

Notes

Course Code: 202

Course Name: Financial Management

UNIT I - Business Finance

1.1 INTRODUCTION TO BUSINESS FINANCE

In our present day economy, Finance is defined as the provision of money at the time when it is required. Every enterprise, whether big, medium or small needs finance to carry on its operations and to achieve its targets. In fact, finance is so indispensable today that it is rightly said to be the life blood of an enterprise.

Meaning of Finance

Finance may be defined as the art and science of managing money. It includes financial service and financial instruments. Finance also is referred as the provision of money at the time when it is needed. Finance function is the procurement of funds and their effective utilization in business concerns. The concept of finance includes capital, funds, money, and amount. But each word is having unique meaning. Studying and understanding the concept of finance become an important part of the business concern.

Definition of Finance

According to **Khan and Jain**, “Finance is the art and science of managing money”.

According to **Oxford dictionary**, the word ‘finance’ connotes ‘management of money’.

Webster’s Ninth New Collegiate Dictionary defines finance as “the Science on study of the management of funds’ and the management of fund as the system that includes the circulation of money, the granting of credit, the making of investments, and the provision of banking facilities.

Meaning of Business Finance

Business Finance means the funds and credit employed in the business. Finance is the foundation of a business. Finance requirements are to purchase assets, goods, raw materials and for the other flow of economic activities.

DEFINITION OF BUSINESS FINANCE

According to the **Wheeler**, “Business finance is that business activity which concerns with the acquisition and conversation of capital funds in meeting financial needs and overall objectives of a business enterprise”.

According to the **Guthumann and Dougall**, “Business finance can broadly be defined as the activity concerned with planning, raising, controlling, administering of the funds used in the business”.

In the words of **Parhter and Wert**, “Business finance deals primarily with raising, administering and disbursing funds by privately owned business units operating in non-financial fields of industry”

1.2. MEANING AND DEFINITION OF FINANCIAL MANAGEMENT

Meaning of Financial Management

The word “Financial Management” is the composition of two words i.e. „Financial“ and „Management“. Financial means procuring or raising of money supply (funds) and allocating (using) those resources (funds) on the basis of monetary requirements of the business. The word „Management“ means planning, organizing, coordinating and controlling human activities with reference to finance function for achieving goals/ objectives of organization. Besides raising and utilization of funds, finance also includes distribution of funds in the form of dividend to shareholders and retention of profit for growth and developments.

Definition of Financial Management

Howard and Upton: Financial management “as an application of general managerial principles to the area of financial decision-making.

Weston and Brigham: Financial management “is an area of financial decision-making, harmonizing individual motives and enterprise goals”.

Joshep and Massie: Financial management “is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.

SCOPE OF FINANCIAL MANAGEMENT:

The main objective of financial management is to arrange sufficient finance for meeting short term and long term needs. A financial manager will have to concentrate on the following areas of finance function.

1. Estimating financial requirements:

The first task of a financial manager is to estimate short term and long term financial requirements of his business. For that, he will prepare a financial plan for present as well as for future. The amount required for purchasing fixed assets as well as needs for working capital will have to be ascertained.

2. Deciding capital structure:

Capital structure refers to kind and proportion of different securities for raising funds. After deciding the quantum of funds required it should be decided which type of securities should be raised. It may

be wise to finance fixed assets through long term debts. Even here if gestation period is longer than share capital may be the most suitable. Long term funds should be employed to finance working capital also, if not wholly then partially. Entirely depending on overdrafts and cash credits for meeting working capital needs may not be suitable. A decision about various sources for funds should be linked to the cost of raising funds.

3. Selecting a source of finance:

An appropriate source of finance is selected after preparing a capital structure which includes share capital, debentures, financial institutions, public deposits etc. If finance is needed for short term periods then banks, public deposits and financial institutions may be the appropriate. On the other hand, if long term finance is required then share capital and debentures may be the useful.

4. Selecting a pattern of investment:

When funds have been procured then a decision about investment pattern is to be taken. The selection of an investment pattern is related to the use of funds. A decision will have to be taken as to which assets are to be purchased? The funds will have to be spent first on fixed assets and then an appropriate portion will be retained for working capital and for other requirements.

5. Proper cash management:

Cash management is an important task of finance manager. He has to assess various cash needs at different times and then make arrangements for arranging cash. Cash may be required to purchase of raw materials, make payments to creditors, meet wage bills and meet day to day expenses. The idle cash with the business will mean that it is not properly used.

6. Implementing financial controls:

An efficient system of financial management necessitates the use of various control devices. They are ROI, break even analysis, cost control, ratio analysis, cost and internal audit. ROI is the best control device in order to evaluate the performance of various financial policies.

7. Proper use of surpluses:

The utilization of profits or surpluses is also an important factor in financial management. A judicious use of surpluses is essential for expansion and diversification plans and also in protecting the interests of shareholders. The ploughing back of profits is the best policy of further financing but it clashes with the interests of shareholders. A balance should be struck in using funds for paying dividend and retaining earnings for financing expansion plans.

1.3 Objectives of Financial Management

Effective procurement and efficient use of finance lead to proper utilization of the finance by the business concern. It is the essential part of the financial manager. Hence, the financial manager must determine the basic objectives of the financial management. Objectives of Financial Management may be broadly divided into two parts such as:

1. Profit maximization
2. Wealth maximization.

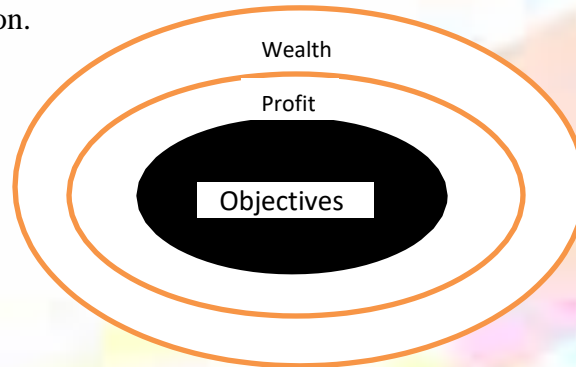


Fig. 1.1 Objectives of Financial Management

Profit Maximization

Main aim of any kind of economic activity is earning profit. A business concern is also functioning mainly for the purpose of earning profit. Profit is the measuring techniques to understand the business efficiency of the concern. Profit maximization is also the traditional and narrow approach, which aims at, maximizes the profit of the concern. Profit maximization consists of the following important features.

1. Profit maximization is also called as cashing per share maximization. It leads to maximize the business operation for profit maximization.
2. Ultimate aim of the business concern is earning profit; hence, it considers all the possible ways to increase the profitability of the concern.
3. Profit is the parameter of measuring the efficiency of the business concern. So, it shows the entire position of the business concern.
4. Profit maximization objectives help to reduce the risk of the business.

Favourable Arguments for Profit Maximization

The following important points are in support of the profit maximization objectives of the business concern:

- (i) Main aim is earning profit.
- (ii) Profit is the parameter of the business operation.
- (iii) Profit reduces risk of the business concern.

- (iv) Profit is the main source of finance.
- (v) Profitability meets the social needs also.

Unfavourable Arguments for Profit Maximization

The following important points are against the objectives of profit maximization:

- (i) Profit maximization leads to exploiting workers and consumers.
- (ii) Profit maximization creates immoral practices such as corrupt practice, unfair trade practice, etc.
- (iii) Profit maximization objectives leads to inequalities among the stake holders such as customers, suppliers, public shareholders, etc.

Drawbacks of Profit Maximization

Profit maximization objective consists of certain drawback also:

- (i) **It is vague:** In this objective, profit is not defined precisely or correctly. It creates some unnecessary opinion regarding earning habits of the business concern.
- (ii) **It ignores the time value of money:** Profit maximization does not consider the time value of money or the net present value of the cash inflow. It leads certain differences between the actual cash inflow and net present cash flow during a particular period.
- (iii) **It ignores risk:** Profit maximization does not consider risk of the business concern. Risks may be internal or external which will affect the overall operation of the business concern.

Wealth Maximization

Wealth maximization is one of the modern approaches, which involves latest innovations and improvements in the field of the business concern. The term wealth means shareholder wealth or the wealth of the persons those who are involved in the business concern. Wealth maximization is also known as value maximization or net present worth maximization. This objective is a universally accepted concept in the field of business.

Favourable Arguments for Wealth Maximization

- (i) Wealth maximization is superior to the profit maximization because the main aim of the business concern under this concept is to improve the value or wealth of the shareholders.
- (ii) Wealth maximization considers the comparison of the value to cost associated with the business concern. Total value detected from the total cost incurred for the business operation. It provides extract value of the business concern.
- (iii) Wealth maximization considers both time and risk of the business concern.
- (iv) Wealth maximization provides efficient allocation of resources.
- (v) It ensures the economic interest of the society.

Unfavourable Arguments for Wealth Maximization

- (i) Wealth maximization leads to prescriptive idea of the business concern but it may not be suitable to present day business activities.
- (ii) Wealth maximization is nothing, it is also profit maximization, it is the indirect name of the profit maximization.
- (iii) Wealth maximization creates ownership-management controversy.
- (iv) Management alone enjoy certain benefits.
- (v) The ultimate aim of the wealth maximization objectives is to maximize the profit.
- (vi) Wealth maximization can be activated only with the help of the profitable position of the business concern.

1.4 Approaches to Financial Management

Financial management approach measures the scope of the financial management in various fields, which include the essential part of the finance. Financial management is not a revolutionary concept but an evolutionary. The definition and scope of financial management has been changed from one period to another period and applied various innovations. Theoretical points of view, financial management approach may be broadly divided into two major parts.

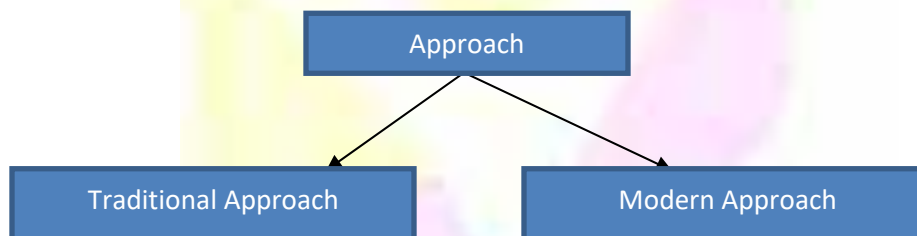


Fig. 1.2 Approaches to Finance Management

Traditional Approach

Traditional approach is the initial stage of financial management, which was followed, in the early part of during the year 1920 to 1950. This approach is based on the past experience and the traditionally accepted methods. Main part of the traditional approach is rising of funds for the business concern. Traditional approach consists of the following important area.

1. Arrangement of funds from lending body.
2. Arrangement of funds through various financial instruments.
3. Finding out the various sources of funds.

Modern Approach

The modern approach of financial Management can be divided into four major decisions as function of finance:

- The investment decision
- The financial decision
- The dividend policy decision
- The funds requirement decision

INVESTMENT DECISIONS

This is concerned with the allocation of capital. It has to show the funds can be invested in assets which would yield benefit in future. This is a decision based on risk and uncertainty. Finance Manager has to evaluate the investment in relation to their expected results and risk to determine whether the investment is feasible or not.

FINANCIAL DECISIONS

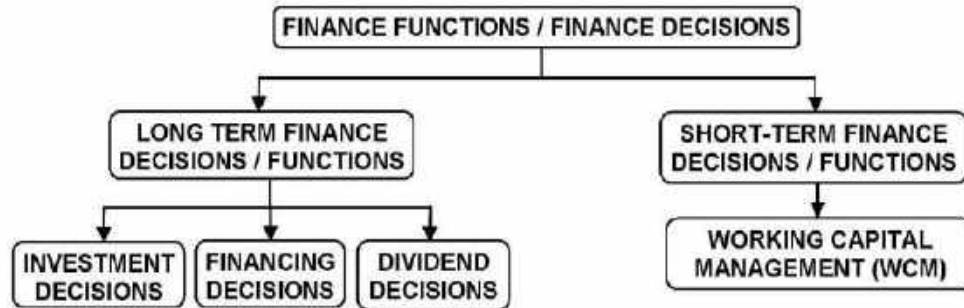
This decision is concerned with the mobilization of finance for investment. The Finance Manager has to take the decisions regarding the acquisition of finance. Whether entire capital required should be raised in the form of equity capital or the amount should be borrowed totally or a balance should be struck between equity and borrowed capital has to be decided. Even the timing of acquisition of capital should also be perfectly made.

DIVIDEND DECISION

The dividend decision involves the determination of the percentage of profit earned by the enterprise which is paid to the shareholders. The dividend payout ratio must be evaluated in the light of the objective of maximizing shareholder's wealth. Thus, the dividend decision has become a vital aspect of financial decision.

CURRENT ASSETS MANAGEMENT

The Finance Manager should also manage the current assets to have liquidity in the business. Investment of funds in current assets reduces the profitability of the firm. However the finance manager should also equally look after the current financial needs of the firm to maintain optimum production. While investing in current assets, he should see that proper trade off is maintained between the profitability and liquidity.



1.5 Finance and its relation with other Disciplines

Business function means functional activities that an enterprise undertakes in achieving its desired objectives. These functions may be classified on the basis of its operational activities.

- 1. Financial Management and Economics**
- 2. Financial Management and Accounting**
- 3. Financial Management or Mathematics**
- 4. Financial Management and Production Management**
- 5. Financial Management and Marketing**
- 6. Financial Management and Human Resource**

1. Financial Management and Economics

Economic concepts like micro and macroeconomics are directly applied with the financial management approaches. Investment decisions, micro and macro environmental factors are closely associated with the functions of financial manager. Financial management also uses the economic equations like money value discount factor, economic order quantity etc. Financial economics is one of the emerging area, which provides immense opportunities to finance, and economical areas.

2. Financial Management and Accounting

Accounting records includes the financial information of the business concern. Hence, we can easily understand the relationship between the financial management and accounting. In the olden periods, both financial management and accounting are treated as a same discipline and then it has been merged as Management Accounting because this part is very much helpful to finance manager to take decisions. But nowadays financial management and accounting discipline are separate and interrelated.

3. Financial Management or Mathematics

Modern approaches of the financial management applied large number of mathematical and statistical tools and techniques. They are also called as econometrics. Economic order quantity, discount factor, time value of money, present value of money, cost of capital, capital structure theories, dividend

theories, ratio analysis and working capital analysis are used as mathematical and statistical tools and techniques in the field of financial management.

4. Financial Management and Production Management

Production management is the operational part of the business concern, which helps to multiple the money into profit. Profit of the concern depends upon the production performance. Production performance needs finance, because production department requires raw material, machinery, wages, operating expenses etc. These expenditures are decided and estimated by the financial department and the finance manager allocates the appropriate finance to production department. The financial manager must be aware of the operational process and finance required for each process of production activities.

5. Financial Management and Marketing

Produced goods are sold in the market with innovative and modern approaches. For this, the marketing department needs finance to meet their requirements. The financial manager or finance department is responsible to allocate the adequate finance to the marketing department. Hence, marketing and financial management are interrelated and depends on each other.

6. Financial Management and Human Resource

Financial management is also related with human resource department, which provides manpower to all the functional areas of the management. Financial manager should carefully evaluate the requirement of manpower to each department and allocate the finance to the human resource department as wages, salary, remuneration, commission, bonus, pension and other monetary benefits to the human resource department. Hence, financial management is directly related with human resource management.

1.6 Functions of Finance Manager

Finance manager is one of the important role players in the field of finance function. He must have entire knowledge in the area of accounting, finance, economics and management. His position is highly critical and analytical to solve various problems related to finance. A person who deals finance related activities may be called finance manager. Finance manager performs the following major functions:

1. Forecasting Financial Requirements

It is the primary function of the Finance Manager. He is responsible to estimate the financial requirement of the business concern. He should estimate, how much finances required to acquire fixed assets and forecast the amount needed to meet the working capital requirements in future.

2. Acquiring Necessary Capital

After deciding the financial requirement, the finance manager should concentrate how the finance is mobilized and where it will be available. It is also highly critical in nature.

3. Investment Decision

The finance manager must carefully select best investment alternatives and consider the reasonable and stable return from the investment. He must be well versed in the field of capital budgeting techniques to determine the effective utilization of investment. The finance manager must concentrate to principles of safety, liquidity and profitability while investing capital.

4. Cash Management

Present days cash management plays a major role in the area of finance because proper cash management is not only essential for effective utilization of cash but it also helps to meet the short-term liquidity position of the concern.

5. Interrelation with Other Departments

Finance manager deals with various functional departments such as marketing, production, personnel, system, research, development, etc. Finance manager should have sound knowledge not only in finance related area but also well versed in other areas. He must maintain a good relationship with all the functional departments of the business organization.

1.7 IMPORTANCE OF FINANCIAL MANAGEMENT

The business goal can be achieved only with the help of effective management of finance. We can't neglect the importance of finance at any time at and at any situation. Some of the importance of the financial management is as follows:

1. Financial Planning

Financial management helps to determine the financial requirement of the business concern and leads to take financial planning of the concern. Financial planning is an important part of the business concern, which helps to promotion of an enterprise.

2. Acquisition of Funds

Financial management involves the acquisition of required finance to the business concern. Acquiring needed funds play a major part of the financial management, which involve possible source of finance at minimum cost.

3. Proper Use of Funds

Proper use and allocation of funds leads to improve the operational efficiency of the business concern. When the finance manager uses the funds properly, they can reduce the cost of capital and increase the value of the firm.

4. Financial Decision

Financial management helps to take sound financial decision in the business concern. Financial decision will affect the entire business operation of the concern. Because there is a direct relationship with various department functions such as marketing, production personnel, etc.

5. Improve Profitability

Profitability of the concern purely depends on the effectiveness and proper utilization of funds by the business concern. Financial management helps to improve the profitability position of the concern with the help of strong financial control devices such as budgetary control, ratio analysis and cost volume profit analysis.

6. Increase the Value of the Firm

Financial management is very important in the field of increasing the wealth of the investors and the business concern. Ultimate aim of any business concern will achieve the maximum profit and higher profitability leads to maximize the wealth of the investors as well as the nation.

7. Promoting Savings

Savings are possible only when the business concern earns higher profitability and maximizing wealth. Effective financial management helps to promoting and mobilizing individual and corporate savings.

Nowadays financial management is also popularly known as business finance or corporate finances. The business concern or corporate sectors cannot function without the importance of the financial management.

UNIT II - Techniques of Financial Statement Analysis

2.1 INTRODUCTION

A financial statement is an official document of the firm, which explores the entire financial information of the firm. The main aim of the financial statement is to provide information and understand the financial aspects of the firm. Hence, preparation of the financial statement is important as much as the financial decisions.

MEANING OF FINANCIAL STATEMENT

Financial statements are the summary of the accounting process, which, provides useful information to both internal and external parties.

Financial statements generally consist of two important statements:

- (i) The income statement or profit and loss account.
- (ii) Balance sheet or the position statement.

DEFINITION OF FINANCIAL MANAGEMENT

According to **Hamptors John**, the financial statement is an organized collection of data according to logical and consistent accounting procedures. Its purpose is to convey an understanding of financial aspects of a business firm. It may show a position at a moment of time as in the case of a balance- sheet or may reveal a service of activities over a given period of time, as in the case of an income statement.

John N. Nyer also defines it “Financial statements provide a summary of the accounting of a business enterprise, the balance-sheet reflecting the assets, liabilities and capital as on a certain data and the income statement showing the results of operations during a certain period”.

MEANING OF FINANCIAL STATEMENT ANALYSIS

The process of reviewing and analysing a company’s financial statements to make better economic decisions is called analysis of financial statements. In other words, the process of determining financial strengths and weaknesses of the entity by establishing the strategic relationship between the items of the balance sheet, profit and loss account, and other financial statements.

The term ‘analysis’ means the simplification of financial data by methodical classification of the data given in the financial statements, ‘interpretation’ means, ‘explaining the meaning and significance of the data so simplified.’ However, both ‘analysis and interpretation’ are interlinked and complementary to each other.

DEFINITION OF FINANCIAL STATEMENT ANALYSIS

According to **Metcalf and Titard**, “Analysing financial statements is a process of evaluating the relationship between component parts of a financial statement to obtain a better understanding of a firm’s position and performance.”

In the words of **Myers**, “Financial statement analysis is largely a study of relationship among the various financial factors in a business as disclosed by a single set-of statements and a study of the trend of these factors as shown in a series of statements.”

USERS OF FINANCIAL STATEMENT ANALYSIS

- Finance Manager
- Top Management
- Trade Payables
- Lenders
- Investors
- Trade Unions

SIGNIFICANCE OF FINANCIAL STATEMENT ANALYSIS

Finance Manager

- Analysis of financial statements helps the finance manager in:
- Assessing the operational efficiency and managerial effectiveness of the company.
- Analyzing the financial strengths and weaknesses and creditworthiness of the company.
- Analyzing the current position of financial analysis,
- Assessing the types of assets owned by a business enterprise and the liabilities which are due to the enterprise.
- Providing information about the cash position company is holding and how much debt the company has in relation to equity.
- Studying the reasonability of stock and debtors held by the company.

Top Management

- Financial analysis helps the top management
- To assess whether the resources of the firm are used in the most efficient manner
- Whether the financial condition of the firm is sound
- To determine the success of the company’s operations
- Appraising the individual’s performance
- Evaluating the system of internal control
- To investigate the future prospects of the enterprise.

Trade Payables

- Trade payables analyze the financial statements for:
- Appraising the ability of the company to meet its short-term obligations
- Judging the probability of firm’s continued ability to meet all its financial obligations in the future.

- Firm's ability to meet claims of creditors over a very short period of time.
- Evaluating the financial position and ability to pay off the concerns.

Lenders

- Suppliers of long-term debt are concerned with the firm's long-term solvency and survival. They analyze the firm's financial statements
- To ascertain the profitability of the company over a period of time,
- For determining a company's ability to generate cash, to pay interest and repay the principal amount
- To assess the relationship between various sources of funds (i.e. capital structure relationships)
- To assess financial statements which contain information on past performances and interpret it as a basis for forecasting future rates of return and for assessing risk.
- For determining credit risk, deciding the terms and conditions of a loan if sanctioned, interest rate, and maturity date etc.

Investors

- Investors, who have invested their money in the firm's shares, are interested in the firm's earnings and future profitability.
- Financial statement analysis helps them in predicting the bankruptcy and failure probability of business enterprises.
- After being aware of the probable failure, investors can take preventive measures to avoid/minimize losses.

Labour Unions

- Labour unions analyze the financial statements:
- To assess whether an enterprise can increase their pay.
- To check whether an enterprise can increase productivity or raise the prices of products/services to absorb a wage increase.

2.2 OBJECTIVES OF FINANCIAL STATEMENT ANALYSIS

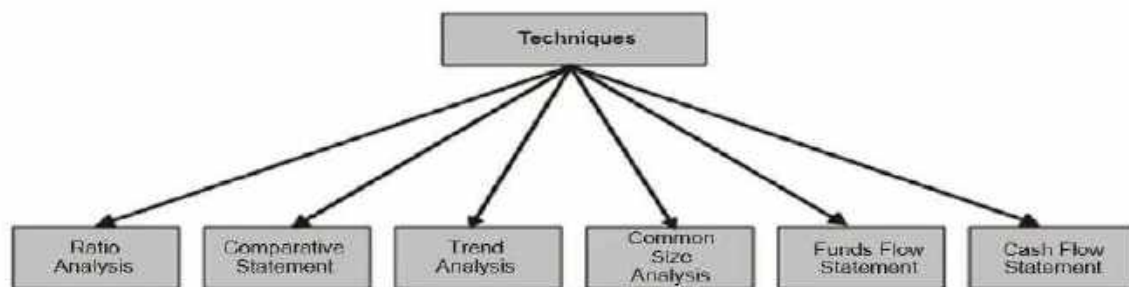
- Reviewing the performance of a company over the past periods
 - Assessing the current position & operational efficiency
 - Predicting growth & profitability prospects
 - Loan Decision by Financial Institutions and Banks
 - To estimate the earning capacity of the business concern.
 - To find out the operating performance of a company.
 - To examine efficiency of various business activities.
 - To find out the financial performance of a company.
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- To compare the performance of a company for different periods.
- To assess the borrowing capacity of the business concern.
- To determine the long-term liquidity and solvency of the business concern.
- To decide about the future prospects of the business concern.
- To know the profitability and collection policy of the business concern.
- To verify the correctness and accuracy of the decision taken by the management already.
- To compare the overall performance of the company with other similar companies.
- To examine the impact of past decision of the management on financial aspect.
- To determine the debt capacity of the firm.
- To judge the managerial ability.

LIMITATIONS OF FINANCIAL STATEMENT ANALYSIS

- It is only a study of interim reports
- Financial analysis is based upon only monetary information and non-monetary factors are ignored.
- It does not consider changes in price levels.
- As the financial statements are prepared on the basis of a going concern, it does not give exact position. Thus, accounting concepts and conventions cause a serious limitation to financial analysis.
- Changes in accounting procedure by a firm may often make financial analysis misleading.
- Analysis is only a means and not an end in itself. The analyst has to make interpretation and draw his own conclusions. Different people may interpret the same analysis in different ways.

2.3 VARIOUS TOOLS/TECHNIQUES OF FINANCIAL STATEMENT ANALYSIS



1. Comparative Statement Analysis
 - A. Comparative Income Statement Analysis
 - B. Comparative Position Statement Analysis
2. Trend Analysis
3. Common Size Analysis
 - A. Common size Income Statement
 - B. Common Size Balance Sheet

4. Fund Flow Statement
5. Cash Flow Statement
6. Ratio Analysis

1. COMPARATIVE STATEMENT ANALYSIS

Comparative statement analysis is an analysis of financial statement at different period of time. This statement helps to understand the comparative position of financial and operational performance at different period of time. Comparative financial statements again classified into two major parts such as comparative balance sheet analysis and comparative profit and loss account analysis.

A. Comparative Balance Sheet Analysis

Comparative balance sheet analysis concentrates only the balance sheet of the concern at different period of time. Under this analysis the balance sheets are compared with previous year's figures or one-year balance sheet figures are compared with other years. Comparative balance sheet analysis may be horizontal or vertical basis. This type of analysis helps to understand the real financial position of the concern as well as how the assets, liabilities and capitals are placed during a particular period.

Comparative Balance Sheet
as at ...

Particulars	Previous Year (₹)	Current Year (₹)	Absolute Change (Increase or Decrease) (₹)	Percentage Change (Increase or Decrease) (%)
I. EQUITY AND LIABILITIES				
1. Shareholders' Funds				
(a) Share Capital				
(i) Equity Share Capital	***	***	***	***
(ii) Preference Share Capital	***	***	***	***
(b) Reserves and Surplus	***	***	***	***
2. Non-current Liabilities				
(a) Long-term Borrowings	***	***	***	***
(b) Long-term Provisions	***	***	***	***
3. Current Liabilities				
(a) Short-term Borrowings	***	***	***	***
(b) Trade Payables	***	***	***	***
(c) Other Current Liabilities	***	***	***	***
(d) Short-term Provisions	***	***	***	***
Total	***	***	***	***
II. ASSETS				
1. Non-current Assets				
(a) Fixed Assets				
(i) Tangible Assets	***	***	***	***
(ii) Intangible Assets	***	***	***	***
(b) Non-current Investments	***	***	***	***
(c) Long-term Loans and Advances	***	***	***	***
2. Current Assets				
(a) Current Investments	***	***	***	***
(b) Inventories	***	***	***	***
(c) Trade Receivables	***	***	***	***
(d) Cash and Cash Equivalents	***	***	***	***
(e) Short-term Loans and Advances	***	***	***	***
(f) Other Current Assets	***	***	***	***
Total	***	***	***	***

B. Comparative Profit and Loss Account Analysis

Another comparative financial statement analysis is comparative profit and loss account analysis. Under this analysis, only profit and loss account is taken to compare with previous year's figure or compare within the statement. This analysis helps to understand the operational performance of the business concern in a given period. It may be analysed on horizontal basis or vertical basis.

Format of Comparative Income Statement
Comparative Income
For the periods ended

<i>Particulars</i>	<i>Previous year</i>	<i>Current year</i>	<i>Absolute change</i>	<i>Percentage change</i>
	Rs.	Rs.	Rs.	Rs.
Gross Sales	x x x	x x x	x x x	x x x
Less : Sales Return	x x x	x x x	x x x	x x x
Sales (Net)	x x x	x x x	x x x	x x x
Less : Cost of Goods Sold	x x x	x x x	x x x	x x x
Gross Profit	x x x	x x x	x x x	x x x
Less : Operating Expenses : Office and Administration, Selling and Distribution	x x x	x x x	x x x	x x x
Net Operating Profit	x x x	x x x	x x x	x x x
Add : Other Incomes : Net Profit/ Earning Before Tax (EBT)	x x x	x x x	x x x	x x x
Less : Income-Tax	x x x	x x x	x x x	x x x
Net Profit/Earning After Tax (ETA)	x x x	x x x	x x x	x x x

2. TREND ANALYSIS

The financial statements may be analysed by computing trends of series of information. It may be upward or downward directions which involve the percentage relationship of each and every item of the statement with the common value of 100%. Trend analysis helps to understand the trend relationship with various items, which appear in the financial statements. These percentages may also be taken as index number showing relative changes in the financial information resulting with the various period of time. In this analysis, only major items are considered for calculating the trend percentage.

Calculation of Trend Percentages

	20X1	20X0	20W9	20W8	20W7
Historical Data					
Inventory	\$ 12,309	\$12,202	\$12,102	\$11,973	\$11,743
Property & equipment	74,422	78,938	64,203	65,239	68,450
Current liabilities	27,945	30,347	27,670	28,259	26,737
Sales	129,000	97,000	95,000	87,000	81,000
Cost of goods sold	70,950	59,740	48,100	47,200	45,500
Operating expenses	42,600	38,055	32,990	29,690	27,050
Net income (loss)	8,130	(1,400)	7,869	5,093	3,812
Trend Percentages					
Inventory	104.8	103.9	103.1	102.0	100.0
Property & equipment	108.7	115.3	93.8	95.3	100.0
Current liabilities	104.5	113.5	103.5	105.7	100.0
Sales	159.3	119.8	117.3	107.4	100.0
Cost of goods sold	155.9	131.3	105.7	103.7	100.0
Operating expenses	157.5	140.7	122.0	109.8	100.0
Net income (loss)	213.3	(36.7)	206.4	133.6	100.0

3. COMMON SIZE ANALYSIS

Another important financial statement analysis technique are common size analysis in which figures reported are converted into percentage to some common base. In the balance sheet the total assets figures are assumed to be 100 and all figures are expressed as a percentage of this total. It is one of the simplest methods of financial statement analysis, which reflects the relationship of each and every item with the base value of 100%.

A. Common Size Income Statement

A **common size income statement** is an **income statement** in which each line item is expressed as a percentage of the value of revenue or sales. It is used for vertical **analysis**, in which each line item in a financial **statement** is represented as a percentage of a base figure within the **statement**.

Common Size Income Statement
for the years ended ...

Particulars (1)	Absolute Amounts		Percentage of Revenue from Operation (Net Sales)	
	Previous Year (₹) (2)	Current Year (₹) (3)	Previous Year (%) (4)	Current Year (%) (5)
I. Revenue from Operations (Net sales)
II. Other Income
III. Total Revenue (I + II)
IV. Expenses				
(a) Cost of Materials Consumed
(b) Purchases of Stock-in-trade
(c) Changes in Inventories of Finished Goods, Work-in-progress and Stock-in-trade
(d) Employess Benefit Expenses
(e) Finance Cost
(f) Depreciation and Amortisation
(g) Other Expenses
Total Expenses
V. Profit before Tax (III – IV)
VI. (–) Income Tax
VII. Profit after Tax

B. Common Size Balance Sheet

A common size balance sheet is a balance sheet that displays both the numeric value and relative percentage for total assets, total liabilities, and equity accounts. Common size balance sheets are used by internal and external analysts and are not a reporting requirement of generally accepted accounting principles (GAAP).

Common Size Balance Sheet
as at ...

Particulars (1)	Absolute Amounts		Percentage of Balance Sheet Total	
	Previous Year (₹) (2)	Current Year (₹) (3)	Previous Year (%) (4)	Current Year (%) (5)
I. EQUITY AND LIABILITIES				
1. Shareholders' Funds				
(a) Share Capital
(i) Equity Share Capital
(ii) Preference Share Capital
(b) Reserves and Surplus
2. Non-current Liabilities				
(a) Long-term Borrowings
(b) Long-term Provisions
3. Current Liabilities				
(a) Short-term Borrowings
(b) Trade Payables
(c) Other Current Liabilities
(d) Short-term Provisions
Total	100	100
II. ASSETS				
1. Non-current Assets				
(a) Fixed Assets				
(i) Tangible Assets
(ii) Intangible Assets
(b) Non-current Investments
(c) Long-term Loans and Advances
2. Current Assets				
(a) Current Investments
(b) Inventories
(c) Trade Receivables
(d) Cash and Cash Equivalents
(e) Short-term Loans and Advances
(f) Other Current Assets
Total	100	100

4. FUNDS FLOW STATEMENT

Funds flow statement is one of the important tools, which is used in many ways. It helps to understand the changes in the financial position of a business enterprise between the beginning and ending financial statement dates. It is also called as statement of sources and uses of funds. Institute of Cost and Works Accounts of India, funds flow statement is defined as “a statement prospective or retrospective, setting out the sources and application of the funds of an enterprise. The purpose of the statement is to indicate clearly the requirement of funds and how they are proposed to be raised and the efficient utilization and application of the same”.

5. CASH FLOW STATEMENT

Cash flow statement is a statement which shows the sources of cash inflow and uses of cash out-flow of the business concern during a particular period of time. It is the statement, which involves only short-term financial position of the business concern. Cash flow statement provides a summary of operating, investment and financing cash flows and reconciles them with changes in its cash and cash equivalents such as marketable securities. Institute of Chartered Accountants of India issued the Accounting Standard (AS-3) related to the preparation of cash flow statement in 1998.

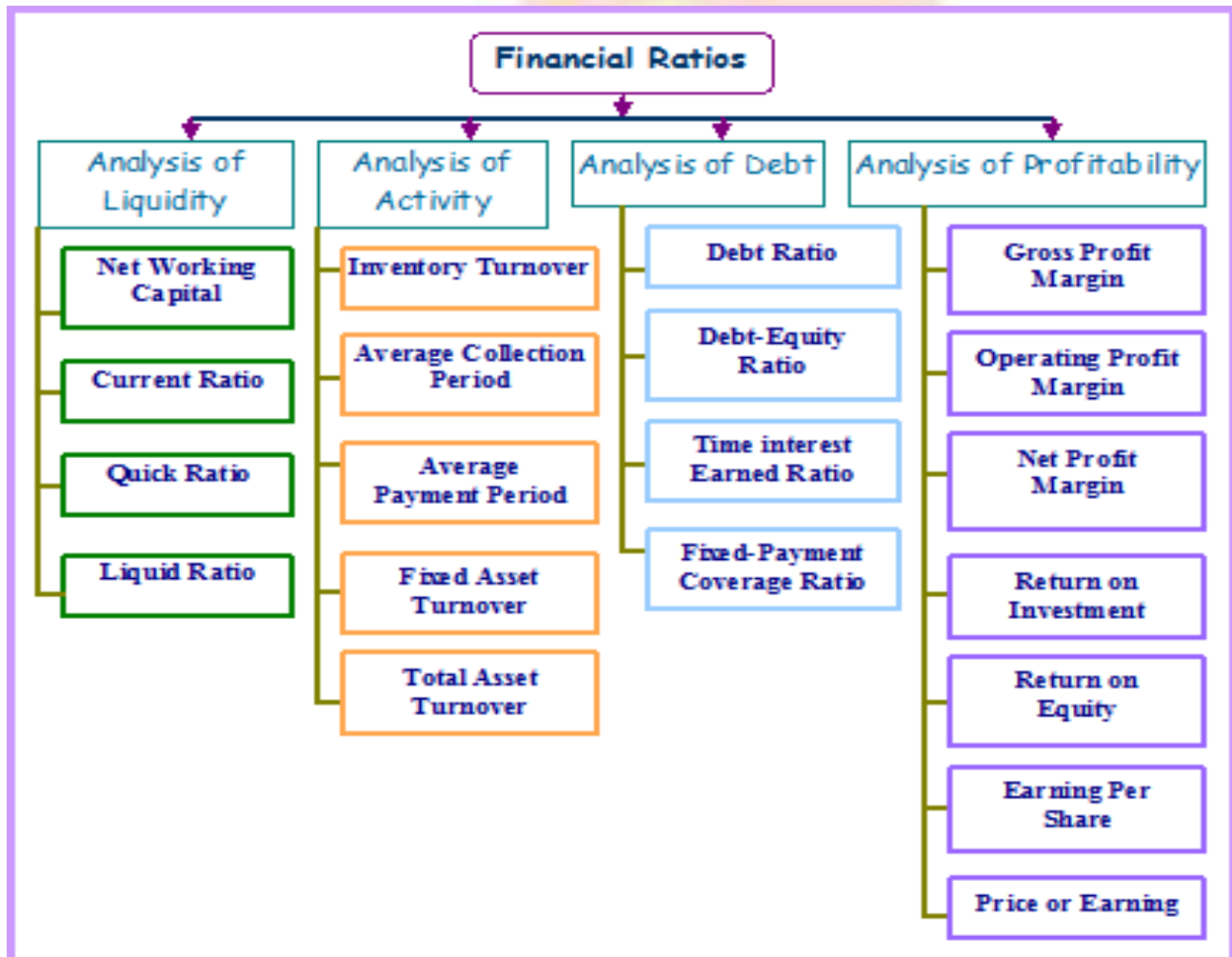
DIFFERENCE BETWEEN CASH FLOW STATEMENT AND FUND FLOW STATEMENT

CASH FLOW STATEMENTS	FUND FLOW STATEMENTS
Shows causes for changes in cash.	Shows causes of changes in net working capital.
Starts with opening and closing balances of cash.	There are no opening or closing balances.
Deals only with cash.	Deals with all components of working capital.
Useful for short-term financing.	Useful for long-term financing.
Based on cash basis of accounting.	Based on accrual basis of accounting.
Improvement in cash flow can be taken as an indicator of improved working capital position.	Sound fund position may not necessarily mean sound cash position.

6. RATIO ANALYSIS

Ratio analysis is a commonly used tool of financial statement analysis. Ratio is a mathematical relationship between one number to another number. Ratio is used as an index for evaluating the financial performance of the business concern. An accounting ratio shows the mathematical relationship between two figures, which have meaningful relation with each other. Ratio can be classified into various types. Classification from the point of view of financial management is as follows:

- Liquidity Ratio
- Activity Ratio
- Solvency Ratio
- Profitability Ratio



Financial Ratio & Formulas

Activity Ratios:

$$\text{Receivables Turnover} = \frac{\text{Annual Sales}}{\text{Average Receivables}}$$

$$\text{Days of sales outstanding} = \frac{365}{\text{Receivables Turnover}}$$

$$\text{Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{average inventory}}$$

$$\text{Days of inventory on hand} = \frac{365}{\text{inventory turnover}}$$

$$\text{Payables Turnover} = \frac{\text{Purchases}}{\text{Average trades payable}}$$

$$\text{No. of days of payables} = \frac{356}{\text{payables turnover ratio}}$$

$$\text{Total asset turnover} = \frac{\text{Revenue}}{\text{Average total assets}}$$

$$\text{Fixed asset Turnover} = \frac{\text{Revenue}}{\text{Average net fixed asset}}$$

$$\text{Working capital Turnover} = \frac{\text{Revenue}}{\text{Average working capital}}$$

Liquidity Ratio:

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

$$\text{Quick Ratio} = \frac{\text{Cash} + \text{Marketable securities} + \text{Receivables}}{\text{Current Liabilities}}$$

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

Leverage / Solvency Ratio

It is also called as leverage ratio, which measures the long-term obligation of the business concern. This ratio helps to understand, how the long-term funds are used in the business concern. Some of the solvency ratios are given below:

Ratio	Ratio Formula
● Debt Ratio	= Total Debt / (Total Debt + Net Worth)
● Debt-Equity Ratio	= External Equity / Internal Equity
● Capital Employed to Net Worth Ratio	= Capital Employed / Net Worth
● Others debt ratio	= TL to TA ratio = Total Liability / Total Assets
● Proprietary Ratio	= Shareholder's Fund / Total Assets
● Interest Coverage Ratio	= EBIT / Fixed Interest Charges

Profitability Ratios	
Ratio	Formula
Gross Profit Margin	Gross Profit / Sales
Operating Profit Margin	Operating Profit / Sales
Net Profit Margin	Net Profit / Sales
Return on Assets	Net Profit / Total Assets
Return on Equity	Net Profit / Shareholders Equity

UNIT 3 – Working Capital Management

3.1 MEANING OF WORKING CAPITAL

Capital of the concern may be divided into two major headings.

Fixed capital means that capital, which is used for long-term investment of the business concern. For example, purchase of permanent assets. Normally it consists of non-recurring in nature.

Working Capital is another part of the capital which is needed for meeting day to day requirement of the business concern. For example, payment to creditors, salary paid to workers, purchase of raw materials etc., normally it consists of recurring in nature. It can be easily converted into cash. Hence, it is also known as short-term capital.

DEFINITION OF WORKING CAPITAL

According to the definition of **Weston and Brigham**, “Working Capital refers to a firm’s investment in short-term assets, cash, short-term securities, accounts receivables and inventories”.

According to the definition of **Bonneville**, “Any acquisition of funds which increases the current assets, increase working capital also for they are one and the same”.

According to the definition of **Shubin**, “Working Capital is the amount of funds necessary to cover the cost of operating the enterprises”.

CONCEPT OF WORKING CAPITAL

Working capital has two concepts:

- (i) Gross working capital and
- (ii) Net working capital.

Gross Working Capital

Gross Working Capital is the general concept which determines the working capital concept. Thus, the gross working capital is the capital invested in total current assets of the business concern. Gross Working Capital is simply called as the total current assets of the concern.

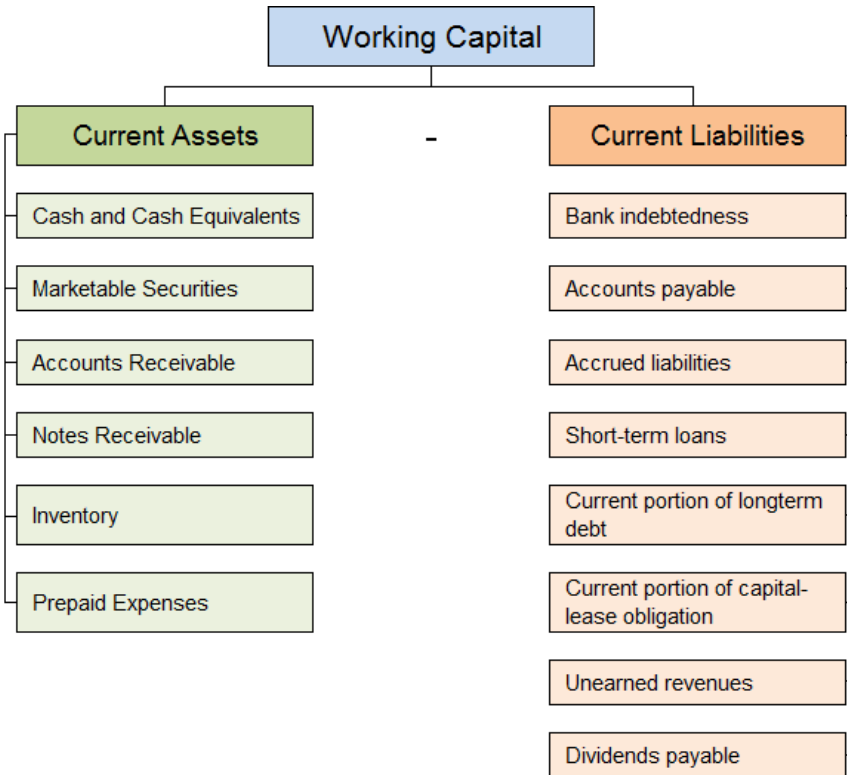
$$\text{GWC} = \text{CA}$$

Net Working Capital

Net Working Capital is the specific concept, which, considers both current assets and current liability of the concern. Net Working Capital is the excess of current assets over the current liability of the concern during a particular period. If the current assets exceed the current liabilities it is said to be positive working capital; it is reverse, it is said to be Negative working capital.

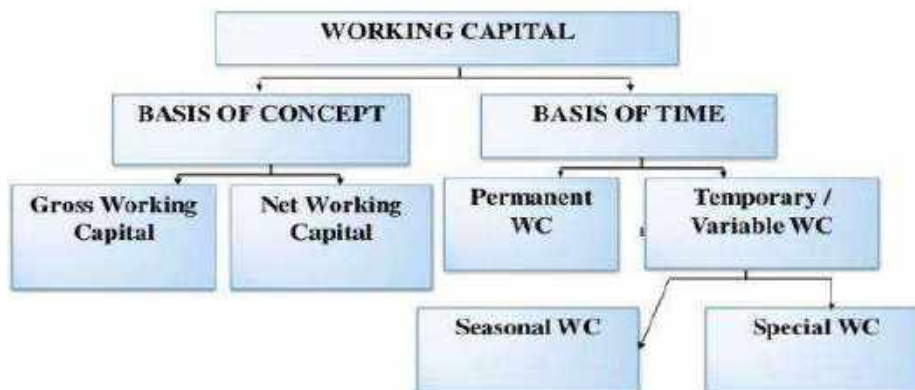
$$\text{NWC} = \text{CA} - \text{CL}$$

3.2 COMPONENTS OF WORKING CAPITAL



3.3 TYPES OF WORKING CAPITAL

TYPES OF WORKING CAPITAL



1. Gross working capital – Refers to firms investments in current assets which are converted in to cash during an accounting year such as cash, bank balance, short term investments, debtors, bills receivable, inventory, short term loans and advances etc.

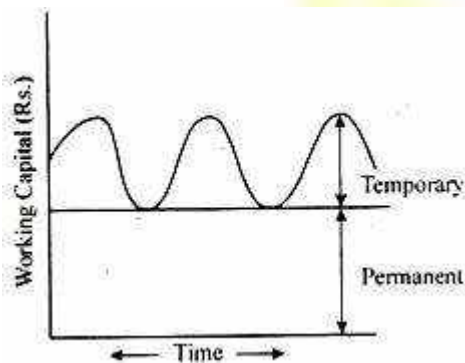
2. Net working capital – Refers to difference between current assets and current liabilities or excess of total current assets over total current liabilities.

3. Permanent Working Capital

It is also known as Fixed Working Capital. It is the capital; the business concern must maintain certain amount of capital at minimum level at all times. The level of Permanent Capital depends upon the nature of the business. Permanent or Fixed Working Capital will not change irrespective of time or volume of sales.

4. Temporary Working Capital

It is also known as variable working capital. It is the amount of capital which is required to meet the Seasonal demands and some special purposes. It can be further classified into Seasonal Working Capital and Special Working Capital. The capital required to meet the seasonal needs of the business concern is called as Seasonal Working Capital. The capital required to meet the special exigencies such as launching of extensive marketing campaigns for conducting research, etc.



a. Seasonal working capital - Refers to capital required to meet seasonal demand e.g. extra capital required for manufacturing coolers in summer, wollen garments in winter. It can be arranged through short term loans.

b. Specific working capital – Refers to part of capital required for meeting unforeseen contingencies such as strike, flood, war, slump etc.

3.4 NEEDS OF WORKING CAPITAL

1. Purchase of raw materials and spares: The basic part of manufacturing process is, raw materials. It should purchase frequently according to the needs of the business concern. Hence, every business concern maintains certain amount as Working Capital to purchase raw materials, components, spares, etc.

2. Payment of wages and salary: The next part of Working Capital is payment of wages and salaries to labour and employees. Periodical payment facilities make employees perfect in their work. So a business concern maintains adequate the amount of working capital to make the payment of wages and salaries.

3. Day-to-day expenses: A business concern has to meet various expenditures regarding the operations at daily basis like fuel, power, office expenses, etc.

4. Provide credit obligations: A business concern responsible to provide credit facilities to the customer and meet the short-term obligation. So the concern must provide adequate Working Capital.

3.5 WORKING CAPITAL POSITION/ BALANCED WORKING CAPITAL POSITION.

A business concern must maintain a sound Working Capital position to improve the efficiency of business operation and efficient management of finance. Both excessive and inadequate Working Capital lead to some problems in the business concern.

A. Causes and effects of excessive working capital.

- (i) Excessive Working Capital leads to unnecessary accumulation of raw materials, components and spares.
- (ii) Excessive Working Capital results in locking up of excess Working Capital.
- (iii) It creates bad debts, reduces collection periods, etc.
- (iv) It leads to reduce the profits.

B. Causes and effects of inadequate working capital

- (i) Inadequate working capital cannot buy its requirements in bulk order.
- (ii) It becomes difficult to implement operating plans and activate the firm's profit target.
- (iii) It becomes impossible to utilize efficiently the fixed assets.
- (iv) The rate of return on investments also falls with the shortage of Working Capital.
- (v) It reduces the overall operation of the business.

3.6 FACTORS AFFECTING WORKING CAPITAL

1. General Nature of Business: In some organizations, the sales are mostly in cash basis and the operating cycle (explained) later is also short. In these concerns, the working capital requirement is comparatively low. Mostly, service companies come under this category. In manufacturing companies, usually the operating cycle is very long and a firm is also required to give credit to

customers to boost sales. In such cases, working capital requirement is high. Similarly, a trading concern requires lower working capital than a manufacturing concern.

2. **Production Policy:** Working capital requirements also fluctuate according to production policy adopted by the company Example: In case of products having seasonal demand a steady production can be planned throughout the year in which case finished goods are to be kept for a longer period. The other alternative is to produce only during the season in which case raw materials have to be accumulated throughout the year.

3. **Credit Policy:** A company, which allows liberal credit to its customers, may have higher sales, but consequently will have larger amount of funds tied up in sundry debtors. Similarly a company, which has very efficient debt collection machinery and offers strict credit terms, may require lesser amount of working capital than the one where debt collection system is not so efficient where the credit terms are liberal. The creditability of a company in the market also has an effect on the working capital requirement. Reputed and established concern can purchase raw material on credit and enjoy many other services like door delivery after sales service, etc., This would mean that they could easily have large current liabilities.

4. **Inventory Policy:** The inventory policy of a company also has an impact on the working capital requirements. An efficient firm may stock raw material for a smaller period and may, therefore, require lesser amount of working capital.

5. **Abnormal Factors:** Abnormal factors like strikes and lockouts require additional working capital. Recessional conditions necessitate a higher amount of stock of finished goods remaining in stock. Similarly, inflationary conditions necessitate more funds, to maintain the same amount of current assets.

6. **Market Conditions:** In case of competitive pressure, large inventory is essential, as delivery has to be off the shelf or credit has to be extended on liberal terms.

7. **Conditions of Supply:** If prompt and adequate supply of raw materials, spares, stores, etc., is available it is possible to manage with small investments in inventory or work on Just- In-Time (JIT) inventory principles. However, if supply is erratic, scant, seasonal, channelised through government agencies etc. it is essential to keep larger stocks increasing working capital requirements.

8. **Business Cycle:** Business fluctuations lead to cyclical and seasonal changes in the production and sales and affect the working capital requirements.

9. **Growth and Expansion Activities:** The working capital of the firm increases as it grows in terms of sale or fixed assets.

10. **Level of Taxes:** The amount of taxes to be paid is determined by the prevailing tax regulations. Very often taxes have to be paid in advance on the basis of the profit of the preceding year.

Management has no discretion in regard to payment of taxes; in some cases non-payment may invite penal action. There is, however, wide scope to reduce the tax liability through proper tax planning.

11. **Dividend Policy:** Payment of dividend utilizes cash while retaining profit acts as a source of working capital. Thus working capital gets affected by dividend policies.

12. **Operating Efficiency:** Efficient and co-ordinated utilization of capital reduces the amount required to be invested in working capital.

13. **Price Level Charges:** Inflationary trends in the economy necessitate more working capital to maintain the same level of activity.

14. **Depreciation Policy:** Depreciation charges do not involve any cash outflow. The effect of depreciation policy on working capital is, therefore, indirect. In the first place, depreciation affects the tax liability and retention of profits and on dividend.

15. **Vagaries in the Availability of Raw Materials:** The availability or otherwise of certain raw materials on a continuous basis without interruption would sometimes effect the requirement of working capital. There may be some materials, which cannot be procured easily either because their sources are few or they are irregular. To sustain smooth production, therefore, the form may be compelled to purchase and stock them far in excess of genuine production needs. This will result in an excessive inventory of such materials.

3.7 COMPUTATION (OR ESTIMATION) OF WORKING CAPITAL

Working Capital requirement depends upon number of factors, which are already discussed in the previous parts. Now the discussion is on how to calculate the Working Capital needs of the business concern. It may also depend upon various factors but some of the common methods are used to estimate the Working Capital.

A. Estimation of components of working capital method

Working capital consists of various current assets and current liabilities. Hence, we have to estimate how much current assets as inventories required and how much cash required to meet the short term obligations. Finance Manager first estimates the assets and required Working Capital for a particular period.

B. Percent of sales method

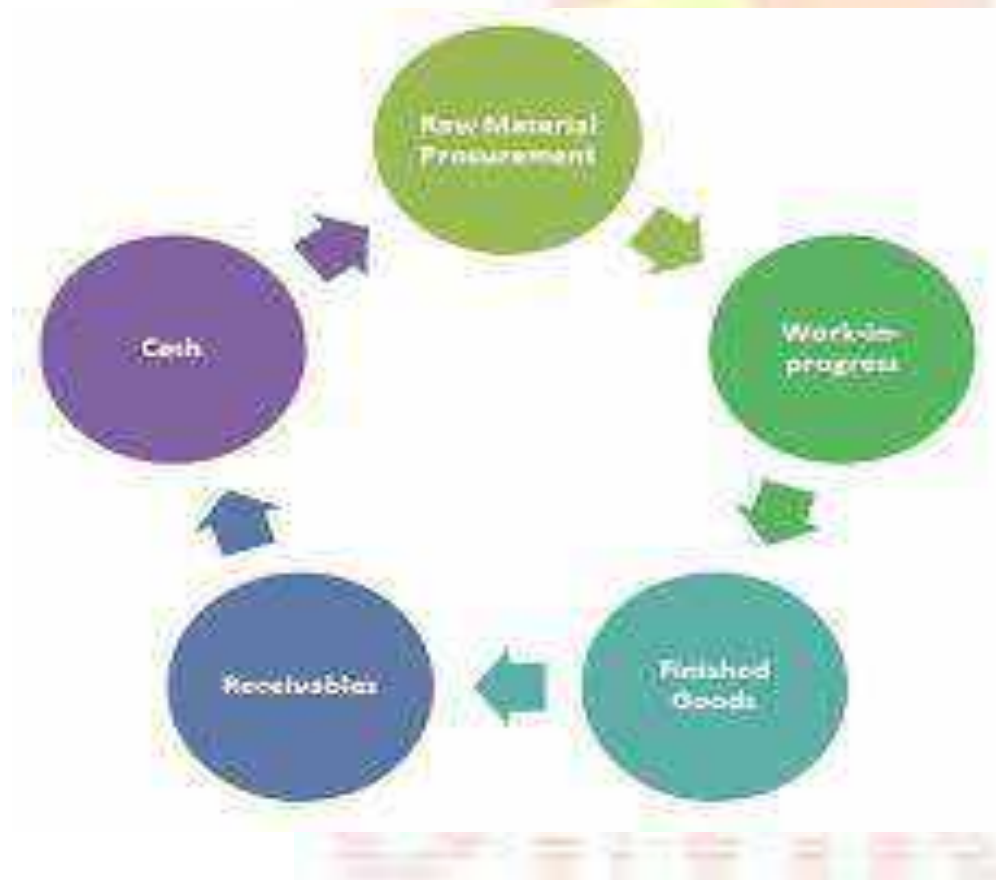
Based on the past experience between Sales and Working Capital requirements, a ratio can be determined for estimating the Working Capital requirement in future. It is the simple and tradition method to estimate the Working Capital requirements. Under this method, first we have to find out the sales to Working Capital ratio and based on that we have to estimate Working Capital requirements. This method also expresses the relationship between the Sales and Working Capital.

C. Operating cycle

Working Capital requirements depend upon the operating cycle of the business. The operating cycle begins with the acquisition of raw material and ends with the collection of receivables.

Operating cycle consists of the following important stages:

1. Raw Material and Storage Stage, (R)
2. Work in Process Stage, (W)
3. Finished Goods Stage, (F)
4. Debtors Collection Stage, (D)
5. Creditors Payment Period Stage. (C)



OPERATING AND CASH CONVERSION CYCLES: FORMULAS

$$\text{Number of days of inventory} = \frac{\text{Inventory}}{\text{Average day's cost of goods sold}} = \frac{365}{\text{Inventory turnover}}$$

Average time it takes to create and sell inventory

$$\text{Number of days of receivables} = \frac{\text{Receivables}}{\text{Average day's revenues}} = \frac{365}{\text{Receivables turnover}}$$

Average time it takes to collect on accounts receivable

$$\text{Number of days of payables} = \frac{\text{Accounts payable}}{\text{Average day's purchases}} = \frac{365}{\text{Accounts payables turnover}}$$

Average time it takes to pay its suppliers

$$\text{Operating cycle} = \text{Number of days of inventory} + \text{Number of days of receivables}$$

$$\begin{array}{l} \text{Net operating cycle} \\ \text{or} \\ \text{Cash conversion cycle} \end{array} = \text{Number of days of inventory} + \text{Number of days of receivables} - \text{Number of days of payables}$$

D Projected Balance Sheet Method

- Under this method, assets and liabilities are forecasted.
- The excess of estimated total current assets over estimated current liabilities, as shown in projected balance sheet, is computed to indicate the estimated amount of WC required.

3.8 WORKING CAPITAL MANAGEMENT

The term 'working capital management' primarily refers to the efforts of the management towards effective management of current assets and current liabilities.

Working capital is nothing but the difference between the current assets and current liabilities.

In other words, an efficient working capital management means ensuring sufficient liquidity in the business to be able to satisfy short-term expenses and debts.

3.9 APPROACHES TO WORKING CAPITAL ESTIMATION:

In estimation of working capital two approaches are in practice:

- (a) Total approach, and
- (b) Cash cost approach.

(a) Total Approach:

In this method of estimation all costs including depreciation and profit margin are included. Unless it is asked specifically, the estimation of working capital under total approach is suggested.

(b) Cash Cost Approach:

Under this approach, working capital is estimated on the basis of cash costs. Depreciation is excluded from the cost of sales. The profit margin is also not considered while estimation of investment in debtors balances.

The estimation of different items of working capital is done under total approach and cash cost approach are as follows:

Example:

The cost sheet of ABC Ltd. provides the following data:

	Cost per unit (Rs)
Raw materials	50
Direct labour	20
Overheads (including depreciation of Rs 10)	40
Total cost	110
Profit	20
Selling price	130

Average raw material in stock is for one month. Average materials in work-in-progress are for half month. Credit allowed by suppliers; one month; credit allowed to debtors; one month. Average time lag in payment of wages; 10 days; average time lag in payment of overheads; 30 days. 25% of the sales are on cash basis. Cash balance expected to be Rs 1,00,000. Finished goods lie in the warehouse for one month.

You are required to prepare a statement of the working capital needed to finance a level of the activity of 54,000 units of output. Production is carried on evenly throughout the year and wages and overheads accrue similarly. State your assumptions, if any, clearly.

Solution:

Given Information,

Level of Activity = 54,000 units

1 year = 360 days

1 month = 30 days

Inventory Norms	Credit Norms
RMHP – 1 month	DCP – 1 month
WIPHP – 1/2 month	COP – 1 month
FGHP – 1 month	

Avg. time for wages = 10 days

Avg. time for OH = 30 days

	Total Cost Basis	Cash Cost Basis
RM	50	50
DL	20	20
OH	40	40-10=30
Total Cost	110	100
(+) Profit	20	20
Selling Price	130	120

Cash Balance = Rs100,000

Cash sales = 25%

Credit Sales = 75%

Depreciation = Rs.10

Statement Showing Calculation of Working Capital [Total Cost approach]

Particulars	Details	Amount
A. Current Assets		
Stock of RM	(4500 units x 1 month x Rs 50)	2,25,000
Stock of WIP (WN - 2)	(4500 units x 0.5 month x Rs 80)	1,80,000
Stock of FG	(4500 units x 1 month x Rs 110)	4,95,000
Debtors	(4500 units x 1 month x Rs 110 x 75%)	3,71,250
Cash Balance	given	1,00,000
Gross Working Capital (A)		13,71,250
B. Current Liabilities		
Creditors for RM	(4500 units x 1 month x Rs.50)	2,25,000
o/s Wages	(4500 units x 10/30 month x Rs 20)	30,000
o/s OH	(4500 units x 30/30 month x Rs 40)	1,80,000
Current Liabilities (B)		4,35,000
Net working Capital (A-B)		9,36,250

Working Notes:

1.No. of units produced in a month=

$$54,000/12= 4500 \text{ units per month}$$

2. WIP = Mat (100%) + DL (50%) + OH (50%) = 50+10+20 =Rs 80

Statement Showing Calculation of Working Capital [Cash Cost approach]

Particulars	Details	Amount
A. Current Assets		
Stock of RM	(4500 units x 1 month x Rs.50)	2,25,000
Stock of WIP (WN - 2)	(4500 units x 0.5 month x Rs.75)	1,68,750
Stock of FG	(4500 units x 1 month x Rs.100)	4,50,000
Debtors	(4500 units x 1 month x 75% x Rs.100)	3,37,500
Cash Balance	(Given)	1,00,000
Gross Working Capital		12,81,250
B. Current Liabilities		
Creditors for RM	(4500 units x 1 month x Rs.50)	2,25,000
Creditors for Wages	(4500 units x 10/30 month x Rs.20)	30,000
Creditors for OH	(4500 units x 1 month x Rs.30)	1,35,000
Current Liabilities		3,90,000
Net working Capital (A-B)		8,91,250

Working Notes:

1. No. of units produced in a month = $54,000/12 = 4500$

2. WIP = Mat (100%) + DL(50%) + OH (50%)
 = $50+10+15$
 75

3. OH = 40- Depreciation = $40-10 = \text{Rs.}30$

Assumptions:

- a) Level of activity will remain unchanged.
- b) Cost structure will remain unchanged.
- c) Various components of operating cycle will be constant.
- d) Assume 1 year = 360 days
- e) 100% purchases are on credit basis

While valuing WIP raw material is assumed to be completed to the extent of 100% whereas wages & overheads are expected to be incurred to the extent of 50%.



UNIT IV - Capital Structure

4.1 INTRODUCTION

Capital is the major part of all kinds of business activities, which are decided by the size, and nature of the business concern. Capital may be raised with the help of various sources. If the company maintains proper and adequate level of capital, it will earn high profit and they can provide more dividends to its shareholders.

Meaning of Capital Structure

The term 'structure' means the arrangement of the various parts. So capital structure means the arrangement of capital from different sources so that the long-term funds needed for the business are raised.

Thus, capital structure refers to the proportions or combinations of equity share capital, preference share capital, debentures, long-term loans, retained earnings and other long-term sources of funds in the total amount of capital which a firm should raise to run its business.

Definition of Capital Structure

According to the definition of **Gerestenbeg**, "Capital Structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources".

According to the definition of **James C. Van Horne**, "The mix of a firm's permanent long-term financing represented by debt, preferred stock, and common stock equity".

According to the definition of **Presana Chandra**, "The composition of a firm's financing consists of equity, preference, and debt".

4.2 OPTIMUM CAPITAL STRUCTURE

Optimum capital structure is the capital structure at which the weighted average cost of capital is minimum and thereby the value of the firm is maximum. Optimum capital structure may be defined as the capital structure or combination of debt and equity, that leads to the maximum value of the firm.

Objectives of Capital Structure

Decision of capital structure aims at the following two important objectives:

1. Maximize the value of the firm.
2. Minimize the overall cost of capital.

Forms of Capital Structure

Capital structure pattern varies from company to company and the availability of finance.

Normally the following forms of capital structure are popular in practice.

- Equity shares only.

- Equity and preference shares only.
- Equity and Debentures only.
- Equity shares, preference shares and debentures.

4.3 IMPORTANCE OF CAPITAL STRUCTURE

- Increases the value of the firm
- Proper utilisation of available Funds
- Maximisation of Returns
- Minimisation of Cost of Capital
- Solvency or liquidity position
- Flexibility
- Undisturbed Controlling
- Minimisation of Financial Risk

4.4 FACTORS AFFECTING CAPITAL STRUCTURE

- Nature of Business
 - Size of a Company
 - Period of Finance
 - Control
 - Environment of Capital Market
 - Nature & type of the investors
 - Regulatory framework
 - Floatation Costs
 - Legal Provisions
 - Trading on Equity
 - Risk
 - Growth Rate
 - Tax Considerations
 - Cost of Capital
 - Profitability
 - Financing Purpose
 - Capital Structure of other Companies
-
- **Nature of business** - It has great influence in the capital structure of the business, companies having stable and certain earnings prefer debentures or preference shares and companies having no assured income depends on internal resources.

- **Size of a company** - Small size business firm's capital structure generally consists of loans from banks and retained profits. While on the other hand, big companies having goodwill, stability and an established profit can easily go for issuance of shares and debentures as well as loans and borrowings from financial institutions.
- **Period of finance** - The period for which finance is needed also influences the capital structure. When funds are needed for long-term (say 10 years), it should be raised by issuing debentures or preference shares. Funds should be raised by the issue of equity shares when it is needed permanently.
- **Control** - The consideration of retaining control of the business is an important factor in capital structure decisions. If the existing equity shareholders do not like to dilute the control, they may prefer debt capital to equity capital, as former has no voting rights.
- **Environment of Capital Market** - Capital markets are of development, boom, and depression. In times of boom, it would be easier for the firm to raise equity, but in times of recession, the equity investors will not show much of interest in investing. Then the firm is to rely in raising debt.
- **Nature & Type of the investors** - Some investors have an abundance of money, whereas some others do not have much money. Hence, the form of demand by various investors differs quite substantially. Generally, bold investors make investments in equity shares, whereas cautious investors having less capital like to invest in preference shares and debentures. Some investors have shaky nature also. For them, the issue of redeemable preference shares and convertible debentures are most suited.
- **Regulatory framework** - Capital structure also influenced by government rules. For example, banking companies can raise money by issuing share capital alone, no other security. Similarly, it is compulsory to maintain the debt-equity ratio given to other companies while raising funds. Various ideal debt-equity ratios like 2: 1; 4: 1; 6: 1 has been set for different industries. The public issue of shares and debentures is to made under SEBI guidelines.
- **Floatation Costs** - The cost of Floatation's called expenses which are spending while issuing securities. These include the commission of underwriters, brokerage, stationery expenses, etc. Generally, issuing debt capital's cost is less than share capital. It attracts the company towards debt capital.

- **Legal Provisions** - Legal provisions in raising capital will also play a significant role in planning capital structure. Raising of equity capital is more complicated than raising debt.
- **Trading on equity** - A company raises debt at low cost with a view to enhance the earnings of the equity shareholders. The cost of debt is lower due to tax advantage. A fixed rate of return is payable on debt funds. Any excess earnings over cost of debt will be added up to the equity shareholders. Capital structure decisions should always aim at having debt component in total component in order to increase the earnings available for equity shareholders.
- **Risk** - In capital structure decisions, two elements of risk viz.,
 - (i) Business risk and
 - (ii) Financial risk are considered.

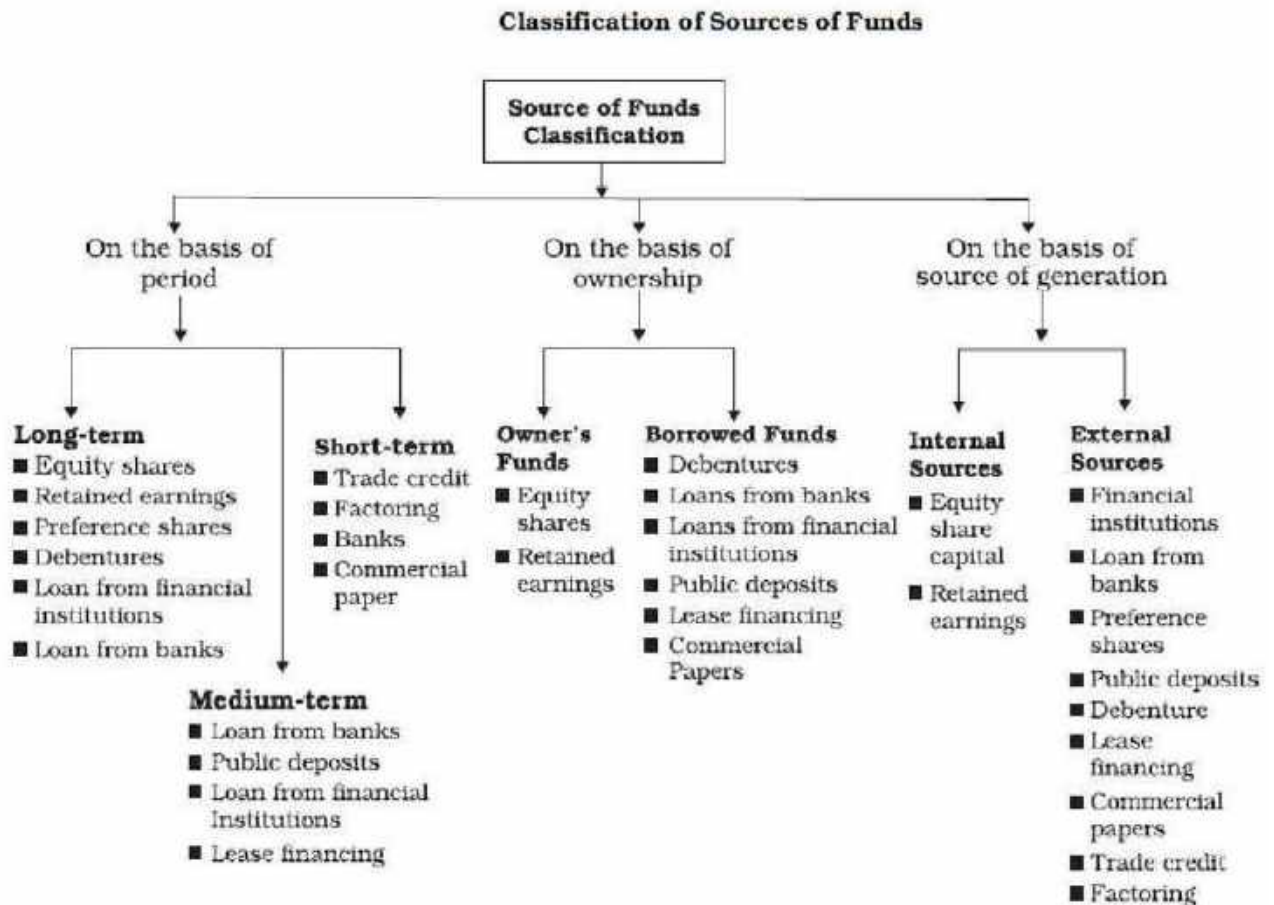
A firm with high business risk prefers to have low levels of debt, since the volatility of its earnings is more. A firm with low level of business risk can have higher debt component in capital structure, since the risk of variations in expected earnings is lower.
- **Growth Rate** - The growing companies will require more and more funds for its expansion schemes, which will be met through raising debt. The fast growing companies will have to rely on debt than on equity or internal earnings.
- **Tax Consideration** - Capital structure is also affected by the existing taxation system of the country. An increase in the rates of Corporate tax issue of debenture in place of shares is regarded as more appropriate. It's the reason being that in respect of interests paid on debentures, deductions thereof permissible for from the profits and hence tax burden on the company gets reduced.
- **Cost of Capital** - Cost of different components of capital will influence the capital structuring decisions. A firm should possess earning power to generate revenues to meet its cost of capital and finance its future growth. Generally, the cost of equity is higher than the cost of debt, since the debt holders are assured of fixed rate of return and repayment of principal amount after the maturity period. Firms that adjust their capital structure in order to keep the riskiness of their debt and equity reasonable, should have a lower cost of capital.
- **Profitability** - A company with higher profitability will have low reliance on outside debt and it will meet its additional requirement through internal generation.

- **Financing Purpose** - The capital structure decisions are taken in view of the purpose of financing. The long-term projects are financed through long-term sources and in the form of equity. The short-term projects are financed by issue of debt instruments and by raising of term loans from banks and financial institutions. The projects for productive purpose can be financed from both equity and debt. But the non-productive projects are financed by using the internal generated earnings.
- **Capital Structure of Other Companies** - Capital structure is influenced by the industry to which a company is related. All companies related to a given industry produce almost similar products, their costs of production are similar, they depend on identical technology, they have similar profitability, and hence the pattern of their capital structure is almost similar.

Because of this fact, there are different debt- equity ratios prevalent in different industries. Hence, at the time of raising funds a company must take into consideration debt-equity ratio prevalent in the related industry.

4.5 SOURCES OF FINANCE / FUNDS / CAPITAL

1. Retained Earnings
2. Trade Credit
3. Factoring
4. Lease Financing
5. Public Deposit
6. Commercial Paper
7. Issue of Shares (Equity and Preference Shares)
8. Debenture
9. Commercial Banks
10. Financial Institutions



SOURCES OF FINANCE / FUNDS / CAPITAL (IN DETAIL)

1. RETAINED EARNINGS

Profits generated by a company that are not distributed to stockholders (shareholders) as dividends but are either reinvested in the business or kept as a reserve for specific objectives (such as to pay off a debt or purchase a capital asset).

Merits

- Retained earnings is a permanent source of funds available to an organization.
- It does not involve any explicit cost in the form of interest, dividend or floatation cost.
- As the funds are generated internally, there is a greater degree of operational freedom and flexibility.

Limitations

- Excessive plugging back may cause dissatisfaction amongst the shareholders as they would get lower dividends.
- It is an uncertain source of funds as the profits of business are fluctuating;
- The opportunity cost associated with these funds is not recognized by many firms.

2. TRADE CREDIT

Trade credit is the credit extended to you by suppliers who let you buy now and pay later. Any time you take delivery of materials, equipment or other valuables without paying cash on the spot, you're using trade credit.

Merits

- Trade credit is a convenient and continuous source of funds;
- Trade credit may be readily available in case the credit worthiness of the customers is known to the seller;
- Trade credit needs to promote the sales of an organization;
- If an organization wants to increase its inventory level in order to meet expected rise in the sales volume in the near future.

Limitations

- Availability of easy and flexible trade credit facilities may induce a firm to indulge in overtrading which may add to the risk of the firm.
- Only limited amount of funds can be generated through trade credit.
- It is generally a costly source of funds as compared to most other sources of raising money.

3. FACTORING

Factoring is a type of finance in which a business would sell its accounts receivable (invoices) to a third party to meet its short-term liquidity needs. Under the transaction between both parties, the factor would pay the amount due on the invoices minus its commission or fees.

Merits

- Obtaining funds through factoring is cheaper than financing through other means such as bank credit.
- With cash flow accelerated by factoring the clients is able to meet his/ her liabilities promptly as and when these arise.

- Factoring as a source of funds is flexible and ensures a definite pattern of cash inflows from credit debt that a firm might otherwise be unable to obtain.

Limitations

- This source is expensive when the invoices are numerous and smaller in amount.
- The advance finance provided by the factor firm is generally available at a higher interest cost than the usual rate of interest.
- The factor is a third party to the customer who may not feel comfortable while dealing with it.

4. LEASE FINANCING

Lease financing is one of the important sources of medium- and long-term financing.

The owner of an asset gives another person, the right to use that asset against periodical payments. The owner of the asset is known as lessor and the user is called lessee.

Merits

- It enables the lessee to acquire the asset with a lower investment.
- Simple documentation makes it easier to finance assets.
- Lease rentals paid by the lessee are deductible for computing taxable profits.
- It provides finance without diluting the ownership or control of business.

Limitations

- A lease arrangement may impose certain restrictions on the use of assets.
- The normal business operations may be affected in case the lease is not renewed.
- It may result in higher pay-out obligation in case the equipment is not found useful and the lessee opts for premature termination of the lease agreement.

5. PUBLIC DEPOSITS

Public deposits refer to the unsecured deposits invited by companies from the public mainly to finance working capital needs. A company wishing to invite public deposits makes an advertisement in the newspapers.

Any member of the public can fill up the prescribed form and deposit the money with the company. The company in return issues a deposit receipt. This receipt is an acknowledgement of debt by the company. The terms and conditions of the deposit are printed on the back of the receipt. The rate of interest on public deposits depends on the period of deposit and reputation of the company.

Merits

- The procedure of obtaining deposits is simple and does not contain restrictive conditions as are generally there in a loan agreement.
- Public deposits do not usually create any charge on the assets of the company. The assets can be used as security for raising loans from other sources.

Limitations

- New companies generally find it difficult to raise funds through public deposits.
- It is an unreliable source of the finance as the public may not respond when the company needs money.
- Collection of public deposits may prove difficult, particularly when the size of deposits required is large.

6. COMMERCIAL PAPER

Commercial Paper or CP is defined as a short-term, unsecured money market instrument, issued as a promissory note by big corporations having excellent credit ratings. As the instrument is not backed by collateral, only large firms with considerable financial strength are authorised to issue the instrument.

Merits

- A commercial paper is sold on an unsecured basis and does not contain any restrictive conditions.
- As it is a freely transferable instrument it has high liquidity.
- It provides more funds compared to other source.
- A commercial paper provides a continuous source of funds.
- Companies can park their excess funds in commercial paper thereby earning some good returns on the same.

Limitations

- Only financially sound and highly rated firms can raise money through commercial papers.
- The size of money that can be raised through commercial paper is limited to the excess liquidity available with the suppliers of funds at a particular time.
- Commercial paper is an impersonal method of financing.

7. SHARES

- 1. Issue of EQUITY SHARES**
- 2. Issue of PREFERENCE SHARES**

1. EQUITY SHARES

Equity shares are the main source of finance of a firm. It is issued to the general public. Equity shareholders do not enjoy any preferential rights with regard to repayment of capital and dividend. They are entitled to residual income of the company, but they enjoy the right to control the affairs of the business and all the shareholders collectively are the owners of the company.

Merits

- Equity shares are suitable for investors who are willing to assume risk for higher returns.
- Payment of dividend to the equity shareholders is not compulsory.
- Equity capital serves as permanent capital as it is to be repaid only at the time of liquidation of a company.
- Equity capital provides creditworthiness to the company and confidence to prospective loan providers.

Limitations

- Investors who want steady income may not prefer equity shares as equity shares get fluctuating returns.
- The cost of equity shares is generally more as compared to the cost of raising funds through other sources.
- Issue of additional equity shares dilutes the voting power and earnings of existing equity shareholders.
- More formalities and procedural delays are involved while raising funds through issue of equity share.

2. PREFERENCE SHARES

Preference shares allow an investor to own a stake at the issuing company with a condition that whenever the company decides to pay dividends, the holders of the preference shares will be the first to be paid.

These shares, often with no voting rights, which receive their dividend before all other shares and are repaid first at face value if the company goes into liquidation.

Merits

- Preference shares provide reasonably steady income in the form of fixed rate of return and safety of investment.
- Preference shares are useful for those investors who want fixed rate of return with comparatively low risk.

- It does not affect the control of equity shareholders over the management as preference shareholders don't have voting rights.

Limitations

- Preference shares are not suitable for those investors who are willing to take risk and are interested in higher returns.
- Preference capital dilutes the claims of equity shareholders over assets of the company.
- The rate of dividend on preference shares is generally higher than the rate of interest on debentures.

Bases of differences	Preferences shares	Equity shares
Rate of dividend	Preference shareholders are paid dividend at a fixed rate	The rate of dividend on equity shares may vary from year to year and depending upon the available of profit.
Arrears of dividend	Holders of cumulative preference shares can get the arrears of past dividend.	Equity shareholders cannot get the arrears of past dividends
Voting right	Preference shareholders do not have right to participate in the management of the company.	Equity shareholder enjoy voting rights
Payment of dividend	These shares have a preferential right to receive dividend before any dividend is paid to equity share.	Payment of dividend to equity shares is made only after paying to preference shares.
convertibility	These shares are convertible.	These shares are not convertible.

8. DEBENTURES

A debenture is a type of debt instrument that is not secured by physical asset or collateral. Debentures are backed only by the general credit worthiness and reputation of the issuer. Both corporations and governments frequently issue this type of bond to secure capital. Like other types of bonds, debentures are documented in an indenture.

Merits

- It is preferred by investors who want fixed income at lesser risk.
- Debentures are fixed charge funds and do not particulars in profits of the company.

- The issue of debentures is suitable in the situation when the sales and earnings are relatively stable.

Limitations

- As fixed charge instruments debentures put a permanent burden on the earnings of a company.
- In case of redeemable debentures, the company has to make provisions for repayment on the specified date, even during periods of financial difficulty.
- Each company has certain borrowing capacity.

9. COMMERCIAL BANKS

A commercial bank is a financial institution that provides various financial service, such as accepting deposits and issuing loans. Commercial bank customers can take advantage of a range of investment products that commercial banks offer like savings accounts and certificates of deposit. The loans a commercial bank issues can vary from business loans and auto loans to mortgages.

Merits

- Banks provide timely assistance to business by providing funds as and when needed by it.
- Secrecy of business can be maintained as the information supplied to the bank by the borrowers is kept confidential.
- Formalities such as issue of prospectus and underwriting are not required for raising loans from a bank.
- Loan from a bank is a flexible source of finance as the loan according to business needs and can be repaid in advance when funds are not needed.

Limitations

- Funds are generally available for short periods and its extension or renewal is uncertain and difficult.
- Bankers make detailed investigation of the company affairs, financial structure etc and may also ask for security of assets and personal sureties.
- In some cases, difficult terms and conditions are imposed by banks for the grant of loan.

10. FINANCIAL INSTITUTIONS

A financial institution (FI) is a company engaged in the business of dealing with monetary transactions, such as deposits, loans, investments and currency exchange. Virtually everyone living in a developed economy has an ongoing or at least periodic need for the services of financial institutions.

Merits

- Financial institutions provide long term finance which are not provided by commercial banks.
- Besides providing funds many of these institutions provide financial, managerial and technical advice and consultancy to business firms.
- As repayment of loan can be made in easy installments, it does not prove to be much of a burden on the business.

Limitations

- Financial institutions follow rigid criteria for grant of loans. Too many formalities make the procedure time consuming and expensive.
- Certain restrictions such as restriction on dividend payment are imposed on the powers of the borrowing company by the financial institutions.

4.6 COST OF CAPITAL

Meaning of Cost of Capital

As it is evident from the name, cost of capital refers to the weighted average cost of various capital components, i.e. sources of finance, employed by the firm such as equity, preference or debt. In finer terms, it is the rate of return, that must be received by the firm on its investment projects, to attract investors for investing capital in the firm and to maintain its market value.

The factors which determine the cost of capital are:

- (i) Source of finance
- (ii) Corresponding payment for using finance.

On raising funds from the market, from various sources, the firm has to pay some additional amount, apart from the principal itself. The additional amount is nothing but the cost of using the capital, i.e. cost of capital which is either paid in lump sum or at periodic intervals.

A firm's cost of capital includes 3 components:

- 1) Return at zero risk level: - It relates to the expected rate of return when a project involves no financial or business risk.
- 2) Business risk premium: - Generally business risk premium is determined by the capital budgeting decisions for investment proposals. If the firm selects a project which has more than the normal risk, the suppliers of the funds for the project will naturally expect a higher rate of return than the normal rate. Thus, the cost of capital increases.

- 3) **Financial risk premium:** - Financial risk relates to the pattern of capital structure of the firm. A firm which has higher debt content in its capital structure should have more risk than a firm which has comparatively low debt content.

The above **3 components** of cost of capital may be written in the form of the following equation.

$$K=r_0+ b + f$$

Where,

K= cost of capital

r_0 = return at 0 risk level

b= business risk premium

f= financial risk premium

4.7 CLASSIFICATION OF COST OF CAPITAL:

- 1) Historical cost and Future cost
- 2) Specific cost and Composite cost
- 3) Average cost and Marginal cost
- 4) Explicit cost and Implicit cost

1. Historical cost and Future cost: -

Historical cost are the costs which are incurred for the procurement of funds based upon the existing capital structure of the firm. It is a book cost.

Future cost is the cost which is relate to estimate for the future. Simply it is the cost to be incurred for raising new funds.

2. Specific cost and composite cost: -

Specific cost refers to the cost which is associated with the particular sources of capital.

E.g.- Cost of Equity

Composite cost is the combined cost of different sources of capital taken together.

E.g.- Cost of debt, cost of equity & Cost of preference shares.

3. Average cost and Marginal Cost: -

Average cost is the combined cost of various sources of capital such as equity shares, debentures, preference shares.

Marginal cost of capital is the average cost of capital which has to be incurred due to new funds raised by the company for their financial requirements.

4. Explicit cost and Implicit cost: -

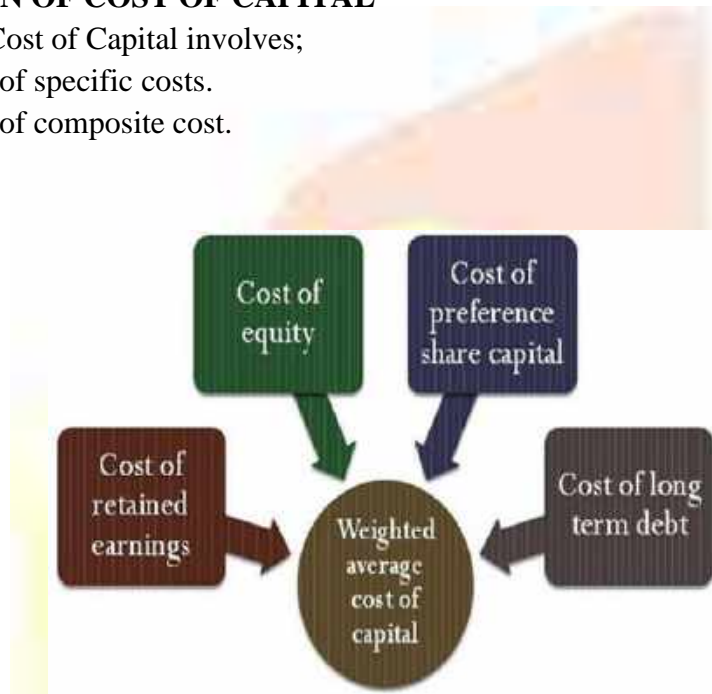
Explicit cost is the cut-off rate or internal rate of return.

Implicit cost is the rate of return related to the best investment opportunity of the firm and its shareholders that will be foregone in order to take up a particular project.

4.8 COMPUTATION OF COST OF CAPITAL

Computation of the Cost of Capital involves;

- I. Computation of specific costs.
- II. Computation of composite cost.



Computation of **Specific Cost** includes;

- A. Cost of Debt
- B. Cost of Preference Shares
- C. Cost of Equity Shares
- D. Cost of Retained Earnings

A. **Cost of Debt:** -It is the rate of return which is expected by lenders.

Cost of Debt (for DCF Valuation)

$$\text{Cost of Debt (Pre-Tax)} = \frac{\text{Total Interest Cost Incurred}}{\text{Total Debt}} \times 100$$

$$\text{Cost of Debt (Post-Tax)} = \frac{\text{Total Interest Cost Incurred} \times (1 - \text{Effective Tax Rate})}{\text{Total Debt}} \times 100$$

Cost of redeemable debt

Redeemable debt refers to the debt which is to be redeemed or repayable after the expiry of a fixed period of time.

$$K_{db} = \frac{I + \frac{1}{n} (RV - NP)}{\frac{1}{2} (RV + NP)} \times 100$$

Where, I = Interest

n = number of years in which debt is to be redeemed

RV = Redeemable Value of Debentures/Debt

NP = Net Proceeds from the issue of Debentures/Debt

After tax cost of redeemable debt is calculated as follows :

$$K_{ds} = \frac{I (1 - t) + \frac{1}{n} (RV - NP)}{\frac{1}{2} (RV + NP)} \times 100$$

Example 1:

A Ltd. issues Rs. 1,00,000, 8% debentures at par. The tax rate applicable to the company is 50%. Compute the cost of debt capital.

Solution:

$$K_d = I (1-t)/N_p$$

$$I = 8\% \text{ of } 1,00,000 = \text{Rs. } 8000$$

$$N_p = 1,00,000$$

$$t = 0.50$$

$$K_d = \frac{8000(1-0.50)}{1,00,000}$$

$$K_d = 4000/1,00,000 \times 100$$

$$K_d = 4\%$$

Example 2:

The costs of floatation amount to Rs. 50,000. The debentures are redeemable after 8 years. Calculate before tax and after tax. Cost of debt assuring a tax rate of 55%.

Solution:

$$K_d = \frac{I + (P - N_p)/n}{(P + N_p)/2}$$

$$I = 10\% \text{ of } 20,00,000 = 200,000$$

$$P = \text{Rs } 20,00,000$$

$$N_p = 20,00,000 - 100,000 - 50,000 = \text{Rs } 18,50,000$$

$$N = 8 \text{ yrs}$$

$$K_d = \frac{200,000 + (20,00,000 - 18,50,000)/8}{(20,00,000 + 18,50,000)/2}$$

$$K_d = \frac{200,000 + 150,000/8}{19,25,000}$$

$$K_d = \frac{200,000 + 18,750}{19,25,000}$$

$$K_{db} = 11.36\%$$

$$K_{da} = K_{db}(1-t) = 11.36(1-0.55)$$
$$5.11\%$$

B. Cost of Preference Share Capital

Normally a fixed rate of dividend is payable on preference shares. But in the practical sense preference dividend is regularly paid by the companies when they earn sufficient amount of profit.

B1) Cost of irredeemable preference share capital

$$KP = DP/NP$$

Where,

KP = Cost of pref. share capital

DP = Fixed preference dividend

NP = Net proceeds of pref. shares

B2) Cost of redeemable preference shares

Redeemable preference shares are those which are to be redeemed after the expiry of specified period of time.

$$KP = \frac{C + (D - NP)/n}{(D + NP)/2}$$

C = annual dividend

D = par value of preference shares

n = no. of years to maturity

NP = net proceeds

Example 3:

XYZ Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Cost of issue is Rs. 2 per share. Calculate cost of preference share capital if these shares are issued (a) at par, (b) at a premium of 10% and (c) at a discount of 6%.

Solution:

$$K_p = D_p/N_p$$

$$\begin{aligned} \text{a) } K_p &= D_p/N_p = 8/98 * 100 \\ &= 8.16\% \end{aligned}$$

$$\begin{aligned} D_p &= \text{Rs } 8 \\ N_p &= 100 - 2 = \text{Rs. } 98 \end{aligned}$$

$$\begin{aligned} \text{b) } K_p &= D_p/N_p = 8/108 \\ &= 7.41\% \end{aligned}$$

$$\begin{aligned} D_p &= \text{Rs } 8 \\ N_p &= 100 + 10 - 2 = \text{Rs. } 108 \end{aligned}$$

$$\begin{aligned} \text{c) } K_p &= D_p/N_p = 8/92 \\ &= 8.70\% \end{aligned}$$

$$\begin{aligned} D_p &= \text{Rs } 8 \\ N_p &= 100 - 6 - 2 = \text{Rs. } 92 \end{aligned}$$

Example 4:

ABC Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Redeemable after 8 years at a premium of 10%. The cost of issue is Rs. 2 per share. Calculate the cost of preference share capital.

Solution:

$$K_p = \frac{D_p + (P - N_p)/n}{(P + N_p)/2}$$

$$D_p = 1,60,000$$

$$P = 20,00,000 + 2,00,000 = \text{Rs. } 22,00,000$$

$$N_p = 20,00,000 - 40,000 = \text{Rs. } 19,60,000$$

$$N = 8 \text{ yrs}$$

$$K_p = \frac{160,000 + (22,00,000 - 19,60,000)/8}{(22,00,000 + 19,60,000)/2}$$

$$K_p = 9.13\%$$

C. Cost of Equity Capital

Cost of equity capital may be defined as the minimum rate of return that a firm must earn on its investment, and also the market price of the equity shares on unchanged.

C1) Dividend price method

$$K_e = D/NP$$

Where,

K_e = Cost of equity capital

D = Expected dividend per share

NP = Net proceeds per share

C2) Dividend price plus growth

In this method cost of equity capital is calculated on the basis of the dividend yield and the growth rate in dividend.

$$K_e = D/NP + g$$

Where,

K_e = Cost of equity capital

D = Expected dividend per share

NP = Net proceeds per share

G = Growth rate in dividends

C3) Earning price approach

$$K_e = EPS/NP$$

Where,

K_e = Cost of equity capital

EPS = Earning per share

NP = Net proceeds

Example 5:

- a) A company plans to issue 10000 new shares of Rs. 100 each at a par. The floatation costs are expected to be 4% of the share price. The company pays a dividend of Rs. 12 per share initially and growth in dividends is expected to be 5%. Compute the cost of new issue of equity shares.
- b) If the current market price of an equity share is Rs. 120. Calculate the cost of existing equity share capital

Solution:

- | | | |
|----|----------------------------|----------------------|
| a) | $K_e = D/N_p + g$ | $D = 12$ |
| | | $N_p = 100 - 4 = 96$ |
| | $K_e = 12/96 * 100 + 5\%$ | $g = 5\%$ |
| | $K_e = 17.5\%$ | |
| b) | $K_e = 12/120 * 100 + 5\%$ | $D = 12$ |
| | $K_e = 15\%$ | $N_p = 120$ |
| | | $g = 5\%$ |

Example 6:

A firm is considering an expenditure of Rs. 75 lakhs for expanding its operations.

The relevant information is as follows:

Number of existing equity shares = 10 lakhs

Market value of existing share = Rs. 100

Net earnings = Rs. 100 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of Rs. 92 per share and the costs of new issue will be Rs. 2 per share.

Solution:

a) $Ke = EPS/Np$ $EPS = 100 \text{ Lakhs}/10 \text{ Lakhs}$
 $Ke = 10/100 * 100$ $EPS = \text{Rs } 10$
 $Ke = 10\%$ $Np = \text{Rs } 100$

b) $Ke = EPS/Np$ $EPS = \text{Rs } 10$
 $Ke = 10/90$ $Np = 92 - 2 = 90$
 $Ke = 11.11\%$

D. Cost of Retained Earnings

It refers to that portion of the profit retained by the company for future development, business use and expansion is known as retained earnings.

$$Kr = Ke(1-t)(1-b)$$

Where,

Kr = Cost of retained earnings

Ke = Cost of equity capital

t = Tax rate

b = Brokerage

Example 7:

A firm's Ke (return available to shareholders) is 10%, the average tax rate of shareholders is 30% and it is expected that 2% is brokerage cost that shareholders will have to pay while investing their dividends in alternative securities. What is the cost of retained earnings?

Solution:

$$Kr = Ke(1-t)(1-b)$$

$$Kr = 10\%(1-0.30)(1-0.02)$$

$$Kr = 10\%(0.7)(0.98)$$

$$KR = 4.9\%$$

COMPUTATION OF COMPOSITE COST

Weighted Average Cost of Capital (WACC)

It refers to the weighted average cost of different sources of finance. It is very important in financial decision making. Steps involved in computation of WACC;

- Calculate the cost of each of the sources of finance is ascertained.
- Assigning weights to specific costs.
- Multiplying the cost of each sources by the appropriate weights.
- Dividing the total weighted cost by the total weights.

Weighted average cost of capital can be computed the following formula.

$$K_w = \frac{\sum XW}{\sum W}$$

Where,

K_w = Weighted average cost of capital

X = Cost of specific source of finance

W = Weights, proportion of specific source of finance

Example 8:

ABC Ltd. has the following capital structure.

Equity (expected dividend 12%)	Rs. 10,00,000
10% preference	Rs. 5,00,000
8% loan	Rs. 15,00,000

You are required to calculate the weighted average cost of capital, assuming 50% as the rate of income-tax, before and after tax.

Solution:

Sources of Capital	Amount (Rs)	Weights (W)	Cost %(X)	Weighted Cost (XW)
Equity	10,00,000	0.333	12	3.99%
10% preference	5,00,000	0.1667	10	1.67%
8% loan	15,00,000	0.5	4	2%
	30,00,000	1		$K_w = 7.66%$

OR

Sources of Capital	Amount(W)	Cost %(X)	Weighted Cost (XW)
Equity	10,00,000	12	1,20,000

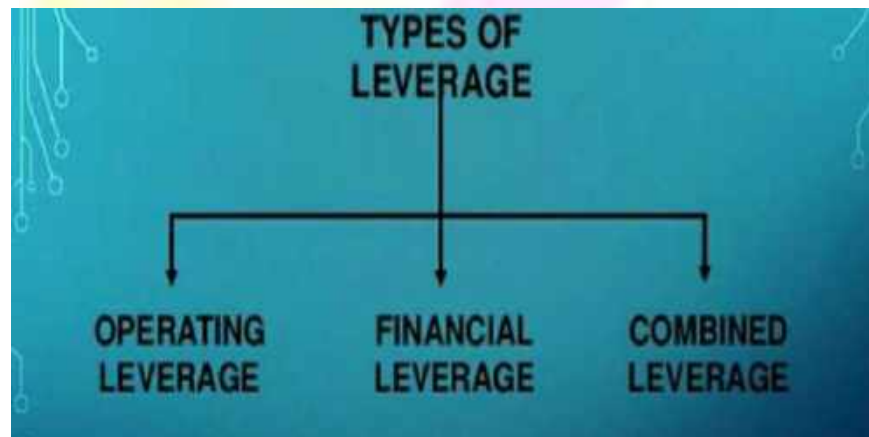
10% preference	5,00,000	10	50,000
8% loan	15,00,000	4	60,000
	30,00,000		2,30,000

$$K_w = \frac{\sum XW}{\sum W}$$

$$K_w = \frac{2,30,000}{30,00,000} = 7.67\%$$

4.9 CONCEPT OF LEVERAGE

- In general, leverage refers to accomplish certain things which are otherwise not possible i.e. lifting of heavy objects with the help of lever. This concept of leverage is valid in business also.
- In finance, the term 'leverage' is used to describe the firm's ability to use fixed cost assets or funds to increase the return to its owners; i.e. equity shareholders. In other words, the fixed cost funds i.e. debentures & preference share capital act as the fulcrum, which assist the lever i.e. the firm to lift i.e. to increase the earnings of its owner i.e. the equity shareholders.
- If earnings less, the variable costs exceed the fixed costs i.e. preference dividend & interest on debenture, or earnings before interest and taxes exceed the fixed return requirement, the leverage is called favourable. when they do not, the result is unfavourable leverage.
- Leverage is also the influence which an independent variable has over a dependent/related variable i.e. rainfall over production. In financial context, sales & fixed cost over profit.



1. Operating leverage

- Operating leverage is a measurement of the degree to which a firm incurs a combination of fixed and variable cost.
- Operating leverage = contribution/EBIT

Where,

contribution = sales – variable cost

EBIT = contribution – fixed cost

Note: in case the contribution exceeds the fixed cost, the operating leverage is favourable. when $C < F$, the operating leverages is unfavourable.

Degree of Operating leverage

- It measures how much is the effect of change in sales on operating profit.
- The degree of operating leverage at any level is expressed in percentage change in operating profit to percentage change in sales.



Degree of Operating Leverage Formula = $\frac{\% \text{ Change in EBIT}}{\% \text{ Change in Sales}}$

2. Financial leverage

- It is the tendency of the residual net income to vary disproportionately with the operating profit. It indicates the changes that takes place in the taxable income as a result of the change in the operating profit.
- Financial leverage = $\frac{\text{EBIT}}{\text{EBT}}$

Where,

EBIT = Earning before interest and tax

EBT = EBIT - I, i.e. Earning before tax

I = Interest and Preference dividend

Degree of financial leverage

- The degree of financial leverage is defined as the percentage change in EPS due to the given percentage change in EBIT.

Degree of Financial Leverage Formula

$$\text{DFL Formula} = \frac{\% \text{ Change in Net Income}}{\% \text{ Change in EBIT}}$$

$$\text{DFL Formula} = \frac{\text{EBIT}}{\text{EBT}}$$

D /B OPERATING LEVERAGE & FINANCIAL LEVERAGE

Difference between Operating leverage & Financial Leverage

- | | |
|--|---|
| ▪ It establishes the relationship b/w operating profit & sales | ▪ It establishes the relationship b/w operating profit & rate of equity |
| ▪ It influence EBIT | ▪ It affect EAT |
| ▪ It is concerned with investment decision | ▪ It is concerned with finance decision |
| ▪ It explains business risk of the firm | ▪ It deals with financial risk of the firm |
| ▪ It is the first stage leverage | ▪ It is the second stage leverage |

3. Combined or Total leverage

- It is the combination of operating and financial leverage.
- Both of these leverage are closely concerned with firms capacity to meet its fixed cost & their combined effect will measure the firm's financial strength.
- Combined leverage = operating leverage * financial leverage

Degree of combined leverage

$$DTL = DOL \times DFL$$

$$DTL = \frac{\Delta\% \text{ in EBIT}}{\Delta\% \text{ in Sales}} \times \frac{\Delta\% \text{ in EPS}}{\Delta\% \text{ in EBIT}}$$

$$DOL = \frac{\Delta\% \text{ in EPS}}{\Delta\% \text{ in Sales}}$$

$$DTL = \frac{Q(P - VC)}{Q(P - VC) - FC - Interest}$$

UNIT V - Capital Budgeting

5.1 INTRODUCTION:

Meaning of Budget

Budget is a financial plan and a list of all planned expenses and revenues.

Meaning of Capital Budgeting

The process through which different projects are evaluated is known as capital budgeting. Capital budgeting is defined “as the firm’s formal process for the acquisition and investment of capital. It involves firm’s decisions to invest its current funds for addition, disposition, modification and replacement of fixed assets”.

Definitions of Capital Budgeting

Capital budgeting (investment decision) as, “Capital budgeting is long term planning for making and financing proposed capital outlays.” **Charles T.Horngreen**

“Capital budgeting consists in planning development of available capital for the purpose of maximizing the long-term profitability of the concern” – **Lynch**

“Capital budgeting is concerned with the allocation of the firm source financial resources among the available opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project with the immediate and subsequent streams of earning from a project, with the immediate and subsequent streams of expenditure”. **G.C. Philippatos**

5.2 NEED AND IMPORTANCE OF CAPITAL BUDGETING

1. Huge investments: Capital budgeting requires huge investments of funds, but the available funds are limited, therefore the firm before investing projects, plan are control its capital expenditure.

2. Long-term: Capital expenditure is long-term in nature or permanent in nature. Therefore, financial risks involved in the investment decision are more. If higher risks are involved, it needs careful planning of capital budgeting.

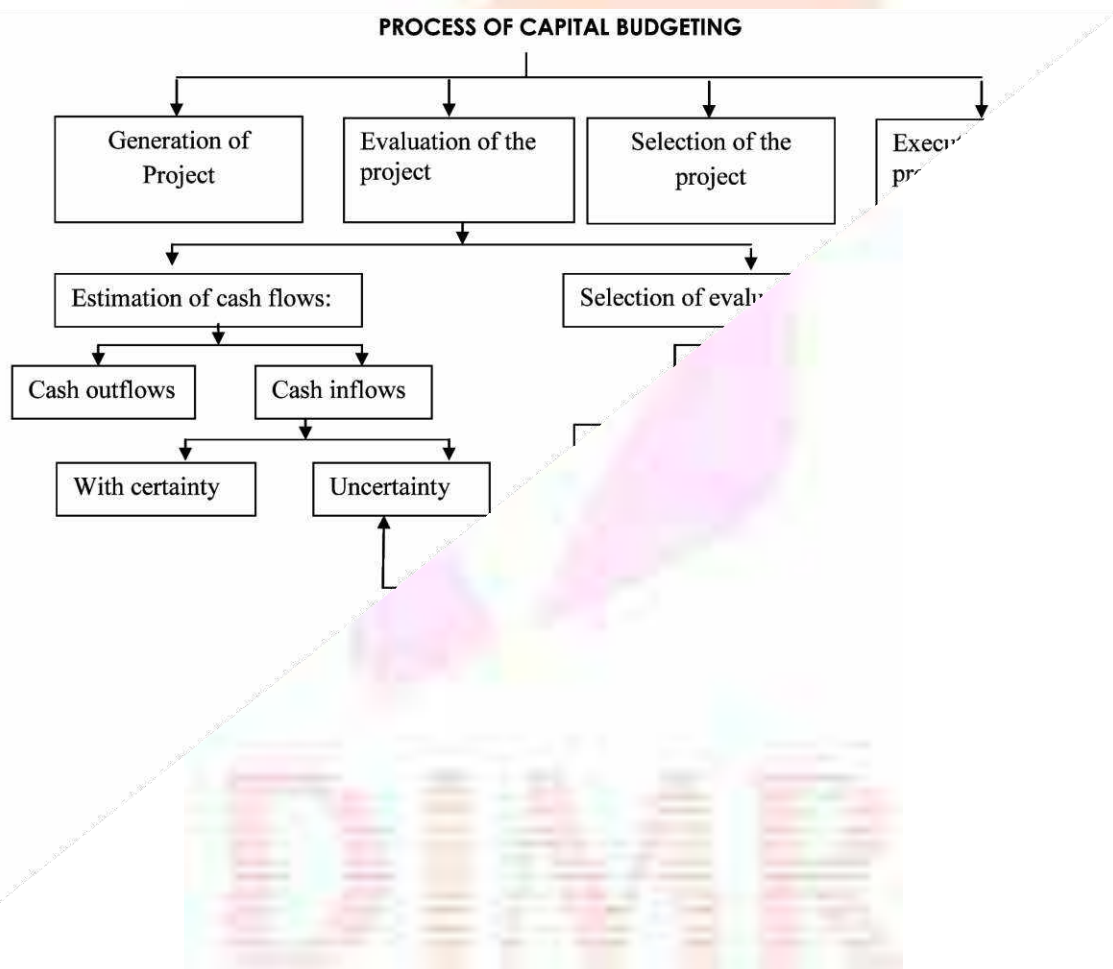
3. Irreversible: The capital investment decisions are irreversible, are not changed back. Once the decision is taken for purchasing a permanent asset, it is very difficult to dispose of those assets without involving huge losses.

4. Long-term effect: Capital budgeting not only reduces the cost but also increases the revenue in long-term and will bring significant changes in the profit of the company by avoiding over or more investment or under investment. Over investments leads to be unable to utilize assets or over

utilization of fixed assets. Therefore, before making the investment, it is required carefully planning and analysis of the project thoroughly.

5.3 CAPITAL BUDGETING PROCESS

The major steps in the capital budgeting process are given below. They are (a) Generation of project; (b) Evaluation of the project; (c) Selection of the project and (d) Execution of the project. The capital budgeting process may include a few more steps. As each step is significant they are usually taken by top management.



(a) **Generation of Project:** Depending upon the nature of the firm, investment proposals can emanate from a variety of sources. Projects may be classified into five categories.

- (i) New products or expansion of existing products.
- (ii) Replacement of equipment or buildings.

- (iii) Research and development.
- (iv) Exploration.
- (v) Others like acquisition of a pollution control device etc.

Investment proposals should be generated for the productive employment of firm's funds. However, a systematic procedure must be evolved for generating profitable proposals to keep the firm healthy.

- (b) **Evaluation of the project:** The evaluation of the project may be done in two steps. First the costs and benefits of the project are estimated in terms of cash flows and secondly the desirability of the project is judged by an appropriate criterion. It is important that the project must be evaluated without any prejudice on the part of the individual. While selecting a criterion to judge the desirability of the project, due consideration must be given to the market value of the firm.
- (c) **Selection of the project:** After evaluation of the project, the project with highest return should be selected. There is no hard and fast rule set for the purpose of selecting a project from many alternative projects. Normally the projects are screened at various levels. However, the final selection of the project vests with the top-level management.
- (d) **Execution of project:** After selection of a project, the next step in capital budgeting process is to implement the project. Thus, the funds are appropriated for capital expenditures. The funds are spent in accordance with appropriations made in the capital budget funds for the purpose of project execution should be spent only after seeking format permission for the controller. The follow – up comparison of actual performance with original estimates ensure better control.

Thus, the top management should follow the above procedure before taking a capital expenditure decision.

5.4 METHODS OF CAPITAL BUDGETING OF EVALUATION

By matching the available resources and projects it can be invested. The funds available are always living funds. There are many considerations taken for investment decision process such as environment and economic conditions.

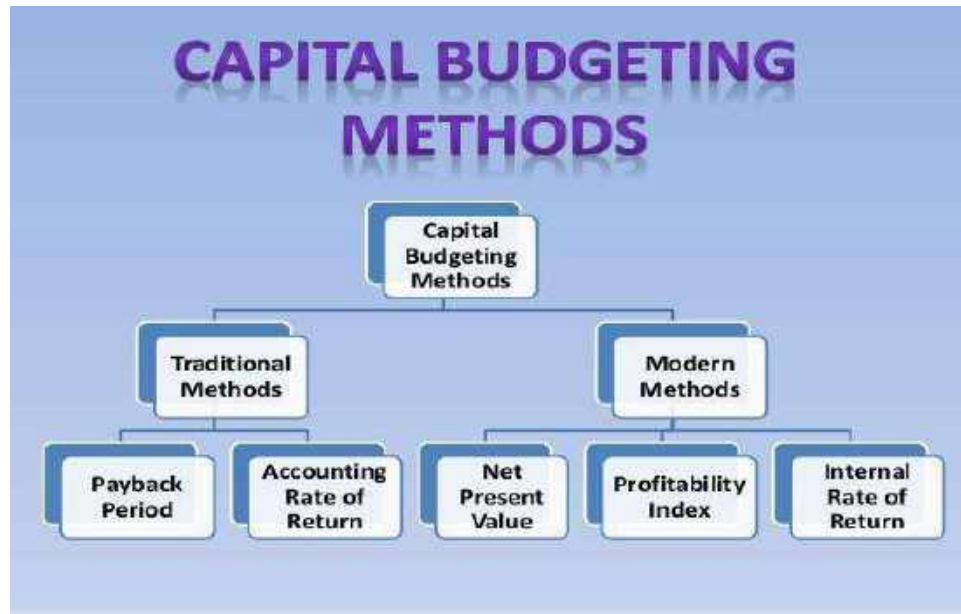
The methods of evaluations are classified as follows:

(A) Traditional methods (or Non-discount methods)

- (i) Pay-back Period Methods
- (ii) Accounts Rate of Return

(B) Modern methods (or Discount methods)

- (i) Net Present Value Method
- (ii) Profitability Index Method
- (iii) Internal Rate of Return Method
- (iv) Discounted Pay-back Period Method



1. Pay-back Period

Pay-back period is the time required to recover the initial investment in a project. (It is one of the non-discounted cash flow methods of capital budgeting).

Formula for Calculating Payback period

1. When Cash inflows are even/equal

When cash inflow of all year is equal, we use the following formula

$$\text{Payback period} = \frac{\text{Initial Investment}}{\text{Annual Cash Inflow}}$$

2. When cash inflows are uneven

When cash inflows of each year is different we use the formula below

$$\text{Payback Period} = E + \frac{B}{C}$$

Where,

E = Year immediately Preceding to year of recovery

B = Amount left to be recovered

C = Cash inflow during the year of final recovery

Note: Before using these values we must find cumulative cash inflows

Merits

The following are the important merits of the pay-back method:

1. It is easy to calculate and simple to understand.
2. Pay-back method provides further improvement over the accounting rate return.
3. Pay-back method reduces the possibility of loss on account of obsolescence.

Demerits

1. It ignores the time value of money.
2. It ignores all cash inflows after the pay-back period.
3. It is one of the misleading evaluations of capital budgeting.

Accept /Reject criteria

If the actual pay-back period is less than the predetermined pay-back period, the project would be accepted. If not, it would be rejected.

Example 1: A project requires a cash outlay of Rs.20,000, and generates cash inflows of Rs.8,000, Rs.7,000, Rs.4,000 and Rs.3,000 during the next 4 years. Find out the payback period of the project.

Solution:

Let us add up the cash inflows:

1st year =	8,000
2nd year =	7,000
3rd year =	<u>4,000</u>
Total	19,000

We find that in the first 3 years Rs.19,000 of original cash outlay is recovered. In the 4th year, cash inflow generated is Rs.3,000, whereas only Rs.1,000 (i.e. 20,000 - 19,000) of the original outlay remains to be recovered.

So, the time required to recover Rs.1,000 = $\text{Rs.1,000} \times 12 \text{ months} / \text{Rs.3,000} = 4 \text{ months}$

Therefore, Payback Period = 3 years + 4 months = 3 years 4 months

Acceptance rules of payback period:

1. Accept the project if $\text{PB} < \text{Standard payback period}$
2. Reject the project if $\text{PB} > \text{Standard payback period}$

2. Accounting Rate of Return or Average Rate of Return

Average rate of return means the average rate of return or profit taken for considering the project evaluation. This method is one of the traditional methods for evaluating the project proposals.

Calculating the accounting rate of return

$$\text{ARR} = \frac{\text{Average annual accounting profit}}{\text{Initial investment}} \times 100\%$$

$$\text{ARR} = \frac{\text{Average annual accounting profit}}{\text{Average investment}} \times 100\%$$

The average investment is calculated as :

$$\frac{(\text{Initial investment} + \text{final or scrap value})}{2}$$

Merits

1. It is easy to calculate and simple to understand.
2. It is based on the accounting information rather than cash inflow.
3. It is not based on the time value of money.
4. It considers the total benefits associated with the project.

Demerits

1. It ignores the time value of money.
2. It ignores the reinvestment potential of a project.
3. Different methods are used for accounting profit. So, it leads to some difficulties in the calculation of the project.

Accept/Reject criteria

If the actual accounting rate of return is more than the predetermined required rate of return, the project would be accepted. If not, it would be rejected.

Example 2: A project will cost Rs.40,000. Its stream of earnings before depreciation, interest and taxes (EBDIT) during the 1st year through 5 years is expected to be Rs.10,000, Rs.12,000, Rs.14,000, Rs.16,000, and Rs.20,000. Assuming a tax rate of 50% and depreciation @ 20% on straight line basis, find out the project's ARR?

Solution:

(Fig. in Rs.)

Period	1st year	2nd year	3rd year	4th year	5th year	Average
EBDIT	10,000	12,000	14,000	16,000	20,000	14,400
Less: Depreciation @ 20%	8,000	8,000	8,000	8,000	8,000	8,000
EBIT	2,000	4,000	6,000	8,000	12,000	6,400
Less: Taxes @ 50%	1,000	2,000	3,000	4,000	6,000	3,200
Earnings before interest	1,000	2,000	3,000	4,000	6,000	3,200
Book value of investment						
Beginning	40,000	32,000	24,000	16,000	8,000	
Ending	32,000	24,000	16,000	8,000	—	
Total	72,000	56,000	40,000	24,000	8,000	
Average investment	36,000	28,000	20,000	12,000	4,000	20,000

$$\text{ARR} = 3,200 \times 100 / 20,000 = 16\%$$

By applying the formula, we can solve this example:

$$[\text{ARR} = \text{EBIT} (1 - T) / n] / (\text{In} + \text{In}) / 2 = 16\%$$

$$= [32,000 (1 - 0.5) / 5] / (40,000 + 0) / 2$$

$$= 16,000 / 5 / 20,000$$

$$= 3,200 \times 100 / 20,000$$

$$= 16\%$$

Acceptance rules of ARR:

- (i) Accept the project if $\text{ARR} > \text{Minimum rate of return}$
- (ii) Reject the project if $\text{ARR} < \text{Minimum rate of return}$
- (iii) Project may be accepted if $\text{ARR} = \text{Minimum rate of return}$

3. Net Present Value

Net present value method is one of the modern methods for evaluating the project proposals. In this method cash inflows are considered with the time value of the money. Net present value describes as the summation of the present value of cash inflow and present value of cash outflow. Net present value is the difference between the total present value of future cash inflows and the total present value of future cash outflows.

Formula:

$$\text{NPV} = \text{PV of inflows} - \text{PV of outflows}$$

Merits

1. It recognizes the time value of money.
2. It considers the total benefits arising out of the proposal.
3. It is the best method for the selection of mutually exclusive projects.
4. It helps to achieve the maximization of shareholders' wealth.

Demerits

1. It is difficult to understand and calculate.
2. It needs the discount factors for calculation of present values.
3. It is not suitable for the projects having different effective lives.

Accept/Reject criteria

If the present value of cash inflows is more than the present value of cash outflows, it would be accepted. If not, it would be rejected.

Example 3: The project X costs Rs.2,500 now, and is expected to generate year end cash inflows of Rs.900, Rs.800, Rs.700, Rs.600, and Rs.500 in years 1 to 5. The opportunity cost of capital is assumed to be 10%.

Find out the NPV of the project taking the discounting rate of Rs.1 as follows:

1st year = Rs. 1 = 0.909

2nd year = Rs. 1 = 0.826

3rd year = Rs. 1 = 0.751

4th year = Rs.1 = 0.683

5th year = Rs.1 = 0.620

Solution:

$$\begin{aligned} \text{NPV} &= [900/(1.10) + 800/(1.10)^2 + 700/(1.10)^3 + 600/(1.10)^4 + 500/(1.10)^5] - 2,500 \\ &= [(900 \times 0.909) + (800 \times 0.826) + (700 \times 0.751) + (600 \times 0.683) + (500 \times 0.620)] - 2500 \\ &= 2,725 - 2,500 \\ &= (+) \text{Rs. } 225 \end{aligned}$$

Thus, the project should be accepted as its NPV is positive.

4.. Profitability Index (PI)

Profitability Index (PI) or Benefit-Cost (B/C) Ratio is the ratio of the present value of cash inflows, at the required rate of return, to the initial cash outflow of the investment. According to Van Horne, the profitability Index of a project is “the ratio of the present value of future net cash inflows to the present value of cash outflows”.

Formula:

$$\text{Profitability Index} = \text{Present value of cash inflows} / \text{Present value of cash outflows}$$

Merits

The merits of this method are:

- (i) It takes into account the time value of money
- (ii) It helps to accept / reject investment proposal on the basis of value of the index.
- (iii) It is useful to rank the proposals on the basis of the highest /lowest value of the index.
- (iv) It takes into consideration the entire stream of cash flows generated during the life of the asset.

Demerits

However, this technique suffers from the following limitations:

- (i) It is somewhat difficult to compute.
- (ii) It is difficult to understand the analytical of the decision on the basis of profitability index.

Accept/Reject criteria: If the Profitability Index is greater than or equal to one, the project should be accepted otherwise reject.

Example 4: The initial cash outlay of a project is Rs.1,00,000. It can generate cash inflow of Rs.40,000, Rs.30,000, Rs.50,000 and Rs.20,000 in 1 through 4 years. Assuming a 10% rate of discount, find out the PI of the project. The discount rate of Rs.1 is as follows:

1st year = Rs.1 = 0.909

2nd year = Rs.1 = 0.826

3rd year = Rs.1 = 0.751

4th year = Rs.1 = 0.683

Solution:

Present value of cash inflow = $(40,000 \times 0.909) + (30,000 \times 0.826) + (50,000 \times 0.751) + (20,000 \times 0.683) = \text{Rs.}1,12,350$

NPV = Rs.1,12,350 – Rs.1,00,000

= Rs.12,350

So, PI = $1,12,350 / 1,00,000$

= 1.1235

The project should be accepted as $PI > 1$.

5. Internal Rate of Return

Internal rate of return is time adjusted technique and covers the disadvantages of the traditional techniques. In other words, it is a rate at which discount cash flows to zero.

It is expected by the following ratio:

Cash inflow / Investment initial

Steps to be followed:

Step 1. find out factor

Factor is calculated as follows:

$F = \text{Cash outlay (or) initial investment} / \text{Cash inflow}$

Step 2. Find out positive net present value

Step 3. Find out negative net present value

Step 4. Find out formula net present value

Formula:

$$\text{IRR} = \text{Base factor} + \frac{\text{Positive net present value} * \text{DP}}{\text{Difference in positive and Negative net present value}}$$

□ Base factor = Positive discount rate

DP = Difference in percentage

Merits

1. It consider the time value of money.
2. It takes into account the total cash inflow and outflow.
3. It does not use the concept of the required rate of return.
4. It gives the approximate/nearest rate of return.

Demerits

1. It involves complicated computational method.
2. It produces multiple rates which may be confusing for taking decisions.
3. It is assumed that all intermediate cash flows are reinvested at the internal rate of return.

Accept/Reject criteria

If the present value of the sum total of the compounded reinvested cash flows is greater than the present value of the outflows, the proposed project is accepted. If not, it would be rejected.

Example 5:

A Co. is considering an investment proposal to install new milling control.
The Project will cost Rs 50,000. The facility has a life expectancy of 5 years and no Salvage Value.
The Company tax rate is 35%. The firm uses straight line depreciation.
The estimated Profit before tax from the propose investment proposal are as follows:

Year	Profit before Depreciation (Rs)	
1	10,000	
2	11,000	
3	14,000	
4	15,000	
5	25,000	

Compute IRR.

Solution:

1) Initial Investment = Rs 50,000

Dep= 50,000/5= Rs 10,000

2) Subsequent Cash Inflow

	1	2	3	4	5
Profit before Depreciation (Rs)	10,000	11,000	14,000	15,000	25,000
Less: Dep	-10,000	-10,000	-10,000	-10,000	-10,000
Profit before tax	Nil	1000	4000	5000	15,000
Less: Tax@ 35%	Nil	-350	-1400	-1750	-5250
Net Profit	Nil	650	2600	3250	9750
Add: Dep	10,000	10,000	10,000	10,000	10,000
Cash Inflow	10,000	10,650	12,600	13,250	19,750

3) Calculation of IRR

Year	Cash Inflow	PVF @ 10%	PV of CI	PVF @ 8%	PV of CI
1	10,000	0.909	9090	0.926	9260
2	10,650	0.826	8797	0.857	9127
3	12,600	0.751	9563	0.794	10004
4	13,250	0.683	9050	0.735	9739
5	19750	0.621	12265	0.681	13450
			48765		51580
		NPV	-1235		1580

IRR= Lower Rate+ NPV of Lower rate/ Diff in CF* Diff in Rate

IRR= 8+1580/2815*2

IRR= 9.1%

6. Discounted Pay Back Method

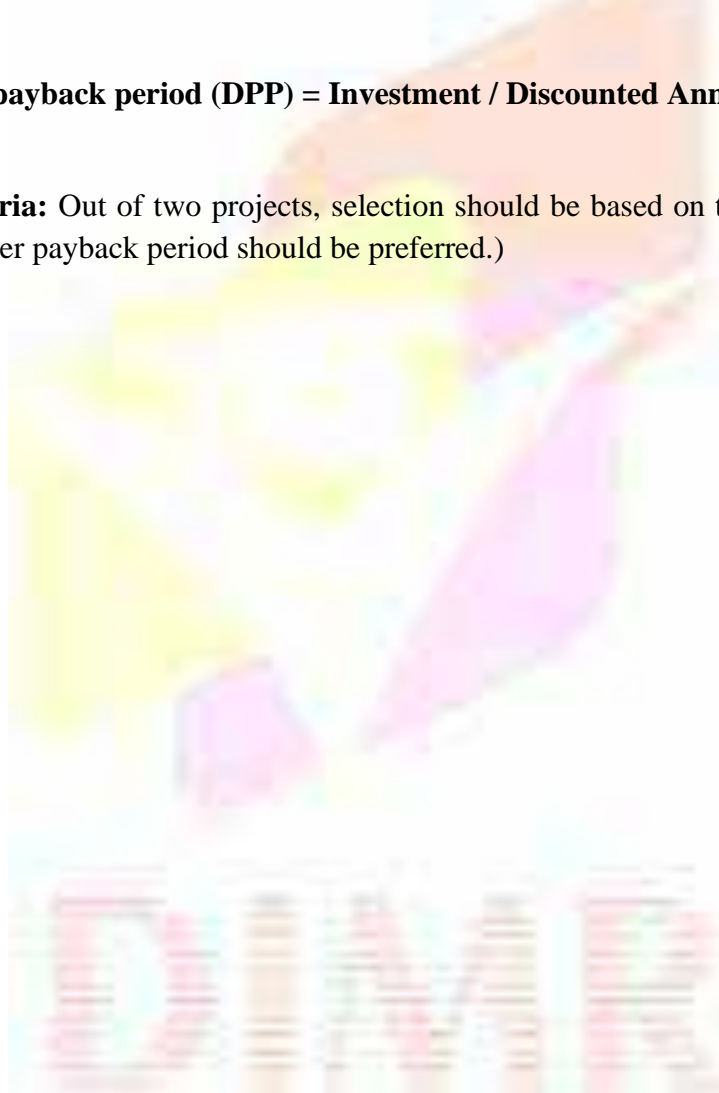
Discounted Payback (DPB) is defined as the number of years required in recovering the cash outlay of the project on the present value basis.

Under this method the discounted cash inflows are calculated and where the discounted cash flows are equal to original investment then the period which is required is called discounting payback period. While calculating discounting cash inflows the firm's cost of capital has been used.

Formula:

$$\text{Discounted payback period (DPP)} = \text{Investment} / \text{Discounted Annual cash in flow}$$

Accept/ Reject criteria: Out of two projects, selection should be based on the period of discounting payback period (Lesser payback period should be preferred.)



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..... **THANKS**