MODULE - I

1

BASICS OF BALANCE SHEET AND PROFIT AND LOSS ACCOUNT

Unit structure:

1.1 OBJECTIVE

After studying the unit, the students will be able to -

- Understand the meaning and types of financial statement.
- Know the parties interested in Financial statements
- Understand the objectives of Financial statements
- Explain the basics of Financial statements

1.2 INTRODUCTION

Government legislations require certain organizations to maintain proper accounts and draw financial statement. Public can understand from the financial statement the extent to which a company is discharging its social responsibilities. While issuing shares, bonds, financial statement become necessary as prospective investors can judge the financial position of the organization and able to take a proper decision. Workers union may study the financial statement and ascertain whether they can enforce their demand. Tax legislature makes it obligatory for the business entities to draw fair and objective financial statement. The financial statement serves as instruments to regulate equity and debentures issued by companies.

1.3 MEANING AND TYPES OF FINANCIAL STATEMENTS

Meaning:

Financial statements are plain statements based on historical records, facts and figures. They are uncompromising in their objectives,

nature and truthfulness. They reflect a judicious combination of recorded facts, accounting principles, concepts and conventions, personal judgements and sometimes estimates.

Financial statements consist of 'Revenue Account' and 'Balance Sheet'.

1. Revenue Account / Income Statement:

Revenue Account refers to 'Profit and Loss Account' or 'Income and Expenditure Account' or simply 'Income Statement'. Revenue Account may be split up or divided into 'Manufacturing Account', 'Trading Account', 'Profit and Loss Account' and 'Profit and Loss Appropriation Account', Revenue Account is prepared for a period, covering one year. This statement shows the expenses incurred on production and distribution of the product and sales and other business incomes. The final result of this statement may be profit of loss for a particular period.

2. Balance Sheet:

Balance sheet shows the financial position of a business as on a particular date. It represents the assets owned by the business and the claims of the owners and creditors against the assets in the form of liabilities as on the date of the statement.

3. Funds Flow Statement –

It describes the sources from which the additional funds were derived and the use of these funds. Funds flow statement helps to understand the changes in the distribution of resources between two balance sheet periods. The statement reveals the sources of funds and their application for different purposes.

4. Cash flow Statement:

A cash flow statement shows the changes in cash position from one period to another. It shows the inflow and outflow of cash and helps the management in making plans for immediate future. An estimated cash flow statement enables the management to ascertain the availability of cash to meet business obligations. This statement is useful for short term planning by the management.

5. Schedules:

Schedule explains the items given in income statement and balance sheet. Schedules are a part of financial statements which give detailed information about the financial position of a business organization.

1.4 PARTIES INTERESTED IN FINANCIAL STATEMENTS

In recent years, the ownership of capital of many public companies has become truly broad based due to dispersal of shareholding. Therefore, one may say that the public in general has become interested in financial

statements. However, in addition to the share holders, there are other persons and bodies who are also interested in the financial results disclosed by the annual reports of companies. Such persons and bodies include:

1. Creditors, potential suppliers or others doing business with the company;
2. Debenture-holders;
3. Credit institutions like banks;'
4. Potential Investors;
5. Employees and trade unions;
6. Important customers who wish to make a long standing contract with the company;
7. Economists and investment analyst;
8. Members of Parliament, the Public Accounts Committee and the Estimates Committee in respect of Government Companies;
9. Taxation authorities;
10. Other departments dealing with the industry in which the company is engaged; and
11. The Company Law Board

Financial Statement analysis, therefore, has become of general interest.

1.5 OBJECTIVES OF FINANCIAL STATEMENTS

The main object of financial statements is to provide information about the financial position, performance and changes taken place in an enterprise. Financial statements are prepared to meet the common needs of most users. The important objectives of financial statements are given below:

1. Providing information for taking Economic decisions:

The economic decisions that are taken by users of financial statements require an evaluation of the ability of an enterprise to generate cash and cash equivalents and of the timing and certainty of their generation. This ability ultimately determines the capacity of an enterprise to pay its employees and suppliers meet interest payments, repay loans and make distributions to its owners.

2. Providing information about financial position:

The financial position of an enterprise is effected by the economic resources it controls, its financial structures its liquidity and solvency and its capacity to adapt to changes in the environment in which it operates.

Information about financial structure is useful in predicting future borrowing needs and how future profits and cash flows will be distributed among those with an interest in the enterprise. This information is useful in predicting how successful the enterprise is likely to be in raising further

finance. Information about liquidity and solvency is useful to predicting the ability of the enterprise to meet the financial commitments as fall due.

3. Providing information about performance(working results) of an enterprise:

Another important objective of the financial statements is that it provides information about the performance and in particular its profitability, which requires in order assessing potential changes in the economic resources that are likely to control in future. Information about performance is useful in predicting the capacity of the enterprise to generate cash inflows from its existing resource base as well in forming judgment about the effectiveness with which the enterprises might employ additional resources.

4. Providing Information about changes in financial position:

The financial statements provide information concerning changes in the financial position of an enterprise, which is useful in order to assess its investing, financing and operating activities during the reporting periods. This information is useful in providing the user with a basis to assess the ability of the enterprise to generate cash and cash equipments and the needs of the enterprise to utilize those cash flows.

1.6 BASICS OF INCOME STATEMENT AND BALANCE SHEET

Each business firm has to prepare two main financial statements viz. Income Statement and Balance sheet. The income statement reveals the profit of loss during a particular period generated from the activities of a business. Balance sheet shows the financial position of a business on a particular date.

- **Income statement**

Income statement summaries the incomes /gains and expenses /losses of a Business for a particular financial period. The format of Income statement explains in detail the items to be included in the statement. It is presented in the traditional T Format and also in the vertically statement form.

1. Horizontal Form T form Manufacturing Trading and Profit and Loss Account For the year ending

Dr. Cr.

Particulars	Rs.	Particulars	Rs.
To Opening stock		By Closing stock	
Raw materials		Raw Material	
Work in progress		Work in progress	
To Purchase of raw materials		By Cost of finished goods c/d	
To Manufacturing wages		By Sales	

To Carriage/ Freight inwards		By Closing stock of Finished Goods	
To Custom duty		By Gross Loss c/d	
To Other factory Expenses		By Gross profit b/d	
To Opening stock		By Business incomes and Gains	
Finished Goods		By Net Loss c/d	
To Cost of finished		By Balance b/d from Previous year	
Goods b/d		By Net Profit b/d	
To Gross profit c/d			
To Gross loss b/d			
To Office and administration Expenses			
To Interest and financial Expenses			
To Provision for Income tax			
To Net Profit c/d			
To Net loss b/d			
To Transfer to General reserve			
To Dividend			
To Balance c/f			

Particulars	**Rs.**	**Rs.**
Gross Sales		xxx
Less : Sales returns	xxx	
Sales tax / Excise duty		
Net Sales		xxx
Less : Cost of goods sold		
(Materials consumed + Direct Labour+ Manufacturing Expenses)	xxx xxx xxx	
Add / Less : Adjustment for change in stock	xxx	xxx
Gross Profit		xxx
Less : Operating expenses	xxx	
a. Office and administration Expenses	xxx	
b. Selling and distribution Expenses	xxx	xxx
Add : Operating Income		xxx
Operating Profit	xxx	

Add : Non Operating Income		xxx
Less : Non Operating expenses (including interest)		xxx
Profit before interest and tax		xxx
Less : Interest		xxx
Profit before tax		xxx
Less : Appropriations:	xxx	xxx
a. Transfer to reserves	xxx	xxx
b. Dividends declared / paid		xxx
Surplus carried to Balance Sheet		xxx

- **Balance sheet:**

It is one of the major financial statements which presents a company's financial position at the end of a specified date. Balance sheet has been described as a "snapshot" of the company's financial position at a moment for e.g. the amounts reported on a balance sheet dated March 31st, 2016 reflects that all the transactions throughout December 31st have been recorded. The balance sheet provides information related to the assets, liabilities and the shareholders' equity of the company as on a specific date.
Total Assets = Total Liabilities + Share holders' equity

The companies Act, 1956 stipulates that the balance sheet of a joint stock company should be prepared as per Part I of Schedule VI of the Act. However, the statement form has been emphasized upon by accountants for the purpose of analysis and interpretation.

Understanding Corporate Balance Sheet: A.
Assets side:

1. Fixed Assets:

Fixed Assets are called long-term assets. These assets are used over several periods. They are major sources of revenue to the business. They are intended for long term use in the business. They are called "bundle of future services" or "Sunk Costs". The group of fixed assets is explained in the proforma. Generally the Fixed assets are classifies as:

a) Tangible movable assets;
b) Tangible immovable assets; and
c) Intangible assets.

a) Tangible movable assets are the assets which can be seen, touched and moved from one place to another place. Plant and Machinery, furniture and fixtures, transportation equipments etc. are tangible movable assets.

b) Tangible immovable assets are the assets which can be seen and touched but cannot be moved from one place to another place. Such assets include land, buildings, mines, oil wells, etc.

c) Intangible assets are the assets which cannot be seen and touched. However, their existence can only be imagined such as patents, trademarks, copyrights, goodwill, etc.

The Fixed Assets are presented as:
Gross Block - Provision for Depreciation = Net Blocks

2. Investments:

Investments may be short-term or long term. Short-term investments are marketable securities and they represent temporary investments of idle funds. These investments can be disposed off by the company at any time. Investments are shown at cost. Cost includes brokerage, fees and all other expenses incurred on acquisition of investments. However, the market value is shown by way of a note.

Long-term investments are held for a long time. They are required to be held by the business by the very nature and conditions of the business. For example, a company engaged in generating electricity may be required to hold the bonds of the Electricity Board. These bonds are retained by the company so long as the company uses electric power.

As per Schedule VI of the Indian Companies Act 1956, investments are shown separately, showing the nature of investments and the mode of valuation of various classes of securities.

Long term Investments are grouped under fixed assets and short term investments under current assets.

3. **Current Assets, Loans and Advances:**

The item, "Current Assets, Loans and Advances" is divided into two parts:

a. Current Assets, and
b. Loans and Advances.

a. Current Assets and Quick assets:

"Current Assets include cash and the other assets that are likely to be converted into cash and the cash thus generated is available to pay current liabilities. Current assets are not intended for long-term use in business. Current assets represent employment of money by the company on a short-term basis. They circulate within the group. **For example,** cash becomes raw material when material is purchased, material becomes finished goods, finished goods become cash or debtors when sold and so on.

Current Assets = Stock + Debtors + Cash & Bank + Loans & Advances + Marketable Securities + Other Current Assets

In fact, total current assets are known as "Gross Working Capital". Current assets less current liabilities are known as 'net working capital'.

Quick Assets are known as 'near cash' assets. In other words, quick assets are those which can be converted into cash quickly. Therefore, they are also known as liquid assets. Cash and bank balances are the most liquid assets. Debtors and cash advances can be converted into cash at a short notice. Therefore, they are also regarded as quick assets. Marketable investments can be converted into cash, fall into the category of quick assets. Inventory does not fall in this category of quick assets, since it cannot be converted into cash quickly, as material is to be converted into finished goods and then they should be sold. Expenses paid in advance do not satisfy the criteria of quick assets. They cannot be converted into cash. They can be received in the form of services.

Therefore Quick Assets = Current Assets – Inventory – Prepayments

b. Loans and Advances:

Loans and advances given are current assets. It includes different types of advances such as advances against salary, advances against machinery, advances to subsidiary, prepaid expenses on account of rent, taxes, insurance, etc.

4. Miscellaneous Expenditures and losses:

This heading covers Fictitious Assets and other expenses which are made for future on a mass basis. These expenses are really not assets but the whole balance on the account of these items is not charged to current year's Profit and Loss A/c therefore the amount to the extent not written off or adjusted is shown on the Assets side as Miscellaneous expenditures.

The **examples** of fictitious assets are:

a. Preliminary expenses.
b. Brokerage on issue of shares and debentures.
c. Discount on issue of shares and debentures.
d. Share or debenture issue expenses.
e. Heavy Advertisement and Publicity expenditure.
f. Profit and Loss A/c debit balance.

Liquidity means easy convertibility into cash. Though ultimately all assets are converted into cash, the term liquidity refers not only to the nature of assets but also to the purposes of holding the assets. Assets are normally arranged in order of permanency i.e., from least liquid to most liquid.

B. Liabilities Side

The term 'liability' when used in accounting, means a debt. A debt is something that a person or an organization owes to another person or organization. In other words, Liabilities are the claims of outsiders against the business. Technically speaking, all liabilities shown in a balance sheet are claims against all assets shown in it. But, there may be certain cases where a liability has a claim against a specific asset. Even under such circumstances, the liabilities are shown separately, not as a deduction from the specific assets.

Classification of Liabilities:

The liabilities of an enterprise may be classified into three categories

1. Permanent Funds or Proprietors' Funds.
2. Semi-permanent Funds or Long-term Borrowings.
3. Current liabilities and Provisions.

1. Proprietor's Funds:

These are the funds provided by the proprietors (owners) or the shareholders. Proprietors' fund represents the interest of the proprietors in the business. This is the amount belonging to the proprietors. Proprietors' fund is also called as 'Proprietors' Equity', 'Owners' Funds', or 'Shareholders' Funds'. This is also known as the 'Net Worth' of the business. Owners' Equity refers to the claim of the owners it includes:

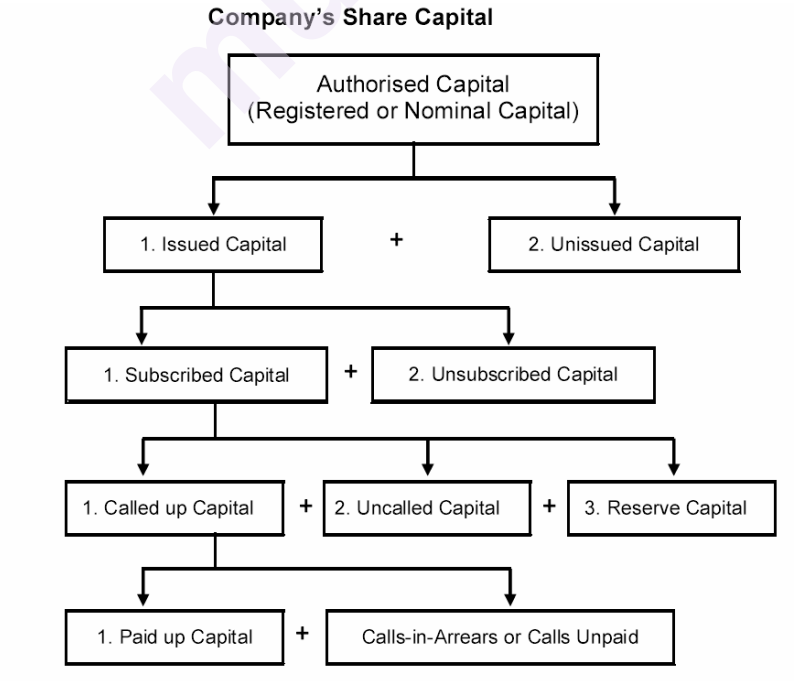
Owners' Equity = Capital (May be Equity Share Capital only or Equity and Preference Share Capital) + Reserves + Profit and Loss A /c credit balance – Accumulated losses and Fictitious assets.

Owners' equity increase either through fresh investments by the owners or by way of increasing the earnings retained i.e., profits not distributed. (Retained earnings are that part of the total earnings which have been retained for use in the business)

a. SHARE CAPITAL:

Share capital is the amount that is raised by a company from the public at large, through the issue of shares. There are different concepts of share capital from the legal and accounting points of view.
The following chart details the different concepts of capital :

Company's Share Capital



i. **Authorised Capital :** Authorised Capital is the maximum capital a company can raise as mentioned in the Memorandum of Association under its Capital Clause.

ii. **Issued Capital :** A company usually does not need the entire registered capital. Issued capital is that part of the Authorised capital; which is actually offered to the prospective investors for subscription. The balance of the Authorised capital which is not issued is called the 'unissued capital.'

iii. **Subscribed Capital :** Subscribed capital is that part of the issued capital which has been subscribed or taken up by the public. Therefore, the subscribed capital may be equal to or less than the issued capital.

Called up Capital Uncalled Capital: The company, therefore, may collect the capital in several instalments as per its need. The called-up capital is that portion of the subscribed capital which has been called or demanded by the company to be paid. The capital that is not demanded from the shareholders is called uncalled capital.

iv. **Paid up Capital:** Paid up capital is that part of the called up capital which has been actually paid by the members. The paid-up capital is the called-up amount less calls not paid. (Calls unpaid or calls-in-arrears).

v. **Reserve Capital :** It is that part of the uncalled capital which may only be demanded on winding up or liquidation, but not when the company is a going on. A company may determine this amount by a Special Resolution.

b. RESERVES AND SURPLUS:

A business may have to meet certain compulsory or voluntary, foreseen or unforeseen, recurring or non-recurring obligations in future. It is advantageous to for the organization to make provision in advance to meet them. If not sudden payment may adversely affect the financial health of the company. In order to avoid such situations some part of profit are retained in each year which is termed as 'Retained Earnings' or 'Plough Back of profits'. It means the reserves represent amounts set aside out of divisible profits. They are appropriations of profits. Indian Companies Act requires every company to transfer a specific percentage (upto 10%) of the profits to "Reserve" accounts.

Reserve created for a specific purpose is called as a "Specific Reserve" and a reserve created for a general purpose is called as a "General Reserve." General reserves are free and can be utilized for Payment of Dividends, Development and expansion purpose or for any other purpose the company thinks proper.

According to Companies Act "Reserve shall not include any amount written off by way of providing for depreciation, renewals or diminution in value of assets or retained by way of providing for any known liability."

It is compulsory for the business organization to disclose each individual head of the reserves in the balance sheet with its opening balance as per last balance sheet, additions thereto and deductions there from in the current yare.

2. LONG-TERM LIABILITIES:

A company raises finance either from owners or through external borrowings. External borrowings of a company which constitute its "owed funds" are important sources of long-term finance. These borrowings are termed as 'fixed liabilities' or 'term liabilities' or 'long term-loans'. They may take various forms such as debentures, public deposits, bank loans, deferred payments, etc. They may be fully secured or partly secured or unsecured.

3. CURRENT LIABILITIES AND PROVISIONS:

a. Current Liabilities:

Current liabilities are those short-term obligations of an enterprise which mature within one year or within the operating cycle. They constitute short-term sources of finance. It includes Sundry Creditors, Bills Payable, Interest accrued but not due, outstanding expenses, Unclaimed dividends and Bank Overdraft.

These liabilities are not normally secured and no interest is payable on them with the exception of bank overdrafts. These liabilities, are generally paid off by utilizing current assets or by creating a current liability.

Actually all current liabilities are payable within a short period of time. However, Bank Overdraft is the current liability which is not paid immediately or in a very short-time, in practice. Therefore, **Bank Overdraft is not considered as a quick liability.** It is a permanent arrangement with the banker. Hence

Quick Liabilities = Current Liabilities – Bank Overdraft

b. Provisions:

'Provision' means any amount retained by way of providing for any known liability of which the amount cannot be determined with substantial accuracy. Provisions have to be made for maintaining the integrity of assets or for known liabilities. Although the amount of liability is not certain organization has to made provision on best estimates. The examples of provisions are Provision for depreciation on assets, Provision for doubtful debts, Provision for proposed dividends, Provision for taxation.

4. CONTINGENT LIABILITIES:

According to ICAI, Contingent liability refers to an obligation relating to an existing condition or situation which may arise in future depending on the occurrence or non-occurrence of one or more uncertain future events. These liabilities may or may not be converted into actual liabilities at some future date. It is a liability which may or may not occur. But on the date of the Balance Sheet, it is not known definitely whether the liability would arise or not. But as a matter of caution, it is indicated in the balance sheet for the sake of information and disclosure, under the head "Contingent Liabilities. Some of the examples of Contingent Liabilities are Discounted Bills of Exchange, Disputed liability on account of income-tax, etc., about which appeal has been filed, Uncalled amount on partly paid-up shares and debentures held by the company as investments, Cumulative preference dividend in arrears, Matters referred to arbitration, Claims not acknowledged as debts, Estimated amount of contracts remaining to be executed on capital account and not provided for, Guarantees given by the company, Bonds executed. and debentures held by the company as investments, Cumulative preference dividend in arrears, Matters referred to arbitration, Claims not acknowledged as debts, Estimated amount of contracts remaining to be executed on capital account and not provided for, Guarantees given by the company, Bonds executed.

Following are the proforma of the Balance sheet

1) Horizontal Form:

Liabilities	Rs	Assets	Rs
Share Capital (with all particulars of authorized, issued, subscribed and Called up capital) Less: Calls in arrears Add: Forfeited shares **Reserve and Surplus** 1. Capital Reserve 2. Capital Redemption Reserve **3.** Share premium **4.** Other Reserves Less: P&L a/c Debit balance **5.** Profit and Loss appropriation A/c **6.** Sinking fund A/c		**Fixed Assets** 1. Goodwill 2. Land and Building 3. Lease hold Property 4. Plant and Machinery 5. Furniture and fixture 6. Patents and trade marks 7. Vehicles **Investments** **Current assets, Loans and Advances** **a. Current assets** 1. Interest accrued on Investment 2. Loose tools 3. Stock in Trade 4. Sundry debtors Less Provision for Bad debts 5. Cash in Hand 6. Cash at Bank	

Long term loans **a. Secured loan** Debentures Add: Outstanding Interest Loan from Banks **b. Unsecured loans** Fixed deposits Short term loans and advances **Current liabilities and Provisions** **a. Current liabilities** 1. Bills payables 2. Sundry creditors 3. Bank overdraft 4. Income received in advance 5. Unclaimed Dividends 6. Other liabilities **b. Provisions** 1. Provision for taxation 2. Proposed dividends 3. Provident fund and Pension fund **Contingent Liabilities**		**b. Loans and Advances** 1. Advances to subsidiaries 2. Bills receivables 3. Prepaid expenses **Miscellaneous expenditure** 1. Preliminary expenses 2. Discount on issue of shares and Debentures 3. Underwriting commission 4. Profit and Loss a/c (debit balance)	

2. Vertical Form

Income Statement of ..... for the year ending .....

Previous	Particulars	Schedule	Current Year
	I. Sources of Funds **1.** Shareholders' Funds a. Capital b. Reserves and surplus **2.** Loan funds a. Secured loan b. Unsecured loans **TOTAL** **II. Application of Funds** 1. Fixed Assets a. Gross Block Less Depreciation		

	b. Net Block 2. Investments 3. Current Assets, Loans and Advances Less Current Liabilities and Provisions **Net Current Assets** 4. Miscellaneous expenditure to the extent not written off or adjusted Profit and Loss a/c debit balance **TOTAL**		

- **Statement of Retained Earnings:**

The Statement of Retained Earnings is prepared to show how the balance in Profit and Loss accounts is appropriated for various purposes like provision for dividend, transfer to reserves etc. The balance on this account is finally shown on the Balance sheet Under the heading Reserve and Surplus.

1.6 LIMITATION OF FINANCIAL STATEMENT

Following are the limitations of financial statements:

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

To overcome from the limitations it becomes necessary to analyse the financial statements.

1.7 EXERCISE

1. Discuss the meaning, nature and limitations of Financial Statement.
2. Explain the several parties interested in Financial statements..
3. Discuss the horizontal and vertical analysis of Balance sheet.

2

ANALYSES OF THE FINANCIAL STATEMENTS (Comparative Statements, Common size statements, Trend analysis)

Unit Structure

2.1 INTRODUCTION AND MEANING OF ANALYSIS

Financial statements viz. the income and the position statement i.e. the balance sheet, are indicators of two significant factors : profitability and financial soundness. Analysis of statements means such a treatment of the information contained in the two statements as to afford a full diagnosis of the profitability and financial position of the firm concerned.

To have a clear understanding of the profitability and financial position, the data provided in the financial statements should be methodically classified and compared with figures of previous periods or other similar firms. Thereafter, the significance of the figures is established. Such a comparative study would lead us to further questioning, the answers for which have to be brought out by further and deeper analysis. We may work out the figure of income of two firms A and B for a period but to analyze systematically one should (i) arrange the cost and revenue, (ii) relate the income to the capital employed and (iii) compare the result. On this basis we may come to know that A is more profitable than B (vice versa). The next question is why is a more profitable than B. This question will require further analysis and study of the underlying situation.

We may define financial statement analysis as the process of methodical classification, comparison and raising pertinent questions and then seeking answers for them.

2.2 OBJECTS OF ANALYSIS

The different parties look at the company from their respective points of view, but the objects generally looked for are : (i) profitability and (ii) financial condition. It can be said that the objective of financial statement analysis is a detailed cause and effect study of the profitability and financial position.

The objectives of financial statement analysis may also be broadly classified on the basis of the persons interested in the analysis as

(i) External: An external analyst usually has to rely only on the published information.

(ii) Internal: An internal analyst would really know the full story behind each and every figure of the financial statement, he would also get further supplementary information to properly assess the significance of the figures. Such analysis would be more reliable than that done by an outsider. However, internal analysis may be biased; external analysis would be unbiased and impartial.

2.3 ARRANGEMENT OF FIGURES FOR ANALYSIS

Before meaningful analysis can be made, the figure have to be arranged properly. For analysis purpose usually instead of the two column (T Form) statements as ordinarily prepared, the statements are prepared in single (vertical) column form which one should throw up significant figures by a process of addition or subtraction. The chief advantage of such presentation is that figures for a number of firms or number of years can be set aside by side for comparison purposes.

A useful form of financial statement was suggested as early as 1917 by the federal reserve Board of the U.S.A. This suggestion was made by the Board to its member banks so that the latte may insist on that presentation while getting the financial statements of their clients for granting of loans etc. This form, it was thought would facilitate the member banks in analyzing the statement. Later this form was also approved by the American Institute of Accountants as suitable for annual reports to the shareholders. The following form (based on the form recommended by the federal reserve Board) is considered suitable for presentation of financial information to shareholders mainly for two reasons:

(1) It provides the information in an easily understandable manner; and
(2) I provides the appropriate figures facilitating further analysis

To facilitate these advantages the financial statements have to arrange in a vertical format which are explained below:

POSITION STATEMENT or Balance Sheet AS ON……

Previous Year Rs.			This Year Rs.
…..	Cash in hand		……
…..	Cash at bank		……
…..	Bills receivable		……
……	Book debts (less provision)		…….
……	Marketable trade investment (at….)		……
……	**(1) Liquid assets**		…..
…..	**(2) Inventories (valuation)**		…..
…..	**(3) Current assets = (1) + (2)**		…..
…..	Bills payable		…..
…..	Creditors for supply of goods		…..
…..	Outstanding expenses		…..
…..	Bank overdraft		…..
…..	Other unsecured creditors (short term)		…..
……	Other liabilities payable in a year's time (including debentures redeemable in a year)		…..
…..	**(4) Current liabilities**		…..
….	Provision for taxation	…	
….	Dividend payable/proposed	…	
….	Other provisions	…	
….	**(5) Provisions**		….
….	**(6) Current liabilities and provisions = (4) + (5)**		….
….	**Net current assets (net working capital) = (3) – (6)**		
….	Land and buildings	…	
….	Plant and machinery	…	
….	Loose tools	…	
….	Furniture and fixtures	….	

_____	**(7) Fixed assets**	____	
----------			---------
....	**(8) Capital employed = (7) +(8)**		....
======			=====
....	Investment in government securities		
....	Investment in subsidiaries	...	
....	Other investments		...
....	Other assets (non-trading)		...
_____			_____
....	**(9) Non business assets**		....
=======			======
....	**(10) Company's Net Assets = (9) + (10)**		
....	% Debentures(Security)		...
....	% Secured loan(Security)		...
....	Loans (unsecured)		...
			____
	(11) Long term loans		....
_____			_____
....	**Shareholder's net worth = (11) - (12)**		....
-======			=======
....	**(12) % Preference share Capital**		....
======			=======
....	**Equity shareholders net worth = (13) - (14)**		....
======			=======
	Represented by		
....	Equity share capital		....
....	Forfeited shares		....
...	Reserves		...
....	Surplus		...
_____			____
....	**(13) Equity shareholders' claims**		...
	Less :		
....	Accumulated losses	...	
....	Miscellaneous expenditure not written off (Preliminary expenses, discount on issue of shares and debenture, etc.)	...	....
_____			_____
....	**Equity shareholders net worth**		....
======			=======

An attempt could be made to present the income statement too in a similar manner. The following form of presentation is recommended :

INCOME STATEMENT FOR THE YEAR ENDED…….

	Previous Year	This Year Rs.
	Rs.	Rs.
Gross Sale proceeds		
Less : Returns		
Sales tax		
(1) Net sales for the year		
(2) Cost of Goods sold (as per cost statement)		...
(3) Gross margin = (1-2)		
(4) Operating expenses :		
Administration expenses		
Distribution expenses		
Selling expenses		
(5) Net margin or operating profit = (3)-(4)		
(6) Non trading income (net) except Interest		
(7) Income before interest and Taxation(IBIT) = (5)+(6)		
(8) Interest		
(9) Net Income before taxation = (7)-(8) (IBT)		
(10) Tax		
(11) Net income after taxation (IAT) = (9)-(10)		
(12) Amounts written off/appropriated, Provisions for dividends, etc.		
(13) Income carried forward to Balance sheet = (11)-(12)		

COST STATEMENT FOR THE PERIOD …..

Previous Year Rs.		This Year Rs.
…	**Opening stock of materials**	…
…	**Add** Purchases of materials	…
…	**Less** Expenses on purchases	…
…	Materials available	…
…	**Less** : Closing stock of materials	…
…	**Materials consumed (A)**	
…	**Add Direct labour cost (B)**	
	Add Direct Overhead (C)	
…	**Add** Opening stock of work-in-progress)	…
	Less Closing stock of work-in-progress) (D)	…
…	**Prime cost** (A +B + C+D = E)	
…	**Manufacturing expense (F)**	
…	**Factory depreciation (G)**	
	Cost of production (E)+(F)+(G)=(H)	
…	**Opening stock of finished goods (I)**	
	Cost of goods available for sale (H)+(I)=(J)	
…	**Less: Closing stock of finished goods (K)**	
…	**Cost of goods sold (J)-(K)=(L)**	

2.4 TOOLS OF ANALYSES

As in balance sheet, so in the revenue statement, as shown above, ready figures can be obtained for the purpose of further analysis. For instance, gross profit, net profit, materials consumed, prime cost, works cost, cost of goods sold, etc. are readily available. This would facilitate the calculation of ratios.

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

1. Comparative financial and operating Statements
2. Common-size statement
3. Trend ration and trend analysis
4. Average Analysis
5. change in working capital

6. Fund-flow and cost-flow analysis
7. Ratio analysis

1. Comparative Financial and Operating Statement:

Here the Balance Sheet and Income Statement are prepared in a Comparative from as the impact of the conduct of business is brought to bear in the Balance Sheet, Comparative statement are made to show –

a. Increases and decreases in absolute data in term of money values.
b. Increases or decreases in absolute data in term of percentage.
c. Comparisons expressed in ration.
d. Percentage of total.

Comparative financial statements are very useful to the analyst as they provide information necessary for the study of financial and operating trend over a period of years. They indicate the duration of the movement with respect to the financial position and operating results. Financial data become more meaningful when compared with similar data for a previous period or a number of prior periods. The comparative profit and loss account presents a review of operating activities of the business. The comparative balance sheet shows the effect of operations on the assets and liability and changes in the financial position during the period under consideration.

2. Common size Statement:

Comparative statement showing only the vertical percentage or ration for financial data without giving any rupee value are known as common size statement.

3. Trend Analysis:

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

(i) Trend percentage,
(ii) Trend ratio,
(iii) Graphic and diagrammatic representation.

Here the percentage column are more relevant than the figure.

4. Average Analysis:

It is an improvement over trend analysis method. Here the trend can be presented on the graph paper also in the shape of curve. In this from the analysis and comparison become more comprehensive and impressive.

5. Statement of changes in Working Capital:

This statement is prepared to know an increase or decrease in working capital over a period of time. The statement gives an accurate summary of the events that affects on the amount of working capital.

6. Funds flow and Cash flow Analysis:

Funds flow analysis is a valuable aid for the financial executive and creditor for the evaluation of the use of funds by the firm and determining how the funds for the uses are generated. A Funds flow statement indicates the sources of funds and the application of during the period under review.

7. Ratio Analysis:

An absolute figure does not convey much meaning. Ration means the relationships expressed in mathematical terms between two figures which are connected with each other in some manner.

2.5 COMPARATIVE STATEMENTS

The comparative statements are important tool of horizontal financial analysis. Financial data become more meaningful when compared with similar data for previous period or a number of previous periods. Such analysis helps as in forming an opinion regarding the progress of the enterprise.

Comparative statements definition:

Foulke has defined these statement as "statement of financial position of business so designed as to provide time perspective to the consideration of various elements of financial position embodied in such statement.'' In any comparative statement columns for more than one year's position or working can be drawn and figures may be provided. The annual date can be compared with similar monthly or quarterly data can be compared with similar data for the same months or quarterly of previous years. In such statement the figure can be shown at the following value.

a. In absolute money value
b. Increase or decrease in absolute values
c. By the way of percentages
d. By the way of common—size statement

Two comparable units can be compared regarding profitability and financial position. The two organization may not have the identical heads of account In order to get over the difficulty, the data must first be property set before comparison In the preparation of comparative financial statement, uniformity is essential.

Importance of Comparative Statement:

These statements are very useful in measuring the effect of the conduct of a business enterprise over the period under consideration. Regardless of its financial strength at a given point of time, the enterprises must operate successfully if it hopes to continue as a going concern. The income statement measures the effects of operation. But the progress of these operations may be viewed over number of periods by preparing the income statement in a comparative form. Similarly the effect of operation of financial position and the progress of a business in term of

financial position can be presented by means of a comparative balance sheet. The accounting authorities in U. S. A. have strongly recommended and encouraged the preparation of financial statement in the comparative from recognising the importance of comparative financial date for two years, the Indian companies Act 1956 has made this fact compulsory that in the balance sheet of a company the figure for the previous year should also be given to facilitated comparison. Though the balance sheet is a useful statement, the comparative balance sheet is even more useful for the it contains not only the data of a single balance sheet but also for the past years which may be useful in studying the trends.

PREPARATION OF COMPARATIVE STATEMENTS:

The form of comparative balance sheet consists of two or more columns according to the number of year we prepare the balance sheet, for the date of original balance sheet and columns for the increases or decreases in various items. Here is a proforma of comparative balance sheet for two years

Specimen of Comparative Balance Sheet for the ended 31st Dec. 1980 and 1981

(Amount in Lakhs of rupees

	Dec. 31 1980	Dec. 31 1981	Increase (+) / Decrease (-)Amount	%	Rate
Assets:					
Current Assets:					
Cash	240	80	-160	-66	1.24
Debtors less reserve for doubtful debts	120	96	- 24	- 40	1.60
Merchandise Inventory	260	320	+ 66	+ 46	2.46
Prepaid Expenses	100	80	-20	-40	1.60
Total Current Assets	720	656	- 64	- 18	1.82
Fixed Assets:					
Land and Building less Depreciation	480	720	+ 240	+ 100	2.0
Furniture &Fixture less Depreciation	60	80	+ 20	+ 66	2.66
Plant and Machinery less Depreciation	240	480	+ 240	+ 200	4.00
Total fixed Assets	780	1,280	+ 500	+ 128	2.20
Total Assets	**1,500**	**1,936**	**+ 436**	**+ 58**	**2.58**

Liabilities and Capital:					
Current					
Trend creditors	234	510	+ 276	+ 108	3.08
Accrued Expenses	400	360	- 40	- 20	1.08
Total	634	870	+ 236	+ 74	2.74
Equity Capital	400	500	+ 100	+ 50	2.50
Retained	466	566	+ 100	+ 42	2.42
Total Capital	866	1,066	+ 200	+ 46	2.46
Total Liabilities Capital	**1,500**	**1,936**	**+ 436**	**+ 58**	**2.58**

Preparation of a Comparative Income Statement:

An Income Statement shows the Net Profit or Net Loss from business operation of a definite accounting period. Like a balance sheet, a comparative income statement show the operating results for a number of accounting periods so that the changes in absolute date from one period to another may be explained and analysis. The Comparative income statement contains the some columns as the comparative balance sheet and provides the same in the figures.

Specimen of a Comparative Income Statement for the year ended 31st Dec. 1980 and 1981

(Amount in Lakhs of Rupees

	Dec. 31 1980	Dec. 31 1981	Increase (+) / Decrease (-) Amount	%
Net Sales	1370	1442	+72	+.6
Less: Cost of Goods Sold	838	926	+ 88	+ 21.0
Gross Profit	532	516	- 16	- 6.4
Operating Expenses:				
Selling Expenses	188	182	- 6	- 6.4
Gen. and Admn. Expenses	94	92	- 2	- 4.2
Total Operating Expenses	282	274	- 8	- 5.6
Operating Profit	250	242	- 8	- 6.4
Add : Other Income				
Dividend	44	50	+ 6	+ 2.8
	294	292	-2	-1.4
Less : Other Deduction				
Interest Paid	44	44	Nil	Nil
	250	248	-2	-1.6
Less:IncomeTax	124	124	Nil	Nil
Net Profit after Tax	126	124	- 2	- 3.2

Illustration

The following is the Profit and Loss Account of TATA MOTORS Ltd. for December 2004 and 2005. Prepare comparative Income statement and comment on the profitability of the undertaking.

Particulars	2004	2005	Particulars	2004	2005
To Cost of goods sold	2,31,625	2,41,950	By Sales Less Returns	3,60,728 5,794	4,17,125, 6,952
To Office expenses	23,266	27,068			
To Selling expenses	45,912	57,816	By other income	3,54,934	4,10,173
To Interest paid	2,137	1,750	By interest and dividend	1,898	1,310
To loss on sale of fixed Assets	627	175	By discount on purchases	2,125	1,898
To Income tax	21,519	40,195			
To Net Profit	35,371	44,425	By Profit on sale of land	1,500	
	3,60,457	4,13,379		3,60,457	4,13,379

Comparative statement of TATA MOTORS Ltd

Particulars	December 2004 Rs.	December 2005 Rs.	Increase (+) Decrease (-)	%
Sales	3,60,728	4,12,125	+ 56,397	+ 15.63
Less : Sales returns	5,794	6,952	+ 1,158	+ 19.98
	3,54,934	4,10,173	+ 55,239	+ 15.56
Less: Cost of goods Sold	2,31,625	2,41,950	+ 10,325	+ 4.46
Gross Profit (i)	**1,23,309**	**1,68,223**	**+ 44,914**	**+ 36.42**
Less: Operating expenses				
Office expenses	23,266	27,068	+ 3,802	+ 16.34
Selling expenses	45,912	57,816	+ 11,094	+ 25.93
Total Operating Expenses(ii)	69,178	84,884	+ 15,706	+ 22.70

Operating Profit (i) – (ii)	**54.131**	**83,339**	**+ 29,208**	**+ 53.96**
Add: Other incomes	5,523	3,206	- 2,317	- 41,95
	59,654	86,545	+ 26,891	+ 45.08
Less : Other expenses	2,764	1,925	-839	- 30.35
Profit before tax	**56,890**	**84,620**	**+ 27,730**	**+ 48.74**
Less:Incometax	21,519	40,195	+ 18,676	+86.79
Net Profit after tax	**35,371**	**44,425**	**+ 9.054**	**+ 25.60**

Interpretation

The comparative income statement reveals that while the net sales has been increased by 15.5% the cost of goods sold increased by 4.46% Gross profit is increased by 36.4%. The total operating expenses has been increased by 22.7% and the gross profits is suffice to compensate increase in operating expends. Net profit after tax is Rs.9.054 (i.e. 25.6%) increased. The overall profitability of the undertaking is satisfactory.

Illustration

The following are the Balance Sheets of GODWINS Ltd. for the years ending 31st March, 2004, 2005.

Particulars	2004	2005
Liabilities		
Equity share capital	2,00,000	3,30,000
Preference share capital	1,00,000	1,50,000
Reserves	20,000	30,000
Profit and loss account	15,000	20,000
Bank overdraft	50,000	50,000
Creditors	40,000	50,000
Provision for taxation	20,000	25,000
Proposed dividend	15,000	25,000
	4,60,000	6,80,000

Fixed Assets (Less: Depreciation)	2,40,000	3,50,000
Stock	40,000	50,000
Debtors	1,00,000	1,25,000
Bills receivable	20,000	60,000
Prepaid expenses	10,000	12,000
Cash in hand	40,000	53,000
Cash at bank	10,000	30,000
	4,60,000	6,80,000

Comparative Statement of Financial position

Particulars	31st March 2004	31st March 2005	Increase(+) Decrease (-)	
	(Rs)	(Rs)	(Rs)	(Rs.)
Assets				
Current Assets				
Cash at bank and in hand	50,000	83,000	+ 33,000	+66
Bills receivable	20,000	60,000	+ 40,000	+ 200
Debtors	1,00,000	1,25,000	+ 25,000	+25
Stock	40,000	50,000	+ 10,000	+25
Prepaid expenses	10,000	12,000	+ 2,000	+20
(1)	2,20,000	3,30,000	+1,10,000	+50
Fixed Assets (2)	2,40,000	3,50,000	+1,10,000	+ 45.83
Total Assets side (1) + (2)	4,60,000	6,80,000	+2,20,000	+ 47.83

Liabilities				
Current liabilities				
Bank overdraft	50,000	50,000	...	----
Creditors	40,000	50,000	+10,000	+ 25
Proposed dividend	15,000	25,000	+10,000	+ 66.67
Provision for taxation	20,000	25,000	+5,000	+25
(a)	1,25,000	1,50,000	+ 25,000	+20
Capital and Reserves				
Equity Share capital	2,00,000	3,30,000	+1,30,000	+65
Preference share Capital	1,00,000	1,50,000	+50,000	+50
Reserves	20,000	30,000	+10,000	+50
Profit and loss account	15,000	20,000	+5,000	+33.33
(b)	3,35,000	5,30,000	+ 1,95,000	+ 58.21
Total of Liabilities side (a) + (b)	4,60,000	6,80,000	+ 2,20,000	+ 47.83

Interpretation –

1. The above comparative balance sheet reveals the current assets has been increased by 50% while current liabilities increased by 20% only. Cash is increased by Rs.33,000 (i.e.66%). There is an improvement in liquidity position.
2. The fixed assets purchased was for Rs.1,10,000. as there are no long term funds, it should have been purchased partly from share capital.
3. Reserves and profit and loss account increased by 50% and 33.33% respectively. The company may issue bonus shares in near future.
4. Current financial position of the company is satisfactory. It can raise more long term funds.

Illustration

The following details are provided by C ltd. For the year ended 31st March, 2015 and 2016 prepare Comparative Statement:

Particulars	31/03/15	31/03/16
Share capital	24,00,000	26,10,000
General Reserves	2,40,000	2,90,000
Profit and Loss A/c	4,20,000	6,00,000
11% Debentures	10,00,000	6,00,000
Goodwill	2,00,000	1,60,000
Land &Building	14,00,000	13,00,000
Plant and Machinery	12,00,000	13,20,000
Investment (Non trading)	4,80,000	4,40,000
Creditors	3,70,000	4,30,000
Provision for Tax	1,60,000	2,10,000
Proposed Dividend	2,72,000	2,88,000
Stock	8,00,000	7,70,000
Debtors	5,76,000	8,30,000
Cash at Bank	1,76,000	1,86,000
Prepaid Expenses	30,000	22,000

Solution:

Particulars	31/03/15	31/03/16	Changes	%
Share Capital	24,00,000	26,10,000	2,10,000	9%
General reserves	2,40,000	2,90,000	50,000	21%
Profit and Loss A/c	4,20,000	6,00,000	1,80,000	43%
11% Debentures	10,00,000	6,00,000	-	-
Total	**40,60,000**	**41,00,000**	4,00,000	40%
Goodwill	2,00,000	1,60,000	**40,000**	1%
Land and Building	14,00,000	13,00,000	-40,000	-
Plant and Machinery	12,00,000	13,20,000	-	20%
Fixed Assets Total	**28,00,000**	**27,80,000**	1,00,000	-7%
Investments	4,80,000	4,40,000	1,20,000	10%
Current Assets			**-20,000**	-1%
Stock	8,00,000	7,70,000	-40,000	-8%
Debtors	5,76,000	8,30,000		
Cash at Bank	1,76,000	1,86,000	-30,000	-4%
Prepaid expenses	30,000	22,000	2,54,000	44%
C.A Total	**15,82,000**	**18,08,000**	10,000	6%

Less: Current Liabilities			-8,000	-
Creditors	3,70,000	4,30,000	**2,26,000**	27%
Provision for tax	1,60,000	2,10,000		
Proposed dividend	2,72,000	2,88,000	60,000	
Net Working Capital	**7,80,000**	**8,80,000**	50,000	16%
	40,60,000	**41,00,000**	16,000	31%
			1,00,000	6%
			40,000	13%

2.6 COMMON-SIZE STATEMENT

Common Size Income Statement

In common size income statement the sales figures is taken as 100 and all other figures of costs and expenses are expressed as percentage to sales. When other costs and expenses are reduced from sales figure of 100, the balance figure is taken as net profit. This reveals the efficiency of the firm in generating revenue which leads to profitability and we can make analysis of different components of costs proportion to sales. Inter firm comparison of common size income statements reveal the relative efficiency of costs incurred.

Common Size Balance Sheet

In common size balance sheet, the total of assets side or liabilities side is taken as 100 and all figures of assets and liabilities capital and reserves are expressed as a proportion to the total i.e. 100. The common size balance sheet reveals the proportion of fixed assets to current asserts composition of fixed assets and current assets proportion of

long term funds to current liabilities and provisions composition of current liabilities etc. It also helps in making inter firm comparison and highlights the financial health and long term solvency ability to meet short term obligations and liquidity position of the enterprise.

Speciman Common Size Income Statement For the year ending 31st March, 2005

Particulars	Amount (Rs.)	% to
Sales (a)	14,00,000	100
Raw materials	5,40,000	38.6
Direct wages	2,30,000	16.4
Factory expenses	1,60,000	11.4
Cost of goods sold (b)	9,30,000	66.4
Gross profit (a) – (b)	4,70,000	33.6
Less : Administrative expenses	1,10,000	7.9
Selling and distribution expenses	80,000	5.7
Operating profit	2,80,000	20.0
Add : Non-operating income	40,000	2.9
	3,20,000	22.9
Less : Non-operating expenses	60,000	4.3
Profit before tax	2.60,000	18.6
Less :Income tax	80,000	5.7
Profit after tax	1,80,000	12.9

Common Size Balance Sheet as at 31st March, 2005

Particulars	Amount Rs.	% to total
Fixed Assets		
Land	50,000	5.3
Buildings	1,10,000	11.7
Plant and machinery	2,50,000	26.6
Current Assets		
Inventory		
Raw materials	80,000	8.5
Work in process	50,000	5.3
Finished goods	1,60,000	17.0
Sundry debtors	2,10,000	22.4
Cash and Bank	30,000	3.2
	9,40,000	100.0

Capital and Liabilities		
Equity share capital	2,50,000	26.6
Preference share capital	1,00,000	10.6
General reserve	1,60,000	17.0
Debentures	80,000	8.5
Current Liabilities		
Sundry creditors	2,20,000	23.4
Creditors for expenses	40,000	4.3
Bills payable	90,000	9.6
	9,40,000	100.0

Illustration 1

The balance sheet of S Ltd are given for the year 2014 and 2015 convert them into common size balance sheet and interpret the changes.

Balance sheet

Liabilities	2014 Rs	2015 Rs.	Assets	2014 Rs.	2015 Rs.
Equity share	1,46,800	1,91,000	Buildings	1,80,000	2,00,000
Capital reserve	50,000	70,000	Plant and machiner	40,000	55,000
Revenue	20,000	30,000	Furniture	10,000	20,000
reserve & surplus			Freehold property	20,000	12,000
Trade creditors	30,000	40,000	Goodwill	25,000	30,000
Bills payable	80,000	60,000	Cash balance	25,000	20,000
Bank overdraft	90,000	80,000	Sunday debtors	30,000	35,000
Provisions	30,000	20,000	Inventories Bills receivable (temporary)	70,000	57,000
	4,46,800	**4,91,000**		**4,46,800**	**4,91,000**

Common size Balance Sheet

Assets	2014		2015	
	Amt. (Rs.)	Percentage	Amt. (Rs.)	Percentage
A. Current Assets				
Sundry Debtor	30,000	6.71	35,000	7.13
Cash balance	25,000	5.59	20,000	4.07
Inventories	70,000	15.71	57,000	11.60
Investment(Temporar	36,500	8.17	42,000	8.55
Bill Receivable	10,300	2.30	20,000	4.08
Total (A)	**1,71,800**	**38.44**	**1,74,000**	**35.43**
B. Fixed Assets				
Building	1,80,000	40.29	2,00,000	40.75
Plant and Machinery	40,000	8.95	55,000	11.20
Furniture	10,000	2.24	20,000	4.07
Freehold Property	20,000	4.48	12,000	2.44
Goodwill	25,000	5.60	30,000	6.11
Total (B)	**2,75,000**	**61.5**	**3,17,000**	**64.57**
Total Assets	**4,46,800**	**100.00**	**4,91,000**	**100.00**

(A+B)				
Liabilities				
C. Current				
Liabilities				
Trade Creditors	30,000	6.17	40,000	8.15
Bill Payable	80,000	17.91	60,000	12.22
Bank Overdraft	90,000	20.14	80,000	16.29
Provision	30,000	6.71	20,000	4.07
Total (C)	**2,30,000**	**51.47**	**200,000**	**40.73**
D. Long-term				
Liabilities				
Equity Share	1,46,800	32.86	1,91,000	38.90
Capital Reserve	50,000	11.19	70,000	14.26
Revenue	20,000	4.48	30,000	6.11
Reserve and Surplus				
Total (D)	**2,16,800**	**48.53**	**2,91,000**	**59.27**
Total Liabilities(C+D)	**4,46,800**	**100.00**	**4,91,000**	**100.00**

Interpretation:

1. Out of every rupee of sales 60.72 per cent in 2014 and 63.63 per cent in 2015 account for cost of goods sold.
2. The percentage ratio of gross profit to sales was 39.28 per cent in 2014 which was reduced 36.37 percent 2015.
3. The operating expenses increased from 15.71 per cent of sales in 2014 to 16.37 per cent in 2015 all this reduced the percentage ratio of net income after tax to sales from 14.15 per cent in 2014 to 12.00 per cent in 2015.
4. The operating expenses increased from 15.71 per cent of sales in 2014 to 16.37 per cent in 2015 all this reduced to percentage ratio of net income after tax to sales from 14.15 per cent in 2015.

In the ultimate analysis it can be said that the operating efficiency of the concern has not been satisfactory during the period under study.

Illustration 3: From the income statement give below you are required to prepare common – sized income statement.

Particular	1986 Rs.	1987 Rs.
Sales	1,40,000	1,65,000
Less : Cost of Goods Sold	85,000	1,05,000
Gross Profit	55,000	60,000
Operating Expenses		
Selling and Distribution	12,000	16,000
Expenses		
Administrative Expenses	10,000	11,000
Total Operating Expenses	22,000	27,000
Net Income before Tax	33,000	33,000
Income Tax (40%)	13,000	13,200
Net Income	19,800	19,800

Solution:

Common size income statement
(For the year ending 1986 and 1987)

Particulars	1986		1987	
	Amt. (Rs.)	Percentage	Amt. (Rs.)	Percentage
Sales	1,40,000	100.00	1,65,000	100.00
Less:Cost of	85,000	60.72	1,05,000	63.63
Sales				
Gross Profit	55,000	39.28	60,000	36.37
Selling &	12,000	8.57	16,000	9.70
Distribution				
Expenses				
Administrative	12,000	7.14	11,000	6.67
Exp.				
Total operating Exp.	22,000	15.71	27,000	16.67
Net Income before Tax	33,000	23.57	33,000	20.00
Income Tax	13,000	9.42	13,200	8.00
(40%)				
Net Income after Tax	19,800	14.15	19,800	12.00

Illustration : You given the following common size percentage of AB Company Ltd for 1997 and 1988.

	1997	1998
Inventory	5.20	5.83
Debtors	10.39	?
Cash	?	7.35
Machinery	49.35	45.35
Building	27.27	29.59
Creditors	20.78	?
Overdraft	?	10.81
Total Current Liabilities	31.17	?
Capital	51.95	49.67
Long-term loan	16.88	17.91
Total Liabilities	3,85,000	4,63,000

From the above information, compute the missing common size percentage. Also calculate the value of all assets and liabilities.

Solution:

Common Size Balance Sheet
(as on 31 December 1997 and 1998)

Assets	1997		1998	
	Amt	Percentage	Amt. (Rs.)	Percentage
Assets:				
A. Current Assets				
Inventory	20,000	5.20	27,000	5.83
Debtors	40,000	10.39	55,000	11.88
Cash	30,000	7.79	34,000	7.35
Total (A)	**90,000**	**23.38**	**1,16,000**	**25.06**
B. Fixed Assets				
Machinery	1,90,000	49.35	2,10,000	45.35
Building	10,05,000	27.27	1,37,000	29.59
Total (B)	**2,95,000**	**76.62**	**3,47,000**	**74.94**
Total Assets (A+B)	**3,85,000**	**100.00**	**4,63,000**	**100.00**

Liabilities:				
C. Current Liabilities				
Creditors	80,000	20.78	1,00,000	21.59
Overdraft	40,000	10.39	50,000	10.81
Total (C)	**1,20,000**	**31.17**	**1,50,000**	**32.40**
D. Long-term Liabilities				
Capital	2,00,000	51.95	2,30,000	49.67
Loan	65,000	16.88	83,000	17.91
Total (D)	**2,65,000**	**68.83**	**3,13,000**	**67.55**
Total Liabilities (C+D)	**3,85,000**	**100.00**	**4,63,000**	**100.00**

Note: Calculation have been made to the nearest rupee.

(i) Calculation of percentage of Cash for 1997

Cash = 23.38* – 15.59*
= 7.79

* Current = Total Assets – Fixed Assets
= 100–76.62
= 23.38

** Inventory + debtor = 5.20 + 10.39 = 15.59

(ii) Calculation of Percentage of overdraft for 1997

Total Current Liability–Creditor= 31.17–20.78 = 10.39

(iii) Calculation of percentage of Debtors for 1998

Debtor = 25.06*– 13.18 = 11.88

* Current Assets = Total Assets – Fixed Assets
= 100–74.94
= 25.06

Illustration

From the following Profit and Loss account prepare a Common Size Income Statement

Particulars	2004	2005	Particulars	2004	2005
To Cost of goods sold	12,000	15,000	By Net Sales	16,000	20,000
To Administrative Expenses	400	400			
To Selling expenses	600	800			
To net profit	3,000	3,800			
	16,000	20,000		16,000	20,000

Common Size Income Statement

Particulars	2004 Rs.	%	2005 Rs.	%
Net Sales	16,000	100.00	20,000	100.00
Less: Cost of goods sold	12,000	75.00	15,000	75.00
Gross profit	4,000	25.00	5,000	25.00
Less Operating expenses				
Administration expenses	400	2.50	400	2.00
Selling expenses	600	3.75	800	4..00
Total operating expenses	1,000	6.25	1,200	6.00
Net Profit	3,000	18.75	3,800	19.00

Illustration

Following are Balance Sheets of NELCO Ltd. for the year ended 31st March, 2014 and 2015

Liabilities	2014	2015	Assets	2014	2015
Equity share capital	1,00,000	1,65,000	Fixed assets (net)	1,20,000	1,75,000
Preference share Capital	50,000	75,000	Stock	20,000	25,000
Reserves	10,000	15,000	Debtors	50,000	62,500
Profit and loss account	7,500	10,000	B i l l s receivable	10,000	30,000
Bank overdraft	25,000	25,000	Prepaid expenses	5,000	6,000
Creditors	20,000	25,000	Cash in bank	20,000	26,500
Provision for taxation	10,000	12.500	Cash in hand	5,000	15,000
Proposed dividends	7,500	12,500			
	2,30,000	**3,40,000**		**2,30,000**	**3,40,000**

Common Size Balance sheet of NELCO Ltd. for the year ended 31sat March, 2014 and 2015

Particulars		2014		2015	
		Rs.	%	Rs.	%
Capital and Reserves					
Equity share capital		1,00,000	43.48	1,65,.000	48.53
Preference share capital		50,000	21.74	75,000	22.05
Reserves		10,000	4.34	15,000	4,41
Profit and loss account		7,500	3.26	10,000	2.95
(i)		**1,67,500**	**72.82**	**2,65,000**	**77.94**
Current liabilities					
Bank overdraft		25,000	10.87	25,000	7.35
Creditors		20,000	8.70	25,000	7.35
Provisions for taxation		10,000	4.35	12,500	3.68
Proposed dividends		7,5000	3.26	12,500	3.68
(ii)		**62,500**	**27.18**	**75,000**	**22.06**
(i) + (ii)		**2,30,000**	**100.00**	**3,40,000**	**100.00**
Fixed Assets (net) (a)	(a)	**1,20,000**	**52.17**	**1,75,000**	**51.47**
Current Assets					
Stock		20,000	8.70	25,000	7.35
Debtors		50,000	21.74	62,500	18.38
Bills receivable		10,000	4.34	30,000	8.82
Prepaid expenses		5,000	2.17	6,000	1.78
Cash in Bank		20,000	8,70	26,500	7.79
Cash in hand		5,000	2.18	15,000	4.41
	(b)	1,10,000	47.83	1,65,000	48.53
Total Assets (a) + (b)		**2,30,000**	**100.00**	**3,40,000**	**100.00**

Interpretation -

1. In 2015, current assets were increased from 47,83% to 28.53%. Cash balance is increased by Rs.16,500
2. Current liabilities were decreased from 27.18% to 22.06%. The Company can pay off the current liabilities from current assets. The liquidity position is reasonably good.

3. Fixed assets were increased from Rs.1, 20,000 in 2014 to Rs.1,75,000 in 2015. These were purchased from the additional share capital issued.

4. The overall financial position is satisfactory.

Illustration

Following is the Balance sheet of Star Ltd. as on 31st March, 2016. You are required to rearrange it in a common size form.

Liabilities	Rs.	Assets	Rs.
Equity share Capital	2,50,000	Fixed Assets	6,50,000
General Reserve	1,50,000	Investments	2,00,000
Security Premium	12,500	Stock	4,25,000
10% Debentures	3,75,000	Sundry Debtors	2,50,000
Profit and Loss a/c	3,70,000	Prepaid expenses	20,000
Sundry Creditors	1,15,000	Advance Income tax	39,000
Bank overdraft	1,97,500	Cash and Bank bal.	31,000
Provision for taxation	90,000	Share issue expenses	5,000
Proposed dividend	75,000	Preliminary Expenses	15,000
	16,35,000		16,35,000

TREND ANALYSIS

The trend ratios of different items are calculated for various periods for comparison purpose. The trend ratios are the index numbers of the movements of reported financial items in the financial statements which are calculated for more than one financial year. The calculation of trend ratios are based on statistical t3echnique called *"Index numbers"*. The trend ratios help in making horizontal analysis of comparative statements. It reflects the behaviour of items over a period of time. The methodology used in computation of trend ratios is as follows:

(1) The accounting principles and policies should be consistently followed throughout the period for which the trend ratios are calculated.

(2) The trend ratios should be calculated only for the items which have logical relationship with one another.

(3) The trend analysis should be made at least for four consecutive years.

(4) The financial statements one financial year should be selected as base statement and financial items of it should be assigned with value as 100

(5) Then trend ratios of subsequent years' financial statements should be calculated by applying the following formula:

Absolute figure of financial statement under study

= ---------- x100

Absolute figure of same item in baser financial statement.

(6) Tabulate the trend ratios for analysis of trend over a period

The trend percentages are calculated for select major financial items in the financial statements to arrive at the conclusions for important changes. The trend may sometimes be affected by external factors like government policies economic conditions changes in income distribution, technology development population growth, changes in tastes and habits etc. the trend analysis is a simple technique and does not involve tedious calculations.

Limitations The analysis through trend ratios is subject to the following limitations :

- The trend ratios are incomparable, if there is inconsistency in accounting policies and practices.
- The price level changes are represented in trend ratios -The trend ratios musty be studied along with absolute data for correct analysis.
- While analyzing the trend ratios, non-financial data should also be considered otherwise conclusions would be misleading.

Illustration

From the given data, calculate trend a percentage taking 2013 As base:

(Rs)

Particulars	**2013 Rs.**	**2014 Rs.**	**2015 Rs.**
Sales	50,000	75,000	1,00,000
Purchasers	40,000	60,000	2,000
Expenses	5,000	8,000	15,000
Profit	5,000	7,000	13,000

Particulars	**2013**	**2014**	**2015**	**Trend percentage Base 2003**		
	(Rs)	(Rs)	(Rs)	2003	2004	2005
Purchases	40,000	60,000	72,000	100	150	180
Expenses	5,000	8,000	15,000	100	160	300
Profit	5,000	7,000	13,000	100	140	260
----	---------- -- ------					
Sales	50,000	75,000	1,00,000	100	150	

Illustration:

From the following data, calculate trend percentages (2013 as the base)

(Rs in Lakhs)

Particulars	**Rs.**		
	2013	2014	2015
Cash	200	240	160
Debtors	400	500	650
Stock	600	800	700
Other current assets	450	600	750
Land	800	800	1,000
Buildings	1,600	1,600	2,400
Plant	2,000	2,000	2,400

Trend percentages				(Base year 2013)		
Current Assets	2013	2014	2015	2013	2014	2015
	(Rs.)	(Rs)	(Rs)			
Cash	200	240	160	100	120	80
Debtors	400	500	650	100	125	163
Stock	600	800	700	100	133	117
Other current assets	450	600	750	100	133	167
TOTAL Current Assets	1,650	2,140	2,260	100	130	137

Fixed Assets						
Land	800	1,000	1,000	100	125	125
Buildings	1,600	2,000	2,400	100	125	150
Plant	2,000	2,000	2,400	100	100	120
TOTAL Fixed Assets	4,400	5,000	5,800	100	114	11

Illustration

Complete the following Trend Analysis Statement for D Ltd.

Particulars	31/12/13	31/12/14	31/12/15	31/12/13 %	31/12/14 %	31/12/15 %
Sales	10,000	15,000	20,000	100	?	?
Less: Cost of Goods sold	7,000	?	?	100	125	200
Gross Profit	3,000	?	?	100	?	?
Less: Administrative Expenses	1,000	1,250	1,500	100	125	150
Finance Expenses	500	625	750	100	?	?
Selling Expenses	250	375	500	100	?	?
Net profit before Tax	1,250	4,000	3,250	100	320	260
Less: Income Tax	250	800	1,000	100	?	?
Net profit after Tax	1,000	?	?	100	320	225

Solution

Particulars	31/12/13	31/12/14	31/12/15	31/12/13 %	31/12/14 %	31/12/15 %
Sales	10,000	15,000	20,000	100	**150**	**200**
Less: Cost of Goods sold	7,000	**8,750**	**14,000**	100	125	200
Gross Profit	3,000	**6,250**	**6,000**	100	**208.33**	**200**
Less: Administrative Expenses	1,000	1,250	1,500	100	125	150
Finance Expenses	500	625	750	100	**125**	**150**
Selling Expenses	250	375	500	100	**150**	**200**
Net profit before Tax	1,250	4,000	3,250	100	320	260
Less: Income Tax	250	800	1,000	100	**320**	**400**
Net profit after Tax	1,000	**3,200**	**2,250**	100	320	225

EXERCISE

1. Explain the tools of analyzing the financial statements
2. Write short notes:

a. Common size Statement b. Comparative statements c. Trend analyses

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MODULE –II

3

INTRODUCTION TO FUND FLOW STATEMENT

Unit Structure

3.0 LEARNING OBJECTIVES

- Understanding the concept of fund
- Calculation of fund from operation
- Calculation of changes in working capital
- Preparation of statement of Sources & Application of Funds

3.1 FUND FLOW STATEMENT

Funds flow statement is a financial statement which shows as to how a business entity has obtained its funds and how it has applied or employed its funds between the opening and closing balance sheet dates (during the particular year/period). It can be described as – WHERE GOT-WHERE GONE statement Funds usually refers to cash resources and funds statement is prepared to show the net effect of various business events on the current resources of the organization. In this topic fund should be understood as working capital & funds flow as to mean any change in working capital.

Funds Flow Statement is a statement prepared to analyse the reasons for changes in the financial position of a company between 2 Balance Sheets. It shows the inflow & outflow of funds i.e. SOURCES and APPLICATIONS of funds for a particular period. In other words Funds flow statement is prepared to explain the changes in the working capital position of a company. There are two types of inflows of funds –

a. Long term funds raised by issue of Shares, Debentures or sale of Fixed Assets
b. Funds generated from operations

If the long term fund requirements of a company are met just out of the Long term Sources of funds, then the whole fund generated from operations will be represented by increase in working capital. However if the funds generated from operations are not sufficient to bridge a gap of long term fund requirement, then there will be a decline in working capital.

3.2 BENEFITS OF FUND FLOW STATEMENT

Funds flow statement is useful for long term analysis. It is very useful tool in the hands of the management for judging the financial & operating performance of the company. The Balance Sheet and the Profit & Loss A/c (Income Statement) fails to provide the information which is provided by the funds flow statement i.e. changes in Financial Position of an enterprise. Such an analysis is of great help to the management, shareholders, creditors etc.

Fund Flow Statement answers the following questions

- Where have the profits gone?
- Why is there an imbalance existing between liquidity position and profitability position of an enterprise?
- Why is the concern financially solid in-spite of losses

Fund flow statement analysis helps the management to test whether the working capital has been effectively used or not and the working capital level is adequate or inadequate for the requirements of the business. The working capital position helps the management in taking policy decisions regarding payment of dividend etc.

Fund flow statement analysis helps the investors to decide whether the company has managed the funds properly. It also indicates the credit worthiness of a company which helps the lenders to decide whether to lend money to the company or not. It helps the management to take policy decisions and to decide about the financing policies and capital expenditure for the future.

3.3 PROCEDURE OF PREPARATION OF FUND FLOW STATEMENT

Step I - Prepare the statement of changes in working capital
Step II - Analyse the changes in non-current assets and noncurrent liabilities to find out inflow or outflow of funds
Step III - Find out funds from operation

Step IV - Prepare statement of Sources & Application of Funds (Funds Flow Statement)

Step – I

STATEMENT OF CHANGES IN WORKING CAPITAL				
			Change in WC	
Particulars	**Previous Year**	**Current Year**	**Increase Rs.**	**Decrease Rs.**
A. CURRENT ASSETS				
Stock	xx	xx		
Debtors	xx	xx		
Cash/Bank	xx	xx		
Bills Receivable	xx	xx		
Prepaid Expenses	xx	xx		
Accrued Income	xx	xx		
Short term loans & advances	xx	xx		
Marketable Investments	xx	xx		
Total	xxx	xxx		
B. CURRENT LIABILITIES				
Creditos for Goods	xx	xx		
Bills Payable	xx	xx		
Outstanding Expenses	xx	xx		
Bank Overdraft	xx	xx		
Unclaimed/Unpaid Dividend	xx	xx		
Short term loans & advances	xx	xx		
Prov. For Doubtful debts	xx	xx		
Prov. For Discount on debtors	xx	xx		
Total	xxx	xxx		
WORKING CAPITAL (A-B)	xxx	xxx		
Increase / Decrease in Working Capital	x	x		
Total	xxx	xxx	xxx	xxx

Step – II - Working Capital Changes

- **Increase in Current Assets – Increase in Working Capital- Outflow**
- **Increase in Current Liabilities – Decrease in Working Capital - Inflow**
- **Decrease in Current Assets – Decrease in Working Capital - Inflow**
- **Decrease in Current Liabilities – Increase in Working Capital - Outflow**

Step III – Finding Funds from Operations

In this step, we need to calculate the funds generated only from the Operating activities of the business and not from the Investing / Financing activities of the business. The funds from operations shall be prepared as follows:

ADJUSTED PROFIT & LOSS A/C			
Particulars	**Amt**	**Particulars**	**Amt**
		By Balance B/d	xx
To Depreciation	xx	By Profit on sale of non current assets	xx
To Preliminary Expenses w/off	xx	BY Transfer from reserves	xx
To Goodwill w/off	xx	By Income from Investments	xx
To Discount on	xx		
To Loss on sale of non current assets	xx	**By Funds from Operations (Bal Fig.)**	xx
To Prov. For tax	xx		
To Proposed Dividend	xx		
To Transfer to reserves	xx		
To Interim Dividend	xx		
To Balance C/d	xx		
	xxx		xxx

	Particulars	**Amt**	**Amt**
	Net Income		xxx
Add	Depreciation on Fixed Assets	xx	
	Amortization of Ingangible Assets	xx	
	Amortization of loss on sale of investments	xx	
	Amortization of loss on sale of fixed assets	xx	
	Losses from other non operating incomes	xx	
	Tax provision (created out of current profits)	xx	
	Proposed Dividend	xx	
	Transfer to Reserves	xx	xxx
Less	Deferred Credits	xx	
	Profit on Sale of Investments	xx	
	Profit on sale of Fixed Assets	xx	
	Any written back reserve or provision	xx	xxx

Step – IV – While preparing the fund flow statement, the sources and uses of funds are to be disclosed clearly so as to highlight the sources from where the funds have been generated and uses to which these funds have been applied. This statement is also sometimes referred to as the sources and applications of funds statement or statement of changes in financial position.

Funds Flow Statement as on			
Sources of Funds	**Amt**	**Application of Funds**	**Amt**
Funds from operations	xx	Drawings	xx
Sale of Fixed Assets	xx	Purchase of fixed assets	xx
Issue of Shares	xx	Redemption of Pref. Shares	xx
Issue of Debentures	xx	Redemption of Debentures	xx
Loans Taken	xx	Payment of taxes	xx
Sale of Long Term Investment	xx	Payment of Dividend	xx
Receipts of Dividends, Legal Claims, Refund of tax etc.	xx	Repayment of Loans	xx
Decrease in working capital	xx	Increase in working capital	xx
	xxx		xxx

Sources of Funds

- Issue of Equity & Preference Shares
- Receipt of Securities Premium
- Issue of Debentures
- Receipt of Long Term Loans from Banks & Other Financial Institutions
- Receipt of Public Deposits & other Unsecured Loans
- Sales of Fixed Assets, Sale of Investments
- Extraordinary receipt awarded in legal suit
- Income from long term investments
- Funds from operations
- Decrease in Working Capital

Application of Funds

- Redemption of Preference share capital, Redemption of Debentures
- Premium paid on redemption of debentures and preference shares
- Repayment of temporary loans, secured & unsecured
- Purchase of Fixed Assets, Purchase of Investment
- Extraordinary payments and non recurring losses like loss by fire & damages paid
- Payment of Dividend & Interim Dividend, Payment of Tax
- Increase in Working Capital

Formats of Fund Flow Statement

There is no prescribed format as such for the preparation of Funds Flow Statement. The only point to be remembered is that it should be presented in a clear and systematic manner. However, Funds Flow Statements may be prepared in any of the following formats

- Report Form – Remainder Type
- Report Form – Self Balancing Type
- Report Form – Reconciling Type

I	**Remainder Type**				
A	Sources of Funds		xx		
B	Application of Funds		xx		
C	Change in Working Capital (A-B)		xx		
II	**Self Balancing Type**				
A	Sources of Funds	xx	Application of Funds		xx
	Decrease in WC (b/f)	xx	Increase in WC (b/f)		xx
		xxx			xxx
III	**Reconciling Type**				
	Working Capital at the beginning of the year			xxx	
Add	Sources of Funds			xxx	
Less	Application of Funds			xxx	
	Working Capital at the end of the year			xxx	

Fund Flow Analysis
Flow analysis consists of two different analysis namely

Working Capital Analysis – is the analysis & reporting of working capital. Working capital is the excess of current assets over current liabilities. This analysis consist of two statements namely

- Statement of changes in working capital
- Statement of Sources & Application of Funds

Cash Flow Analysis – is the analysis of inflows and outflows of cash. Cash flow analysis results in separate reports viz. Sources and Applications of Cash Funds flow statement explains as to what caused the changes in the balance sheet items between two balance sheet dates

3.4 IMPORTANCE OF FUND FLOW ANALYSIS

Funds flow statement is an important financial tool, which analyze the changes in financial position of a firm showing the sources and applications of its funds. It provides useful information about the firm's operating, financing and investing activities during a particular period. The following points highlight the importance of funds flow statement.

1) Helps in identifying the change in level of current assets investment and current liabilities financing.
2) Helps in analyzing the changes in working capital level of a firm.
3) Shows the relationship of net income to the changes in funds from business operation.
4) Reports about past fund flow as an aid to predict future funds flow.
5) Helps in determining the firms' ability to pay interest and dividend, and pay debt when they become due.
6) Shows the firms' ability to generate long-term financing to satisfy the investment in long-term assets.
7) Helps in identifying the factor responsible for changes in assets, liabilities and owners' equity at two balance sheet date.

COMPARATIVE ANALYSIS			
Point	**Income Statement**	**Balance Sheet**	**Fund Flow Statement**
Meaning	Statement showing results of activities conducted during the year	Statement of assets & liabilities of an organisation	Statement of changes in assets & liabilities of an organisation
Objective	To ascertain profit/loss	To ascertain financial position	To know the change in financial position over the year or how the profit has been utilised
Legality	Obligatory to prepared as per schedule VI of the Indian Companies Act, 1956	Obligatory	Non Obligatory
Format	No format but should be subject to certain requirements	Prescribed Format	No prescribed format
Sections	Incomes & Expenses	Assets & Liabilities	Sources & Applications
Basis	Prepared on the basis of nominal accounts & other information	Prepard on the basis of ledger balances and additional information	Prpepared on the basis of two consucutive balance sheets

Illustration - 1			
From the records of a company the following information has been extracted.			
	Net profit after providing for the following items		80000
	Loss on sale of equipments		15000
	Premium on redemption of debentures		1000
	Discount on issue of debentures		2000
	Depreciation on buildings		15000
	Depletion of wasting assets		5000
	Goodwill written off		20000
	Interim Dividend		20000
	Profit on sale of fixed assets		35000
	Excess taxation provided		20000
	Income from investments		5000
	Transfer to general reserve		6000
	Preliminary expenses written off		1500
	Profit on revaluation of investments		2000
Solution			
	Net Profit		80000
Add:	**Non Cash & Non Operating Expenses**		
	Loss on sale of equipments	15000	
	Discount on issue of debentures	2000	
	Depreciation on Buildings	15000	
	Depletion of wasting assets	5000	
	Goodwill written off	20000	
	Excess taxation provided	20000	
	Transfer to general reserve	6000	
	Preliminary expenses written off	1500	
	Premium on redemption of debentures	1000	
	Interim Dividend	20000	105500
			185500
Less:	**Non Cash & Non Operating Incomes**		
	Profit on revaluation of investments	2000	
	Profit on sale of Non current assets (fixed assets)	35000	
	Income from investments	5000	42000
	Funds from Operations		**143500**

Illustration 2

From the following data calculate funds from operations

Sales	400000	Excess provison for tax writen back	31000
Cost of goods sold	280000	Loss on sale of Fixed Assets	60000
Salaries	30000	Interest received on Investments	10000
Rent	20000	Profit on sale of Investments	20000
Selling Expenses	7000	**Profit & Loss A/c**	
Office Expenses	2000	- Opn Balance	29000
Preliminary exp. w/off	9000	- Closing Balance	60000
Trf. To General Reserve	21000		
Postage & Telegram	1000		

Solution:

	Operating Incomes		
	Sales		400000
Less:	**Operating Expenses**		
	Cost of Goods Sold	280000	
	Salaries	30000	
	Rent	20000	
	Selling Expenses	7000	
	Office Expenses	2000	
	Postage & Telegram	1000	340000
	Funds from Operations		**60000**

Illustration 3

From the following data, prepare Fund Flow Statement

Liabilities	**2015**	**2016**	**Assets**	**2015**	**2016**
Equity Share Capital	100,000	150,000	Plant & Machinery	200,000	180,000
Pref. Share Capital	50,000	30,000	Furnitures	90,000	130,000
Profit & Loss A/c	40,000	65,000	Investments	80,000	85,000
Debentures	80,000	120,000	Stock	20,000	30,000
Other Secured Loans	90,000	100,000	Debtors	50,000	65,000
Sundry Creditors	65,000	20,000	Bank	5,000	7,000
Bills Payable	5,000	7,000	Cash	1,000	200
Outstanding Expenses	16,000	5,200			
	446,000	497,200		**446,000**	**497,200**

Solution

A. Statement of Changes in Working Capital

Particulars	2015	2016	Increase in WC	Decrease in WC
Current Assets (A)				
Stock	20000	30000	10000	
Debtors	50000	65000	15000	
Bank	5000	7000	2000	
Cash	1000	200		800
Total	**76000**	**102200**		
Current Liabilities (B)				
Sundry Creditors	65000	20000	45000	
Bills Payable	5000	7000		2000
O/s Expenses	16000	5200	10800	
Total	**86000**	**32200**		
Working Capital (A-B)	-10000	70000	82800	2800
Net Increase in Working Capital (82800-2800)				**80000**

B. Fund Flow Statement

Sources of Funds		**Application of Funds**	
Increase in Share Capital	50000	Redemption of Debentures	20000
Issue of Debentures	40000	Purchase of Furniture	40000
Secured Loans Received	10000	Purchase of Investments	5000
Sale of Plant & Machinery	20000	Increase in Working Capital	80000
Funds from Operations	25000		
(P&L A/c 65000-40000)			
	145000		**145000**

Illustration 4

Liabilities	2015	2016	Assets	2015	2016
Capital - Opn Balance		80,000	Goodwill	10,000	8,000
Add: Capital Introduced		10,000	Plant	30,000	46,000
Add: Net Profit		7,000	Furniture	7,000	6,000
Less: Drawings		6,000	Investment	31,000	57,000
Capital - Cl. Balance	80,000	91,000	Stock	22,000	17,000
Bank Loan	45,000	64,000	Sundry Debtors	15,000	19,500
Creditors	12,000	10,000	Bills Receivable	21,000	18,000
Bills Payable	17,000	14,000	Bank Balance	18,000	7,500
	154,000	**179,000**		**154,000**	**179,000**

Depreciation written off against plant is Rs.4000 & Furniture Rs.1000

Prepare - Statement of sources & uses of funds

- Statement of changes in working capital

Solution

A. Statement of Changes in Working Capital

Particulars	2015	2016	Increase in WC	Decrease in WC
Current Assets (A)				
Stock	22000	17000		5000
Debtors	15000	19500	4500	
Bills Receivables	21000	18000		3000
Bank Balance	18000	7500		10500
Total	**76000**	**62000**		
Current Liabilities (B)				
Creditors	12000	10000	2000	
Bills Payable	17000	14000	3000	
Total	**29000**	**24000**		
Working Capital (A-B)	47000	38000	9500	18500
Net Decrease in Working Capital (47000-38000)				**9000**

B. Fund Flow Statement for the year 2016

Sources		Applications	
Bank Loan taken	19000	Investments Purchased	26000
Capital Introduced	10000	Plant Purchased	20000
Funds from Operations	14000	Drawings	6000
Increase in Working Capital	9000		
	52000		**52000**

c. Adjusted Profit & Loss A/c

To Goodwill Written off	2000	By Funds from Operations	14000
To Depreciation On			
Plant	4000		
Furniture	1000		
To Net Profit	7000		
	14000		**14000**

d. Plant A/c

To Opn Balance	30000	By Depreciation	4000
To Bank (Bal. figure)	20000	By Balance c/d	46000
	50000		**50000**

e. Capital A/c

To Drawings	6000	By Balance b/d	80000
To Balance c/d	91000	By Bank	10000
		By Net Profit	7000
	97000		**97000**

f. Furniture A/c

To Balance b/d	7000	By Depreciation	1000
		By Balance c/d	6000
	7000		**7000**

Illustration 5

Timbaktu Limited furnishes the following details with the direction to prepare Fund Flow Statement for the year 2007

Liabilities	2007	2006	Assets	2007	2006
Share Capital	90,000	80,000	*Working Capital*		
Profit & Loss A/c	46,000	30,000	Current Assets	120,000	96,000
			Less- Current Liabilities	42,000	30,000
				78,000	**66,000**
			Fixed Assets	56,000	40,000
			Share Issue Expenses	2,000	4,000
	136,000	**110,000**		**136,000**	**110,000**

1. An old machine costing Rs.8000/- (WDV Rs.6000) was sold during the year for Rs.7000/-
2. Depreciation for the year was Rs.2000/-
3. Interim Dividend of Rs.4000 was paid during the year. Final dividend was not declared
4. The company made the bonus issue of shares during the year at one equity share for 8 equity shares held by the existing shareholders by utilising the profits.

Solution 5

a. Statement of Changes in Working Capital

Particulars	2006	2007	Increase in WC	Decrease in WC
Current Assets	96000	120000	24000	
Less - Current Liabilities	30000	42000	12000	
Working Capital	66000	78000	12000	

Net Increase in Working Capital (78000-66000) ... Rs.12000

b. Funds Flow Statement as on 31.03.2007

Sources		Applications	
Sale of Machinery	7000	Increase in Working Capital	12000
Funds from Operations	33000	Interim Dividend Paid	4000
		Purchase of Fixed Assets	24000
	40000		**40000**

c. Adjusted Profit & Loss A/c

To Depreciation on Fixed Assets	2000	By Balance b/d	30000
		By Profit on Sale of Machinery	1000
To Interim Dividend	4000	By Funds from Operations (Balancing Figure)	33000
To Bonus to Shareholders	10000		
To Share issue expenses	2000		
To Balance c/d	46000		
	64000		**64000**

d. Fixed Assets

To Balance b/s	40000	By Machine Sold ***	6000
To Bank (Bal. figure)	24000	By Depreciation	2000
		By Balance c/d	56000
	64000		**64000**

*****Working Note**

Machinery at Cost	8000
Less - Accumulated Depreciation	2000
WDV (Written Down Value)	**6000**
Less - Sale Proceeds	7000
Profit on Sale	**1000**

Important Terms

- **Fund –** It refers to working capital, **Flow –** It is a movement of fund
- **Current Items –** It includes current assets and current liabilities
- **Non Current Items –** It includes share capital, reserves, loans, fixed assets, investments etc
- **Fund from Operation** – it is the cash profit generated from operations
- **Working Capital –** Excess of current assets over current liabilities is called as working capital.

Theory Questions

1. Why are funds flow statements important?
2. Explain – funds from operations
3. Explain the concept of fund & how the funds flow?

Practical Questions

1 The following are the Balance Sheets of Commerce Colleges Limited as on 31st March, 2011 & 2012

Liabilities	2011	2012	Assets	2011	2012
Share Capital	120,000	156,000	Goodwill	-	12,000
Reserves	30,000	35,000	Land & Building	89,100	86,550
Profit & Loss A/c	23,814	24,732	Plant & Machinery	67,770	69,720
Sundry Creditors	23,700	19,681	Cash	1,500	1,620
Bills Payables	20,268	6,915	Sundry Debtors	51,105	43,575
Bank Overdraft	35,706	-	Sundry Advances	1,389	441
Provision for Tax	24,000	30,000	Stock	66,624	58,422
	277,488	**272,328**		**277,488**	**272,328**

1 During the year ended 31.03.2012 an interim dividend of Rs.16000/- was paid
2 Income Tax paid during the year amounted to Rs.15000/-
3 The assets & Liabilities of another company were purchased for Rs.36000/- payable in fully paid shares of the company. These assets consist of Stock Rs.14984/-, Machinery Rs.11016/- and Goodwill Rs.12000/-, Creditors Rs.2000/-. Additional plant for Rs.3390/- was purchased

2 The following are the summarised Balance Sheets of Archana Polygraph Ltd as on 31st March, 2010 & 2011

Liabilities	2010	2011	Assets	2010	2011
Share Capital	460,000	460,000	Land & Building	300,000	300,000
Profit & Loss A/c	32,000	46,000	Machinery	104,000	140,000
Reserve for Contingency	120,000	120,000	Investments	220,000	148,000
8% Debentures	180,000	140,000	Stock	164,000	212,000
Depreciation Fund	80,000	88,000	Debtors	134,000	86,000
Creditors	206,000	192,000	Cash	180,000	180,000
O/s Expenses	26,000	24,000	Prepaid Expenses	2,000	4,000
	1,104,000	**1,070,000**		**1,104,000**	**1,070,000**

1 10% Dividend was paid during the year 2006
2 Machinery for Rs.6000 was purchased and old machinery costing Rs.24000 (accumulated depreciation Rs.12000) was sold for Rs.8000
3 Rs.40000 8% Debentures were redeemed by purchase from open market at Rs.96 for a Debenture of Rs.100
4 Investments worth Rs.72000/- were sold at book value
You are required to prepare a schedule of changes in working capital and a statement showing sources and application of funds.

4

INTRODUCTION TO CASH FLOW STATEMENT

Unit Structure

4.0 LEARNING OBJECTIVES

- Understanding concept of cash flow
- Accounting standard for Cash Flow Statement (AS-3)
- Preparation of Cash Flow Statement
- Importance & Limitations of Cash Flow Statement

4.1 CASH FLOW STATEMENT

In financial accounting, a **cash flow statement**, also known as **statement** of **cash flows**, is a financial **statement** that shows how changes in balance sheet accounts and income affect **cash** and **cash** equivalents, and breaks the analysis down to operating, investing and financing activities.

Cash Flow Statement gives information about cash receipts (sources) and cash payments (application). It contains opening balances & closing balances of cash for a given period and explains how the closing balance as per last balance sheet changed by various inflows & outflows of cash to a closing balance of cash as per the next balance sheet. As per AS-3, cash would include cash in hand and savings, current a/c balances with banks & cash equivalents. Cash equivalents are short term & highly liquid investments that are readily convertible into cash. An investment would normally be called a cash equivalent only when it has a short term maturity of say 3 months or less from the date of acquisition.

4.2 ANALYSIS OF CASH FLOW STATEMENT

The cash flow statement is distinct from the income statement and balance sheet because it does not include the amount of future incoming and outgoing cash that has been recorded on credit. Therefore, cash is not the same as net income, which, on the income statement and balance sheet, includes cash sales *and* sales made on credit. Cash flow is determined by looking at three components by which cash enters and leaves a company: **core operations, investing and financing**,

4.2 (a) Operations

Measuring the cash inflows and outflows caused by core business operations, the operations component of cash flow reflects how much cash is generated from a company's products or services. Generally, changes made in cash, accounts receivable, depreciation, inventory and accounts payable are reflected in cash from operations.

Cash flow is calculated by making certain adjustments to net income by adding or subtracting differences in revenue, expenses and credit transactions (appearing on the balance sheet and income statement) resulting from transactions that occur from one period to the next. These adjustments are made because non-cash items are calculated into net income (income statement) and total assets and liabilities (balance sheet). So, because not all transactions involve actual cash items, many items have to be re-evaluated when calculating cash flow from operations.

For example, depreciation is not really a cash expense; it is an amount that is deducted from the total value of an asset that has previously been accounted for. That is why it is added back into net sales for calculating cash flow. The only time income from an asset is accounted for in CFS calculations is when the asset is sold.

Changes in accounts receivable on the balance sheet from one accounting period to the next must also be reflected in cash flow. If accounts receivable decreases, this implies that more cash has entered the company from customers paying off their credit accounts - the amount by which AR has decreased is then added to net sales. If accounts receivable increase from one accounting period to the next, the amount of the increase must be deducted from net sales because, although the amounts represented in AR are revenue, they are not cash.

An increase in inventory, on the other hand, signals that a company has spent more money to purchase more raw materials. If the inventory was paid with cash, the increase in the value of inventory is deducted from net sales. A decrease in inventory would be added to net sales. If inventory was purchased on credit, an increase in accounts payable would occur on the balance sheet, and the amount of the increase from one year to the other would be added to net sales.

The same logic holds true for taxes payable, salaries payable and prepaid insurance. If something has been paid off, then the difference in the value owed from one year to the next has to be subtracted from net income. If there is an amount that is still owed, then any differences will have to be added to net earnings.

4.2 (b) Investing

Changes in equipment, assets or investments relate to cash from investing. Usually cash changes from investing are a "cash out" item, because cash is used to buy new equipment, buildings or short-term assets such as marketable securities. However, when a company divests of an asset, the transaction is considered "cash in" for calculating cash from investing.

4.2 (c) Financing

Changes in debt, loans or dividends are accounted for in cash from financing. Changes in cash from financing are "cash in" when capital is raised, and they're "cash out" when dividends are paid. Thus, if a company issues a bond to the public, the company receives cash financing; however, when interest is paid to bondholders, the company is reducing its cash.

Major Cash Inflows

- Issue of new shares for cash
- Receipt of short term & long term loans from banks, financial institutions etc
- Sale of assets & investments, Dividend & Interest received,
- Cash generated from operations

Major Cash Outflows

- Redemption of preference shares, Purchase of fixed assets or investments
- Repayment of long term and short term borrowings
- Decrease in deferred payment liabilities, Loss from operations
- Payment of tax, dividend etc.

Classification of Activities

As per AS-3 the cash flow statement should report cash flows during the period classified by

- OPERATING ACTIVITIES
- INVESTING ACTIVITIES
- FINANCING ACTIVITIES

4.3 CASH FLOW FROM OPERATING ACTIVITIES

- The cash flows generated from major revenue producing activities of the entities are covered under this head.
- Cash flow from operating activities is the indicator of the extent to which the operations of the enterprise have generated sufficient cash to maintain the operating capability to pay dividend, repay loans & make new investments. Main Examples are
- Cash receipts from sale of goods & services
- Cash receipts from royalties, fees, commission etc
- Cash payments to employees
- Cash payments or refunds (receipt) of income tax
- Cash receipts & payments relating to future contracts, forward contract etc
- Cash receipts and payments arising from purchase and sale of trading securities

4.4 CASH FROM INVESTING ACTIVITIES

- These are the acquisition and disposal of long term assets and other investments not included in cash equivalents. This represents the extent to which the expenditures have been made for resources intended to generate future incomes & cash flows, Examples are
- Cash payments for purchase of fixed assets
- Cash receipts from sale of fixed assets
- Cash payments for purchase of shares/debentures etc. in other entities
- Loans and advances given to third parties
- Repayments of loans given

4.5 CASH FROM FINANCING ACTIVITIES

- Financing activities are the activities that result in changes in the size and composition of the owner's capital and borrowings of the enterprise.
- Separate disclosure is important because it is useful in predicting claims on future cash flows by providers of funds
- Examples
- Cash receipts from issue of share capital , debentures & short term & long term loans
- Cash Repayments of loans borrowed
- Cash payment to redeem preference shares

I	**CASH FROM OPERATING ACTIVITIES**		
	Net Profit Before Tax (if profit & loss A/c is given)		XX
	Closing Bal - Opening Bal (if profit & loss A/c Balances are given in B/S)		XX
Add	**Non Cash & Non Operating Expenses**		
	- Depreciation on Fixed Assets	xx	
	- Goodwill written off	xx	
	- Preliminary Expenses written off	xx	
	- Discount on issue of Shares & Debentures	xx	
	- Underwritting commission	xx	
	- Cost of issue of shares & debentures written off	xx	
	- Loss on sale of Investments & Fixed Assets	xx	
	- Foreign Exchange Loss	xx	
	- Interest Paid / Dividend Paid	xx	
	- Loss by fire, theft etc.	xx	
	- Proposed Dividend	xx	
	- Trf. to Gen Reserve, Debenture Red. Fund etc	xx	
	- Loss by fire, theft etc.	xx	
Less	**Non Cash & Non Operating Incomes**		
	- Gain on sale of Fixed Assets & Investments	xx	
	- Interest & Dividend Received	xx	
	- Any other extra-ordinary income	xx	
	- Foreign exchange Gain	xx	
Add	**Increase in Current Liabilities**	xx	
Less	**Decrease in Current Liabilities**	xx	
Add	**Decrease in Current Assets**	xx	
Less	**Increase in Current Assets**	xx	
Less	**Income Tax Paid**	xx	
	CASH FROM OPERATING ACTIVITIES		xxx

II	**CASH FROM INVESTING ACTIVITIES**		
	- Purchase of Fixed Assets & Investments	(xx)	
	- Sale of Fixed Assets & Investments	xx	
	- Interest Received	xx	
	- Dividend Received	xx	xxx
III	**CASH FROM FINANCING ACTIVITIES**		
	- Proceeds from Issue of Share Capital, Debentures etc.	xx	
	- Proceeds from Long Term Borrowings	xx	
	- Repayment of Long Term Borrowings	(xx)	
	- Redemption of Debentures & Preference Shares	(xx)	
	- Interest Paid	(xx)	
	- Dividend Paid	(xx)	
IV	**Net Increase / (Decrease) in Cash**	xx	
	Add: Opening Cash Balance at the beginning of period	xx	
	Closing Cash Balance at the end of period	xx	

	CASH FLOW STATEMENT AS ON		
	PARTICULARS	**AMT**	**AMT**
I	**CASH FROM OPERATING ACTIVITIES**	XX	
II	**CASH FROM INVESTING ACTIVITIES**	XX	
III	**CASH FROM FINANCING ACTIVITIES**	XX	
IV	**Net Increase / (Decrease) in Cash**		**XXX**
	Add: Opening Cash Balance at the beginning of period		**XX**
	Closing Cash Balance at the end of period		**XXX**

4.6 BENEFITS/IMPORTANCE OF CASH FLOW ANALYSIS

- **Efficient Cash Management** – manage the cash resources in such a way that adequate cash is available for meeting the expenses
- **Internal Financial Management** – useful for internal financial management as it provides clear picture of cash flows from operations
- **Knowledge of change in Cash Position** – It enables the management to know about the causes of changes in cash position

- **Success or Failure of Cash Planning** – Comparison of actual & budgeted cash flow helps the management to know the success or failure in cash management
- It is a **supplement to fund flow statement** as cash is a part of fund
- Cash Flow Statement is a **better tool of analysis for short term decisions**

4.7 LIMITATIONS OF CASH FLOW ANALYSIS

- **Misleading Inter Industry Comparison** - Cash flow does not measure the economic efficiency of one company in relation to another company
- **Misleading Inter Firm Comparison** - The terms & conditions of purchases & sales of different firms may not be the same. Hence inter firm comparison becomes misleading
- **Influence of Management Policies** – Management policies influence the cash easily by making certain payments in advance or by postponing certain payments
- **Cannot be equated with Income Statement** – Cash flow statement cannot be equated with income statement. Hence net cash flow does not mean income of the business
- **CFS cannot substitute the B/S & Funds Flow**.

4.8 ACCOUNTING STANDARD – AS3 ON CASH FLOW STATEMENT

Objective of AS-3 is to provide desired information about historical changes in cash & cash equivalents of an enterprise classified in to Operating, Investing and Financing activities.

- An enterprise should disclose the components of cash and cash equivalents and should present a reconciliation of the amount in the cash statement with the equivalent items reported in the balance sheet
- An enterprise should disclose the amount of cash & cash equivalent balance held by the enterprises that are not available for use by it with explanation of Management

4.9 DISTINCTION BETWEEN CASH FLOW V/S FUNDS FLOW

	CASH FLOW	FUNDS FLOW
1	Shows net change in position of "Cash & Cash Equivalents"	Shown net changes in position of "Working Capital"
2	Based on narrower concept of funds i.e. Cash & Cash Equivalents	Based on broader concept of funds i.e. Working Capital
3	Mandatory for all the listed companies & is more widely used in India & Abroad	Not mandatory & not used by many companies
4	Classification of inflow & outflow is done in three categories - Operating, Investing & Financing	Such a meaningful classification is not used in fund flow statement
5	No Statement of changes in working capital is prepared as the changes are adjusted in ascertaining cash from operating activities	Statement of changes in working capital is prepared
6	Increase in CA - Decrease in Cash	Increase in CA - Increase in WC
	Increase in CL - Increase in Cash	Increase in CL - Decrease in WC
	Decrease in CA - Increase in Cash	Decrease in CA - Decrease in WC
	Decrease in CL - Decrease in Cash	Decrease in CL - Increase in WC

Practical Sums

Problem No.1

From the following information, prepare cash flow statement for the year ended 31.03.2014

Opening Cash Balance	10000
Closing cash balance	12000
Decrease in Debtors	5000
Increase in creditors	7000
Sale of Fixed Assets	20000
Redemption of Debentures	50000
Net Profit for the year	20000

Solution

Cash Flow Statement for the year ended 31.03.2014

	Particulars	**Amt**	**Amt**
I	**Cash Flow from Operating Activities**		
	Net Profit for the year		20000
Add:	Decrease in Current Assets - Debtors (Inflow)	5000	
Add:	Increase in Current Liabilities - Creditors (Inflow)	7000	12000
			32000
II	**Cash Flow from Investing Activities**		
	Sale of Fixed Assets (Inflow)		20000
III	**Cash Flow from Financing Activities**		
	Redemption of Debentures (Outflow)		-50000
	Total Cash Flows Generated		2000
Add:	**Opening Cash Balance**		10000
	Closing Cash Balance (Bal. figure)		**12000**

Problem No.2

From the following information, prepare cash flow statement for the year ended 31.03.2014 by Direct Method

1. Cash sales Rs.6586000
2. Cash collected from debtors during the year amounted to Rs.3323400
3. Cash paid to suppliers was Rs.7936810
4. Rs.987500 was paid to and for employees
5. Furniture of the book value of Rs.18500 was sold for Rs.11000 and a new furniture costing Rs.83160 was purchased
6. Debentures of the face value of Rs.300000 were redeemed at a premium of 2% interest on debentures. Interest on debentures, Rs.84000 was also paid
7. Dividend of Rs.450000 for the year ended 31st March,2014 was distributed in May, 2014
8. Cash in hand and at Bank as on 31.03.2013 and 31.03.2014 was Rs.51070 and Rs.574000 respectively

Solution:

Cash Inflows		**Cash Outflows**	
Cash Sales	6586000	Cash paid to Suppliers	7936810
Cash collected from Debtors	3323400	Paid to employees	987500
Sale of Furniture	11000	Purchase of Furniture	83160
Opening Cash Balance	51070	Interest on Debentures Paid	84000
		Redemption of Debentures	300000
		Int. on Redemtion of Debentures	6000
		Closing |Cash Balance	574000
	9971470		**9971470**

Total Cash Inflows		9920400
Less - Cash Outflows		9397470
Net Cash Flows		**522930**
Add - Opn Cash Balance		**51070**
Closing Cash Balance		**574000**

Problem No.3

From the summary cash a/c of X Ltd, prepare the cash flow statement for the year ended 31.03.2014 by direct method

DR **CASH BOOK for the year ended 31.03.2014** **CR**

Particulars	Amt	Particulars	Amt
To Balance on 1.4.2013	50000	By Payment to Suppliers	2000000
To Issue of Equity Shares	300000	By Purchase of Fixed Assets	200000
To Receipts from Customers	2800000	By Overhead Expenses	200000
To Sale of Fixed Assets	100000	By Wages & Salaries	100000
		By Income Tax Paid	250000
		By Dividend Paid	50000
		By Repayment of Bank Loan	300000
		By Balance on 31.03.2014	150000
	3250000		**3250000**

Solution:

	Cash from Operating Activities		
	Receipt from Customers (inflow)	2800000	
	Payment to Suppliers (outflow)	-2000000	
	Overhead Expenses (outflow)	-200000	
	Wages & Salaries (outflow)	-100000	500000
	Cash from Investing Activities		
	Sale of Fixed Assets	100000	
	Purchase of Fixed Assets	-200000	-100000
	Cash from Financing Activities		
	Issue of Equity Shares (inflow)	300000	
	Dividend Paid (outflow)	-50000	
	Repayment of Bank Loan (outflow)	-300000	-50000
	Total Cash Flows		**350000**
	Less - Income Tax Paid		-250000
	Net Cash Flow after Tax		**100000**
	Add: Opening Cash Balance		50000
	Closing Cash Balance		**150000**

Problem No.4

Financial position of ABC Limited as on 31.03.2014 was as follows

Liabilities	**2013**	**2014**	**Assets**	**2013**	**2014**
Current Liabilities	72000	82000	Cash	8000	7200
Loan from Z Ltd	0	40000	Debtors	70000	76800
Loan from Bank	60000	50000	Stock	50000	44000
Share Capital	200000	200000	Land	40000	60000
Profit & Loss A/c	96000	98000	Buildings	100000	110000
			Machinery	214000	244000
			Prov for Depreciatio	(54,000)	(72,000)
	428000	**470000**		**428000**	**470000**

During the year Rs.52000 were paid as Dividend. Prepare Cash Flow Statement

Solution:

	Cash Flow Statement for the year ended 31.03.2014		
	Particulars	**Amt**	**Amt**
I	**Cash from Operating Activities**		
	Net Prodit during the year		2000
Less:	Increase in Current Assets - Debtors	-6800	
Add:	Decrease in Current Assets - Stock	6000	
Add:	Increase in current liability - Prov for Depreciation	18000	
Add:	Increase in current liability	10000	
Add:	Dividend Paid	52000	79200
II	**Cash from Investing Activities**		
	Purchase of Land	-20000	
	Purchase of Building	-10000	
	Purchase of Machinery	-30000	-60000
III	**Cash from Financing Activities**		
	Loan from Z taken	40000	
	Repayment of Bank Loan	-10000	
	Dividend Paid	-52000	-22000
	Total Cash Flow		-800
	Add - Opening Cash Balance		8000
	Closing Cash Balance (Balancing Figure)		**7200**

Problem No.5

From the following Financial Statement you are required to prepare cash flow statement of Dolphine Ltd for the year ended 31st March, 2006

Balance Sheet as on 31.03.2006

Liabilities	2005	2006	Assets	2005	2006
Share Capital	140000	140000	Plant & Machinery	100000	182000
Secured Loan	0	80000	Inventory	30000	80000
P&L A/c	14000	20000	Debtors	10000	40000
Creditors	28000	78000	Cash	40000	18000
Tax Payable	2000	6000	Preliminary Exp.	4000	4000
	184000	**324000**		**184000**	**324000**

Revenue Statement for the year ended 31.03.2006

To Opening Inventory	30000	By Sales	200000
To Purchases	196000	By Closing Inventory	80000
To Gross Profit	54000		
	280000		**280000**
To General Expenses	22000	By Gross Profit b/d	54000
To Depreciation	16000		
To Provision for Tax	8000		
To Net Profit	8000		
	54000		**54000**
To Dividend Paid	2000	By Balance b/d	14000
To Balance c/d	20000	By Net Profit b/d	8000
	22000		**22000**

Solution:

CASH FLOW STATEMENT OF DOLPHINE LIMITED AS ON 31.03.2006

	Particulars	Amt	Amt
I	**Cash from Operating Activities**		
	Net Profit after tax	8000	
	Add - Provision for tax	8000	
	Net Profit before tax		**16000**
Add	**Non Cash/Non Operating Expenses**		
	Depreciation	16000	
Less	**Increase in Current Assets**		
	Inventory	-50000	
	Debtors	-30000	
Add	**Increase in Current Liabilty**		
	Creditors	50000	**-14000**
	Total Cash Flow		**2000**
Less	Tax Paid (working note - tax payable A/c)		**-4000**
	Net Cash Flow from Operating Activities		**-2000**
II	**Cash from Investing Activities**		
	Purchase of Plant & Machinery (working note P&M A/c)		**-98000**
III	**Cash from Financing Activities**		
	Secured Loan taken	80000	
	Dividend Paid	-2000	**78000**
	Total Cash Flows		**-22000**
Add	Opening Cash Balance		**40000**
	Closing Cash Balance (Bal.Figure)		**18000**

Tax Payable A/c

To Bank A/c	4000	By Balance b/d	2000
To Balance c/d	6000	By P&L A/c	8000
	10000		**10000**

Plant & Machinery a/c

To Balance c/d	100000	By P&L (dep)	16000
To Bank A/c	98000	By Balance b/d	182000
	198000		**198000**

Problem No.6					
Calculate cash flow from operating activities from the following P&L A/C					
Salaries	20000		Gross profit		50000
Rent	10000		Profit on sale of Land & Building		5000
Depreciation	5000		Income Tax Refund		5000
Loss on sale of plant	2000				
Goodwill w/off	5000				
Proposed Dividend	6000				
Provision for taxation	5000				
Net Profit	7000				
	60000				**60000**

Cash Flow from Operating Activities		**Amt**	**Amt**
	Net Profit		7000
Add	Proposed dividend	6000	
	Depreciation	5000	
	Loss on sale of Plant	2000	
	Goodwill W/off	5000	
	Provision for taxation	5000	23000
Less:	Profit on sale of Lans & Building		-5000
Less:	Income Tax Refund - to be shown separately		-5000
	Cash Flow from Operating Activities		20000

Key Terms:

Cash – It includes cash and demand deposits with Banks

Cash Equivalents – These are short term and highly liquid investments

Cash Flows – It is movement of cash

Non Cash Expenses – These are the expenses which do not involve any cash payment

Revenue Activities - These are the activities which are revenue producing

Investing Activities – These are related to acquisition and disposal of long term assets

Financing Activities – These are the activities relating to changes in capital & borrowings

Theory Questions:

1. Explain the technique of cash flow statement?
2. What is utility of cash flow statement to financial management?
3. Explain the concept of "Flow of Cash" & enumerate the sources of cash?
4. What data would you require to prepare a cash flow statement?

Suggested Readings for Fund Flow & Cash Flow Statements

Management Accounting – Bhattacharya Debarshi

Introduction to Management Accounting – Dr.Varsha Ainapure (Manan Prakashan)

Principles of Financial Management – Satish Inamdar (Everest Publishing House)

Practical Sums:

Problem No.7

Prepare cash flow statement from the following balance sheets.

Liabilities	2005	2006	Assets	2005	2006
Share capital	4300	5000	Plant	6250	7450
Reserves	3000	3850	Investment	125	375
Loan	375	625	Stock	1625	2000
Creditors	1375	1125	Debtors	1000	750
O/s Exp for Admin	125	50	Cash	375	325
Prov for Deprec.	200	250			
	9375	**10900**		**9375**	**10900**

Income Statement for 2006

	Sales		5000
Less :	Cost of Sales (including depreciation Rs.50)		3750
			1250
Less :	Selling & Distribution Expenses	250	
	Other Expense	125	
	Interest on Loan	25	400
	Net Profit		**850**

Problem No.8

Prepare cash flow statement from the following balance sheets.

Liabilities	2005	2006	Assets	2005	2006
Eq.Share capital	250000	325000	Fixed Assets	200000	250000
Gen.Reserves	50000	75000	Depreciation W/off		-25000
Profit & Loss A/c	25000	75000	Investment	50000	50000
7% Debentures	100000	100000	Stock	100000	125000
Creditors	100000	100000	Debtors	100000	150000
Proposed Dividend	25000	32500	Cash	75000	157500
			Misc. Expenses	25000	
	550000	**707500**		**550000**	**707500**

Problem No.9

Prepare cash flow statement from the following balance sheets.

Liabilities	2005	2006	Assets	2005	2006
Eq.Share capital	70000	70000	Fixed Assets (Net)	45000	43500
Gen.Reserves	37000	52500	Cash	37500	48500
Sundry Creditors	16000	17500	Debtors	21500	20000
Wages O/s	1500	2000	Inventories	24500	29000
Mis. Exp O/s	5500	1500	Prepaid Rent	1500	2500
	130000	**143500**		**130000**	**143500**

Accumulated Depreciation was Rs.8000 for the year ended 31.03.2005 and Rs.9500 for the year ended 31.03.2006

Other Information		
Sales	150000	
Cost of goods sold	95000	
wages	11500	
rent	3000	
Mis. Expenses	23500	
Depreciation	1500	

MODULE - III

5

RATIO ANALYSIS

Unit Structure

5. 1 INTRODUCTION

Ratio analysis is the process of determining and interpreting numerical relationships based on financial statements. A ratio is a statistical yardstick that provides a measure of the relationship between two variables or figures.

This relationship can be expressed as a percent or as a quotient. Ratios are simple to calculate and easy to understand. The persons interested in the analysis of financial statements can be grouped under three heads,

i) Owners or investors
ii) Creditors and
iii) Financial executives

Although all these three groups are interested in the financial conditions and operating results, of an enterprise, the primary information that each seeks to obtain from these statements differs materially, reflecting the purpose that the statement is to serve.

Investors desire primarily a basis for estimating earning capacity. Creditors are concerned primarily with liquidity and ability to pay interest and redeem loan within a specified period. Management is interested in evolving analytical tools that will measure costs, efficiency, liquidity and profitability with a view to make intelligent decisions.

5.2 OBJECTIVE OF RATIO ANALYSIS:

The main objectives of analyzing financial statement with the help of ratios are:

1. The analysis would enable the calculation of not only the present earning capacity of the business but would also help in the estimation of the future earning capacity.
2. The analysis would help the management to find out the overall as well as the department – wise efficiency of the firm on the basis of the available financial information.
3. The short term as well as the long term solvency of the firm can be determined with the help of ration analysis.
4. Inter – firm comparison becomes easy with the help of ratios.

5.3ADVANTAGES OF RATIO ANALYSIS:

Financial statement prepared at the end of the year do not always convey to the reader the real profitability and financial health of the business. They contain various facts and figures and it is for the reader to conclude what these figures indicated. Ratio Analysis is an important tool for analyzing these financial statements .Some important advantage derived by the firm by the use of accounting ratios are:

1. Help in Financial statement analysis

It is easy to understand the financial position of a business enterprise in respect of short-term solvency, liquidity and profitability with the help of ratio. It tells us the changes taking place in the financial condition of the business.

2. Simplified accounting figures

Absolute figures are not of mush use. They become important when relationships are established say between gross profit and sales.

3. Helps in calculating operation efficiency of the business enterprise

Ratio enables the user of financial information to determine operating efficiency of a firm by relating. The profit figure to the capital employed for a given period.

4. Facilities inter- firm comparison

Ratio analysis provides data for inter- fir m comparison. It revels

strong and weak firms, overvalues and undervalues firms as well as successful and unsuccessful firms.

5. Makes inter- firms comparison possible

Ratio Analysis helps the firm to compare e its own performance over a period of time as well as the performance of different divisions of the firm. It helps in deciding which divisions are more efficient than other.

6. Helps in forecasting

Ratio Analysis helps in planning and forecasting. Ratios provides clues on trends and futures problems. E.g. if the sales of a firm during the year are Rs. 10 lakhs and he average stock kept during the year Rs. 2 lakhs, it must be ready to keep a stock of Rs. 3 lakhs which is 20 % of the Rs. 15 lakhs.

5.4. MEANING OF RATIOS :-

A ratio is one figure expressed in terms of another figure. It is mathematical yardstick of measuring relationship of two figures or items or group of items, which are related, is each other and mutually inter-dependent. It is simply the quotient of two numbers. It can be expressed in fraction or in decimal point or in pure number.

Accounting ratio is an expression relating to two figures or two accounts or two set accounting heads or group of items stated in financial statement.

5.5. MODES OF EXPRESSING AN ACCOUNTING RATIO

An accounting ratio may be expressed in different ways as under.

I) Simple or pure ratio :- It is merely a quotient arrived by simple division of one number by another.

Example : When current assets of the business enterprise are Rs. 1,00,000 and current liabilities are Rs.25,000. The ratio between current assets and current liabilities will be expressed as 1,00,000 / 25,000 = 04 OR it is expressed as 4:1.

II) Percentages :- It is expressed as percentage relationship when simple or pure ratio is multiplied by 100.

Example : The current ratio in above example is expressed in percentage by multiplying 4 by 100.
i.e. 100 x 4 = 400%

III) Rate :- The ratio is expressed as rates which refer to the ratio over a period of time.

Example : Stock has turned over 8 times a year.

IV) Number of days or week or month:- Certain items of the financial statements are expressed better in the form of days or weeks or months.

Example: Debtors' collection period, credit payment period, movement of stock, etc are expressed in days or weeks or months in a year.

V) Rupees :- In this case numerator is divided by denominator and figure of result is expressed in rupees.

Example : Earnings per share, dividend per share etc are expressed in rupees. It net profit after tax is Rs. 12,500 and number of shares of a company are 1250.

Earning per shares = NPAT/ No. Of Shares
12500/ 1250 = Rs. 10 per shares

5.6. IMPORTANCE OF RATIO ANAYSIS

The ratios are useful for the following parties.

1. Investors, both present as well as potential investors.
2. Financial analysist.
3. Stock broker and stock exchange authorities.
4. Government.
5. Tax Department.
6. Competitors
7. Research analysist and students.
8. Creditors and supplier.
9. Banks and financial institutions.
10. Company's management.
11. Finance managers
12. Mutual funds.
13. Other interested parties like credit rating agencies.

5.7. CLASSIFICATION OF RATIOS

Different types of ratios are computed depending on the purpose for which they are needed. Broadly speaking, they are grouped under four heads:

1. Liquidity ratios
2. Solvency ratios
3. Turnover or Activity ratios
4. Profitability ratios

The ratios are worked out to analyze the following aspect or areas of business organization.

1) Solvency: -
   a) Long-term solvency
   b) Short-term solvency
   c) Immediate solvency
2) Stability
3) Profitability
4) Operational efficiency
5) Credit standing
6) Structural analysis.
7) Utilization of resources and
8) Leverage or external financing.

The ratios are used for different purposes, for different users and for different analysis. The ratios can be classified as under:

a) Traditional classification
b) Functional classification
c) Classification from user's point of view

Traditional classification :

As per this classification, the ratios readily suggest through their names, their respective resources. From this point of view, the ratios are classified as follows.

a) Balance Sheet Ratio :- This ratio is also known as financial ratios. The ratios which express relationships between two items or group of items mentioned in the balance sheet at the end of the year.

Example : Current ratio, Liquid ratio, Stock to Working Capital ratio, Capital Gearing ratio, Proprietary ratio, etc.

b) Revenue Statement Ratio :- This ratio is also known as income statement ratio which expresses the relationship between two items or two groups of items which are found in the income statement of the year.

Example : Gross Profit ratio, Operating ratio, Expenses Ratio, Net Profit ratio, Stock Turnover ratio, Operating Profit ratio.

c) Combined Ratio :- These ratios shows the relationship between two items or two groups of items, of which one is from balance sheet and another from income statement (Trading A/c and Profit & Loss A/c and Balance Sheet).

Example : Return on Capital Employed, Return on Proprietors' Fund ratio, Return on Equity Capital ratio, Earning per Share ratio, Debtors' Turnover ratio, Creditors Turnover ratio.

Functional Classification of Ratios :

The accounting ratios can also be classified according their functions as follows.

a) Liquidity Ratios :- These ratios show relationship between current assets and current liabilities of the business enterprise.

Example : Current Ratio, Liquid Ratio.

b) Leverage Ratios :- These ratios show relationship between proprietor's fund and debts used in financing the assets of the business organization.

Example : Capital gearing ratio, debt-equity ratio, and proprietary ratio. This ratio measures the relationship between proprietors fund and borrowed funds.

c) Activity/Turnover Ratio :- This ratio is also known as turnover ratio or productivity ratio or efficiency and performance ratio. These ratios show relationship between the sales and the assets. These are designed to indicate the effectiveness of the firm in using funds, degree of efficiency, and its standard of performance of the organization.

Example : Stock Turnover Ratio, Debtors' Turnover Ratio, Turnover Assets Ratio, Stock working capital Ratio, working capital Turnover Ratio, Fixed Assets Turnover Ratio.

d) Profitability Ratio:- These ratios show relationship between profits and sales and profit & investments. It reflects overall efficiency of the organizations, its ability to earn reasonable return on capital employed and effectiveness of investment policies.

Example:
i) Profits and Sales: Operating Ratio, Gross Profit Ratio, Operating net profit Ratio, Expenses Ratio etc.

ii) Profits and Investments: Return on Investments, Return on Equity Capital etc.

e) Coverage Ratios: - These ratios show relationship between profit in hand and claims of outsiders to be paid out of profits.

Example: Dividend Payout Ratio, Debt Service Ratio and Debt Service Coverage Ratio.

Classification from the view point of user:

Ratios from the users' point of view are classified as follows.

a) Shareholders' point of view: - These ratios serve the purposes of shareholders. Shareholders, generally expect the reasonable return on their capital. They are interested in the safety of shareholders investments and interest on it.

Example: Return on proprietor's fund, Return on Capital, Earning per share.

b) Long term creditors:- Normally leverage ratios provide useful information to the long term creditors which include debenture holders, vendors of fixed assets, etc. The creditors interested to know the ability of repayment of principal sum and periodical interest payments as and when they become due.

Example: Debt equity ratio, return on capital employed, proprietary ratio.

c) Short term creditors: - The short-term creditors of the company are basically interested to know the ability of repayment of short-term liabilities as and when they become due. Therefore, the creditors has important place on the liquidity aspects of the company's assets.

Example:
a) Liquidity Ratios - Current Ratio, Liquid Ratio
b) Debtors Turnover Ratio
c) Stock working capital Ratio.

d) Management : - Management is interested to use borrowed funds to improve the earnings.

Example : Return on capital employed, turnover Ratio, Operating Ratio, and Expenses Ratio.

5.8. BALANCE SHEET RATIOS

Current Ratio:

This ratio is also known as working capital ratio. This expresses the relationship between current assets and current liabilities. This ratio is calculated by dividing current assets by current liabilities. It is expressed as pure ratio standard current ratio is 2:1. Means current

assets should be double the current liabilities.

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

a) Current assets includes I) Inventories of raw materials, finished goods, work-in-progress, stores & spare, loose tools, II) Sundry debtors, III) Short-term loan, deposits, advance, IV) Cash on hand and bank, V) Prepaid expenses, accrued income, VI) Bills receivables, VII) Marketable investments, short term securities.

b) Current liabilities includes sundry creditors, bills payables, outstanding expenses, unclaimed dividends, interest accrued but not due on secured and unsecured loans, advances received, income received in advance, provision for tax, purposed dividend loan installment of secured and unsecured loan payable within 12 months.

c) Significance: This ratio tests the credit strength and solvency of an organization. It shows strength of working capital, it indicates ability to discharge short term liabilities.

Liquid ratio:

This ratio expresses the relationship between liquid assets and liquid liabilities. This ratio is also known as quick ratio or acid test ratio. This ratio is calculated by dividing liquid assets by liquid liabilities. Standard quick ratio is 1:1.

$$Liquid\ Ratio = \frac{Liquid\ Assets\ /\ Quick\ Assets}{Quick\ or\ Current\ Liabilities}$$

a) Liquid assets = Current assets less (Stock, prepaid expenses and advance tax etc)
b) Liquid liabilities = Current liabilities less (Bank overdraft and cash credit etc)

c) Significance:-

1) Indicate immediate solvency of enterprise.
2) Unlike CR it is more qualitative concept
3) As it eliminates inventories, it is rigorous test of liquidity.
4) More important for financial institutions.

Proprietary ratio:

Proprietary ratio is a test of the financial and credit strength of the business. It establishes relationship between proprietors to total assets. This ratio determines the long term solvency of the company.

Alternatively this ratio is also known as Worth Debt Ratio. Net worth to Total Assets Ratio, Equity Ratio, Net worth Ratio or Assets Backing Ratio, Proprietor's funds to Total Assets Ratio or Share holders Funds to Total Assets Ratio.

This ratio is expressed in percentage.

a) Formula:-

$$Pr oprietary\ Ratio = \frac{Pr oprietor's\ Shareholder's\ Fund}{Total\ Assets} \times 100$$

b) Components:-

1) Proprietors Funds = Paid up equity + Reserves and surplus less accumulated loss +

Paid up preference capital.

2) Total assets = Fixed assets + investment + current assets.

c) Purpose: - This ratio is exercised to indicate the long term solvency of the business.

d) Significance: -

This ratio shows general financial strength of the business.

1) It determines the extent of trade on equity.

2) It indicates long term solvency of business.

3) It tests credit strength of business.

4) It can be used to compare proprietary ratio with others firms or industry.

Stock-working capital ratio:

This ratio establishes relationship between stock and working capital. Alternatively it is known as "Inventory-working capital ratio".

a) Formula:-

$$Stock - Working\ Capital\ Ratio = \frac{Stock}{Working\ Capital}$$

b) Components:-
1) Stock (closing stock)
2) Working capital i.e. current assets less current liabilities.

It can be expressed in percentage also by multiplying this ratio by 100.

c) Purpose :- This ratio shows the extent to which the working capital is blocked in inventories.

d) Significance:-

1) This ratio highlights the predominance of stocks in current financial position of organization.

2) A higher ratio indicates week working capital.

3) This ratio is the indicator of the adequacy of working capital.

e) Standard Ratio: - Standard stock working capital ratio is 1:1

Capital Gearing Ratio:

This ratio brings out the relationship between capital carrying fixed rate of interest or fixed dividend and capital that doesn't carry fixed rate of interest or fixed dividend. This ratio indicates degree to which capital has been geared in the capital structure of the company. Alternatively this ratio is also known as "Leverage ratio" or "Financial leverage ratio" or " Capital structure ratio".

a) Formula:-

$$Capital\ Gearing\ Ratio = \frac{Capital\ bearing\ Fixed\ Interest\ or\ dividend}{Capital\ not\ bearing\ Fixed\ Interest\ or\ dividend}$$

b) Components:-

1) Capital bearing fixed interest or dividend comprises of debentures, secured and unsecured loans, and preference share capital.

2) Capital not bearing fixed interest or dividend is equity share capital and reserve & surplus. This ratio also can be expressed in %age by multiplying this ratio by 100.

c) Purpose: - This ratio is used to understand the effective capital structure of the company.

d) Significance:-

1) It is mechanism to ascertain the extent to which the company is practicing trade or equity.
2) It brings one balanced capital structure.

Debt Equity Ratio:

This ratio express the relationship between external equities and external equities i.e. owners' capital and borrowed capital.

a) Formula:-

$$Debt\ equity\ Ratio = \frac{Debt}{Equity}\ OR\ \frac{Long\ Term\ Debts}{Shareholders\ Fund}\ OR$$

$$\frac{Long\ Term\ Debts}{Shareholders'\ Funds + Long\ Term\ Debts}$$

b) Components:-

1) Debts include all liabilities including short term & long term i.e. mortgage loan and debentures.
2) Shareholders' funds consist of preference share capital, Equity share capital, Capital and Revenue Reserves, Surplus, etc.

c) Significance:-

1) It shares favorable or non favorable capital structure of the company.
2) It shows long term capital structure.
3) It reveals high margin of safety to creditors.
4) It makes us understand the dependence on long term debts.

d) Standard: - Standard debt- equity ratio is 2:1. It means debts should be double the shareholders funds.

5.9. REVENUE STATEMENT RATIOS:

Revenue statement ratios are the ratios which highlights the relation between two items from revenue statements i.e. Trading Account and Profit and Loss Account.

Gross profit ratio:

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

$$Gross\ Pr ofit\ Ratio = \frac{Gross\ Pr ofit}{Sales} \times 100$$

b) Components of this ratio are:-

1) Net sales = Total sales less sales return
2) Gross profit = Sales - Cost of sales
3) Cost of sales = (opening stock + purchases + direct labour + other direct charge) - closing stock

c) Significance:-

1) This ratio analyzes the basic profitability of business.
2) It shows the degree to which the selling price per unit may decline without resulting in loss from operations.
3) Yearly comparisons of gross profit ratio reveal the trend of trading results.

Operating Ratio:

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

a) Formula:-

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

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

c) Purpose : - Purpose of operating ratio is to ascertain the efficiency of the management regarding operation of business concern.

d) Significance:-

1) It is used to test operational efficiency of business.
2) This ratio is the yardstick which measures the efficiency of all operational activities of business i.e. production, management, administration, sales, etc.

e) Limitation of operating ratio:-

1) It cannot test profitability of business without considering extra - ordinary items.
2) The utility of operating ratio is limited owing to its vulnerability to changes in management decisions.

Expenses Ratio:

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

a) Formula :

$$Expenses\ Ratio \frac{Item\ or\ Group\ of\ Expenses}{Net\ Sales} \times 100$$

1) $$Ad\ min istrative\ Expenses\ Ratio \frac{Ad\ min istrative\ Expenses}{Net\ Sales} \times 100$$

2) $$Selling\ \&\ Dist.exp enses\ Ratio = \frac{Selling\ \&\ Dist.\ Expenses}{Net\ Sales} \times 100$$

3) $$Cost\ of\ material\ consumed\ Ratio = \frac{Cost\ of\ material\ consumed}{Net\ Sales}$$

4) $$Manufacturing\ Expenses\ Ratio = \frac{Manufacturing\ Expenses}{Sales} \times 100$$

5) $$Non-operating\ exp enses\ Ratio = \frac{Non\ operating\ Expenses}{Net\ Sales} \times 100$$

c) Purpose and significance:-

1) This ratio helps us to know the cause behind overall changes in operating ratio
2) Purpose of this ratio is to take corrective action.
3) It indicates the efficiency of management in controlled expenses and improving profitability.
4) This ratio enables the income tax department to judge the correctness and reliability of income disclosed in income tax returns.
5) Analytical study of this ratio can be judged by trend of expenses.
6) Comparative study of year to year expenses can be possible.

Net profit ratio:-

Net profit ratio indicates the relationship between net profit and net sales. Net profit can be either operating net profit or net profit after tax or net profit before tax. Alternatively this ratio is also known as “Margin on sales ratio". Normally this ratio is calculated & expressed in Percentage.

a) Formula :

$$Net\ Pr ofit\ Ratio = \frac{Net\ Pr ofit}{Net\ Sales} \times 100\ OR\ \frac{NPAT}{Net\ Sales} \times 100$$
$$OR\ \frac{NPDT}{Net\ Sales} \times 100\ OR\ \frac{ONP}{Net\ Sale} \times 100$$

b) Significance :-

1) It measures overall profitability of business.
2) It is very useful in judging return on investments.
3) It provides useful inferences as to the efficiency and profitability of business.
4) It indicates the portion of net sales is available for proprietors.
5) It is clear index of cost control, managerial efficiency, sales promotion, etc.

Net operating profit ratio :

Operating profit ratio indicates the relationship between operating profit and net sales. This ratio is expressed in percentage.

a) Formula :

$$Net\ Operating\ Pr ofit\ Ratio = \frac{Net\ operating\ Pr ofit}{Net\ Sales} \times 100$$

b) Components :-

1) Net operating profit is equal to gross profit minus all operating expenses or sales minus cost of goods sold and operating expenses.
2) Net sales are equal to sales minus sales returns.

c) Significance:-

1) It signifies higher operating efficiency of management and control over operating cost.
2) It indicates profitability of various operations of the organization i.e. buy, manufacture, sales, etc.
3) It shows ability of organization to generate operating profit out of its daily operations.

Stock Turnover Ratio:

Stock turnover ratio shows relationship between costs of goods sold and average stock. This ratio is also known as

"Inventory Ratio" or "Inventory Turnover Ratio" or "Stock Turn Ratio" or "Stock Velocity Ratio" or "Velocity of Ratio".

This ratio measures the number of times of stock turns or flows or rotates in an accounting period compared to the sales affected during that period. This ratio indicated the frequency of inventory replacement. This ratio is expressed as rate.

a) Formula:-

$$Stock\ Turnover\ Ratio = \frac{Cost\ of\ goods\ sold}{Average\ Stock}$$

b) Components:-

1) Cost of goods sold = Sales – Gross Profit

2) $$Average\ Stock = \frac{Opening\ stock + closing\ Stock}{2}$$

***** If opening stock is not given, the closing stock is treated as average stock.

c) Alternative method of stock turnover ratio: - This ratio can be calculated by using average stock at selling price at as the denominator. Under this method, average Stock at selling price is related to net sales.

$$Stock\ Turnover\ Ratio = \frac{Net\ Sales}{Average\ inventory\ at\ selling\ price}$$

d) Purpose: - Purpose of stock turnover ratio is to

1) Calculate the speed at which the stock is being turned over into sales.
2) Calculate the stock velocity to indicate the period takes by average stock to be sold out.
3) Judge how efficiently the stock are managed and utilized to generate sales.

5.10. COMBINE RATIO / COMPOSITE RATIOS:

Combined or composite ratios relate two items or group of items of which one is from balance sheet and another from revenue statements of an enterprise.

Return on capital employed:

This ratio explains the relationship between total profit earned by business and total investment made or total assets employed. It

is expressed in percentage. This ratio is also known as "Return on Investment", or "Return on Total Resources".

a) Formula:-

$$Return\ on\ apital\ employed = \frac{Profit\ before\ tax\ interest}{Capital\ Employed} \times 100$$

b) Components :

1) Net profit before tax, interest & dividends (PBIT)
2) Capital employed
   Capital employed =
   i) Equity share capital
   ii) Add. Preference share capital reserve & surplus
   iii) Add. Long term borrowings (Term loan + Debentures)
   iv) Less: Fictitious assets like miscellaneous expenses not written off.
   v) Less profit & loss A/c Dr. Balance (loss)

c) Purpose :-

1) Purpose of this ratio is to measure overall profitability from the total funds made available by owners and leaders.

2) Purpose of this ratio is to judge how efficient the business concern is in managing the funds at its disposal.

d) Significance: -

1) This ratio is effective tools to measure overall managerial efficiency of business.

2) Comparison of this ratio with other company and this information can be obtained for determining future course of action.

3) This ratio indicates the productivity of capital employed and measures the operating efficiency of the business.

Return on Proprietors Funds:

This ratio measures the relationship between net profit after tax & interest and proprietors fund. This ratio is alternatively known as "Return on proprietors' equity" or "Return on shareholders' investment" or "Investors' ratio". This ratio is Expressed in percentage.

a) Formula :

$$Return\ on\ Proprietor's\ Fund = \frac{Net\ Profit\ after\ tax\ \&\ Interest\ (NPATI)}{Proprietor's\ Fund} \times 100$$

b) Components:-

1) Net profit after tax and interest
2) Proprietors' funds

c) Purpose: -

1) Purpose of this ratio is to measure the rate of return on the total fund made available by the owners.

2) This ratio helps to judge how efficient the concern is in managing owners' funds at its disposal.

d) Significance: -

1) This ratio is very significant to prospective investors and shareholders.
2) With the help of this ratio company can decide to rise finance from external sources even from public deposit it ratio is satisfactory.
3) Shareholders can expect to capitalize its reserves and issue bonus shares when ratio is higher for reasonable period of time.

Return on equity share capital:

This ratio explains relationship between net profit (after tax and interest and dividend on preference share) and equity share holders' funds. This ratio is expressed in percentage.

a) Formula:-

$$Return\ on\ Equity\ Capital = \frac{Net\ Profit\ after\ tax\ less\ preference\ dividend}{Equity\ share\ capital} \times 100$$

Alternatively this ratio may be calculated by using following formula for calculating the return per equity shares.

$$Return\ on\ Equity\ Shares = \frac{Net\ Profit\ after\ tax\ less\ preference\ dividend}{Number\ of\ Equity\ share}$$

b) Components:-

1) Net profit after tax & interest and preference dividend.
2) Equity share capital by adding reserves or deducting miscellaneous expenditures.

c) Purpose:-

Purpose of this ratio is to calculate amount of profit available to take care of equity dividend, transfer to reserves, etc.

d) Significance:-

1) It is useful to the investors while deciding whether to purchase or sale of shares.

2) This ratio helps to make comparative study of equity capital with other company and it will be appreciate if there is high return.

Earning per share :

Earning per share is calculated to find out overall profitability of the organization. It represents earnings of the company whether or not dividends are declared. Earning per share is determined by dividing net profit by the number of equity shares.

a) Formula :-

$$Earning\ per\ shares\ (EPS) = \frac{Net\ Pr ofit\ after\ tax\ preference\ dividend}{Number\ of\ Equity\ share}$$

b) Components :-

1) Net profit after tax & interest - less preference dividend.
2) No. of equity shares.

c) Purpose :-

Purpose of this ratio is to calculate the amount of profit available on each equity shares to take care of equity dividend , transfer to reserve, etc.

d) Significance :-

1) This ratio helps the investors or shareholders to take decision while purchasing or selling shares.
2) This ratio shows the possibilities of issue of bonus shares.
3) Higher ratio indicates overall profitability.

Dividend payout ratio :

This ratio shows relationship between dividend paid to equity shareholders out of profit available to the equity shareholders.

a) Formula: -

This ratio is calculated as follows.

$$Dividend\ payout\ ratio = \frac{Dividend\ per\ equity\ shares}{Earning\ per\ shares}$$

b) Components: -

1) Dividend per equity shares means total dividend paid to equity shareholder dividend by number of equity shares.
2) Earning per shares refer to formula given above

c) Purpose: - Purpose of this ratio is to measure the dividend paying capacity of the company.

d) Significance: -

1) Higher ratio signifies that the company has utilized the larger portion of its earning for payment of dividend to equity shareholders.
2) It says lesser amount of earning has been retained.

Price earnings ratio (P/E Ratio) :

This ratio measures relationship between market price of equity shares and earnings per share. It is usually expressed as a fraction.

a) Formula: -

$$Price\ Earning\ Ratio = \frac{Market\ price\ per\ Equity\ shares}{Earning\ per\ Equity\ shares}$$

b) Components: -

1) Market price per equity share = quoted price of a listed equity share.
2) Earnings per equity share refer to formula given above

c) Purpose: -

1) Purpose of this ratio is to show the effect of the earning on the market price of the share.
2) It helps the investors while deciding whether to purchase, keep or sell the equity shares.
3) It helps to ascertain the value of equity share.

Debt service Ratio :

Debt service ratio shows relationship between net profit and interest payable on loans. This ratio is also called as interest coverage ratio. This ratio is expressed as a pure number.

a) Formula :-

$$Debt\ Service\ Ratio = \frac{Net\ Profit\ before\ interest\ \&\ tax}{Interest\ Charges}$$

b) Components :-

1) Profit before interest & tax means net profit before payment of interest on loan and tax.
2) Interest means interest on long term loans.

c) Purpose :-

1) Purpose of this ratio is to measure the interest paying capacity the company.
2) The purpose of this ratio is to find out the number of times the fixed financial charges are covered by income before interest and tax.

d) Significance :-

1) It is important from the lenders' point of view.
2) It indicated whether the company will earn sufficient profits to pay periodical interest charges.
3) It shows that the company will be able is pay interest regularly.

Debt service coverage ratio :

Debt service coverage ratio shows the relationship between net profit and interest plus loan installments payable. This ratio is expressed in pure number.

a) Formula :-

$$Debt\ Service\ Ratio = \frac{Cash\ profit\ available\ for\ debt\ servicing}{Interest + Installment\ due\ on\ loan}$$

b) Components :-

1) Net profit + non-cash debit to P & L A/c (depreciation + goodwill written off, deferred revenue expenditure written off, loss on sale of fired assets) = cash profit for debit servicing.
2) Interest means interest on long term loan.
3) Installments means installments due on long term loan during the year.

c) Purpose :- Purpose of this ratio is to measure the debt servicing capacity of the company.

Creditors Turnover Ratio :

This ratio shows relationship between the net credit purchases and theaverage creditors. This ratio is express as a rate.

b) Components: -

1) Credit purchases means gross credit purchases minus purchases returns.

2) Average creditors mean average of opening and closing amount of creditors. If details are not given then only closing creditors may be considered as average creditors.

3) Amount of bills payable.

c) Purpose: - Propose of this ratio is to measure the debt servicing capacity of the company.

Creditors Turnover Ratio :

This ratio shows relationship between the net credit purchase and the average creditors. This ratio is express as a rate.

a) Formula :

$$Creditor's\ Turnover\ Ratio = \frac{Net\ Credit\ Purchases}{Average\ creditors}\ OR\ \frac{Credit\ purchases}{Creditors + Bills\ payable}$$

$$Credit\ payment\ period\ OR\ (Creditors\ velocity) = \frac{365\ day\ or\ 12\ months}{Creditors\ turnover\ ratio}$$

$$= \frac{Creditors + Bills\ payable}{Daily\ credit\ purchases}$$

b) Components :

1) Credit purchases means gross credit purchases minus purchases returns.
2) Average creditors mean average of opening and closing amount of creditors. If details are not given then only closing creditors may be considered as average creditors.
3) Amount of bills payable.

c) Purpose :

Purpose of this ratio is to.

1) Calculate the speed with which creditors are paid off on an average during the year.
2) Calculate the creditors' velocity to indicate the period taken by the average creditors to be paid off.
3) Judge how efficiently the creditors are managed.

Debtors' Turnover Ratio :

This ratio shows relationship between credit sales and average trade debtors. Alternatively this ratio is known as "accounts receivable turnover ratio" or "turnover of debtors' ratio". This ratio is expressed as a rate.

a) Formula :-

$$Debtors\ Turnover\ Ratio = \frac{Credit\ Sales}{Average\ debtors}\ OR\ \frac{Credit\ sales}{Average\ receivable}$$

$$Average\ collections\ period = \frac{Debtors + Bills\ Receivable}{Daily\ credit\ sales}\ OR$$

$$\frac{365\ days\ or\ 12\ months}{Debtors\ turnover\ ratio}\ OR\ \frac{365\ days}{Credit\ Sales}\ Average\ debtors$$

1) Sundry debtors
2) Accounts receivables i.e. bills receivables.
3) Average daily sales.

c) Purpose :- Purpose of this ratio is to.

1) Calculate the speed with which debtors get settled on an average during the year.
2) Calculate debtors' velocity to indicate the period of credit allowed to average debtors.
3) Judge how efficiently the debtors are managed.

5.11. LIMITATION OF RATIOS:

1) It is always a challenging job to find an adequate standard. The conclusions drawn from the ratios can be no better than the standards against which they are compared.
2) When the two companies are of substantially different size, age and diversified products,, comparison between them will be more difficult.
3) A change in price level can seriously affect the validity of comparisons of ratios computed for different time periods and particularly in case of ratios whose numerator and denominator are expressed in different kinds of rupees.
4) Comparisons are also made difficult due to differences of the terms like gross profit, operating profit, net profit etc.
5) If companies resort to 'window dressing', outsiders cannot look into the facts and affect the validity of comparison.
6) Financial statements are based upon part performance and part events which can only be guides to the extent they can reasonably be considered as dues to the future.
7) Ratios do not provide a definite answer to financial problems. There is always the question of judgment as to what significance should be

given to the figures. Thus, one must rely upon one's own good sense in selecting and evaluating the ratios.

5.12. EXERCISE WITH SOLUTION

EX. 1 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.

EX.2 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

EX.3 Calculate Debt Equity, from the following information:

10,000 preference share of Rs. 10 each	Rs. 1,00,000
5,000 equity shares of Rs. 20 each	Rs. 1,00,000
Creditors	Rs. 45,000
Debentures	Rs. 2,20,000
Profit and Loss accounts (Cr.)	Rs. 70,000

Solution

Debt = Debentures = Rs. 2,20,000

Equity = Equity share capital + Preferences Share Capital + profit and Loss accounts

= Rs. 1,00,000 + Rs. 1,00,000 + Rs. 70,000
= Rs. 2,70,000

Debt Equity Ratio = Long term debt/ shareholders' funds
= Rs. 2,20,000 / Rs. 2,70,000
= 0.81:1

EX.4 Calculate Debt Equity Ratio, from the following information :

Total Debts Rs. 3,00,000; Total assets Rs. 5,40,000; Current liabilities Rs. 70,000.

Solution

Long-term Debt = Total Debt – Current Liabilities
= Rs. 3,00,000 – Rs. 70,000 = Rs. 2,30,000

Shareholders Funds = Total Assets – Total Debts
= Rs. 5,40,000 – Rs. 3,00,000
= Rs. 2,40,000

Debt Equity Ratio = Long term debt/ Shareholders' funds
= Rs. 2,30,000/Rs. 2,40,000
= 0.96:

EX.5 Shareholders' funds Rs. 80,000; Total debts Rs. 1,60,000; Current liabilities Rs. 20,000. Calculate Total assets to debt ratio.

Solution

Long term debt = Total Debt - Current liabilities
= Rs. 1,60,000- Rs. 20,000
= Rs. 1,40,000

Total Assets = Shareholders' funds + Total debt
= Rs. 80,000 + Rs. 1,60,000
= Rs. 2,40,000

Total Assets to debt ratio = Total Assets/ Debt
= Rs. 2,40,000 / Rs. 1,40,000
= 12:7
= 1.7:1

EX.6 From the following balance sheet of a company, calculate debt equity ratio, total assets to debt ratio and proprietary ratio

Balance Sheet of X ltd as on 31.12.2007

Preference Share Capital	7,00,000	Plant and Machinery	9,00,000
Equity Share Capital	8,00,000	Land and Building	4,20,000
Reserves	1,50,000	Motor Car	4,00,000
Debentures	3,50,000	Furniture	2,00,000
Current Liability	2,00,000	Stock	90,000
		Debtors	80,000
		Cash and Bank	1,00,000
		Discount on Issue of Shares	10,000
	22,00,000		22,00,000

Solution

Debt equity Ratio = Long-term Debt/Equity
Total Assets Ratio= Total Assets / long term Debt
Proprietary Ratio = Shareholders Funds/Total assets
Debt equity ratio = Rs. 3,50,000 / Rs. 16,40,000 = 0.213
Total Assets Ratio= Rs. 21,90,000 / Rs. 3,50,000 = 6.26
Proprietary Ratio = Rs. 16,40,000 / Rs. 21,90,000 = 0.749

EX.7 From the following information, calculate Debt Equity Ratio, Debt Ratio, Proprietary Ratio and Ratio of Total Assets to Debt.

Balance Sheet as on December 31, 2006

Equity share Capital	3,00,000	Fixed Assets	4,50,000
Preference Share Capital	1,00,000	Current Assets	3,50,000
Reserves	50,000	Preliminary Expenses	15,000
Profit & loss A/C	65,000		
11 % Mortgage Loan	1,80,000		
Current liabilities	1,20,000		
	8,15,000		8,15,000

Solution

Shareholders Funds = Equity Shares capital + Preference Shares capital + Reserves + profit % loss A/C - Preliminary Expenses
= Rs. 3,00,000 + Rs. 1,00,000 + Rs.50,000 + Rs. 65,000 - Rs. 15,000
= Rs. 5,00,000

Debt Equity Ratio = Debt / Equity
= Rs. 1,80,000 / Rs. 5,00,000 = 0.36: 1

Proprietary Ratio = Proprietary funds / Total Assets
= Rs. 5,00,000 / Rs. 8,00,000
= 0.625:1

Total Assets to Debt Ratio = Total Assets / Debt
= Rs. 8,00,000 / Rs. 1,80,000
= 4.44:1

EX.8 The debt equity ratio of X Ltd. is 1:2. Which of the following would increase / decrease or not change the debt equity ratio?

i) Issue of new equity shares
ii) Cash received from debtors
iii) Sale of fixed assets at a profit
iv) Redemption of debentures
v) Purchase of goods on credit.

Solution :

a) The ratio will decrease. This is because the debt remains the same, equity increases.

b) The ratio will not change. This is because neither the debt nor equality is affected.

c) The ratio will decrease. This is because the debt remains unchanged while equity increases by the amount of profit.

d) The ratio will decrease. This is because debt decreases while equity remains same.

e) The ratio will not change. This is because neither the debt nor equity is affected.

EX.9 From the following information, calculate stock turnover ratio.

Opening stock Rs 58,000; Excess of Closing stock opening stock Rs. 4,000; sales Rs. 6,40,000; Gross Profit @ 25 5 on cost

Solution :

Cost of goods Sold = Sales - Gross Loss
= Rs. 6,40,000 – 25/125(6,40,000)
= Rs. 5,12,000

Closing stock = Opening stock + Rs. 4000
= Rs. 58,000 + Rs 4,000
= Rs. 62,000

Average stock = (Opening stock + Closing Stock)/2
= (58,000 +62,000)/2
= Rs. 60,000

Stock Turnover Ratio = Cost of Goods Sold/ Average Stock
= Rs.5,12,000 / Rs. 60,000 = 8.53 times.

EX.10 A trader carries an average stock of Rs. 80,000. His stock turnover is 8 times. If he sells goods at profit of 20% on sales. Find out the profit.

Solution
Stock Turnover Ratio = Cost of Goods Sold/ Average Stock
= Cost of Goods Sold/Rs. 80,000

Cost of Goods Sold = Rs. 80,000 × 8
= Rs. 6,40,000

Sales = Cost of Goods Sold × 100/80
= Rs. 6,40,000 × 100/80
= Rs. 8,00,000

Gross Profit = Sales – Cost of Goods Sold
= Rs. 8,00,000 – Rs. 6,40,000
= Rs. 1,60,000.

EX.11 Calculate the Debtors Turnover Ratio and debt collection period (in months) from the following information:

Total sales = Rs. 2,00,000
Cash sales = Rs. 40,000
Debtors at the beginning of the year = Rs. 20,000
Debtors at the end of the year = Rs. 60,000

Solution
Average Debtors = (Rs. 20,000 + Rs. 60,000)/2 = Rs. 40,000

Net credit sales = Total sales - Cash sales
= Rs.2,00,000 - Rs.40,000
= Rs. 1,60,000

Debtors Turnover Ratio = Net Credit sales/Average Debtors
= Rs. 1,60,000/Rs. 40,000
= 4 Times.

Debt collection period = 12 months/52 weeks/365 days
Debtors' turnover
= 12/4
= 3 months

EX.12 Cash purchased ratio Rs. 1,00,000; cost of goods sold Rs. 3,00,000; opening stock Rs. 1,00,000 and closing stock Rs. 2,00,000. Creditors turnover ratio 3 times. Calculate the opening and closing creditors if the creditors at the end were 3 times more than the creditors at the beginning.

Solution

Total Purchase = Cost of goods sold + closing stock - opening stock
= Rs. 3,00,000 + Rs. 2,00,000 – Rs. 1,00,000
= Rs. 4,00,000

Credit purchases = Total Purchase - cash purchase
= Rs. 4,00,000- Rs. 1,00,000
= Rs. 3,00,000

Creditor Turnover Ratio = Net Credit Purchase / Average Creditor
Average Creditor = Rs. 3,00,000/ 3
= Rs. 1,00,000

(opening Creditor + Closing Creditor)/2 = Rs. 1,00,000

opening Creditor + Closing Creditor = Rs. 2,00,000

(opening Creditor + (opening Creditor + 3opening Creditor)

= Rs. 2,00,000

Opening Creditor = Rs. 40,000

Closing Creditor = Rs. 40,000 +(3 X Rs. 40,000)

= Rs. 1,60,000

EX.13 From the following information, calculate (i) Fixed Assets Turnover and (ii) Working Capital Turnover Ratios :

Preference Shares Capital	6,00,000	Plant and Machinery	6,00,000
Equity Share Capital	4,00,000	Land and Building	7,00,000
General Reserve	2,00,000	Motor Car	2,50,000
Profit and Loss Account	2,00,000	Furniture	50,000
15% Debentures	3,00,000	Stock	1,70,000
14% Loan	1,00,000	Debtors	1,20,000
Creditors	1,40,000	Bank	90,000
Bills Payable	30,000	Cash	20,000
Outstanding Expenses	30,000		
	20,00,000		**20,00,000**

Sales for the year were Rs. 60,00,000.

Solution

Sales =Rs 60,00,000

Fixed Assets =Rs. 6,00,000 + Rs.7,00,000 + Rs. 2,50,000 + Rs. 50,000

Working capital = Current Assets – Current Liabilities

Current Assets = Stock + Debtors + bank + cash

Rs. 1.70,000 + Rs. 1.20,000 + Rs. 90,000 + Rs. 20,000

Rs. 4,00,000

Current Liabilities = Creditors + BIP + OIS Exp
= Rs. 1,40,000 + Rs. 30,000 + Rs. 30,000
= Rs. 2,00,000

Working capital = Rs. 4,00,000 + Rs. 2,00,000
= Rs. 2,00,000

Fixed Turn over Ratio = Net sale / Fixed assets
= Rs. 60,00,000/ Rs. 16,00,000 = 3.75 times

Working capital Turnover = Net Sale / Working Capital
= Rs. 60,00,000/ Rs. 2,00,000 = 30 times.

EX.14 Calculate Gross Profit ratio from the following information:

Opening stock Rs. 50,000; closing stock Rs. 75,000; cash sale Rs. 1,00,000; credits sales Rs 1,70,000; Returns outwards Rs. 15,000; purchased Rs. 2,90,000; advertisement expenses Rs. 30,000; carriage inwards Rs.
10,000.

Solution :

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

= Rs. 50,000 + (Rs. 2,90,000- Rs. 15,000) + Rs. 10,000 - Rs. 75,000
= Rs. 2,60,000

Total Sales = Cash Sales + Credits Sales
= Rs. 1,00,000 + Rs 1,70,000
= Rs. 2,70,000

Gross profit = Total Sales - Cost of goods sold
= Rs. 2,70,000- Rs. 2,60,000
= Rs. 10,000

Gross profit Ratio = 10,000 X 100
2,70,000
= 3.704 %

EX.15 Calculated price earnings ratio from the following information:

Equity share capital (Rs. 10 per Share)	Rs 2,50,000
Reserves (including current year's profit)	Rs 1,00,000
10 % Preference Share Capital	Rs 2,50,000
9 % Debentures	Rs 2,00,000
Profit before interest	Rs 3,30,000
Market Price per Share	Rs 50.
Tax rate	50 %

Solution :

P/E Ratio = Market price of a Share/Earnings per Share

Earning per share = Profit available for equity shareholders/ No. of Equity Share

Profit available for equity shareholders:

Profit before interest = Rs. 3,30,000

Less interest on debentures = Rs 18,000
Rs 3,12,000
Less tax (50 % of Rs. 3,12,000) = Rs. 1.56,000
Less preference dividend = Rs. 25,000
Earning after Tax = Rs 1,31,000

Earning per share = Earning after tax / No.of equity shares
= Rs 1,31,000/ 25,000
= Rs. 5.24

P/E Ratio = Market price share / Earning per share
= Rs. 50/ Rs. 5.24
= Rs. 9.54

Ex.16 Following is the trading and profit and loss account for the year ended 31st March 2014 and balance sheet as on that date of Sun. ltd.

Trading and profit and loss account for the year ended 31st March 2014.

Particulars	Amt.	Particulars	Amt.
To Opening Stock	2,50,000	By Sales (Credit)	37,00,000
To Purchases	26,00,000	By Closing Stock	5,00,000
To Gross Profit c/d	13,50,000		
Total	**42,00,000**	**Total**	**42,00,000**
To Administration Exps.	2,70,000	By Gross Profit	13,50,000
To Interest	72,000	By Profit on sale of Assets	50,000

To Rent	60,000		
To Selling Exps	1,00,000		
To Depreciation	1,20,000		
To Provision for I.Tax	2,78,000		
To Proposed Dividend	1,00,000		
To Net Profit	4,00,000		
Total	**14,00,000**		**14,00,000**

Balance sheet as on 31.3.2014

Liabilities	Amt.	Assets	Amt.
Equity Share Capital (Rs.10)	5,00,000	Fixed Assets (at cost)	12,40,000
11% Preference Sh. Capital	3,00,000	Short Term Capital	1,00,000
General Reserve	4,00,000	Trade Receivable	9,50,000
12% Debenture	6,00,000	(Last Year Rs. 9,00,000)	
Trade Payable	3,00,000	Inventories	5,00,000
Proposed Dividend	1,00,000	Cash and Bank	1,50,000
Bank Overdraft	2,00,000	Discount on Issue of Shares	60,000
Provision For Depreciation	4,00,000		
Provision for Tax	2,00,000		
	30,00,000		**30,00,000**

From the above information calculate following ratios and comment on current ratio.

1. Current ratio
2. Inventory Turnover Ratio
3. Return on Proprietors Fund
4. Operating Ratio
5. Debtors Turnover Ratio
6. Capital Gearing Ratio
7. Dividend Payout Ratio

Assume 360 days in a year.
Note : Drafting of Vertical Financial Statement is not expected. Ans. :

S. No.	Ratio	Formula	Calculation	Ans.
1.	Current Ratio	$\frac{CA}{CL}$	$\frac{1,700}{300}$	2.13:1
2.	Inventory Turnover Ratio	$\frac{COGS}{Avg.\ Stock}$	$\frac{2,350}{375}$	6.27 Times
3.	Return on Proprietors Fund	$\frac{NPAT}{Prop.\ Fund} \times 100$	$\frac{500}{1140} \times 100$	43.86%
4.	Operating Ratio	$\frac{COGS + Op.\ Exps + Int.}{Net\ Sales} \times 100$	$\frac{2,350 + 550 + 72}{3700} \times 100$	80.32%
5.	Debtors Turnover Ratio	$\frac{Credit\ Sales}{Avg.\ A/c\ Receivable}$ $\frac{No.\ Days}{DTR}$	$\frac{3,700}{925}$ $\frac{1,700}{300}$	4 Times 90 days
6.	Capital Gearing Ratio	$\frac{Pref.\ Cap + LTC}{Equity\ Sh.\ Holder\ Fund}$	$\frac{300 + 600}{840}$	1.07
7.	Dividend Payout Ratio	$\frac{Eq.\ Dividend}{Profit\ Available\ for\ Eq.\ Sh.\ Ho.}$	$\frac{1,00,000}{5,00,000 - 33,000}$	21.41%

Current Ratio is more than standard Current Ratio is more than standard current Ratio 2:1 This shows favorable short term financial position.

Ex.17 Following is the balance sheet of Bliss Happiness Ltd. as at 31st March 2013

Balance sheet as at 31.3.2013

Liabilities	Amt.	Assets	Amt.
Equity Share Capital	1,00,000	Machinery	2,96,000
General Reserve	70,000	Investment	1,12,000
10% Preference Capital	1,80,000	Stock In Trade	1,01,000
15% Debenture	1,20,000	Bills Receivable	20,000
Trade Payable	1,22,000	Trade Receivable	49,000
Bank Overdraft	20,000	Cash and Bank	38,000
Provision for Tax	18,000	Profit and Loss A/c	14,000
	6,30,000		**6,30,000**

Sale for the year Rs.7,00,000; Gross profit Rate 25% and Opening Stock is Rs.1,09,000. Profit before

Tax for the year ending 31.3.13 is Rs.2,10,000.

You are required to compute the following ratios and comment on current ratio.

1. Current Ratio
2. Acid Test Ratio
3. Stock turnover Ratio
4. Capital Gearing Ratio
5. Proprietary Ratio
6. Debt Equity Ratio (Debt / Net worth)
7. Return on Capital Employed

Redrafting the given Balance sheet in vertical format is not expected.

Ans.

Current Ratio	$\frac{Current\ Assets}{Current\ Liabilities}$	$\frac{1,01,000+20,000+49,000+38,000}{1,22,000+20,000+18,000}$	1.3
Acid Test Ratio	$\frac{Liquid\ Assets}{Quick\ Liabilities}$	$\frac{20,000+49,000+38,000}{1,22,000+18,000}$	.76
Stock Turnover	$\frac{Cost\ of\ goods\ sold}{Op.+Cl.\ Stock\ /\ 2}$	$\frac{7,00,000-1,75,000}{(1,09,000+1,01,000)/2}$	5 Time
Capital Gearing Ratio	$\frac{Fixed\ Int.\ Bearing\ Securities}{Eq.\ Sh\ Cap.+Res\ \&\ Surplus-Loss}$	$\frac{1,80,000+1,20,000}{1,00,000+70,000-14,000}$	1.92
Proprietory Ratio	$\frac{Proprietor's\ Fund}{Total\ Assets}\times 100$	$\frac{1,00,000+1,80,000+70,000-14,000}{2,96,000+1,12,000+2,08,000}\times 100$	54.44%
Debt. Equity Ratio	$\frac{Debt}{Net\ Worth}$	$\frac{1,20,000}{1,00,000+1,80,000+70,000-14,000}$	36
Return on capital employed	$\frac{NPBIT}{Capital\ Employed}\times 100$	$\frac{2,10,000+18,000}{1,20,000+3,36,000}\times 100$	50%

Current ratio is 1:3. It is lower than the standard of 2:1. The current assets for every rupee of current liabilities. Current assets are not sufficient to pay current liabilities short tern solvency position of the company is not satisfactory.

Ex.18 M/s Sumit Ltd. Presents the following Trading and Profit & Loss A/c for the year ended 31.3.2014 and balance sheet as on that date.

Trading and profit and loss account for the year ended 31.3.2014.

Particulars	Amt.	Particulars	Amt.
To Opening Stock	2,00,000	By Sales	12,00,00
To Purchases	5,00,000	By Closing Stock	4,00,000
To Wages	3,00,000		
To Gross Profit c/d	6,00,000		
	16,00,000		**16,00,00**
To Salaries	1,50,000	By Gross Profit b/d	6,00,000
To Rent	60,000	By Profit on sale of	5,000
To Commission	12,000	By Interest	15,000
To Advertising	20,000		
To Interest	83,000		
To Depreciation	30,000		
To Provision For tax	50,000		
To Net Profit c/d	2,15,000		
	6,20,000		**6,20,000**
To Proposed Dividend	80,000	By balance b/f	1,85,000
To Preference Dividend	16,000	By Net profit b/d	2,15,000
To Balance c/d	3,04,000		
	4,00,000		**4,00,000**

Balance sheet as on 31.3.2014

Liabilities	Amt.	Assets	Amt.
Equity share capital (Rs.100)	8,00,000	Land and Building	6,00,000
8% Pref. Sh. Capital	2,00,000	Plant and Machinery	5,50,000
Reserve and surplus	3,04,000	Furniture	4,00,000
7% Debentures	5,00,000	Investment	2,70,000
Loan from IDBI	6,00,000	Stock	4,00,000
Creditors	1,50,000	Debtors	2,00,000
Bills Payable	50,000	Bills Receivable	1,60,000
Provision for tax	50,000	Advance tax	30,000
Dividend Payable	96,000	Prepaid expenses	40,000
		Cash in Hand	20,000
		Bank Balance	60,000
		Dis. On Issue of Debentures	20,000
	27,50,000		**27,50,000**

Additional Information:

1. The Market Price of equity shares as on 31.3.2014 was Rs.90.
2. Out of total sales, 30% are cash sales and out of total Purchases, 50% are credit purchases. You are required to calculate the following Ratios.
   a) Return on capital employed
   b) Price Earning ratio
   c) Debt Service Ratio
   d) Creditors Turnover Ratio
   e) Return on Equity capital

Ans :

Return on Capital Employed	$\frac{NOPBIT}{Capital\ Employed} \times 100$	$\frac{1,01,000 + 20,000 + 49,000 + 38,000}{1,22,000 + 20,000 + 18,000}$	14..39%
Creditors Turnover Payment Period	$\frac{Credit\ Purchases}{Av.\ Creditors + Bills\ payable}$ $\frac{365}{CTR}$	$\frac{2,50,000}{2,00,000}$ $\frac{365}{1.25}$	1.25 Time 292 days
Price Earning Ratio EPS	$\frac{MP}{EPS}$ $\frac{Net\ Profit - Pref.Div.}{No.\ of\ Equity\ Shares}$	$\frac{7,00,000 - 1,75,000}{(1,09,000 + 1,01,000)/2}$ $\frac{2,15,000 - 16,000}{8,000}$	3.62 24.88
Return on Equity Capital	$\frac{NPAT - Pref.Div.}{Eq.\ Sh\ Cap.}$	$\frac{2,15,000 - 16,000}{8,00,000} \times 100$	24.875%
Debt Equity Ratio	$\frac{NPBIT}{Interest}$	$\frac{2,15,000 + 50,000 + 83,000}{83,000}$	4.19 Times

Ex.19 The following is the summarized profit and loss A/c of M/s Hema Ltd. For the year ended 31.32014.

Particulars	**Amt.**	**Particulars**	**Amt.**
To Opening Stock	5,00,000	By Sales	50,00,000
To Purchases	25,00,000	By profit on sale of assets	50,000
To Wages	25,000	By Interest	25,000
To Freight and Octroi	80,000	By Dividend	10,000
To Direct Expenses	75,000	By Closing Stock	7,50,000
To Office Insurance	80,000		
To Office Staff Salaries	2,00,000		
To Gen. Manager Salary	50,000		
To Staff Welfare Expenses	40,000		
To Printing and Stationery	5,000		
To Interest	50,000		
To Audit Fees	15,000		
To Office Rent	2,00,000		
To Computer Repairs	75,000		
To Advertising	2,50,000		
To Bad Debts	5,000		
To Traveling	20,000		
To Commission	75,000		

To Dep. On Furniture	30,000		
To Depn. On Building	40,000		
To Depn on Vehicles	20,000		
To Interim Dividend	50,000		
To Loss on sale of Assets	1,00,000		
To Income Tax	50,000		
To Net Profit	13,00,000		
	58,35,000		**58,35,000**

Calculate the following Ratio;

1. Gross Profit Ratio
2. Operating Profit Ratio
3. Office Expense Ratio

Vertical statement is not expected. Ans.

Gross Profit Ratio	$\frac{Gross\ Profit}{Net\ Sales} \times 100$	$\frac{1,01,000 + 20,000 + 49,000 + 38,000}{1,22,000 + 20,000 + 18,000}$	51.4%
Operating Ratio	$\frac{Operating\ Cost}{Net\ Sale} \times 100$ COGS + Operating Exps. = Operating cost	$\frac{24,30,000 + 11,55,000}{50,00,000} \times 100$	71.7%
Office Expense Ratio	$\frac{Office\ Expense}{Net\ Sales} \times 100$	$\frac{7,55,000}{50,00,000} \times 100$	15.1%

Ex. 20 The following is the balance sheet of M/s Shyam Ltd. Ason 31.3.2014.

Balance sheet as on 31.3.2014

Liabilities	**Amt.**	**Assets**	**Amt.**
Equity share capital (Rs.10)	4,00,000	Goodwill	1,25,000
9% Pref. Sh. Cap. (Rs.10)	2,00,000	Furniture & Fitting	3,00,000
General Reserve	1,00,000	Land and Building	4,00,000
Profit and Loss A/c	1,00,000	Stock	1,00,000
10% Mortgage Loan	2,00,000	Debtors	2,00,000
Accounts Payable	1,00,000	Cash and Bank	60,000
Adv. From Customer	50,000	Prepaid Expenses	40,000
Prov. For Tax.	60,000	Preliminary Expenses	15,000
Proposed Dividend	40,000	Dis. on Issue of Deb.	10,000
	12,50,000		12,50,000

The following further information is also given for the year;

Total sales Rs.10,00,000 net profit rate 15%. Out of total sales 20% are cash sales. Purchases Rs.5,00,000. No. of days in a year 360. Calculate the following Ratio :

a) Proprietory Ratio
b) Acid Test Ratio
c) Creditors Turnover Ratio
d) Debt Equity Shares
e) Stock Working Capital Ratio
f) Capital Gearing Ratio
g) Operating Ratio

Ans:

Operating Ratio	$\frac{Operating\ Cost}{Sales} \times 100$	$\frac{1,01,000 + 20,000 + 49,000 + 38,000}{1,22,000 + 20,000 + 18,000}$	
Acid Test Ratio	$\frac{Liquid\ Assets}{Quick\ Liabilities}$	$\frac{2,00,000 + 60,000}{1,00,000 + 60,000 + 40,000}$	1.3:1
Creditors Turnover Ratio	$\frac{Credit\ Purchases}{Creditors}$	$\frac{5,00,000}{1,00,000}$	5 Times
Capital Gearing Ratio	$\frac{Fixed\ Int.\ Bearing\ Securities}{Eq.\ Sh\ Cap. + Res\ \&\ Surplus - Loss}$	$\frac{2,00,000 + 2,00,000}{4,00,000 + 1,00,000 + 1,00,000 - 15,000 - 10,000}$	0.07:1
Proprietory Ratio	$\frac{Proprietor's\ Fund}{Total\ Assets} \times 100$	$\frac{4,00,000 + 2,00,000 + 1,00,000 + 1,00,000 - 15,000 - 10,000}{12,50,000 - 15,000 - 10,000} \times 100$	
Debt Equity Ratio	$\frac{Debt}{Net\ Worth}$	$\frac{2,00,000}{7,75,000}$	0.26:1
Stock Working Capital Ratio	$\frac{Closing\ Stock}{Working\ Capital}$	$\frac{1,00,000}{(2,00,000 + 60,000 + 1,00,000 + 40,0}$	0.67:1

Ex21 Calculate Gross Profit Ratio:

Particulars	Amt.	Particulars	Amt.
To Opening Stock	60,000	By Sales	4,00,000
To Purchases	2,50,000	By Goods Destroyed by fire	20,000
To Carriage Inward	30,000	By Closing Stock	80,000
To Office Expenses	50,000		
To Selling Expenses	40,000		
To Loss by fire	20,000		
To Net Profit	50,000		
	5,00,000		**5,00,000**

$$\text{Gross Profit Ratio: } \frac{Gross Profit}{Sale} \times 100$$

$$= \frac{1,60,000}{4,00,000} \times 100 = 40\%$$

Gross Profit = 4,00,000 – (60,000+ 2,50,000 -20,000 +30,000 - 80,000)

Ex.22 **Following is the Revenue Statement of Promod Ltd.**

Trading , Profit & Loss account for the year ended 31.3.2014

Particulars	Amt.	Particulars	Amt.
To Opening Stock	27,150	By Sales	2,55,000
To Purchases	1,63,575	By Closing Stock	42,000
To Carriage Inward	4,275	By Interest received on Invt.	2,700
To Office Expenses	45,000		
To Sales Expenses	13,500		
To Loss on sale of Fixed asset	1,200		
To Net Profit c/d	45,000		
	2,99,700		**2,99,700**

Calculate the following ratio:

a) Gross Profit Ratio
b) Stock Turnover Ratio
c) Net Profit before tax ratio
d) Operating Ratio
e) Office Expense Ratio

Ans.

Gross Profit Ratio	$\frac{Gross\ Profit}{Net\ Sales} \times 100$	$\frac{1,02,000}{2,55,000} \times 100$	40%
Operating Ratio	$\frac{Operating\ Cost}{Net\ Sale} \times 100$ COGS + Operating Exps. = Operating cost	$\frac{1,53,000 + 58,500}{2,55,000} \times 100$	82.94%
Office Expense Ratio	$\frac{Office\ Expense}{Net\ Sales} \times 100$	$\frac{45,000}{2,55,000} \times 100$	17.65%
Stock Turnover Ratio	$\frac{COGS}{Avg.\ Stock}$	$\frac{1,53,000}{45,000}$	4.43 Times
Net Profit before tax Ratio	$\frac{NPBT}{Net\ Sales} \times 100$	$\frac{45,000}{2,55,000} \times 100$	17.65%

Ex.23 The summarized balance sheet of Bad Luck ltd. As on 31.3.2014 is as follow.

Balance sheet as on 31.3.2014 (In lakh)

Liabilities	Amt.	Assets		Amt.
Equity share capital (Rs.100)	150	Fixed Assets (at cost)	420	
9% Pref. Sh. Cap. (Rs.10)	80	Less: Depreciation	50	370
Reserve and Surplus	90	Stock		50
Profit and Loss A/c	40	Debtors		60
10% Debentures	50	Cash at bank		30
Provision for Taxation	20			
Sundry Creditors	80			
	510			**510**

The following particulars are also given for the year.

	Rs. In Lakhs
Net Sales (Credit)	240
Profit before interest and Tax	65
Net profit after tax	40

Market Price per equity shares is Rs.150

Calculate the following ratio:

a) Acid test Ratio
b) Debtors turnover Ratio (360 days in a year)
c) Capital Gearing Ratio
d) Debt service Ratio
e) Return on Proprietor's Fund

Ans.: (Rs. In Lakh)

Debtors Turnover Ratio	$\frac{Net\ Credit\ Sales}{Debtors + B.R.}$	$\frac{240}{60}$	4 Times
Creditors Turnover	$\frac{Liquid\ Assets}{Quick\ Liabilities}$	$\frac{60+30}{20+80}$	0.9:1
Capital Gearing Ratio	$\frac{Fixed\ Int.Bearing\ Securities}{Eq.Sh.Cap. + Res\ \&\ Surplus - Loss}$	$\frac{80+50}{150+90+40}$	0.46:1
Debt Service Ratio	$\frac{Net\ profit\ before\ Int.\&\ Tax}{Interest}$	$\frac{65}{5}$	13 Times
Return on Proprietor's Fund	$\frac{NPAT}{Proprietor's\ Fund} \times 100$	$\frac{40,00,000}{3,60,00,000} \times 100$	11.11%

Ex.24 Following is the balance sheet of M/s Moon Ltd.

Balance sheet as on 31.3.2014

Liabilities	Amt.	Assets	Amt.
Equity share capital	5,00,000	Fixed Assets	13,00,000
General Reserve	3,00,000	Investment	4,00,000
Securities Premium	25,000	Stock	8,50,000
10% Debenture	7,50,000	Sundry Debtors	5,00,000
Profit & Loss A/c	7,40,000	Prepaid Expenses	40,000
Sundry Creditors	2,30,000	Adv. Income tax	78,000
Bank Overdraft	3,95,000	Cash and Bank Bal.	62,000
Prov. For Taxation	1,80,000	Share Issue Expenses	10,000
Prop. Equity Dividend	1,50,000	Preliminary Expenses	30,000
	32,70,000		**32,70,000**

You are required to compute the following ratio and give your comments on each ratio with reference to standard ratio.

a) Current Ratio
b) Liquid Ratio
c) Proprietory Ratio
d) Stock working capital Ratio

Ans:

Current Ratio	$\frac{Current\ Assets}{Current\ Liabilities}$	$\frac{15,30,000}{9,55,000}$	1.6:1
Acid Test Ratio	$\frac{Liquid\ Assets}{Quick\ Liabilities}$	$\frac{5,62,000}{5,60,000}$	1:1
Stock Working Ratio	$\frac{Stock}{Working\ Capital}$	$\frac{8,50,000}{5,75,000}$	5 Time
Proprietory Ratio	$\frac{Net\ Worth}{Total\ Assets} \times 100$	$\frac{15,25,000}{32,30,000} \times 100$	47.21%

Comments:

1. Short term solvency of the company is satisfactory. In industry, current ratio of 1.50 is considered satisfactory Rs.1 current liabilities are supported by Rs.1.60 current assets.
2. Immediate solvency of the company is quite satisfactory as the company has sufficient quick assets to pay off its quick liabilities. The company can meet its urgent liabilities.
3. Long term solvency of the company is not satisfactory. Only 47.12% of its total assets are financed by own fund. Margin of safety for the lenders of the company is not satisfactory. The company should improve this ratio by increasing shareholders fund to bring it to 65% or above. The company does not have financial stability.

4. Company stock is 147.83% of its working capital. Company is carrying excess stock. Company inventory management is not satisfactory. Stock may contain defective or slow moving items. Ideally stock should not exceed working capital. Working capital position of the company is unsatisfactory. There is excessive incidence of inventory in working capital management.

Ex.25

a) The current ratio of a company is 4:1 and its current liabilities are Rs.50,000. The quick ratio is 2:1. Calculate the value of stock.

b) A trader carries an average stock (valued at cost) of Rs.50,000 and turns this over five times a year at a G.P. ratio of 20%. His administrative and selling and distribution overheads amount to Rs.20,000 in the year. Find the net profit

a)

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

$$\frac{4}{1} = \frac{Current\ Assets}{50,000}$$

$$Current\ Assets = 2,00,000$$

$$Quick\ Ratio = \frac{Quick\ Assets}{Quick\ Liabilities}$$

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

$$\frac{2}{1} = \frac{2,00,000 - Stock}{50,000}$$

$$Stock = 1,00,000$$

$$Stock\ turnover = 5\ Times$$

$$Stock\ Turnover = \frac{COGS}{Avg.\ Stock}$$

$$5 = \frac{COGS}{50,000}$$

$$COGS = 2,50,000$$

$$Gross\ Profit = 20\%\ on\ sales$$

b) *i.e.25% on COGS*

G.P. 62,500

Net Profit

Gross Profit	*62,500*
Less : Selling Exps.	*− 20,000*
Net profit	*42,500*

Ex.26 Following are the ratio relating to the activities of Indo ltd.

Debtors velocity 3 months; Stock velocity 8 months; Creditors velocity 2 months; gross profit 25%. G.P. for the year amounting to Rs.4,00,000; Closing stock is Rs.10,000 above opening stock. Bills receivable Rs.25,000; Bills Payable Rs.10,000.

Find out : a) Sales b) Debtors c) Closing stock d) Creditors.

a)

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

$$\frac{25}{100} = \frac{4,00,000}{Net\ Sales}$$

$$Net\ Sales = 16,00,000$$

$$COGS = Sales - G.P.$$

$$= 16,00,000 - 4,00,000$$

$$= 12,00,000$$

b) Debtors

$$Velocity = \frac{Debtors + Bills\ Receivable}{Net\ credit\ sales} \times 12$$

$$\frac{Debtors - 25,000}{16,00,000} \times 12$$

$$Debtors = 3,75,000$$

$$Stock\ Velocity = \frac{Avg.\ Stock}{COGC} \times 12$$

$$8 = \frac{Avg.\ Stock}{12,00,000} \times 12$$

$$Avg.\ Stock = 8,00,000$$

$$Avg.\ Stock = \frac{Op.\ Stock - Cl.Stock}{2}$$

$$8,00,000 = \frac{x + x + 10,000}{2}$$

$$X = 7,95,000$$

$$= Opening\ Stock$$

c)

$$Closing\ Stock = X + 1,00,000$$

$$= 7,95,000 + 10,000$$

$$= 8,05,000$$

$$Purchase = COGC - Op.Stock + Cl.Stock$$

$$= 12,00,000 - 7,95,000 + 8,05,000$$

$$= 12,10,000$$

d) Creditors

$$Velocity = \frac{Creditors + 1,00,000}{Net\ Credit\ Purchases} \times 12$$

$$2 = \frac{Creditors + 1,00,000}{12,10,000} \times 12$$

$$Creditor = 1,91,656$$

Ex.27

a) Current Ratio is 2.5, Liquid Ratio is 1.5, Working capital is Rs.50,000. Ascertain current Assets and inventory.

b) Turnover is fixed assets ratio is 1:1.5: value of goods sold is Rs5,00,000. Compute the value of Fixed assets.

Ans.

a)

1)

$$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities} = \frac{2.5}{1}$$

$$So\ Current\ Assets = 2.5\ Current\ Assets - Current\ Liabilities$$

$$50,000 = 2.5CL - CL$$

$$50,000 = 1.5CL$$

$$CL = 33,333$$

$$CA = WC + CL$$

$$CA = 50,000 + 33,333$$

$$CA = 83,333$$

b)

$$Turnover\ to\ Fixed\ Assets$$

$$= \frac{Turnover}{Fixed\ Assets}$$

2

$$\frac{1}{1.5} = \frac{5,00,000}{Fixed\ Assets}$$

$$Fixed\ Assets = 7,50,000$$

2) $Quick\ Ratio = \frac{Quick\ Assets}{Quick\ Liabilities}$ $1.5 = \frac{CA - Stock}{CL}$ $1.5 = \frac{83,333 - Stock}{33,3333}$ $Stock = 33,333$	

Ex.28

a) Gross profit on sales is 25%; cost of goods sold Rs.4,00,000. Find out sales.

b) Average stock of a firm is Rs.1,00,000 and its opening stock is Rs.10,000 less than closing.

Calculate its opening and closing stock.

$Sales - COGS = GP$ $100 - 75 = 25$ a) $Gross\ Profit = 4,00,000 \times \frac{25}{75}$ $= 1,33,333$	$Avg.\ Stock = 1,00,000$ $\frac{Op.\ Stock + Cl.Stock}{2}$ b) *Hence assume opening Stock as x* $So\ Closing\ Stock = x + 10,000$ $1,00,000 = \frac{x + x + 10,000}{2}$ $X = 95,000$ Opening Stock =95,000 So Closing Stock =95,000+1,00,000

5.13. PRACTICE

A - **PRATICAL QUESTIONS**

1 From the following financial statement of Sanket Ltd. calculate the following ratios.

a) Current Ratios
b) Liquid Ratios
c) Stock Turnover Ratio
d) Debtors Turnover Ratio
e) Operating Ratio
f) Capital Gearing Ratio
g) Net Profit Ratio
h) Stock Working Capital Ratio
i) Earnings per Equity Share
j) Interest Coverage Ratio
k) Creditors Turnover Ratio
l) Dividend Payout Ratio
m) Gross Profit Ratio

Trading and profit & Loss Account for the year ended 31st December, 2009.

Particulars	Rs.	Particulars	Rs.
To Opening Stock	1,50,000	By Sales	15,00,000
To Purchases	12,90,000	By Closing Stock	1,50,000
To Gross Profit c/d	2,10,000		
	16,50,000		16,50,000
To Administrative Expenses	20,000	By Gross Profit b/d	2,10,000
To Rent & Taxes	14,000	By Profit on Sale	27,500
To Interest	22,500	of Fixed Assets	
To Selling Expenses	11,000		
To Depreciation	50,000		
To Income Tax Provision	60,000		
To Net Profit	60,000		
	2,37,500		2,37,500

Balance sheet as at 31st December 2009

Liabilities	Rs.	Assets	Rs.
Equity Share Capital of		Fixed Assets	6,50,000
Rs. 10 each	2,50,000	Bank Balance	25,000
10% Preference Share		Short term Investment	75,000
Capital	50,000	Debtors	1,00,000
General Reserve	2,00,000	Stock	1,50,000
12% Debentures	3,50,000		
Creditors	30,000		
Outstanding Expenses	55,000		
Income Tax Provision	65,000		
	10,00,000		10,00,000

The company declared dividend on Equity Shares @ 20%.

2 The condensed balance sheet of Dixit Ltd. as on 31st March 2006 is as follows:

Liabilities	Rs.	Assets	Rs.
Equity Share Capital	6,00,000	Fixed Assets	9,00,000
Reserve	2,00,000	Stock	3,00,000
6% Debentures	5,00,000	Marketable Investment	1,00,000
Current Liabilities	2,00,000	Debtors	1,50,000
Bank Overdraft	1,00,000	Cash and Bank balance	1,00,000
		Preliminary Expenses	50,000
	16,00,000		16,00,000

Net profit for the years was Rs.75,000/-.
Prepare a statement suitable for analysis and indicate the soundness of the financial positions of the company by calculating the following ratios and comment on the same.

a) Current Ratio
b) Liquid Ratio
c) Proprietary Ratio
d) Return on Capital Employed
e) Return on Proprietors Equity
f) Return on Equity Capital
g) Stock Working Capital Ratio

3 The following is the Balance Sheet of Swapnaja Ltd. as on 31st December 2009.

Liabilities	Rs.	Assets	Rs.
Paid up Capital (Rs.10)	2, 00,000	Fixed Assets	3, 00,000
Reserves & Profit	1, 38,000	Stock	1, 00,000
Debentures	2, 00,000	Debtors	1, 22,000
Creditors	32,000	Bills Receivable	8,000
Bills Payable	12,000	Bank Balance	52,000
	5, 82,000		5, 82,000

Sales Rs.4,00,000/-;
Gross Profit Rs.1,20,000/-;
Net Profit Rs.80,000/-.

Rearrange the above Balance Sheet in suitable form for analysis and workout the following ratios.

a) Net Profit Ratio
b) Gross Profit Ratio
c) Current Ratio
d) Liquid Ratio
e) Return on Capital Employed
f) Debtors Turnover Ratio
g) Earnings per Share
h) Stock Turnover Ratio.

4 From the following information of Abhay Ltd. prepare summarized Balance Sheet as at 31st March, 2009.

1) Working Capital	1,50,000
2) Reserve & Surplus	1,00,000
3) Bank Overdraft	25,000
4) Fixed Assets Proprietary Ratio	0.75
5) Current Ratio	2.5
6) Liquid Ratio	1.5

Your working notes should be part of the answer.

5 Using the following accounting ratios construct the Balance Sheet of ABC Ltd. as on 31st December 2009.

Balance sheet as on 31st December 2009.

Liabilities	Rs.	Assets	Rs.
Share Capital	?	Fixed Assets	?
Reserve & Surplus	?	Stock	?
Bank Loan Creditors	2,00,000	Debtors	?
	?		?

Additional information :

1) Sales for the year (20% cash sales) Rs. 45,00,000
2) Gross Profit Ratio = 20%
3) Debtors Turnover Ratio = 12 months
4) Stock Turnover Ratio = 12 Times
5) Debt Equity Ratio (debt / equity) = 20%
6) Reserve and Surplus to Capital = 25%
7) Current Ratio = 2
8) Fixed Assets Turnover Ratio = 0.20% (Fixed Assets / Sales)

6 From the following information of financial ratios of Star Ltd. prepare Balance Sheet as on 31st March 2009

a) Current Ratio	2.5
b) Liquid Ratio	1.5
c) Working Capital	Rs.1,50,000
d) Stock Turnover Ratio	5
e) Gross Profit Ratio	20%
f) Turnover Ratio to Fixed Assets (COGS to FA)	2
g) Average Debt Collection Period	2.4 months
h) Fixed Assets to Net Worth	0.80
i) Long Term Debt to Capital and Reserves	7/25

7 M/s Rajesh & Co. gives you the following information. Prepare Trading and Profit & Loss

Account for the year ended 31st March 2004 and Balance Sheet as on that date.

Opening Stock	90,000
Stock Turnover Ratio	10 times Net Profit Ratio on
Turnover	15% Gross Profit Ratio on
Turnover	20% Current Ratio 4:1
Long Term Loan	Rs. 2,00,000
Depreciation on Fixed Assets @10%	Rs. 20,000
Closing Stock	Rs. 1,02,000

Credit Period allowed by Supplier	one month
Average Debt Collection Period	two month

On 31st March 2004 Current Assets consists of Stock, Debtors and Cash only. There was no Bank Overdraft. All Purchases were on made on credit. Cash Sales were 1/3rd of Credit Sales.

8 From the following data, prepare Trading and Profit & Loss A/c

a) Sales	Rs.10,00,000
b) Administration, Selling and Distribution Expenses	Rs.60,000
c) Stock Turnover Ratio	8 times
d) Net Profit Ratio	20%
e) Gross Profit Ratio	35%

Closing Stock is Rs. 8,000 greater than Opening Stock.

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;

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

10. 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]

11. 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.

12. 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.

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

Find out: Current assets;, Current liabilities; Liquid Assets.
14. From the following, calculate Debt-Equity Ratio.

Equity share capital Rs. 1,50,000. Preference Share capital Rs. 50,000, General reserves Rs. 1,00,000, Accumulated profits Rs. 60,000, Debentures Rs. 1,50,000. Sundry creditors Rs. 80,000, Expenses payable Rs. 20,000. Preliminary Expenses not yet written off Rs. 10,000.

15. Calculate Debt Equity Ratio from the Balance Sheet of X Ltd. as on 31st March 2007

Liabilities	Rs.	Assets	Rs.
Equity shares of Rs. 10 each	8,00,000	Land and Buildings	6,20,000
11% preference share capital	4,00,000	Plant and Machinery	12,00,000
Securities premium account	80,000	Furniture and fittings	1,80,000
General reserve	5,80,000	Stock	5,30,000
Profit and Loss account	1,40,000	Trade debtors	4,70,000
12% Debentures of Rs. 100 each	10,00,000	Cash in hand	65,000
Bills payable Trade creditors	80,000	Cash at bank	3,00,000
Outstanding	1,40,000	Bills receivable	1,35,000
Expenses Provision for tax	60,000		
	2,20,000		
	35,00,000		35,00,000

16. From the following calculate debt-equity ratio:

	Rs.
Preference share capital	2,00,000
Equity share capital	4,00,000
Capital reserves	1,00,000
Profit & Loss account	1,00,000
14% Debentures	2,00,000
Unsecured loans	1,00,000
Creditors	40,000
Bills payable 20,000	
Provision for taxation	10,000
Provision for dividends	20,000

17. The debt-equity ratio of a company is 1:2. Which of the following suggestions would (i) increase, (ii)
decrease, and (iii) not change it.

a) Issue of equity shares,

b) Cash received from debtors

c) Redemption of debentures for cash,

d) Purchased goods on credit,

e) Redemption of debentures by conversion into shares,

f) Issue of shares against the purchase of a fixed asset,

g) Issue of debentures against the purchase of a fixed asset.

18. Debtors in the beginning Rs. 90,000; debtors at the end Rs. 96,000 credit sales during the year Rs. 4,65,000. calculate debtors turnover ration.

19. Rs. 1,75,000 is the net credit sales of a concern during 1989. If debtors turnover is 8 times, calculate debtors in the beginning and at the end of the year. Debtors at the end is Rs. 7,000 more than at the beginning.

20. From the following figures, compute the debtors turnover ratio:

	Year I Rs.	**Year II Rs.**
Gross sales	9,50,000	8,00,000
Sales returns	50,000	50,000
Debtors in the beginning of year	86,000	1,17,000
Debtors at the end	1,17,000	86,000
Provision for doubtful debts	7,000	6,000

21. Opening stock Rs. 76,250; Closing Stock Rs. 98,500; Sales Rs. 5,20,000; Sales Returns Rs. 20,000; Purchases Rs. 3,22,250. Calculate stock turnover ratio.

22. Average stock carried by a trader is Rs. 60,000 stock turnover ratio is 10 times. Goods are sold at a profit of 10% on cost. Find out the profit.

23. If inventory turnover ratio is 5 times and average stock at cost is Rs. 75,000, find out cost of goods sold.

24. You are given the following data.

Gross profit at 30% on sales = Rs. 60,000

Stock turnover = 7 times

The opening stock is 5,000 less then the closing stock.

Accounts payable (opening) Rs. 30,000; Accounts payable (closing) Rs. 38,000.

Find out (a) Net purchases (b) Accounts payable turnover (c) Average age of creditors.

25. From the following information, calculate creditors at the beginning of the year: Rs.

	Rs.
Total purchases	22,00,000
Cash purchases (included in above)	10,00,000
Creditors turnover ratio-4 times creditor	2,50,000

26. Calculate working capital turnover ratio from the following data:

	Rs.
Cost of goods sold	1,50,000
Current assets 1,00,000	
Current liabilities	75,000

27. From the following, compute working capital turnover;

	Rs.
Sales	25,20,000
Current assets 15,60,000	
Current liabilities	6,00,000

28. Find out the working capital turnover ratio:

	Rs.
Cash	10,000
Bills receivable	5,000
Sundry debtors	25,000
Stock	20,000
Sundry creditors	30,000
Cost of sales	1,50,000

29. Capital employed Rs. 1,00,000, Working capital Rs. 20,000, Cost of goods sold Rs. 3,20,000, Gross profit Rs. 80,000. Calculate fixed assets turnover ratio assuming that there were no long- term investments.

30. Calculate Gross Profit ratio:

Sales	1,60,000	Purchases	90,000
Sales return	10,000	Purchases returns	10,000
Opening stock	30,000	Closing Stock	10,000

31. From the following details calculate the operating ratio:

(a)	Rs.
Cost of goods sold	5,20,000
Operating expenses	1,80,000
Net sales	8,00,000

(b)	
Cost of goods sold	8,00,000
Operating expenses	40,000
Sales	10,50,000
Sales return	50,000

c)	
Sales less Return	1,00,000
Gross Profit	40,000
Administrative expenses	10,000
Selling Expenses	10,000
Income from Investments	5,000
Loss due to fire	3,000

d) Trading and Profit & Loss Account for the year ended 31st December,2007

Particulars	Rs.	Particulars	Rs.
To stock 1.4.93	35,000	By Sales	4,00,000
To Purchase	2,25,000	By Stock at end	50,000
To Wages	6,000		
To gross profit	1,84,000		
	4,50,000		4,50,000
To administrative exp.	10,000	By Gross Profit	1,84,000
To selling & distribution exp.	14,000		
To loss on sale of plant			
To net profit	10,000		
	1,50,000		
	1,84,000		1,84,000

32. The following is the Balance Sheet of Vinod Mills Ltd. as on 31st December, 2006:

				Rs.
Sundry Creditors	60,000	Bank		50,000
Bills payable Tax	1,00,000	Trade investments		1,50,000
Provision Outstanding	1,30,000	Book Debts (Debtors)		2,00,000
Expenses	10,000	Stock		3,00,000
12% Debentures	7,00,000	Fixed Assets	18,00,000	
10% Preference share capital	1,00,000	Less: Depreciation	5,00,000	13,00,000
Equity share capital	5,00,000			
Reserve Fund	4,00,000			
	20,00,000			20,00,000

Other information supplied is as follows

	Rs.
Net sales	30,00,000
Cost of goods sold	25,80,000
Operating expenses	2,20,000

(a) Quick ratio; (b) Total assets to debt ratio; (c) Current ratio; (d) Gross profit ratio; (e) Operating ratio (f) Net profit ratio.

33. From the following information, calculate stock turnover ratio, operating ratio; fixed assets turnover ratio and current assets turnover ratio:-

Rs. Opening stock		56,000
Closing stock	44,000	
Purchases	92,000	
Sales		1,80,000
Sales Returns	20,000	
Carriage Inwards		8,000
Office Expenses		8,000
Selling & Distribution Expenses		4,000
Fixed assets		70,000
Current assets	60,000	

34 From the following data, calculate:-

a) Gross profit ratio,
b) Net profit ratio
c) Working capital turnover ratio
d) Debt-equity ratio
e) Proprietary ratio

Net sales	30,00,000
Cost of sales	20,00,000
Net Profit	3,00,000
Fixed Assets	6,50,000
Current Assets	6,00,000
Paid-up share Capital	5,00,000
Debentures	2,50,000

35. With the help of the given information, calculate any three of the following ratios:

a) Operating ratio
b) Quick ratio
c) Working capital turnover ratio
d) Debt equity ratio.

Information: Equity share capital Rs. 50,000; 12% preference share capital Rs. 40,000; 12% debentures Rs. 30,000; General Reserve Rs. 40,000; Sales Rs. 3,00,000; Opening stock Rs. 20,000; Purchases Rs. 1,40,000; Wages Rs. 30,000; Closing stock Rs. 40,000; Selling and distribution expenses Rs. 18,000; Other Current assets Rs. 1,00,000 and current liabilities Rs. 60,000.

B - THEORY QUESTIONS:

1 What are the limitations of Ratio Analysis.
2 Discuss the benefit of Ratios.
3 How are the ratio classified from the point of view of users.
4. What are the significance of gross profit ratio.
5. Write short notes on
   A Quick Ratio
   B Creditors Turnover Ratio
   C Debtors Turnover Ratio
   D Distinguish between over trading and under trading.
   E. Trading on Equity
6. Explain in detail importance of Balance Sheet Ratio.
7. Define Current Ratio. Give its purpose.

RATIOS AT A GLANCE

Ratio	Formulae
1. Current ratio	Current assets Current liabilities
2. Quick ratio	Quick assets Current liabilities
3. Inventory turnover ratio	Cost of goods sold Average inventory
4. Debtors (receivables) turnover ratio	Annual Net credit sales Average accounts receivables
5. Debt (receivables) collection period	365 days/52 weeks/ 12 months Debtors turnover ratio
6 Creditors turnover ratio	Net Credit Purchase Average Creditor Net

7. Average Credit Payment period	365 days/52 weeks/ 12 months Creditor turnover ratio
8. working capital Turnover	Net Sale working Capital
9. Fixed Asset Turnover ratio	Net sale or cost of sale Net fixed assets
10. Current assets turnover ratio	Net sales Current assets
11. Debt- equity ratio	Total long term debt Shareholders' funds
12. Total assets to debts	Total assets Long term debts
13. Proprietary ratio	Shareholders Funds Total assets
14. Gross Profit ratio	Gross Profit/Net Sales × 100
15. Net Profit Ratio	Net profit / Net Sales × 100
16. Operating ratio	Operating cost X 100 Net sales
17. Operating profit ratio	Operating profit X 100 Net sales
18. Return on capital employed (ROI)	Net profit before interest, tax & dividend X 100
19. Earnings per share (EPS)	Net income after interest, tax and preference dividend X 100
20. Dividends per share	Dividends amount Numbers of equity share
21. Price earning ratio	Market price of share EPC
22. Dividend payout ratio	Dividend per share Earning per share

6

INTRODUCTION TO DUPONT ANALYSIS

6.1 Meaning
6.2 Formula
6.3 Analysis
6.4 Exercise with solution
6.5 Practice

6.1. MEANING

The Dupont analysis also called the Dupont model is a financial ratio based on the return on equity ratio that is used to analyze a company's ability to increase its return on equity. In other words, this model breaks down the return on equity ratio to explain how companies can increase their return for investors.

The Dupont analysis looks at three main components of the ROE ratio.

- Profit Margin
- Total Asset Turnover
- Financial Leverage

Based on these three performances measures the model concludes that a company can raise its ROE by maintaining a high profit margin, increasing asset turnover, or leveraging assets more effectively.

The Dupont Corporation developed this analysis in the 1920s. The name has stuck with it ever since.

6.2. FORMULA

The Dupont Model equates ROE to profit margin, asset turnover, and financial leverage. The basic formula looks like this.

Return on Equity = Profit Margin x Total Asset Turnover x Financial Leverage

Since each one of these factors is a calculation in and of itself, a more explanatory formula for this analysis looks like this.

$$Return\ on\ Equity = \frac{Profit\ Margin}{Net\ Income\ /\ Net\ Sales} \times \frac{Total\ Assets\ Turnover}{Net\ Sales\ /\ Avg.Total\ Assets}$$

$$\times \frac{Financial\ Leverage}{Total\ Assets\ /\ Total\ Equity}$$

Every one of these accounts can easily be found on the financial statements. Net income and sales appear on the income statement, while total assets and total equity appear on the balance sheet.

6.3. ANALYSIS

This model was developed to analyze ROE and the effects different business performance measures have on this ratio. So investors are not looking for large or small output numbers from this model. Instead, they are looking to analyze what is causing the current ROE. For instance, if investors are unsatisfied with a low ROE, the management can use this formula to pinpoint the problem area whether it is a lower profit margin, asset turnover, or poor financial leveraging.

Once the problem area is found, management can attempt to correct it or address it with shareholders. Some normal operations lower ROE naturally and are not a reason for investors to be alarmed. For instance, accelerated depreciation artificially lowers ROE in the beginning periods. This paper entry can be pointed out with the analysis and shouldn't sway an investor's opinion of the company.

6.4. EXERCISE WITH SOLUTION

Ex.1 Seeta's Retailers and Rama's Retailers. Both of the companies operate in the same apparel industry and have the same return on equity ratio of 45 percent. This model can be used to show the strengths and weaknesses of each company. Each company has the following ratios:

Ratio	Seeta	Rama
Profit Margin	30%	15%
Total Asset Turnover	.50	6.0
Financial Leverage	3.0	.50

As you can see, both companies have the same overall ROE, but the companies' operations are completely different.

Ans:
DuPont Analysis
45% = .30 x .50 x 3.0
45% = .15 x 6.0 x .50

Seeta's is generating sales while maintaining a lower cost of goods as evidenced by its higher profit margin. Seeta's is having a difficult time turning over large amounts of sales.

Rama's business, on the other hand, is selling products at a smaller margin, but it is turning over a lot of products. You can see this from its low profit margin and extremely high asset turnover.

This model helps investors compare similar companies like these with similar ratios. Investors can then apply perceived risks with each company's business model.

EX.2 Parrot Packaging's ROE last year was 2.5 percent, but its management has developed a new operating plan designed to improve things. The new plan calls for a total debt ratio of 50 percent, which will result in interest charges of Rs.240 per year. Management projects an EBIT of Rs.800 on sales of Rs. 8,000, and it expects to have a total assets turnover ratio of 1.6. Under these conditions, the federal-plus-state tax rate will be 40 percent. If the changes are made, what return on equity will Parrot earn?

a. 2.50% **b.** 13.44% **c.** 13.00% **d.** 14.02% **e.** 14.57%

EX. 3 Brother Corporation Balance Sheet as on 31st March 2015

Liabilities	Rs.	Assets	Rs.
Accounts Payable	250	Cash and Marketable Securities	50
Accrued Liabilities	250	Accounts Receivable	200
Notes Payable	500	Inventories	250
Long Term Debts	250	Net Fixed Assets	1500
Common Stock	400		
Retained Earnings	350		
	2,000		2,000

Ans:

ROE = Profit margin × Total assets turnover × Equity multiplier
= NI / Sales × Sales / TA × TA / Equity.

Now we need to determine the inputs for the equation from the data that were given. On the left we set up an income statement, and we put numbers in it on the right:

	Rs.
Sales (given)	8,000
Cost	NA
EBIT (given)	800
Interest (given)	240
EBT	560
Taxes (40%)	224
Net Income	336

Now we can use some ratios to get some more data: Total assets turnover = S/TA = 1.6 (given).
D/A = 50%, so E/A = 50%, and therefore TA/E = 1/(E/A) = 1/0.5 = 2.00.

Now we can complete the Extended Du Pont Equation to determine ROE:
ROE = 336/8,000 1.6 2.0 = 13.44%.

6.5. PRACTICE

Q.1 Explain DuPont Analysis in detail.

Q.2 Discuss in detail the formula for calculating ROE under DuPont Analysis.

Q.3 Explain in detail the factors to be taken into account for calculating ROE under DuPont Model.

Q.4 Write Short Not On Du Pont Model.

MODULE - IV

7

FREE CASHFLOW ANALYSIS

Unit Structure

7.0 LEARNING OBJECTIVES

After studying this chapter, the student will be able to:

1. Understand the meaning of free cashflows
2. Differentiate between Different types of free cashflows
3. Calculate FCFF and FCFE under various methods
4. Importance of Free Cash Flows with respect to Valuation
5. Calculate the value of the firm from FCFF and of Equity from FCFE of the firm

7.1 INTRODUCTION

You have already learnt in your earlier chapters, concepts and importance of a cash flow statement. You have also learnt the methods of preparation of cash flow statement and the uniqueness of a cash flow statement vis-à-vis other financial statements.

You may recall that the term 'cash flows' refers to the cash inflows as well as cash outflows. Further, you would also appreciate that analysis of cash inflows and outflows is carried out on the basis of Operating Activities, Financing Activities and Investing Activities.

In this unit, we will be discussing about concepts relating to free cash flows, techniques of computation of different kinds of free cash flows, their importance in relation to financial analysis and valuation of a firm and that of equity holders' interests.

7.2 MEANING OF FREE CASH FLOW

The term 'Free Cash Flow' refers to a sum of cash net inflows or outflows in relative contexts. There are three important such relative cash flows. It moves in a hierarchical order. At the top, it relates the free cash

flows and the operations. Second one in order relates the cash flow available to the firm (Long Term Debt + Shareholders), while the third one relates the cash flows available only to the shareholders. They are as follows.

a. Operating Free Cash Flows
b. Free Cash Flows to the Firm
c. Free Cash Flows to the Equity

Now let us discuss each of the above in detail.

- **Operating Free Cash Flows**

As the term indicates, Operating Free Cash Flows refer to the cash flows that are available in the context of operations, after having met the cash requirement for investment in non-current assets and net working capital. Now the question would arise as to what type of investment in non-current assets and net working capital would qualify for deduction. It needs to be answered that for a given project, whatever additional expenditure is required in the form of non-current assets and the net working capital would be deducted. Any additional expenditure that may arise due to expansion outside of the current project in respect of which the Free Cash Flows is computed need not be deducted. This would enable comparative study with peers and / or competitors, by analysts much relevant.

It may be understood from the previous paragraph that the cash flows that are generated as above are the ones that are available for

- **Historical vs Prospective Operating Free Cash Flows**

We can compute Operating free cash flows for historical periods as well as for future periods. We compute historical operating free cash flows, by deducting Investments if any in operating non-current assets from "Cash Flows from Operating Activities". However, in both the cases, we recognize "Tax" as an operating cash flow. We compute prospective (future) operating free cash flows as below.

After Tax Operating Earnings	xxxxx
Add:Depreciation / Amortization / Impairment Write off / of Tangible and Intangible Assets	xxxx
Deduct: Investments in Long Term Assets (Operating)	xxxx
Deduct: Investments in additional net working capital	xxxx
Operating Free Cash Flows	xxxxx

Adjustments that are mentioned above are like the ones you have already learnt while computing 'Cash from Operating Activities' in preparing a cash flow statement under indirect method. However, there are two notable differences. They are as below.

1. Deductions in respect of Investments made in Long Term Assets
   This deduction is made todetermine the cash flows that are available after meeting the requirements for expanding operations / sales or to maintain the existing operations / sales of the entity. When we prepare a cash flow statement, such an item is shown as an outflow of cash under 'Investing Activity'.

2. Deduction in respect of net investment in working capital
   While we calculate historical cash flow from operating activities, we add back increase in current liabilities and decrease in current assets other than cash and cash equivalents and deduct decrease in current liabilities and increase in current assets other than cash and cash equivalents. In computing projected "Operating Free Cash Flows", we deduct the estimated net investment in net working capital, so that we are able to ascertain the available cash flows that can be used for payments to lenders and then ultimately to the shareholders, without any interruptions of whatsoever as far as the operations of the business entity are concerned.

- **Importance of Operating Free Cash Flows Analysis**

It is to be appreciated that a business is in existence to generate cash flows to provide returns to the providers of long term funds, namely lenders and shareholders. The extent of the cash flows generated by a business out of its operations portrays an entity's ability to meet the additional investment required to expand the market share, to provide returns in the form of interest to the lenders and dividends to the shareholders and repayment of the loans / capital.

Illustration 1:

Assume that a company generated Rs. 25 crores of operating cashflow and has spent 5 crores for capital expenditure during the year and an additional net investment of Rs. 1 Crore in Net Working Capital.

In this case, the entity has generated a surplus, ie, free cashflow of 19 crores for the year. Out of this free cash flow, the entity would pay returns to its lenders, repay the loans, pay dividends, if any to shareholders and the redeem the shares, if any, as per covenant obligations.

Illustration 2:
An entity provides the following information.

Particulars	Rs. In Mns.
Before tax Operating earnings (EBIT)	100
Tax rate	30% on Taxable Profit
Trade Debtors in the beginning	5
Trade Debtors at the end (estimated)	7
Trade Creditors at the beginning	6.90
Trade Creditors at the end (estimated)	5.75
Cash and Bank Balances at the beginning	0.50
Inventories at the beginning	3
Inventories at the end (estimated)	4.50
Cash at the end (estimated)	0.60
Bank balance at the end (estimated OD)	0.75
Depreciation on Tangible Assets	15.50
Amortization of Intangible Assets	4.50
Impairment of Tangible Assets	3.00
Assume that the firm is debt free. The firm needs to invest Rs. 25 Mn in the next year out of which Rs. 10 Mn is in order to maintain the existing level of operations and Rs. 15Mn for expansion of sales in the subsequent years.	

Compute (1) Operating Free Cash Flows (OFCF) and (2) Cash From Operating Activities

Solution:

(1) Computation of Operating Free Cash Flows

Particulars		Rs. (in Mns)
Before Tax Operating Earnings (EBIT)		100
Less: Tax		(30)
After Tax Earnings		70
Add:		
Depreciation 15.50		
Amortization 4.50		

Impairment 3.00		23
Less:		
Investment in Non-Current Assets		(25)
Investment in Net Working Capital		
Trade Debtors in the beginning 5.00		
Trade Debtors at the end(estimated) 7.00	(2.00)	
Trade Creditors at the beginning 6.90		
Trade Creditors at the end (estimated) 5.75	(1.15)	
Inventories at the beginning 3.00		
Inventories at the end (estimated) 4.50	(1.50)	
Cash and Bank Balances at the beginning 0.50		
Cash at the end (estimated) 0.60		
Bank balance at the end (estimated OD) 0.75	0.65	(4)
Operating Free Cash Flows		64

(2) Computation of Cash Flows From Operating Activities

After Tax Earnings	70
Add: Depreciation, Amortization and Impairment	23
Less: Net Increase in Current Assets or Decrease in Current Liabilities (other than cash and cash equivalents)	(4.65) ie., (2.00 +1.15 +1.50)
Cash from Operating Activities	88.35

Illustration 3:

Continuing the above illustration, suppose that in addition to the above information, there had been revaluation of assets upwards, resulting

in recognition of Rs. 10 Mn in the pretax earnings. What would be the change in the cash flows computed earlier.

Solution:

Both Operating Free Cash Flows and the Cash From Operating Activities would decrease by Rs. 10 Mn, because, revaluation of assets does not result in any increase in the cash flows. However, the same amount had been considered in computation of the pre-tax earnings.

- **Free Cash Flows to the Firm**

Free cash flow to the Firm (FCFF) refers to the cash flow available to all investors in the company — both shareholders and bondholders after consideration for taxes, capital expenditure and working capital investment. It enables a firm's ability to service its lenders and enables comparison between a leveraged firm and an unleveraged firm. This is because interest payments are considered as returns payable to lenders and not as an operating expense.

However, it must be noted here that non-operating income and cash flows are also considered to be a part of the FCFF. Arithmetically, its computation is explained below.

Operating Free Cash Flows	xxxxx
Add: After Tax non operating income	xxxx
Add: Decrease in Non-Operating Assets	xxxx
Deduct: Increase in Non-Operating Assets	xxxx
Free Cash Flows to Firm	xxxxx

Let us explain the computation of FCFF by an illustration.

Illustration 4:

A manufacturing entity is projecting that its Operating Free Cash Flows for the year ending 31st March 2018 would amount to Rs. 70 Mn. The entity provides the following additional information.

a. Estimated purchase of Investments in Securities– Rs. 5 Mn
b. Income that will be received from the above investment – Rs. 1Mn
c. Estimated Cost of Acquisition of Land for use after 10 years - Rs.5Mn
d. Applicable tax rate - 30%
e. An existing investment in securities amounting to Rs. 2 Mn, yielding a taxable return of 25%, will be sold on 31st march 2018

Compute the Free Cash Flows to the Firm

Solution:

Computation of Free Cash Flows to the Firm

Particulars		Rs. (In Mns)
Operating Free Cash Flows		70.00
Add: After Tax non-operating Income		
-old Investment Less tax	0.50 Mn(@25% on 0.15 Mn	0.35
-new Investment Less Tax	1.00 Mn 0.30 Mn	0.70
Add: Decrease in Investments		2.00
Less: Increase in Investments in Securities		(5.00)
Increase in Non-Current Assets		(5.00)
FCFF		63.05

- **Importance of Free Cash Flows to the Firm**

As explained earlier, Free Cash Flows refer to the cash flows that are available in the business from the perspective of providers of long term sources of funds, namely, Lenders, Preference Shareholders and Ordinary Share Holders.

A comparative analysis of two or more firms based on the FCFF is important, particularly when we are comparing the firms which have different capital structures over different periods of time.

- **Free Cash Flows to the Equity**

Free Cash Flows to the Equity can be categorized into two types. They are (a) Free Cash Flows to the Preference Shareholders and (b) Free Cash Flows to the Ordinary Shareholders. Adjustments are made to FCFF with respect to cash flows that would be arising becauseof payments to lenders and fresh loans raised. In the case of puttable share capital with constant rates of dividend, the payments to and capital raised from such shareholders need to be adjusted against FCFF to arrive at the FCFE. Computation of FCFE is arrived at as below.

Particulars	FCF to Preference Shareholders	FCF to ordinary Shareholders
FCFF	xxxx	xxxx
Less: Interest (Less Tax Advantage)	xxx	xxx
Less: Repayment of Loans		
Add: New Borrowings		
Less: Preference Dividend + with holding Tax	Not Applicable	xxx
Less: Redemption of Preference Share Capital	Not Applicable	xxx
Add: Issue of Preference Share Capital	Not Applicable	xxx
	FCF to Preference Shareholders	FCF to ordinary Shareholders

A split up analysis of Free Cash Flows to Equity into FCF to Preference Shareholders and Ordinary Shareholders respectively, provides a better analysis of the free cash flows of a business. However, when we compare two or more business entities over a period, comparison on the basis of FCFE, as a single category provides better comparability.

Illustration 5:
Following information relates to Hypothetical Co Ltd., for the year ending 31st March 2017.

Particulars	**Rs. (In Mns)**
FCFF	100
10% Preference Share Capital	75
Withholding Tax on Preference Share Capital Dividend	10%
Long Term Loans at the beginning of the year	50
Additional Loans borrowed during the middle of the year	30
Instalments relating to the old loans repaid at the end of the year	10
Rate of Interest on Loans	8%
10% Additional Preference Share Capital raised at the end of the year	7
10% Preference Share Capital Redeemed at the end of the year	7
Applicable tax rate for the company is 30%.	

Compute the FCF to Preference Share Holders and to the Ordinary Shareholders respectively.

Solution:

Particulars	FCF to Preference Shareholders	FCF to ordinary Shareholders
FCFF	100	100
Less: Interest (Less Tax Advantage)	5.20 (8% * 50 +8% *30/2) 1.60 = 3.60	3.60
Less: Repayment of Loans	10	10
Add: New Borrowings	30	30
Less: Preference Dividend + with holding Tax	Not Applicable	8.25 (10% on Preference Share Capital +Tax @10% on Preference Dividend)
Less: Redemption of Preference Share Capital	Not Applicable	7.000
Add: Issue of Preference Share Capital	Not Applicable	7.000
	116.40	108.15

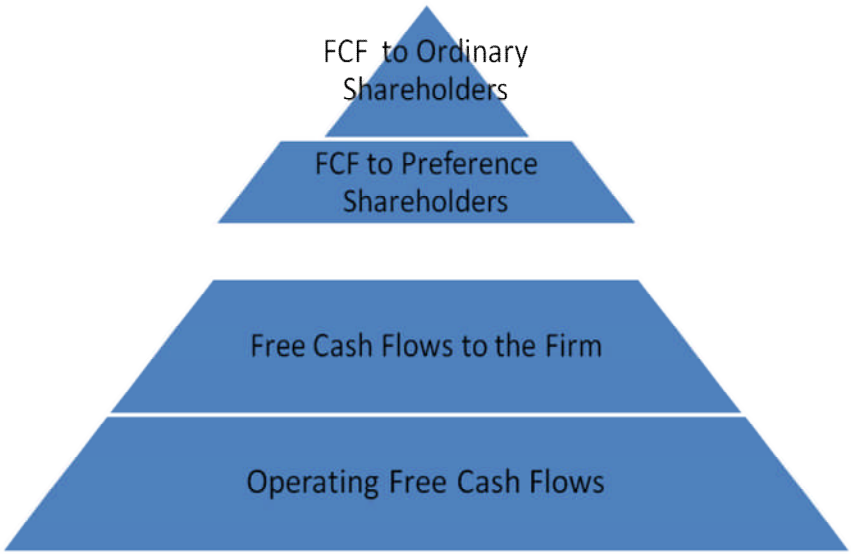
Free Cash Flows to Ordinary Shareholders may also be calculated from Free Cash Flows available to Preference Shareholders as well. Such a Computation is shown below.

FCF to Ordinary Shareholders = FCF to Preference Shareholders – Preference Dividend +Net Issue / Redemption of Preference Share Capital
= 116.40 -8.25 +7.00 -7.00 = 108.15 Mn.

- **Hierarchy of Free Cash Flows**

As you would have appreciated by now, there is a hierarchical order in the conceptual perspectives of various kinds of Free Cash Flows. At the base level, it is known as Operating Free Cash Flows and down the level it ends up with Free Cash Flows to the Ordinary Shareholders.

A thematic presentation of Free Cash Flows into its major elements emphasizes this aspect.



As the diagram indicates, Operating Free Cash Flows forms the basis of a business entity's ability to generate cash flows over a long period. At every level, an appropriate reduction in the Operating Cash Flows that forms part of the free cash flows respective to the hierarchy takes place. However, it needs to be understood that other than on account of Operations, the cash flows may either increase or decrease. For example, for a business that has an OFCF of Rs. 25 Mn can have an FCFE of Rs. 45 Mn, due to additional issue of share capital. On the other hand, an entity having Rs. 50 Mn as Cash from Operating Activities may be having an FCFF of Rs. (-) 25 Mn, because of huge investment in non-current assets.

A collective presentation of the items that get into computation of the respective free cash flows is given below, for ease of understanding.

Particulars	OFCF	FCFF	FCF to Preference Shareholders	FCF to Ordinary Shareholders
After Tax Operating Earnings	xxxxx	xxxxx	xxxxx	xxxxx
Add: Depreciation / Amortization / Impairment Write off / of Tangible and Intangible Assets	xxxx	xxxx	xxxx	xxxx
Deduct: Investments in Long Term Assets (Operating)	xxxx	xxxx	xxxx	xxxx
Deduct: Investments in additional net working capital	xxxx	xxxx	xxxx	xxxx

Operating Free Cash Flows	xxxxx	xxxxx	xxxxx	xxxxx
Add: After Tax non operating income	Not Applicable	xxxx	xxxx	xxxx
Add: Decrease in Non-Operating Assets	Not Applicable	xxxx	xxxx	xxxx
Deduct: Increase in Non-Operating Assets	Not Applicable	xxxx	xxxx	xxxx
Free Cash Flows to Firm	Not Applicable	xxxxx	xxxxx	xxxx
Less: Interest (Less Tax Advantage)	Not Applicable	Not Applicable	xxxx	xxx
Less: Repayment of Loans	Not Applicable	Not Applicable	xxx	xxx
Add: New Borrowings	Not Applicable	Not Applicable	xxx	xxx
Less: Preference Dividend + with holding Tax	Not Applicable	Not Applicable	Not Applicable	xxx
Less: Redemption of Preference Share Capital	Not Applicable	Not Applicable	Not Applicable	xxx
Add: Issue of Preference Share Capital	Not Applicable	Not Applicable	Not Applicable	xxx
Total	***OFCF***	***FCFF***	***FCF – Preference Shareholders***	***FCF-Ordinary Shareholders***

The table given above provides us an easier understanding of relationship between different kinds of free cash flows and the components that get into their computation.

- **Cash Flow and valuation of a firm**

In our discussion, so far, we explained the meaning, concepts and importance of different kinds of free cash flows. We also explained the technique of computation of free cash flows. It must be understood that, as explained earlier, computation of free cash flows helps analysts and investors to understand the ability of a business in generation and effective utilization of cash. Besides, an entity's worthiness ultimately depends upon its ability to pay returns in the form of cash flows to lenders and shareholders either directly by way of dividend / buy back of shares or indirectly by way of increased market price of securities that can help the holders to generate cash flows. Whether it is by way of direct flows or

indirect flows to the investor, our focus point is the ability of a business in generation of cash flows. You also need to appreciate the fact that the cash flows that an investor would be getting not directly from the business entity but from the stock exchanges or private deals among the investors also depend upon the ability of the business in effective generation and utilization of the cash. This drives us to the point that an entity's value very much depends upon the ability to generate / utilize the cash.

- **Basic aspects of valuation**

You might have already learnt about the basic concepts relating to valuation of a capital project under "Capital Budgeting" and of securities in portfolio management and securities analysis. Valuation of a business based on free cash flows also requires application of the same fundamental concepts. Philosophy of valuation requires two important aspects, namely cash flows associated with an asset or a project or an entity and the relevant cost of capital.

As a recall of the concepts relating to valuation, let us illustrate with the following example.

Illustration 6:

ABC Ltd., which has many projects is contemplating acquisition of an existing business from DEF Ltd., ABC Ltd wants to be a financial investor in DEF Ltd., for a period of five years, after which, it would dispose of its entire holdings in DEF Ltd., Following Information are provided by ABC Ltd.,

Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
Operating FCF (Rs. Mn)	275	340	450	600	700
Non-Operating Income (Rs. In Mn)	10	10	10	10	10
Tax Rate	30%	30%	30%	30%	30%
Capital Structure –10% Debt	40%	40%	40%	40%	40%
Capital Structure – Ordinary Share Capital	60%	60%	60%	60%	60%
Market rate of return expected	15%	15%	15%	15%	15%
Risk Free Rate	9%	9%	9%	9%	9%
Beta for ABC Ltd	1.40	1.40	1.40	1.40	1.40

Advise ABC Ltd., the price it can pay for investment in DEF Ltd as a Financial Investor for a period of five years, so that ABC Ltd can create value for its own shareholders.

Solution:

ABC Ltd needs to determine the present value of the Free Cash Flows as far as DEF Ltd is concerned. Since it will be disposing the acquisition in five years, we need to consider the present value of the Free

Cash Flows of the Firm that will be received over the next five years. Determination of present value of Free Cash Flows to the Firm as far as DEF Ltd is concerned requires the following procedure.

a. Computation of Free Cash Flows of the Firm that relates to DEF Ltd., (as explained earlier)
b. Computation of Weighted Average Cost of Capital
   - Computation of Post Tax cost of debt
   - Computation of Cost of Equity based on Capital Asset Pricing Model
   - Computation of the Weighted Average Cost
c. Compute the Present Value of FCFF by discounting the FCFF by applying the WACC

Valuation of DEF Ltd., to be acquired by ABC Ltd.,						
Computation of Free Cash Flows						
Particulars		Year 1	Year 2	Year 3	Year 4	Year 5
Operating FCF		275	340	450	600	700
After Tax Non-Operating Income (After Tax @ 30%)		7	7	7	7	7
FCFF		282	347	457	607	707
Computation of Weighted Average Cost of Capital						
Computation of Post Tax Cost of Debt						
Pre-Tax Cost of Debt	10%					
Tax Rate	30%					
Post tax Cost of Debt = Pre Tax Cost *(1-Tax Rate)	=10% (1-0.30) = 7%					
Cost of Equity						
Capital Asset Pricing Model = Risk Free Rate + (Market Rate – Risk Free Rate)* Beta						
= 9% +(15%-9%)1.4 = 9% +8.40% = 17.40%						
Weighted Average Cost of Capital						
Component	Weight	Cost	WACC			
Debt	0.40	7.00	2.80			
Ordinary Share Capital	0.60	17.40	10.44			
			13.24%			
Present Value of FCFF	= FCFF/ (1+0.1324)^n					
FCFF (as Computed earlier)		282	347	457	607	707
Present Value (Rs. Mn)	1583.16	249.03	270.60	314.71	369.14	379.68
Thus, the value of firm DEF Ltd is determined at Rs. 1583.13 Mn. IF ABC Ltd. can negotiate the deal by paying any price equivalent to or less than the present value, ABC Ltd will be able to create value to its shareholders.						

- **Free Cash Flows and Valuation of Equity**

Based on the cash flows available to firm and to the equity share holders, over the valuation period, we can find the value of equity of a firm. The formulas for ascertaining the value of equity of a firm are as below.

- **Valuation based on the free Cash flow of the firm**

Value of Equity = Value of the firm based on FCFF – debt value of the firm. Let us explain with the help of an illustration as below.

Illustration 7:

A firm which has a capital of Rs. 1000 Mn, equally divided between Debt and Ordinary Share Capital, determines the present value of its FCFF at Rs. 2,000 Mn. Determine the Value of Equity .

Solution

Present Value of Firm = Rs. 2,000 Mn.
Book Value of Debt = Rs. 500 Mn. (50% of Rs. 1,000 Mn)

Hence Value of Equity = Rs. 1,500 Mn.

- **Determination of Present Value of Firm based on Infinity**

In our Illustration 6, we determined the value of the firm based on a specified period of 5 years. However, it must be appreciated that, in practice, we consider that an entity is expected to generate cash flows over its entire life period, which may be infinite. In such a scenario, the following formula is applied.

$$\text{Value of the firm based on FCFF} = \sum_{t=1}^{\infty} \{\text{FCFF } t/[(1+\text{WACC})^t]\}$$

Where, 'WACC' is the weighted average cost of capital. However, the above formula can not be applied in a straight- jacket manner.

Valuation of free cash flows relating to an indefinite period is split into two or more separate time periods. Time period (s) in respect of which growth and cash flows can be forecast on a justifiable basis are known as explicit periods. Forecast of cash flows subsequent to the explicit period is determined on a perpetual basis based on FCFF at the end of the explicit period, that immediately precedes the uncertain period.

Once the value of firm is determined, we can deduct the values of Debt and Preference Share Capital, if any to arrive at the value of equity.

- **Valuation based on the free Cash flow to the equity shareholders**

$$\text{Value of the firm based on FCFE} = \sum_{t=1}^{\infty} \{\text{FCFE } t/[(1+r)^t]\}$$

Where, 'r' is the expected return of the shareholders.

Here again, the above formula is based on an infinity period.We had earlier discussed the method of determining the value of equity from the value of the firm by applying the WACC of the firm on the Free Cash Flows to the Firm. The above formula helps us determine the Value of Equity directly from the Free Cash Flows to the Equity.

Additional Illustrations:

Illustration 1

	Rs. (in crores)
EBITDA	1000
Depreciation	400
Interest Expense	150
Tax rate	30%
Purchase of fixed assets	500
Change in Working capital	50
Net borrowing	80
Equity dividends	200

- **Calculate FCFF and FCFE under various methods:**

FCFF under Net income, EBIT, EBITDA, Cashflow from Operations methods in this FCFE under FCFF, Net income, Cashflow from Operations methods FCFF and FCFE from end use perspective method

Solution

A. FCFF Calculation

1 – Calculation from Net Income

Calculation of FCFF, in this case involves, the following steps.

a. Computation of Net Income
b. Computation of FCFF from Net Income

a. Computation of Net Income

We first must obtain net income from the example provided, which is the EBITDA after depreciation, interest, and taxes

Net income= (EBITDA- Depreciation- Interest) (1- Tax rate)

Net income= (1000-400-150) (1-.3) = 315 crores

b. Computation of FCFF

FCFF= Net income + Non cash charges + Interest (1-Tax Rate) - Capital Expenditure - Investment in working capital

Assuming that depreciation expense (of 400) is the only non cash charges, the resulting value for FCFF is 270.

FCFF= 315+ 400+ 150(1-0.30)- 500- 50= Rs 270 crores

Notice that to get net income, we subtracted depreciation and interest from EBITDA. To get FCFF, we added them back. This suggests that we could have calculated FCFF more easily by working higher on the income statement at EBITDA. This is what we do on the method

2 Calculation of FCFF from EBIT and EBITDA

We first must obtain EBIT from the example provided, which is the EBITDA after depreciation:

EBIT= EBITDA- Depreciation = 1000- 400= Rs 600 crores

Computation of FCFF from EBIT

FCFF= EBIT (1-tax rate) + Non cash charges - Capital Expenditure - Investment in working capital

FCFF= 600(1-0.30)+ 400- 500- 50= Rs 270 crores

Computation of FCFF from EBITDA

FCFF= EBITDA (1- tax rate) + Non cash charges (tax rate) - Capital Expenditure - Investment in working capital

FCFF= 1000(1-0.30)+ 400(0.30)- 500- 50=Rs 270 crores

Starting higher on the income statement at EBITDA, we again arrive at Rs.270 crores.

Recall our discussion from the previous method where we first examined the EBIT and EBITDA formulas:

If starting with EBIT, we add back depreciation because it was subtracted to obtain EBIT. If starting with EBITDA, we add back only the depreciation tax shield (Dep × Tax Rate = Amount the firm saves on taxes by being able to claim the noncash depreciation expense). We add it back because although EBITDA is before depreciation, the depreciation tax shield saves the firm on taxes and adds to its cash flows.

c. Calculating FCFF from Cashflow from Operations

We first must obtain Cashflow from Operations from the example provided, which is the net income plus depreciation minus the change in working capital:

Cashflow from Operations= Net Income+ Depreciation- Working Capital Investment

Cashflow from Operations= 315+ 400- 50= Rs 665 crores

FCFF= Cashflow from operating activities + **interest (1-tax rate)** - Capital expenditure

FCFF= 665+ 150(1-0.30)- 500= Rs 270 crores

We add back interest because it was subtracted out to obtain CFO and it is available to one of the firm's capital providers (the debtholders). The investment in fixed capital is a cash outflow that was not included in the calculation of CFO, so it is subtracted out.

B. FCFE calculation

1. Calculating from FCFF

FCFE= FCFF- Interest(1-Tax rate)+ Net Borrowing
FCFE= 270- 150(1-0.30)+ 80= Rs 245 crores

2. Calculating from Net Income

FCFE= net income + non cash charges - capital expenditure - investt in working capital+ **Net Borrowing**
FCFE= 315+ 400- 500- 50+ 80= Rs 245 crores

3. Calculating from Cash from Operations

FCFE= Cashflow from operating activities - Capital expenditure+ **Net Borrowing**
FCFE= 665- 500+ 80= Rs 245 crores

Illustration 2

Current FCFF	Rs 60,00,000
Target Debt to capital ratio	0.25
Market value of debt	Rs 3,00,00,000
Shares Outstanding	29,00,000
Required return on equity	12%
Cost of debt	7%
Long term growth in FCFF	5%
Tax Rate	30%

Estimate the value of a company using Free cashflow model

Solution

1. We first must calculate the WACC for the firm.

$$WACC = \left[\left(\frac{MV(Debt)}{MV(Debt) + MV(Equity)}\right) \times r_d \times (1 - Tax\ Rate)\right] + \left[\left(\frac{MV(Equity)}{MV(Equity) + MV(Debt)}\right) \times r\right]$$

The formula says the WACC is determined by debt and equity component costs.

MV(Debt) = current market value of debt
MV(Equity) = current market value of common equity
rd = before-tax cost of debt (which is transformed into the after-tax cost by multiplying by 1 – Tax Rate)
r = cost of equity

To calculate the debt component, the tax rate is used because in most jurisdictions, the interest payments on debt are tax deductible, which reduces the effective cost of debt financing. Equity financing, however, is not subject to such favorable tax treatment because the payment of dividends does not reduce the firm's taxable income.

WACC= [0.25*7%*(1-0.30)]+ [0.75* 12%]= 10.23%

Note that the debt-to-capital ratio of 0.25 means that 25% of firm assets are financed with debt and the other 75% are financed with equity. In some cases (as in this example), analysts use the ratio of target debt to capital instead of using current market value weights because they frequently assume that the targeted debt ratio is that which the firm will use over the long term.

Note that here, market value of equity is not available, hence we have to use debt and equity ratios of 0.25 and 0.75 instead of using actual market values of debt and equity

2. Firm value

The general model to value a firm from its FCFF is,

$$\text{Value of the firm based on FCFF} = \sum_{t=1}^{\infty} \{\text{FCFF } t/[(1+\text{WACC})^t]\}$$

However, as growth rates are given, the formula simplifies to;

$$Firm\ Value = \frac{FCFF_1}{WACC - g}$$

We grow the current $6 million in FCFF out one period at 5% to arrive at next period's FCFF.

FCFF1= FCFF0*(1+g)

FCFF1= 60,00,000(1.05)

Firm value= 60,00,000(1.05)/(0.1023- 0.05)= Rs 12.05 crores

Note also that here the FCFF is discounted by the firm's WACC. If the FCFE were provided, it would be discounted by the shareholder's required return to obtain the equity value.

Summary

Free Cash Flows refer to cash flows that are from specific set of commitments from a specific set of perspectives. Free Cash Flows from the perspective of operations refer to cash flows that are available after meeting operational cash flows **and** meeting investment commitments with respect to capital expenditure and net working capital in order to allow smooth operations within the planned capacity. 'Free Cash Flows to the Firm' present cash flows of a business entity from the perspective of 'what is available to the long term providers of funds' and out of which allocations to them can be made. FCFE, as you would have gone through goes a step further and presents a cash flow picture from the perspective of Shareholders, which again may be classified into preference shareholders and ordinary shareholders. Valuation of a firm depends upon an entity's ability to generate and effectively utilize the cash, which in turn decides about the worthiness of a firm. Valuation can be made for a firm from which values of debt and equity can be segregated. Additionally, value of

shareholders can be independently made on the basis of cash flows available to the shareholders. Weighted average cost of capital and expected rate of return are applied in determining the value of the firm and of shareholders, respectively.

Key Words
WACC, Operating Free Cash Flows, Free Cash Flows to the Firm, Free Cash Flows to Equity,

Review Questions and Exercises
1. Define OCF, FCFF and FCFE
2. What is WACC ? How is it computed?
3. Valuation of a firm or equity depends upon appropriate free cash flows. Validate the statement
4. List out the adjustments made to OFCF to arrive at FCFF and FCFE
5. Explain the meaning of "Explicit Period"
6. Applying the concepts explained in this chapter, determine the FCFE of your Organization

7. Calculate FCFF and FCFE under various methods learnt:

	Rs. (in crores)
EBITDA	2000
Depreciation	800
Interest Expense	300
Tax rate	30%
Purchase of fixed assets	1000
Change in Working capital	100
Net borrowing	160
Equity dividends	400

8. Calculate FCFF and FCFE under the various methods studied

	Rs. (in crores)
EBITDA	500
Depreciation	200
Interest Expense	300
Tax rate	30%
Purchase of fixed assets	250
Change in Working capital	25
Net borrowing	40
Equity dividends	100

9. Calculate value of firm using FCFE method

Current FCFE	Rs 45,00,000
Shares Outstanding	29,00,000
Required return on equity	12%
Cost of debt	7%
Long term growth in FCFE	5%
Tax Rate	30%

Estimate the value of a company using Free cashflow model

10. Calculate value of firm using FCFF method

Current FCFF	Rs 40,00,000
Target Debt to capital ratio	0.30
Required return on equity	12%
Cost of debt	10%
Long term growth in FCFF	7%
Tax Rate	35%

Estimate the value of a company using Free cashflow model

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