It is an important item coming under the head 'source of funds '

Funds from operations can be ascertained in any of the following methods ;-

[a]Adjusting net profit for the year [Statement method]

Funds from operations are not equal to net profit. It is the net profit before charging non fund and non operating expenses and losses and excluding non operating incomes. It is calculated as follows

Calculation of Funds from operations

Calculation of Funds from operations

Net profit for the year		Xxxx
Add: Non fund and non operating expenses and losses	Xxxx	
Depreciation for the current year	Xxxx	
Provision for tax	Xxxx	
Loss on sale of fixed assets	Xxxx	
Loss on sale of investments	Xxxx	
Good will written off	Xxxx	
Preliminary expenses written off	Xxxx	
Premium on redemption of debentures written off	Xxxx	
		Xxxx
Less: Non operating incomes		
Profit on sale of fixed assets	Xxxx	
Profit on sale of investments	Xxxx	
Dividends received	Xxxx	
Refund of tax	xxxx	xxxx
FUNDS FROM OPERATIONS		xxxx

[b] Preparing an adjusted Profit and Loss Account [Account Method]

An adjusted profit and loss account is prepared under this method and funds from operations can be ascertained as the balancing figure. When adjusted P/L A/c is prepared all appropriations of profits made during current year like transfer to general reserve, interim dividend paid , proposed dividend for current year etc. are also debited in addition to non fund and non operating expenses and losses. An adjusted Retained Earnings account or adjusted reserve and surplus account can be prepared to find our funds from operations, where separate profit and loss account balances are not given in the problem.

Adjusted Profit and Loss Account

Depreciation	Xxxx	Balance b/d	Xxxx
Provision for tax	Xxxx	Profit on sale of assets	Xxxx
Loss on sale of assets	Xxxx	Dividends received	Xxxx
Loss on sales of investments	Xxxx	Funds from operations [Bal.fig.]	Xxxx
Goodwill written off	Xxxx		
Preliminary expenses written off	xxxx		
	xxxx		
Premium on redemption of debentures	xxxx		
Transfer to general reserve	xxxx		
Interim dividend paid	xxxx		
Proposed dividend	xxxx		
Balance C/d	xxxx		
	xxxx		xxxx

Note; if the credit side is more than the debit side, difference will be Funds lost on operations which are shown as application of funds.

Illustration 2

Calculate funds from operations from the information given below as on 31st March 2008

1. Net profit for the year ended 31st march 2008 650000
2. Gain on sale of building Rs 35500
3. Good will appears in the books at Rs 180000.out of that 10% has been written off during the year
4. Old machinery worth Rs. 8000 has been sold for 6500 during the year
5. Rs. 125000 has been transferred to the general reserve fund

6. Depreciation has been provided during the year on machinery and furniture at 20% whose total cost is 650000

Solution

Calculation of funds from operations

Net profit for the year as given		Rs.650000
Add: non fund and non operating items		
which have been debited to P/L a/c		
Good will written off	18000	
Loss on sale of machinery [Rs.8000-6500]	1500	
Transfer to general reserve fund	125000	
Depreciation @20%on 650000	130000	274500
Less :Non fund and non operating items which have been credited to P/L a/c		924500
Gain on sale of Building	35500	35500
Funds from operations		**889000**

Alternate method

Adjusted Profit and Loss A/c

Good will	18000	Opening balance	
Loss on sale of machinery	1500	Gain on sale of building	35500
Transfer to general reserve	125000	Funds from operation	889000

Depreciation	130000	[bal.fig.]	
Closing balance	650000		
	924500		924500

CASH FLOW STATEMENT

Cash plays an important role in the entire economic life of a business. A firm needs cash to make payments to suppliers, to incur day-to-day expenses and to pay salaries, wages, interest and dividend etc .Management of liquidity or cash flow is an important aspect for the successful functioning of every business. Cash is the most liquid form of current asset and maintenance of sufficient cash is a pre requisite for the smooth functioning of the business. Therefore , it is necessary to make a cash flow analysis by preparing a Cash flow statement.

Meaning of the term cash

The term 'cash' includes cash and cash equivalents. These include cash in hand, cash at bank and short term investments or marketable securities. Short term investments are highly liquid and can be converted into cash on demand or on short notice. These are not held for a real return but to meet the liquidity requirements of the business.

Meaning of cash flow statement

Cash flow statement is a statement which describes the inflows and outflows of cash and cash equivalents in an enterprise during a specified period of time. It explains the reasons for changes in a firm's cash position during an accounting year.

The Institute of Cost and Works Accountant of India defines cash flow statement as " a statement setting out the flow of cash under distinct heads of sources of funds and their

utilization to determine the requirements of cash during the given period and to prepare for its adequate provision."

The term cash, cash equivalents and cash flow are explained as follows:-

1. Cash comprises of cash in hand and demand deposits with banks
2. Cash equivalents are short term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value. Cash equivalents are held for the purpose of meeting cash commitments rather than for investment or other purposes. For an investment to qualify as cash equivalent, it must be readily convertible into known amount of cash subject to an insignificant risk of changes in value. Therefore , an investment normally qualifies as a cash equivalent only when it has a short maturity, i.e,three months or less from the date of acquisition.
3. Cash flows are inflows and outflows of cash and cash equivalents. Flow of cash is said to have taken place when any transaction makes changes in the amount of cash and cash equivalents available before happening of the transaction. If the effect of the transaction results in increase of cash and its equivalents, it is called an inflow of cash and if it results in decrease of cash, it is known as outflow of cash.

Difference between cash flow statement and funds flow statement

CASH FLOW STATEMENT	FUNDS FLOW STATEMENT
1. Cash flow statement is a statement which discloses the inflows and outflows of cash during a period	1. fund flow statement is a statement which discloses the sources and uses of funds or working capital during a period

2. it is prepared on cash basis, that is , actual cash inflows and outflows are shown 3. it is mainly used for cash planning and managing liquidity 4. It explains reasons for shortage or surplus of liquid cash at the end of an accounting year 5. it is presented in prescribed format as per AS-3 6. a schedule of changes in working capital is not required.	2. it is prepared on working capital basis and follows accrual concept of accounting. 3. it is mainly used for long term financial planning 4. it explains reasons for a net increase or decrease in working capital at the end of an accounting year 5. it is not presented in prescribed format. 6. a schedule of changes in working capital is prepared to ascertain the net increase or decrease in working capital

USES OF CASH FLOW STATEMENT

1. A Cash flow statement discloses changes in financial position on cash basis. It facilitates management of cash flows of a business.
2. It facilitates management in the evaluation of cash position and appropriate measures may be taken to arrange loans or make investments of surplus cash
3. It helps management in formulating financial policies such as dividend policy, credit policy etc.
4. A projected cash flow statement can guide the management regarding the need for arranging cash on long term basis by issuing shares, raising loans etc.
5. A cash flow statement can explain how much cash is

generated within the business from operations for meeting various demands for cash such as payment of dividend, tax, financing expansion and investment son new projects etc.

6. It also explains reasons for paying very low dividend in spite of earning sufficient net profit by the business.

Limitations of cash flow statement

1. A cash flow statement discloses changes in financial position on cash basis only. Therefore, non cash transactions affecting changes in financial position are ignored
2. It is not a substitute to financial statements like Profit and Loss Account and Balance sheet. It can only substantiate these statements.
3. It is easy to manipulate cash position by delaying payment or quick collection of cash by management decisions. Therefore, the real cash position may not be disclosed.
4. The real liquidity position can be evaluated only by analyzing other current assets also. But in cash flow analysis only cash is evaluated.

CLASSIFICATION OF CASH FLOWS

The revised Accounting Standard [AS-3] has made the following classification in respect of cash flows.

1. Cash flows from operating activities
2. Cash flows from investing activities
3. Cash flows from financing activities

1. Cash flow from operating activities

These are cash flows from regular course of operations. The operations of a firm include manufacturing, trading,

rendering of services etc. Examples of cash flows from operating activities are;-

a. Cash sales
b. Cash received from debtors on account of credit sales
c. Cash purchase of goods
d. Cash paid to suppliers on account of credit purchases
e. Wages paid to employees and staff
f. Cash operating expenses
g. Income from investing activities

2. Cash from investing activities

The investing activities of a business include purchase and sale of fixed assets like land buildings, equipments, machinery etc. Acquisition or disposal of companies also comes under investing activities. These are separately discloses in cash flow statement

Eg.

a. Cash payments to acquire fixed assets
b. Cash receipts from disposal of fixed assets
c. Cash payments to acquire shares, debt instruments or warrants
d. Cash receipts from disposal of shares
e. Cash advances and loans made to third parties

3. Cash flows from financing activities

The financing activities of a firm include issuing or redemption of share capital, issue and redemption of debentures , raising and repayment of long term loans etc. these are items changing the owners equity and debt capital during an accounting year. Dividends paid to shareholders also

come under financing activities

Eg.

a. Cash proceeds from issuing shares or other similar instruments

b. Cash proceeds from issuing debentures, loans, notes , bonds and other short or long term borrowings and

c. Cash repayments of amounts borrowed such as redemption of debentures, bonds, preference shares.

PREPARATION OF CASH FLOW STATEMENT

It requires comparative balance sheet at the beginning of the year and at the end f the year. In addition income statement for current year and/ or additional information regarding sale of asset, depreciation provided, tax paid etc. are also given. Thus the information given is the same as that is required for the preparation of funds flow statement.

The following steps are involved in the preparation of cash flow statement.

1. Prepare all non current accounts and ascertain inflow or outflow of cash
2. Calculate cash from operations for current year
3. Prepare cash flow statement in the prescribed format as per AS-3

Cash from operations

Cash from operations is an important source of inflow of cash into the business. It can be calculated by the following methods;-

a. Direct method

b. The indirect method

a. The Direct method

Under this method, all cash receipts on accounts of normal course of operations of business are added and from these total all cash payments on account of operations are deducted. The net amount is the cash received from operations as outlined below;-

Cash from operations [Direct method]

Cash receipts from operations Cash sales		XX
Cash received from debtors	XX	
Royalties, commissions and fees received	XX	
Less;Cash payments for operations	XX	
Cash purchases		XX
Cash paid to creditors	XX	
Cash wages	XX	
Cash operating expenses	XX	
		XX
CASH FROM OPERATIONS		XX

Illustration 1.

From the following Profit and Loss account, calculate cash from operations under direct method

Profit and Loss account for the year ended 31/03/2012

To opening stock		16000	By sales		300000
Purchases [all cash]		140000	Closing stock		20000
Wages	20000		Dividend received		5000
Add:	4000	24000			

outstanding					
Salaries	18000				
Add: outstanding	2000	20000			
Rent	12000				
Less; Prepaid	2000	10000			
Office expenses		5000			
Depreciation		15000			
Selling expenses		3000			
Loss on sale of asset		2000			
Provision for tax		30000			
Net profit		60000			
		3,25,000			3,25,000

Solution

Calculation of cash from operations [direct method]

	Rs	Rs
Cash receipts from operations		
Cash sales		300000
Less:cash payment for operations		
Cash purchases	140000	
Cash wages	20000	
Cash salaries	18000	
Cash rent	12000	
Office expenses	5000	
Selling expense	3000	198000
Cash from operations		102000

The indirect method

Under this method cash from operations are calculated by adjusting net profit for

1. Non operating and non cash items like depreciation, provision for tax, loss on sale of asset, goodwill written off, preliminary expenses written off and
2. Changes in current assets and current liabilities except cash and bank, changes in current assets and liabilities result in notional inflow or notional outflow of cash

The indirect method is followed when details of cash receipts and cash payments are not given

Cash from operations [Indirect method]

Cash flow from operating activities		
Net profit for the year		XX
Add; non operating and non cash items debited to P/L A/c		
Depreciation	XX XX	
Provision for tax		
Loss on sale of asset/investment		
Goodwill written off	XX	
	XX	
Less: non operating incomes credited to P/L a/c		
Dividend received		
Profit on sale of asset		
Cash operating profit before working capital changes	XX	
Add: decrease in current assets	XX	
Increase in current liabilities		

Less: Increase in current assets		
Decrease in current liabilities	XX	
Cash from operations	XX	
Less: income tax paid	[XX]	
Cash flow from operating activities [1]	[XX]	

Cash flow from financing activities Issue of shares		
Redemption of preference shares Issue of debentures		
Redemption of debentures Loans raised		
Loans repaid		
Interim dividend paid		
Final dividend paid [previous year]		
Net cash flow from financing activities [3] Net cash flow for the year [1+2+3]		
Add:opening balance of cash and cash equivalents		
CLOSING BALANCE OF CASH ANDCASH EQUIVALENTS		

Illustration 2

From the following comparative balance sheets and additional information, calculate cash from operations for the year ending 31/03/2012

Liabilities	2011	2012	Assets	2011	2012
Equity share	50000	80000	Plant and	50000	50000

capital			building		
P/L account	49000	28000	Plant	60000	80000
Debentures	30000	50000	Stock	20000	16000
Creditors	16000	20000	Debtors	15000	24000
Bills payable	6000	4000	Prepaid expenses	3000	2000
Outstanding expenses	3000	2000	Cash in hand	1000	2000
			Cash at bank	5000	10000
	154000	184000		154000	184000

Additional information;

1. Net profit after tax for the year was Rs. 25000
2. Depreciation on plant Rs.12000
3. Loss on sale of plant debited to P/L a/c Rs.2000

FORMAT OF CASH FLOW STATEMENT

The cash flow statement is generally prepared in the following manner :-

ABC Limited

Cash flow statement for the year ended 31st March 2012

Cash flow from operating activities		
Net profit for the year		
Add; non operating and non cash items		XX
debited to	XX	
P/L A/c		
Depreciation	XX	
Provision for tax	XX	
Loss on sale of asset/investment	XX	
Goodwill written off		
Less: non operating incomes credited to	XX	
P/L a/c		

Dividend received	XX	
Profit on sale of asset		
Cash operating profit before working capital changes	XX	
Add: decrease in current assets	XX	
Increase in current liabilities	[XX]	
Less: Increase in current assets	[XX]	
Decrease in current liabilities		
Cash from operations		
Less: income tax paid		
Cash flow from operating activities [1]		

Cash flow from financing activities Issue of shares		
Redemption of preference shares Issue of debentures		
Redemption of debentures		
Loans raised		
Loans repaid		
Interim dividend paid		
Final dividend paid [previous year]		
Net cash flow from financing activities [3] Net cash flow for the year [1+2+3]		
Add: opening balance of cash and cash equivalents		
CLOSING BALANCE OF CASH AND CASH EQUIVALENTS		

Illustration 3

Balance sheets of P& Q as on 01-01-2011 and 31-12-2011 were as follows :

liabilities	01/01/2011	31/12/2011	assets	01/01/2011	31/12/2011
Creditors	40000	44000	Cash	10000	7000
Mr.As loan	25000	---	Debtors	30000	50000
Loan from bank	40000	50000	Stock	35000	25000
Combined capital	125000	153000	Machinery	80000	55000
			Land	40000	50000
			Building	35000	60000
	230000	247000		230000	247000

During the year, a machine costing Rs.10000 [accumulated depreciation Rs.3000] was sold for Rs.5000. the provision for depreciation against machinery on 01/01/2011 was Rs.25000 and on 31/12/2011 it was Rs.40000.

Net profit for the year 2011 amounted toRs.45000. you are required to prepare a cash flow statement

Machinery account [at cost]

To balance b/d [80000+25000]	105000	By bank- sale	5000
		Provision for depreciation	3000
		P/L account [loss on sale]	2000
		Balance c/d [55000+40000]	95000
	105000		105000

Provision for depreciation account

To machinery a/c	3000	Balance b/d	25000
Balance c/d	40000	P/L account [dep-bal.fig]	18000
	43000		43000

Combined capital account

Bank drawings Balance c/d	17000 153000	Balance b/d Net profit for the year	125000 45000
	170000		170000

Cash flow statement of P&Q for the year ended 31/12/2011

Cash flow from operating activities Net profit for the year		45000
Add: non cash and non operating items debited to P/L a/c Depreciation	18000	

Loss on sale of machinery	2000	20000
		65000
Less; non operating incomes credited to P/L a/c		Nil
Cash operating profit before adjusting working capital		65000
changes		

Add: decrease in stock	10000	
Increase in creditors	4000	14000
		79000
Less: increase in debtors		20000
Net cash flow from operating activities		59000
Cash flow from investing activities		
Sale of machinery		5000
Purchase of land		[10000]
Purchase of building		[25000]
Net cash flow from investing activities		[30000]
Cash flow from financing activities		
Loan from bank		10000
Repayment of As loan		[25000]
Drawings by partners		[17000]
Net cash flow from financing activities		[32000]
Net cash flow for the year [1+2+3]		[3000]
Add; opening cash balance		10000
Closing cash balance		7000

Illustration 4

From the following balance sheet of B ltd and additional information make out the statement of cash flow

Liabilities	2008	2009	assets	2008	2009
Equity share capital	300000	400000	Goodwill	115000	90000
8% redeemable	150000	100000	Land and building	200000	170000

preference share			Plant	80000	200000
General reserve	40000	70000	Debtors	160000	200000
P/L a/c	30000	48000	Stock	77000	109000
Proposed dividend	42000	50000	Bills receivable	20000	30000
Creditor	55000	83000	Cash in hand	15000	10000
Bills payable	20000	16000	Cash at bank	10000	8000
Provision for taxation	40000	50000			
	677000	817000		677000	817000

a. Depreciation of Rs.10000 and Rs.20000 have been charged on plant account and land and building accounts respectively in 2009

b. An interim dividend of Rs.20000 was paid in 2009

c. Income tax Rs.35000 was paid during the year 2009 Solution:

Land and buildings a/c

To balance b/d	200000	Depreciation Bank[sale-bal.fig.] Balance c/d	20000 10000 170000
	200000		200000

Plant account

To balance b/d	80000	Depreciation	10000
To bank [purchase-bal.fig]	130000	Balance c/d	200000
	210000		210000

Provision for tax a/c

To bank [tax paid]	35000	Balance b/d	40000
Balance c/d	50000	P/L a/c [bal.fig-current provision]	45000
	85000		85000

Cash flow statement for the year ended 31/12/2009

Cash flow from operating activities		
Net profit for the year [48000-30000]		18000
Add: non cash and non operating items debited to P/L a/c		
Transfer to reserve	30000	
Interest on dividend paid	20000	
Proposed dividend [2009]	50000	100000
		118000
Depreciation [10000+20000]	30000	
Provision for tax	45000	
Goodwill written off	25000	100000
Cash operating profit before adjusting working capital		218000
changes		
Add: Increase in creditors [83000-55000]		28000
		246000
Less: increase in debtors	40000	
Increase in stock	32000	
Increase in bills receivable	10000	
Decrease in bills payable	4000	86000
cash flow from operating activities		160000

Less: income tax paid		[35000]
Net cash flow from operating activities [1]		125000
Cash flow from investing activities		
Sale of land and building		10000

Purchase of plant		[130000]
Net cash flow from investing activities [2]		**120000**
Cash flow from financing activities		100000
Issue of equity share capital		[50000]
Redemption of preference shares		[20000]
Interim dividend paid		[42000]
Proposed dividend paid [2008]		[12000]
Net cash flow from financing activities [3]		[7000]
Net cash flow for the year [1+2+3]		25000
Add; opening cash balance and Bank		**18000**
Closing cash balance		

Practice problems :

1. The balance sheets of xyz ltd. As on 31/03/2011 and 2012 are given below

Liabilities	31/3/11	31/3/12	Assets	31/3/11	31/3/12
Share capital	50000	60000	Land	10000	15000
General reserve	25000	30000	Buildings	30000	30000

P/L account	17000	32000	Plant and	60000	58000
Bank loan	50000	30000	machinery	20000	30000
Creditors	12000	14000	Investments	15000	18000
Bills payable	3000	2000	Stock	16000	9000
Tax payable	8000	12000	Debtors	3000	4000
			Prepaid expenses	10000	13000
			Cash at bank	1000	3000
			Cash in hand		
	165000	180000		165000	180000

Prepare a cash flow statement of the company for the year 2011-12

MODULE IV
MARGINAL COSTING

The basic objectives of Cost Accounting are cost ascertainment and cost control. In order to help management in cost control and decision making, cost accounting has developed certain tools and techniques. Marginal costing and Break even analysis are important techniques used for cost control and decision making.

Marginal Cost

The term Marginal cost means the additional cost incurred for producing an additional unit of output. It is the addition made to total cost when the output is increased by one unit.

Marginal cost of nth unit = Total cost of nth unit- total cost of n-1 unit.

Eg. When 100 units are produced, the total cost is Rs. 5000.When the output is increased by one unit, i.e, 101 units, total cost is Rs.5040. Then marginal cost of 101th unit is Rs. 40[5040-5000]

Marginal cost is also equal to the total variable cost of production or it is the aggregate of prime cost and variable overheads. The chartered Institute of Management Accountants [CIMA] England defines Marginal as "the amount at any given volume of output by which aggregate costs are changed if the volume of output is increased or decreased by one unit

MARGINAL COSTING

It is the technique of costing in which only marginal costs or variable are charged to output or production. The cost

of the output includes only variable costs .Fixed costs are not charged to output. These are regarded as 'Period Costs'. These are incurred for a period. Therefore, these fixed costs are directly transferred to Costing Profit and Loss Account.

According to CIMA, marginal costing is "the ascertainment, by differentiating between fixed and variable costs, of marginal costs and of the effect on profit of changes in volume or type of output.

Under marginal costing, it is assumed that all costs can be classified into fixed and variable costs. Fixed costs remain constant irrespective of the volume of output. Variable costs change in direct proportion with the volume of output. The variable or marginal cost per unit remains constant at all levels of output

FEATURES OF MARGINAL COSTING [ASSUMPTIONS IN MARGINAL COSTING]

1. All costs can be classified into fixed and variable elements. Semi variable costs are also segregated into fixed and variable elements.
2. The total variable costs change in direct proportion with units of output. It follows a linear relation with volume of output and sales.
3. The total fixed costs remain constant at all levels of output. These are incurred for a period and have no relation with output.
4. Only variable costs are treated as product costs and are charged to output, product, process or operation
5. Fixed costs are treated as 'Period costs' and are directly transferred to Costing Profit and Loss Account.
6. The closing stock is also valued at marginal cost and not at total cost.

7. The relative profitability of product or department is based on the contribution it gives and not based on the profit
8. It is also assumed that the selling price per unit remains the same i.e, any number of units can be sold at the current market price.
9. The product or sales mix remains constant over a period of time.

CONCEPT OF CONTRIBUTION

Contribution is the excess of sales over marginal cost. It is not purely profit. It is the profit before recovery of fixed assets. Fixed costs are first met out of contribution and only the remaining amount is regarded as profit. Contribution is an index of profitability. It has a fixed relationship with sales. Larger the sales more will be the contribution and vice versa.

Contribution = Sales – Marginal cost

Marginal cost equation

Sales-Marginal cost = Contribution Contribution = Fixed costs + Profit Therefore, Fixed cost = Contribution – Profit'

PROFIT VOLUME RATIO [P/V RATIO].

Contribution is an absolute measure of profitability but it cannot be used for comparison of two products or departments. Therefore, the contribution is related to volume of sales. It is called Contribution / Sales Ratio or Profit/Volume Ratio [P/V Ratio]

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

When the P/V Ratio is higher, profitability of the product will also be higher. It is an index of relative profitability of

products or departments.

$$\text{Sales} = \frac{\text{Contribution}}{\text{P/V Ratio}}$$

Contribution = Sales x P/V Ratio

P/V Ratio can also be find out by the following formula :-

$$\text{P/V Ratio} = \frac{\text{Change in Profit x100}}{\text{Change in Sales}}$$

$$\text{Or P/V Ratio} = \frac{\text{Fixed Cost x 100}}{\text{Break even sales}}$$

Marginal cost statement

The Marginal cost statement is a profitability statement prepared according to marginal costing principles. It is prepared in the following format.

Sales		Xx
Less: Variable/Marginal cost		
Direct Labour		
Direct Expenses		
Variable Factory overheads Variable Administration overheads		
Variable Selling and distribution overheads		
Contribution		
Less Fixed Costs		
Profit		

Illustration 1.

You are given the following information relating to a company for the year 2012

Output	20000 units
Selling price per unit	Rs.12
Direct materials per unit	Rs.5
Direct Labour per unit	Rs.2
Variable overhears per unit	Rs.1
Fixed cost per year	Rs.60000

Calculate [1] Total Marginal cost [2] Contribution [3] Profit [4] P/V Ratio

Solution:-

MARGINAL COST STATEMENT		
Output 20000 Units Sales	12	**240000**
Less: Marginal Cost		
Direct Materials	5	100000
Direct Labour	2	40000
Direct Expenses	1	20000
Total Marginal Cost	8	160000
Contribution	**4**	**80000**
Less: Fixed Costs		60000
Profit		**20000**

$$\text{P/V Ratio} = \frac{\text{Contribution} \times 100}{\text{Sales}} = \frac{80000 \times 100}{240000} = 33.33\%$$

Advantages of Marginal Costing

Following are the advantages of Marginal costing

1. It is simple to understand and easy to apply to any firm

2. There is no arbitrary apportionment of fixed cost in this system. Fixed costs are transferred to costing profit and Loss account.
3. It also prevents the illegal carry forward in stock valuation of some proportion of current years fixed cost.
4. The effect of different sales mix on profit can be ascertained and management can adopt the optimum sales mix
5. It is used in control of cost by concentrating on variable cost of production.
6. It helps in profit planning by break even and cost volume profit analysis
7. It helps management to take a number of short term decisions like pricing, output, closing down of department, sales mix, make or buy etc..

Disadvantages

Important disadvantages of marginal costing are ;

1. All Assumptions of marginal costing are not appropriate. The assumption fixed cost remains constant for all levels may not hold good in the long run.
2. The assumption that changes in direct proportion with the volume of also do not hold good under all circumstances.
3. It is difficult to segregate all costs into fixed and variable elements.
4. The exclusion of fixed costs in ascertaining cost of production may give misleading results and lead to non recovery of total costs.
5. The exclusion of fixed costs from inventories affect profit and financial statements may not reflect true and fair view of financial affairs.

Marginal costing and Absorption costing

Marginal costing is the practice of charging only variable costs to cost of production, leaving fixed costs to be charged to the costing profit and loss account.

In Absorption costing or Total costing all types of costs are charged to output or process. While variable costs are wholly allocated to output or production, fixed costs are apportioned and a portion is charged to output or production.

The profits disclosed under the two methods will be the same, provided there is no closing stock. But in the event of closing stock, the profits disclosed will be different under the two methods. This is due to the practice followed in stock valuation. In marginal costing stock is valued at marginal cost, whereas in total costing it is valued at total cost.

DIFFERENCE BETWEEN MARGINAL COSTING AND ABSORPTION COSTING

1. Marginal costing is the practice of charging only variable costs to products, outputs or processes and absorption costing variable and fixed cost to products, outputs or processes
2. There is no apportionment of fixed costs and they are charged to profit and loss account under marginal costing. But fixed costs are apportioned and charged to outputs or processes under absorption costing.
3. Under marginal costing, inventories or stocks are valued at marginal costs and under absorption costing they are valued at total costs.
4. Under marginal costing, the profitability of a product or department is judged on the basis of the contribution that it gives but under absorption costing it is judged on the basis of the ultimate profit that it gives.

5. Under marginal costing, profit is ascertained by deducting fixed costs from contribution and under absorption costing it is ascertained by deducting total costs from sales.

BREAK EVEN ANALYSIS

Every business is interested in ascertaining the breakeven point. It is the level of operation where total revenue or sales are equal to total cost. It is the point of no profit or no loss. The contribution received at Breakeven point is just sufficient to meet the fixed costs, leaving nothing as profit. The firm ceases to incur losses at this point or it starts to earn a profit from this point. Breakeven point can be expressed in algebraic method or graphical method.

Algebraic Method

Breakeven point may be expressed in terms of number of units to be produced, or in terms of volume of sales or in terms of the capacity of operation. It can be calculated by the following formula.

1. Break even point in units = $\frac{\text{Total Fixed costs}}{\text{Contribution per unit}}$

2. Break even point in value = $\frac{\text{Total Fixed costs}}{\text{P/V Ratio}}$

   or $\frac{\text{Total Fixed cost}}{\text{Contribution}} \times \text{sales}$

3. Break even point (in % of capacity utilization) =

   $\frac{\text{Total Fixed cost}}{\text{Contribution}} \times 100$

Illustration 2

From the following information calculate

1. P/V Ratio

2. Breakeven point in Units

3. Breakeven point in Value

Given :

Selling price per unit Rs.20

Variable cost per unit Rs.12

Fixed costs Rs.32000

1. P/V Ratio = Contribution/Sales x 100

   = 20-12/20x100 = 40 %

2. Breakeven point in units = Fixed costs/ Contribution per unit = 32000/8= 4000 units

3. Breakeven point in value = $\frac{\text{Fixed costs}}{\text{P/V Ratio}}$

   = 32000/40 x 100 = Rs.80000

Target Profit

The Break even analysis can guide an organization to determine the volume of sales required to earn a desired level of profit. The firm can decide upon the target return or profit in advance. To achieve this profit, efforts would be taken to increase the volume of sales. The volume of sales required to achieve the desired level of profit may be computed as follows:-

Number of units to be sold = $\frac{\text{Fixed costs + desired Profit}}{\text{Contribution per unit}}$

Sales volume required= $\frac{\text{Fixed costs+ Desired Profits}}{\text{P/V Ratio}}$

Illustration 3

Product A is sold at a unit selling price of Rs. 40 and the

variable cost incurred per unit is Rs.32. The firm's fixed cost are Rx.40000. Find out

1. The number of units to be produced to break even
2. The number of units to be sold to earn a profit of Rs.10000

Solution

Contribution = SP-VC

= 40-32 = 8 per unit

1. Number of units to be produced to Break even

   BEP= Fixed cost/ Contribution per unit = 40000/8

   = 5000 units.

2. Number of units to be sold to earn a profit of Rs.10000

$$\frac{\text{Fixed Cost + Desired Profit}}{\text{Contribution per unit}} = 40000+10000/8 = 6250 \text{ units}$$

Break Even Chart [Graphic Method]

It is the graphical presentation of breakeven point. It shows the relationship between sales volume, variable and fixed costs. It also shows the profit or loss at different levels of output or volume of sales.

Construction of Break even Chart

A Break even chart shows the total sales line, total cost line and the point of intersection called the breakeven point. It is constructed using a database of variable costs, fixed costs, total costs and sales at different levels of output.

The units of output or sales revenue are plotted along the X axis, using suitable scale of measurement. The costs and sales are plotted along the Y axis. The fixed costs line is plotted first. It forms a parallel line to the X axis indicating that the fixed cost remain constant at all levels of output. The

variable cost line is plotted next, starting from zero it progresses continuously indicating that the variable cost increase with the volume fixed cost line of sales. The total cost line is plotted above the variable cost line. It starts from the fixed cost line on the Y axis and follows the same pattern of variable cost line. The sales line is plotted finally. It starts from the zero and progresses continuously, indicating that the sales increase with larger units of output. The point of intersection of sales line and total cost line indicates the Break even point. A vertical line drawn to the X axis from this point shows the volume of output required to Break even.

Illustration 4

Draw a Break even chart using the following data Selling price per unit Rs.12

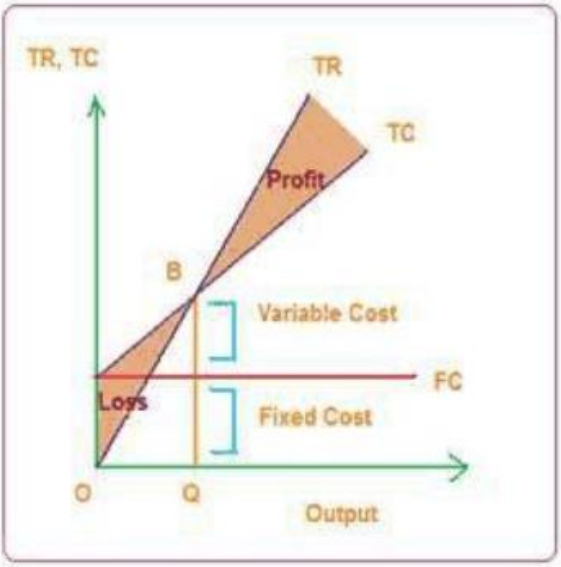
Variable cost per unit Rs.7

Fixed costs Rs. 2000

Budgeted output 800 units

Solution

Output [units]	Variable costs	Fixed costs	Total costs	Sales
200	1400	2000	3400	2400
400	2800	2000	4800	4800
600	4200	2000	6200	7200
800	5600	2000	7600	9600



ANGLE OF INCIDENCE

It is the angle caused by the intersection of the total sales line and total cost line at the Break even point. The width of the angle represents the rate of profitability i.e, the larger the angle the greater will be the profit the business is making on additional sales

MARGIN OF SAFETY

Margin of safety represents the strength of the business to face an adverse market condition. It is the excess of actual sales over break even sales. Higher the Margin of safety, better the position of the firm.

Margin of safety = Actual sales- Break even sales

Margin of safety = Profit / P/V Ratio

Or Profit = margin of safety x P/V Ratio

Illustration 5

Calculate BEP and Margin of safety from the following?

Sales 50000 units @ Rs.6 per unit

Prime cost Rs. 3 per unit

Variable overhead Rs. 1 per unit

Fixed costs Rs.75000 per annum

Solution :-

$$\text{BEP} = \frac{\text{Fixed Cost}}{\text{SP- VC per unit}} = \frac{75000}{6-4} = 37500 \text{ units}$$

BEP in value = 37500 x 6 = 225000

Margin of safety = Actual sales – BE sales

= [50000x6]-225000= Rs.75000

Illustration 6

The following data have been obtained from the records of a manufacturing firm.

	Period I	Period II
Sales	300000	320000
Total cost	260000	272000

Calculate

1. Break even sales
2. Profit when sales are Rs.360000.
3. Sales required to earn a profit of Rs.50000

Solution:

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

Change in profit = 48000-40000= 8000

Change in Sales = 320000-300000 = Rs.20000

P/V Ratio = 8000/20000 x 100 = 40%

Contribution = Sales x P/V Ratio

Period I = 300000 x 40/100 = Rs.120000

Fixed cost = Contribution – Profit = 120000- 40000

= Rs.80000

1. BEP = Fixed cost /P/V Ratio = 8000/40 x 100 = 200000
2. Profit when sales are Rs.360000 Contribution

   = 360000x40/100 = 144000

   Profit = Contribution – Fixed cost

   = 144000-80000=Rs.64000
3. Sales required to earn a profit of Rs.50000

Contribution required = Fixed cost + Profit required

= 80000+50000 = 130000

Sales = Contribution requires/ P/V ratio

= 130000/40x100 = Rs.325000

CASH BREAK EVEN POINT

Total fixed costs include depreciation. Depreciation is a non cash expense. Therefore, cash break even point is the number of units to be produced to give a contribution equal to cash fixed costs.

$$\text{Cash Break even point} = \frac{\text{Fixed cost – Depreciation}}{\text{Contribution per unit}}$$

Illustration 7

Calculate cash Break even point for the following

Selling price per unit Rs.40

Variable cost per unit Rs.32

Fixed cost [including depreciation of Rs.20000] Rs.60000 per annum

Solution

Contribution per unit = S- VC = 40-32 = 8

Cash break even point = $\frac{\text{Fixed cost – depreciation}}{\text{Contribution per unit}}$

= 60000-20000/8 = 5000 units

COMPOSITE BREAK EVEN POINT

In the case of companies producing more than one product an over all or composite break even point is calculated.

Composite Break even point = $\frac{\text{Total Fixed Costs}}{\text{Composite P/V Ratio}}$

Composite P/V Ratio = $\frac{\text{Total contribution x 100}}{\text{Total Sales of all products}}$

Cost-Volume Profit Analysis [CVP Analysis]

It is the study of the impact of a change in cost , price and volume on profit. Break even analysis is a narrow interpretation of cost volume profit analysis. But it is mainly confined to finding out the Break even point. In CVP analysis the relationship between cost, volume and profit is studied in detail. It helps management in profit planning, decision making and cost control.

Assumptions in CVP analysis

The assumptions in CVP analysis are the same as that under marginal costing.

- Cost can be classified into fixed and variable components.

- Total fixed cost remain constant at all levels of output
- The variable cost change in direct proportion with the volume of output
- The product mix remains constant
- The selling price per unit remains the same at all the levels of sales
- There is synchronization of output and sales, i.e, what ever output is produced , the same is sold during that period.

PROFIT VOLUME CHART OR [P/V CHART]

It shows the amount of profit or loss at different levels of output. When the output is zero, total loss will be equal to fixed costs. The fixed costs are recovered gradually when the volume of output is increased. When the output reaches the Break even point, the whole fixed costs are recovered. The firm incurs no loss or earns no profit. Thereafter, the firm makes a profit and the amount of profit increases with the increase in sales volume.

CONSTRUCTION OF P/V CHART

The same data used for drawing a Break even chart may be used for constructing a P/V chart. The following steps may be followed for constructing a P/V chart.

1. Sales or units of output are plotted along the X axis
2. The Y axis is used for marking fixed costs losses and profits
3. Points of Profits or losses are marked at different levels of sales and these points are joined to get the profit or loss line.
4. The point where the profit or loss line intersects the X axis is marked as the Break even point.

5. The angle at the BEP measures the angle of incidence
6. The distance between BEP and actual sales on the X axis measures the margin of safety

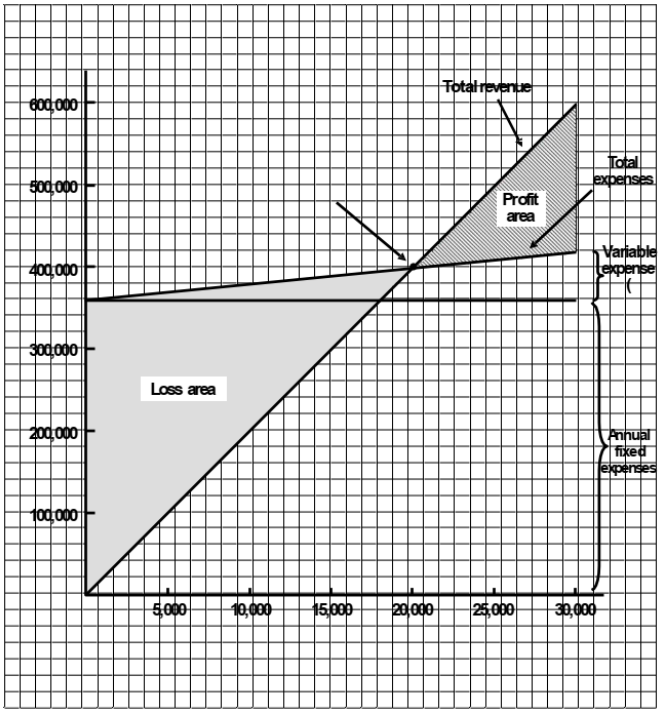
Illustration 7

Draw a Profit/ Volume graph from the following data and find out the BEP?

Sales for the year [20000units]	Rs.2000000
Variable Costs	Rs.1600000
Fixed costs for the year	Rs.2000000

What would be the profits when the output is 22000 units?

Cost-volume-profit graph:



MANAGERIAL ANALYSIS USES OF MARGINAL COSTING AND BREAK EVEN

Marginal costing and Beak even analysis are very useful to management. The important uses of marginal costing and Break Even analysis are the following

1. Profit Planning

The first step in profit planning is the ascertainment of Break even point. It is the level of operation when there is no profit no loss. Once BEP is found out the management can decide upon the required level of sales to earn a particular amount of profit.

2. Cost control

Cost control is an important function of management. In marginal costing all costs are classified into fixed and variable elements. Fixed costs are generally non controllable in nature. But variable costs can be controlled by managerial actions. Therefore, managerial attention is drawn towards the control of variable costs in marginal costing.

3. Decision making

Marginal costing helps to take important managerial decisions like ;-

1. Fixation of selling price under different market conditions
2. Whether to accept a special order or not
3. Whether to accept an export order or not
4. Selection of suitable product or sales mix
5. Make or buy decisions
6. Whether to discontinue a product or not
7. Closing down of a department

8. Merger of plant capacities
9. Key factor or limiting factor
10. Shut down or continue

4. Fixation of selling price

Selling price is actually the profit plus cost. But under severe competition or in a depressed market, it may not be possible to earn a uniform profit on sales. Some times the price may be fixed even below the cost. In marginal costing any product which gives the positive contribution is profitable and recommended in the long run.

Illustration 8

ABC Ltd is working below the normal capacity due to adverse market conditions. The present sales and costs of the firm are:

Normal capacity	5000 units
Actual output	3000 units
Direct Materials	Rs.30000
Direct Labour	Rs.12000
Variable overheads	Rs.3000
Fixed overheads	Rs.25000
Selling price per unit	Rs.20

It is difficult to sell additional units in the market over the present level of output. The company has received enquiries for supply of additional units below the current market price. You are advises to suggest the minimum price to be charged for additional units?

Calculation of Marginal cost

Direct Materials Direct	Rs.30000
Labour	Rs.12000
Variable overheads	Rs.3000

Marginal Cost Rs.45000

Marginal cost per unit = 45000/3000 = Rs.15

Therefore, the minimum price to be charged is Rs.15. Any price above the marginal cost will reduce the present loss by recovery of fixed costs.

Accepting Special Offer / Export Offer

Sometimes a firm may receive an offer for supply of additional units at a price lower than the current selling price. According to Marginal costing technique, any price quoted above marginal cost can be accepted. This is because the firm is already selling maximum units in the domestic market and making a profit. If the new offer is accepted, the contribution from such offer is purely profit and therefore the total profit of the firm is increased. However, before accepting the offer, it should be confirmed that it is within the capacity and there is no increase in fixed costs as a result of increasing the output

Illustration 10

MNP ltd is working at 60% of capacity producing 6000 units of output. The following details are available from its cost records.

Direct materials	Rs.24000
Direct labour	Rs.12000
Variable overheads	Rs.6000
Fixed overheads	Rs.15000

The output is sold at a price of Rs.10 per unit. The company receives an offer to export 4000 units @Rs.8.50 per

unit. Should the export order be accepted

Solution

Output 60% of capacity 6000 units	Per unit Rs.	Total' Rs.
Sales 6000 units @ Rs.10	10	60000
Less: Marginal costs		
Direct materials	4	24000
Direct labour	2	12000
Variable overhead	1	6000
Total marginal cost	7	42000
Contribution	3	**18000**
Less : Fixed over heads		15000
Profit		**3000**

The marginal cost of the product is Rs. 7 per unit. Since the price quoted by the exporters is higher than the marginal cost, the export offer should be accepted. There is a contribution of Rs.1.50 per unit [8.50-7] from every unit of export. Therefore, the total profit will increase by Rs.6000 [4000 units x1.50] by accepting the offer as shown below.

Profitability statement [after accepting export offer]

Capacity 100 % output 10000 units	Per unit Rs.	Total Rs.
Sales: Domestic 6000@ Rs.10	10	60000
Export 4000@Rs.8.50	8.5	34000
		94000
Less: marginal cost		
Direct materials	4	40000

Direct labour	2	20000
Variable overheads	1	10000
Total marginal cost		70000
Contribution		24000
Less; fixed costs		**15000**
Profit		**9000**

Selection of a Product/ sales mix

The marginal costing technique is useful for deciding the optimum product/sales mix. The product which shows higher P/V ratio is more profitable. Therefore, the company should produce maximum units of that product which shows the highest P/V ratio so as to maximize profits.

Illustration 11

ABC Ltd produces and sells two products A and B. the cost and sales data are given as

	Product A	Product B
Selling price	20	30
Direct material	10	15
Direct labour	4	5

Fixed overheads Rs.1200

Variable overheads are absorbed at 50% of direct labour The proposed sales mix are

a. 100 units of A and 200 units of B

b. 150 units of A and 150 units of B

c. 200 units of A and 100 units of B

Recommend which of the above sales mix the company should adopt

Solution

Marginal cost statement

	Product A	Product B
SELLING PRICE	20	30
Less: marginal costs		
Direct materials	10	15
Direct labour	4	5
Variable overheads [50% of direct labour]	2	2.5
	16	22.5
Contribution	4	7.5
P/V ratio = contribution/sales x 100	20%	25%

Since product B gives a higher P/V ratio . sales mix with the highest units of product B should be adopted . therefore the proposal [a], 100 units of A and 200 units of B is recommended. The profit will be the maximum as shown below

[a]100 units of A and 200 units of B

Contribution A 100 x 4	=400
B 200x7.5	=1500

	1900
Less: fixed cost	1200

Profit	700

[b]150 units of A and 150 units of B

Contribution A 150 x 4		=600
	B 150x7.5	=1125
		1725
Less: fixed cost		1200
	Profit	525

[c] 200 units of A and 100 units of B

Contribution A 200 x 4		=800
	B 100x7.5	=750
		1550
Less: fixed cost		1200
	Profit	350

Make or buy decision

Marginal costing helps the management in deciding whether to make a component part within the factory or to buy it from an outside supplier. Here, the decision is taken by comparing the marginal cost of producing the component part with the price quoted by the supplier. If the marginal cost is below the supplier's price, it is profitable to produce the component within the factory. Whereas if the supplier's price is less than the marginal cost of producing the component, then it is profitable to buy the component from outside.

Illustration 12

A television manufacturing company finds that while the cost of making component part No.Xo5 is Rs.4 per unit, the same is available in the market at Rs. 350 per unit with assured supply. The cost details are

Material	1.50
Labour	1.00
Variable OH	0.50
Fixed cost allocated	1.00
Total	4.00

Should the component part be made or bought ?what would be your suggestion if the component part is available at 2.50 in the market ?

Solution

Calculation of marginal cost of component

Material	1.50
Labour	1.00
Variable overhead	0.50
Marginal cost	3.00

The marginal cost of producing the component part is Rs. 3 where as the market price is Rs. 3.50 per unit. Therefore, the company should continue to produce the component. There is a saving of Rs.0.50 in every unit manufactured by the company.

If the market price is Rs.2.50, it is profitable to buy the component part from the market. There is a saving of rs. 0.50 on every unit bought from the market.

Closing down of a department or discontinuing a product

The firm that has several departments or products may be faced with this situation, where one department or product shows a net loss. Should this product or department be eliminated? In marginal costing, so far as a department or

product is giving a positive contribution then that department or product shall not be discontinued. If that department or product is discontinued the overall profit is decreased.

Illustration 13

MNP LTD is producing and selling three products A,B and C. the result of operation for the period are as under :-

	A	B	C
Sales Variable cost	10000 6000	15000 8000	25000 12000
Contribution Fixed cost	4000 3000	7000 8000	13000 6500
Net profit	1000	[1000]	6500

On the above basis management is thinking of dropping product B. You are asked to advice management whether the product B should be dropped or not ?

Solution

Presently the firm is making a total profit of Rs.6500. product B is giving a contribution of 7000. Therefore if product B is dropped total profit will decrease by Rs.7000 or will be incurring a net loss of Rs.500. therefore, the product B should not be dropped. Fixed cost are to be incurred whether product B is produced or not.

Profitability statement [after dropping product B]

	A	C	Total
Sales Less: Variable cost	10000 6000	25000 12000	35000 18000
Contribution Less: Fixed cost	4000	13000	17000 17500
Net profit			[500]

It is recommended to continue product B

Limiting factor or key factor

A limiting factor or key factor is defined as the factor which restricts the volume of operation of the firm. Sometimes a firm may be confronted with scarce supply of materials , labour hours or production capacities . when there is a limiting factor in operation, the product that gives a higher contribution per unit of the limiting factor is more profitable than other products . therefore contribution is related to unit of the limiting factor and choose the product mix based on higher contribution per unit of the limiting factor

Illustration 14

A toy manufacturing company produces two type of toys. The skilled labour required for the production of these toys is in short supply. You are given the following details of cost :-

	Toy A	Toy B
Direct materials	20	16
Standard time required		
For one unit [hrs.]	4 Hrs	16 hrs
Direct labour cost @2/Hr	8	6
Variable overhead	4	3
Selling price	50	40

Which type of toy is more profitable to produce and why?

The skilled labour available during a month is only 1200 Hrs. and maximum sales possible of each toy are only 200 units per month. In such a case what would be the optimum product mix of toys?

Marginal cost statement

	Toy A	Toy B
Selling price	50	40
Less: marginal cost		
Direct materials	20	16
Direct labour	8	6
Variable overhead	4	3
	32	25
Contribution	18	15

Contribution for Direct labour hour = $\frac{\text{Contribution per unit}}{\text{Direct labour hour percent}}$

Toy A = Rs.4.5 / hr

Toy B = Rs.4.5/hr

Toy B is more profitable since it gives a contribution of Rs. 5 per hour against Rs.4.50 per hour of Toy A

Since Toy B is more profitable maximum units of toy B are to be produced. The balance of direct labour hours is utilized for producing toy A

Thus optimum product mix is

200 units of Toy B requiring 600 hours [200 x 3 hrs]. the balance hours i.e, 1200-600 =600 is used for producing toy A. it is sufficient to produce 150 units of Toy A [600/4 hrs]

Thus the optimum product mix is 150 units of toy A and 200 units of toy B.

MODULE V
RESPONSIBILITY ACCOUNTING

Responsibility accounting is a system used in management accounting for control of costs. It is used along with other systems like budgetary control and standard costing. The organization is divided into different centers called "responsibility centers" and each centre is assigned to a responsible person.

According to Eric. L. Kohler " Responsibility Accounting is the classification, management maintenance, review and appraisal of accounts serving the purpose of providing information on the quality and standards of performance attained by persons to whom authority has been assigned."

The focus of responsibility accounting is on responsibility centers. The centers are clearly defined and responsibility is assigned to specified person . He is assigned with the right authority to carry out the functions and responsible for inputs resources and output of the centre. The accounting system collects and reports information relating to each centre so that performance evaluation is possible. Managerial control is exercised based on the reports received from each centre.

Features of Responsibility Accounting

1. It is a control system used by top management for monitoring and controlling operations of a business.
2. It is based on clearly defined functions and responsibilities assigned to executives.
3. The organization is divided into meaningful segments called responsibility centres.

4. Costs and revenues of each centre and responsibility of them are fixed on the individuals.
5. There is continuous reporting of information relating to each centre and appropriate corrective actions are taken wherever necessary
6. It is used along with budgetary and standard costing system

Steps in Responsibility Accounting

1. Identifying Responsibility centres

The organization is divided into meaningful segments based on functions. Each centre is assigned to a specified person. He is responsible for the costs and performance of that centre.

2. Fixing targets for Responsibility centres

Targets are fixed for each centre in terms of inputs and outputs or costs and revenues. The functions and targets are clearly communicated to the bottom level persons.

3. Measuring the actual performance

The performance of each centre is continuously monitored and evaluated. There is a system to communicate this information to the top management regularly

4. Evaluating performance

The actual performance is compared with targets and variances are analyzed

5. Taking corrective measures

Whenever there is an adverse variance in terms of cost, revenue or resources, managerial control is exercised by taking corrective actions.

Responsibility accounting like budgeting or standard costing, is a control device. The whole exercise is done to

check inefficiencies, wastages and losses, thereby improving the overall performance of the organization.

Responsibility Centres

These are segments or departments of an organization. A responsibility centre is assigned to a manager who is responsible for the performance of the centre. The centre is associated with its inputs and outputs. The inputs are the physical or intangible resources by the centre. These are measured in terms of costs expressed in monetary terms. The outputs are the performance of the centre measured in terms of revenues generated by the centre.

Types of Responsibility Centres

The responsibility centres may be classified into the following types;-

1. Cost centres
2. Revenue centres
3. Profit centres
4. Investement centres

1. Cost centres

A cost centre is a segment of the organization where inputs are used. The inputs are measured in terms of costs and expenses,. The manager of the cost centre is responsible for the cost incurred and is not responsible for the revenue of such centre. E.g. Service departments

2. Revenue Centres

A revenue centre is a segment of division where the manager is responsible for the revenue or sales. These are centres to which revenues can be attributed. The performance evaluation of such centre is made by comparing actual revenues with targeted revenues. E.g. Marketing departments

3. Profit centres

A profit centre is a product segment or product line to

which both costs and revenues can be attributed. These are the most important responsibility centre's among all. These centres are identified by the top management after a detailed analysis of all product segments. The performance of profit centre is evaluated by comparing actual profits with targeted profits.

4. Investment centres

An investment centre is a segment using assets or investments for generating profits. The manager of the centre is responsible for the effective use of assets under his control and generating targeted profits. The performance of the Investment centre is evaluated on the basis of Return on Investment.

Advantages of Responsibility accounting

1. It is used for exercising effective control on operations by fixing responsibilities on specific persons in an organization
2. It helps to increase profitability of the organization
3. It helps in the effective delegation of authority
4. The managers and employees will be more vigilant since their performances are constantly evaluated.
5. It helps in the implementation of budgetary control and standard accounting system.
6. A good reporting system is inevitable to Responsibility Accounting which facilitates quick decision making by management.

Disadvantages of Responsibility Accounting

1. It is difficult to identify and classify the responsibility centres
2. There will always be conflict of interests among the

responsibility centres and that may not be at the interest of the organization as a whole.

3. It may not be actually needed especially in small and medium organizations where there is already a system of budgetary control and standard costing.

4. The co-ordination of responsibility centres may be difficult if there are too many centres.

5. Resistance of managers and lack of co-operation from employees may happen

6. It needs a detailed communication and reporting system which is very costly.

ACTIVITY BASED COSTING [ABC]

ABC is an innovative method used for accurately allocating overheads to products or services which is against the conventional system of costing.. It was developed by Professors Robin Cooper and Robert. S. Kaplan. In ABC multiple activities are identified in production process that is associated with the incurrence of costs. The activities are influencing or driving the costs.

Steps in Activity based Costing

1. Identifying the appropriate activities.

Activities are the major tasks or group of tasks involved in the production process. These are associated with the cost of operation or job.

2. Relating costs to activities.

Costs are related to cost pools for different activities. For this purpose cost drivers are identified. Costs are traced in two stages.

a. In the first stage, cost drivers trace the costs of inputs or resources into cost pools. Cost driver means that a

activity that generated cost E.g. The number of purchase orders.

b. In the second stage, cost drivers trace the cost pools into product costs.

3. Determine Cost driver for each activity

Here, Cost drivers are identified for activities called activity drivers. There are events within activities that cause costs. E.g. For purchasing materials, the events included are inviting quotations, placing orders, receiving, inspection etc. An activity driver is selected for each cost pool depending on the availability of cost data.

4. Estimate application rate for each activity driver.

A predetermined rate is calculated for each activity driver by dividing the cost pool by the estimated level of activity.

5. Applying costs to products ad jobs.

The allocation of costs to products, jobs or services is done by multiplying the application rate by the usage of the activity driver for producing the product or completing the job.

Advantages of ABC

1. It helps in detailed analysis of activities and helps to reorganize activities and reduce those activities that do not add value to the product.
2. It helps to ascertain product costs more accurately by charging overheads in a scientific way.
3. It provides comprehensive cost data to management for decision making.
4. ABC can help management in strategic planning, decision making and control of costs.
5. The analysis of activities under ABC also helps better

performance evaluation of managers.

Disadvantages of ABC

1. ABC is based on historical costs and is not helpful for future planning and decision making.
2. In ABC there is no classification of cost into fixed and variable, which is relevant for short run decisions.
3. The implementation of ABC is more lengthy and costly compared with the traditional costing system.
4. Cost allocation will be arbitrary if the cost drivers selected are not associated with the factors that cause costs.