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Maisammaguda(H),Medchal -Malkajgiri District, Secunderabad, Telangana State-500100,www.mrec.ac.in



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INTRODUCTION TO FINANCIAL MANAGEMENT

INTRODUCTION AND MEANING OF FINANCIAL MANAGEMENT:

Financial management is that managerial activity which is concerned with the planning and controlling of the firm's financial resources. Though it was a branch of economics till 1890, as a separate activity or discipline it is of recent origin. Still it has no unique body of knowledge of its own and draws heavily on economics for its theoretical concepts even today.

Financial management is about analysing financial situation making financial decision setting financial objectives. Formulating financial plan to attain this objectives and providing effective system of financial control to ensure plan to progress towards the set of objective.

DEFINITIONS OF FINANCIAL MANAGEMENT:

1. **According to Weston and Brigham**, "Financial Management is an area of financial decision making, harmonising individual motives and enterprise goals".
2. **According to Howard and Upon**, "Financial Management is the application of the planning and controlling functions to the finance function".
3. **According to Ezra Solomon and Pringle John**, "Financial Management is concerned with the effective use of an economic resource namely capital fund".
4. **A formal definition of finance would be determining** acquisition, allocation, understanding and utilisation of financial resources usually in the aim of achieving of some particular goals of objective.

SCOPE OF FINANCIAL MANAGEMENT

Financial Management means the entire excise of managerial efforts devoted to the management of finance, both its sources and uses of financial resources of an enterprise.

Financial management has undergone significant changes over years as regards its scope and coverage. As such the role of finance manager has also undergone fundamental changes over the years. In order to have a better understanding of these changes, it will be appropriate to study both traditional approach and modern approach to the finance function.

I. TRADITIONAL APPROACH:

The traditional approach, which was popular in the early part of this century, limited role of financial management to raising and administering of funds required by the enterprise to meet their financial needs. It broadly covered the following three aspects,

- i) Arrangement of funds from financial institutions.
- ii) Arrangement of funds through issue of financial instruments.
- iii) Looking after the legal and accounting relationship between a corporation and its sources of funds.

Thus the traditional concept of financial management included the whole exercise of raising funds externally. The finance manager had a limited role to perform.

He was expected to keep accurate financial records, prepare reports on the financial performance and manage cash in a way that the corporation is in a position to pay bills in time. The term "Corporate Finance" was used in place of the present term "Financial Management".

The traditional approach evolved during 1920 continued to dominate academic thinking during forties and through the early fifties. However, in the later fifties it started to be severely criticised and later abandoned on account of the following reasons:

1. Outsiders looking in Approach:

This approach treated the subject of finance from the view point of suppliers of funds i.e., outsiders, bankers and investors etc.

It followed an outsider-looking in approach and not the insider looking-out approach, since it completely ignored the viewpoint of those who had to take internal financing decisions.

2. Ignored Routine Problems:

The approach gave undue emphasis to infrequent happenings in the life of an enterprise. The subject of financial management was confined to the financial problems arising during course of, incorporation, mergers, consolidations and reorganisation of corporate enterprise. As a result this approach did not give any importance to day-to-day financial problems of business undertakings.

3. Ignored Non-Corporate Enterprise:

The approach focused only the financial problems of corporate enterprise. Non-corporate industrial organisations remained outside its scope.

4. Ignored Working Capital Financing:

The approach laid emphasis on the problems of long term financing. The problems relating to financing short term or working capital were ignored.

II. MODERN APPROACH:

The traditional approach outlived its utility due to changed business situations since mid-1950. Technology improvements, innovative marketing operations, development of strong corporate structure, keen business competition, all made it imperative for the management to make optimum use of available to the financial manager, based on which he could make sound decisions.

The scope of financial management increased with the introduction of capital budgeting techniques. As a result of new methods and techniques, capital investment projects led to efficient allocation of capital within the firm.

- i. During the next two decades various pricing models, valuation models and investment portfolio theories also developed.
- ii. Efficient allocation of capital became an important area of study under financial management.
- iii. Eighties witnessed an era of high inflation, which caused the interest rates to rise dramatically. Thus, raising loan on suitable terms became an important aspect of financial management.
- iv. In the new volatile environment investment and financing decisions became more risky than ever before.
- v. These environmental changes enlarged the scope of finance. The concept of managing a firm as a system emerged. External factors now no longer could be evaluated in isolation.
- vi. Decision to arrange funds were to be seen in consonance with their efficient and effective use. This total approach to study of finance is being termed as financial management.
- vii. Thus, according to modern approach/concept, financial management is concerned with both acquisitions of funds as well as their allocation. The new approach views the term financial management in a broader sense.

i) Investment Decision:

The investment decision is a selection of assets in which funds will be invested by a firm. These are broadly divided into two parts; they are
(a) Long-term Assets and (b) Short-term Assets.

a) Long-term Assets:

These are the asset which yield over a period of time in future such as capital budgeting. The capital budgeting is a crucial financial decision and it is a process begin with identifications of potential investment opportunities.

The capital budgeting decisions relates to the choice of assets out of the alternatives or reallocation of capital when an old assets fails to justify. It is a decision which analyse the risk and uncertainty
The worth of long term project implies a certain standard for benefits.

b) Short-term Assets:

It is also known as current assets. The short-term assets are resources of a firm in the form of cash or converted in cash without the diminution in value.

Example: The working capital management.

It is day to day activity of finance which deals with current assets and current liabilities. The two basic ingredients of working capital are i) An overview of working capital management as a whole ii) Efficient management of the individual current assets such as cash, Bills receivables and inventory.

ii) Financial Decision:

The financial decision is process perform by financial manager to decide, when, where from and how to acquire funds to meet the investment needs. The main aspect is to determine the appropriate proportion of debt and equity mix known as capital structure.

iii) Dividend Decision:

The financial manager must decide whether the firm should distribute all profit or return to them or distribute a portion. The proportion of profit distributed as dividend is known as dividend payout ratio and retained portion of profit is called retention ratio.

FUNCTIONS OF FINANCIAL MANAGEMENT

There are two approaches to identify the functions that must be performed by financial management. One classification system links the functions with the twin goals of liquidity and profitability. The second classification method focuses on what is being a managed asset or funds.

1) Liquidity Functions:

In seeking sufficient liquidity to carry out the firm's activities, the financial manager performs tasks such as the following:

- The day-to-day operations require the firm to be able to pay its bills properly. This is largely a matter of matching cash inflows against cash outflows.
- The firm must be able to forecast the sources and timing of inflows from customers and use them to pay creditors and suppliers.

2) Raising Fund:

The firm receives financing from a variety of sources. At different times some sources will be more desirable than others.

The possible source may not at a given time, have sufficient funds available to meet firm's need.

The financial manager must identify the amount of funds available from each source and the periods when they will be needed.

Then the manager must take steps to ensure that the funds will actually be available and committed to the firm.

3) Managing the Flow of Internal Funds:

A large firm has a number of bank accounts for various operating division. The money that flows among these internal accounts should be carefully monitored. Frequently, a firm has excess cash in one bank account when it has a need for cash elsewhere.

By continuously checking on the cash balances in the head quarters and each operating division's accounts, the manager can achieve a high degree of liquidity with minimum external borrowing.

4) Profitability Functions:

In seeking profits for the firm the financial manager provides specific inputs into the decision making process, based on the financial training and actions. With respects to profitability, the specific functions are,

i) Cost Control:

Most large corporations have detailed cost accounting systems to monitor expenditure in the operational areas of the firm.

Data are fed into a system on a daily basis and computer-processed reports containing important information on activities are displayed on a screen.

ii) Pricing:

Some of the important decisions made by a firm involve the prices established for products and service. The philosophy and approach to pricing policy are critical elements in the company's marketing efforts, image and sales level.

Determination of the appropriate price should be a joint decision of marketing manager provides information on how differing price will affect demand in the market and firm's competitive position.

The financial manager can supply information about changes in costs at varying levels of production and the profit margins needed to carry on the business successfully.

In effect, finance provides tools to analyse profit requirements in pricing decisions and contributes to the formation of pricing policies.

iii) Forecasting Profits:

The financial manager is responsible for gathering and analysing the relevant data and making forecasts of profits levels.

To estimate profits from future sales, the firm must be aware of current costs likely increases in costs and likely changes in the ability of the firm to sell its products at the planned selling prices.

iv) Measuring Required Return:

Every time a firm invests its capital, it must make a risk return decision. Is the level of return offered by the project adequate for the level of risk there in? The required rate of return that must be expected from a proposal before it can be accepted.

It is sometimes called the cost of capital. Determining the firm's required return or cost of capital is a profitability function.

v) Management functions:

In performing many functions leading to liquidity and profitability, the financial manager operates in two distinct roles. One role is manager, decision maker, a participant in the corporate team trying to maximise the value of the firm over the long run.

The other role is an expert of financial matters and money markets, an individual with specific knowledge and skills in the area of money management. These roles are recognised in the two categories of functions performed by the financial manager.

vi) Managing Assets:

Assets are the resources by which the firm is able to conduct business. The term assets include buildings, machinery, vehicles, inventory, money and other resources owned or leased by the firm.

A firm's assets must be carefully managed and a number of decisions must be made concerning their usage.

The function of asset management attests to the decision making role of the financial manager.

Finance personnel meet with other officers of the firm and participate in making decisions affecting the current and future utilisation of the firm's resources.

The decision making role crosses liquidity and profitability lines, converting idle equipment to cash, so as to improve liquidity, reducing costs and improving profitability.

II. Managing Funds:

Funds may be viewed as the liquid assets of the firm. The term funds includes cash held by the firm, money borrowed by the firm, money borrowed by the firm, money gained from purchases of common and preferred stock.

In the management of funds, the financial manager acts as a specialised staff officer to the CEO of company. The manager is responsible for having sufficient funds for the firm to conduct its business and to pay its bills.

Money must be allocated to finance receivables and inventories, to make arrangements for the purchase of assets and to identify sources of long term financing. Cash must be available to pay dividends declared by the company. The management of funds has both liquidity and profitability aspects. If the companies are inadequate, the firm may default on the payment of bills, interest on its Debt or repayment of principle when a loan is due. If the firm does not carefully choose its financing sources it may pay excessive interest costs with a subsequent decline in profits.

FINANCE FUNCTIONS

Although it may difficult to separate the finance functions from production, marketing and other functions, yet the functions themselves can be readily identified. The functions of raising funds, investing them in assets and distributing returns earned from assets to shareholders are respectively known as financing, investment and dividend decisions. While performing these functions, a firm attempts to balance cash inflows and outflows. This is called liquidity decision and we may add it to the list of important finance decision or functions. Finance functions or decisions include,

1. Investment or long term asset-mix decision.
2. Financing or Capital- mix decision.
3. Dividend or Profit allocation decision.
4. Liquidity or Short term asset-mix decision.

A firm performs finance functions simultaneously and continuously in the normal course of the business. They do not necessarily occur in a sequence. Finance functions call for skilful planning, control and execution of a firm's activities.

Let us note at the outset that shareholders are made better off by a financial decision that increase the value of their shares. Thus while performing the finance functions, the financial manager should strive to maximise the market value of shares. This point is elaborated in detail later on.

Investment Decision:

Investment decision or capital budgeting involves the decision of allocation of capital or commitment of funds to

long term assets that would yield benefits in the future. Two

Important aspects of the investment decision are,

1. The evaluation of the prospective profitability of new investments and
 2. The measurement of a cut off rate against that the prospective return of new investments could be compared.
 - i. Future benefits of investments are difficult to measure and cannot be predicted with certainty.
 - ii. Because of the uncertain future, investment decisions involve risk. Investment proposals should, therefore, be evaluated in terms of both expected return and return.
 - iii. Besides the decision to commit funds in new investment proposals, capital budgeting also involves decision of recommitting funds when an asset becomes less productive or non-profitable.
 - iv. There is a broad agreement that the correct cut off rate is the required rate of return or the opportunity cost of capital.
 - v. However, there are problems in computing the opportunity cost of capital in practice from the available data and information. A decision maker should be aware of these problems.
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- i. Financing decision is the second important function to be performed by financial manager.
 - ii. Broadly, he or she must decide when, where and how to acquire funds to meet the firm's investment needs.
 - iii. The central issue before him or her is to determine the proportion of equity and debt.
 - iv. The mix of debt and equity is known as the firm's capital structure for his or her firm.
 - v. The firm's capital structure is considered to be optimum when the market value of shares is maximised.
 - vi. The use of debt affects the return and the risk of shareholders, it may increase the return on equity funds but it always increases risk.
 - vii. When the shareholders return is maximised with minimum risk, the market value per share will be maximised and the firm's capital structure would be considered optimum.
 - viii. Once the financial manager is able to determine the best available sources.
 - ix. In practice, a firm considers many other factors such as control, flexibility, loan convenient, legal aspects etc., in deciding its capital structure.
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- i. Dividend decision is the third major financial decision.

- ii. The financial manager must decide whether the firm should distribute all profits or retain them or distribute a portion of profit and retain the balance in the business.
- iii. Like the debt policy, the dividend policy is one that maximises the market value of the firm's shares.
- iv. Thus, if shareholders are not indifferent to the firm's dividend policy, the financial manager must determine the optimum dividend-payout ratio.
- v. The pay-out ratio is equal to the percentage of dividends to earnings available to shareholders.
- vi. The financial manager should also consider the questions of dividends regularly.
- vii. Periodically, additional shares called bonus shares (or stock dividend) are also issued to the existing shareholders in addition to the cash dividend.

IV. Liquidity Decision:

- i. Current assets management that affects a firm's liquidity is yet another important financial function, in addition to the management of long-term assets.
- ii. Current assets should be managed efficiently for the safeguarding the firm against the dangers of liquidity and insolvency.
- iii. Investment in current assets affects the firm's profitability, liquidity and risk. A conflict exists between profitability and liquidity while managing current assets.
- iv. If the firm does not invest sufficient funds in current assets, it may become liquid.
- v. But it would lose profitability, as idle current assets would not earn anything.
- vi. Thus, a proper trade-off must be achieved between profitability and liquidity.
- vii. In order to ensure that neither insufficient nor unnecessary funds are invested in current assets.
- viii. He or she should estimate firm's needs for current assets and make sure that funds would be made available when needed.
- ix. It would be clear that financial decision directly concern the firm's decision to acquire or dispose off assets and require commitment or recommitment of funds on a continuous basis.
- x. It is in this context that finance functions are said to influence production, marketing and other functions of the firm.
- xi. This is in consequence finance functions may affect the size, growth, profitability and risk of the firm and ultimately, the value of the firm.

To Quote Ezra Solomon:

- i. The function of financial management is to review and control decisions to commit or recommit funds to new or ongoing uses.

- ii. Thus in addition to raising funds, financial management is directly concerned with production, marketing and other functions within an enterprise whenever decisions are made about the acquisition or distribution of assets.

Financial Procedures and Systems:

For the effective execution of the finance functions, certain other functions have to be routinely performed. They concern procedures and systems and involve a lot of proper work and time. They do not require specialised skills of finance. Some of the important routine finance functions are,

1. Supervision of cash receipts and payments and safeguarding of cash balances.
 2. Custody and safeguarding of securities, insurance policies and other valuable papers.
 3. Taking care of the mechanical details of new outside financing.
 4. Record keeping and reporting.
- i. The finance manager in the modern enterprise is mainly involved in the managerial finance function, the routine finance functions are carried out by executives at lower levels.
 - ii. Financial managers involvement in the routine functions is confined to setting up of rules of procedures, selecting forms to be used, establishing standards for the employment of competent personnel and check up the performance to see that the rules are observed and that the forms are properly used.
 - iii. The involvement of the financial manager in the managerial financial functions is recent. About two or three decades ago, the scope of finance functions or the role of the financial manager was limited to routine activities.

OBJECTIVES / GOALS OF FINANCIAL FUNCTION

- i. The firm's investment and financing decisions are unavoidable and continues.
- ii. In order to make them rationally the firms must have a goal.
- iii. It is generally agreed in theory that the financial goal of the firm should be the maximisation of owners' economic welfare.
- iv. Owners' economic welfare could be maximised by the shareholders wealth as reflected in the market value of shares.
- v. In this section, we show that the Shareholders Wealth Maximization (SWM) is to theoretically logical and operationally feasible normative goal for guiding the financial decision making.

I. PROFIT MAXIMISATION:

- i. Profit maximization means maximising the rupee or any other currency such as dollar, pound or both income of firms.
- ii. Profit is a primary motivating force for any economic activity. Firm is essentially being an economic organisation, it has to maximise the interest of its stakeholders. To this the firm has to earn profit from its operations.
- iii. In fact, profits are useful intermediate beacon (encouragement/inspiration/guiding light/symbol of hope/signal) towards which a firm's capital should be directed.
- iv. McAlpine rightly remarked that profit cannot be ignored since it is both a measure of the success of business and means of its survival and growth.
- v. Profit is the positive and fruitful difference between revenues and expenses of a business enterprise over a period of time.
- vi. If an enterprise fails to make a profit, capital invested is eroded /wrinkled/windswept and this situation prolongs, the enterprise ultimately ceases to exist.
- vii. The overall objective of business enterprise is to earn at least satisfactory returns on the funds invested, consistent with maintaining a sound financial position.

Limitations: The goal of profit maximisation has, however, been criticised in recent times because of the following reasons:

1. Vague:

- i. The term "profit" is vague and it does not clarify what exactly it means. It has different interpretations for different people. Does it mean short-term or long-term; total profit or net profit; profit before tax or profit after tax; return on capital employed.
- ii. Profit maximisation is taken as objective, the question arises which of the about concepts of profit should an enterprise try to maximise. Apparently, vague expression like profit can form the standard of efficiency of financial management.

2. Ignores Time Value of Money:

- i. Time value of money refers a rupee receivable today is more valuable than a rupee, which is going to be receivable in future period.
- ii. The profit maximisation goal does not help in distinguishing between the returns receivable in different periods.
- iii. It gives equal importance to all earnings through the receivable in different periods. Hence, it ignores time value of money.

3. Ignores Quality of Benefits:

- i. Quality refers to the degree of certainty with which benefits can be expected.
- ii. The more certain expected benefits, the higher are the quality of the benefits and vice versa.
- iii. Two firms may have same expected earnings available to shareholders, but if the earnings of one firm show variations considerably when compared to the other firm, it will be more risky.

❖ Profit maximisation objective leads to exploiting employees and consumers. It also leads to colossal /vast inequalities and lowers human values that are an essential part of ideal social systems.

❖ It assumes perfect competition and in the existence of imperfect competition, it cannot be a legitimate/lawful/legal objective of any firm. It is suitable for self-financing, private property and single ownership firms.

❖ A company is financed by shareholders, creditors and financial institutions and managed and controlled by professional managers. A part from these people, there are some others who are interested towards company (i.e., employees, government, customers and society).

❖ Hence one has to take into consideration all these parties interests, which is not possible under the objective of profit maximisation. Wealth maximisation objective is the alternative of profit maximisation.

II. SHAREHOLDERS WEALTH MAXIMISATION (SWM) :

- i. On account of above discussed limitations of profit maximisations shareholders wealth maximisation is an appropriate goal for financial decision making.
- ii. It is operationally feasible since it satisfies all the three requirements of a suitable operational objective of financial courses of action namely exactness, quality of benefits and the time value of money.
- iii. **The objective of Shareholders wealth maximization** is an appropriate and operationally feasible criterion to choose among the alternative financial actions.
- iv. It provides an unambiguous measure of what financial management should seek to maximise in making investment and financing decisions on behalf of owners (shareholders).
- v. Shareholders Wealth Maximisation means maximising the net present value (or wealth) of a course of action to shareholders.
- vi. The Net Present Value (NPV) of course of action is the difference between the present value of its benefits and present value of its costs.

- vii. A financial action that has a positive NPV creates wealth for ordinary shareholders and therefore, desirable/preferable and vice versa.
- viii. A financial action resulting in negative NPV should be rejected since it would destroy shareholders wealth. Between a numbers of mutually exclusive projects the one with the highest NPV should be adopted. The NPV of firm's projects add. Therefore, the wealth will be maximised if this criterion is followed in making financial decisions.
- ix. The wealth will be maximised if this criterion is followed in making financial decisions.
- x. From shareholders point of view, the wealth created by corporation through financial decisions or any decision is reflected in the market value of company shares.
- xi. For example, take Infosys Co., whose share price is increasing year by year, even by issue of bonus shares, and the company is trying to put its shares at popular trading level.
- xii. Therefore, the wealth maximisation principle implies that the fundamental objective of a firm is to maximise market value of its shares.
- xiii. In other words, the market value of the firm is represented by its market price, which in turn is a reflection of a firm's financial decisions.
- xiv. Hence market price acts as a firm's performance indicator.
- xv. A shareholders wealth at a period of time can be computed by the following formula:
 - i. $SW_t = NS \times MP_t$
 - ii. Where SW_t = shareholders wealth at 't' period.
 - iii. NS = Number of equity shares owned (outstanding)
 - iv. MP_t = Market price of share at 't' period.

III. EARNING PER SHARE (EPS) MAXIMISATION :

- i. Apart from the above discussed goals, there are several alternative goals, which will again help to maximise value of the firm or market price per share. They are:
- ii. Maximisation of Return on Equity(ROE)
- iii. Maximisation of Earnings Per Share (EPS)
- iv. Management of Reserves for Growth and Expansion.
- v. If we adopt maximising earnings per share as the financial objective of the firm, this will also not ensure the maximisation of owner's economic welfare.
- vi. It also suffers from the flows already mentioned, i.e., ignores time and risk of the expected benefits. Apart from these problems, maximisation of earnings per share has certain deficiencies as a financial objective.
- vii. For example, Note the following observation,

- viii. For one thing, it implies that the market value of employee's shares is a function of earnings per share, which may not be true in many instances.
- ix. If the market value is not a function of earnings per share, then maximisation of the latter will not necessarily result in the highest possible price for the company's shares.
- x. Maximisation of earnings per share further implies that the firm should make no dividend payments so long as funds can be invested internally at any positive rate of return, however small. Such a dividend policy may not always be to the shareholders advantage.
- xi. It is thus, clear that maximising profits after taxes or earnings per share as the financial objective fails to maximise the economic welfare of owners.
- xii. Both methods do not take account of the timing and uncertainty of the benefits. An alternative to profit maximisation, which solves these problems, is the objective of wealth maximisation. This objective is also considered consistent with the survival goal and with the personal objectives of managers. Such as recognition, power, status and personal wealth.

PROFIT MAXIMIZATION Vs WEALTH MAXIMISATION

Profit maximisation is basically a single period or almost, short term goal, to be achieved within one year, it is usually intercepted to mean the maximisation of profits within a given period of time. A corporation may maximise its short term profits at the expense of its long term profitability. In contrast, stockholder wealth maximisation is a long term goal, since stakeholders are interested in future as well as present profits. Wealth maximisation is generally preferred because it consider,

- 1) Wealth for the long term.
- 2) Risk or uncertainty.
- 3) The timing of return.
- 4) The stakeholders return.

Timing of returns is important, the earlier the return is received, the better, since a quick return reduces the uncertainty about receiving the return and the money received can be reinvested sooner.

The following Table summarises the advantages and disadvantages of these two often conflicting goals.

Goal	Objective	Advantages	Disadvantages
Profit Maximisation	Large amount of profits.	1) Easy to calculate profits.	1) Emphasises the short term.
		2) Easy to determine the link between	2) Ignores risk or uncertainty.

		financial decisions and profits.	3) Ignores the timing of returns. 4) Requires immediate Resources.
Stakeholders Wealth Maximisation	Highest market value of common stock.	1) Emphasises the long run	1) Offers no clear relationship between financial decision and stock price.
		2) Recognises risk or uncertainty	2) It can lead to management anxiety and frustration
		3) Recognises the timing of return.	
		4) Consider the stockholders return.	

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THE EVOLUTION OF FINANCIAL MANAGEMENT.

Definition of Financial Management:

According to Van Home and Wachowicz, “Financial management is concerned with the acquisition, financing and management of assets with some overall goal in mind.” Financial manager has to forecast expected events in business and note their financial implications.

Evolution of Financial Management:

Financial Management has emerged as a distinct field of study, only in the early part of this century, as a result of consolidation movement and formation of large enterprises. Its evolution may be divided into three phases.,

1. The Traditional Phase
2. The Transitional Phase
3. The Modern Phase.

1. The Traditional Phase:

This phase lasted for about four decades. Its finest expression was shown in the scholarly work of Arthur S. Dewing, in his book titled "The Financial Policy of Corporation in 1920's". In this phase the focus of financial management was on four selected aspects.

- i) It treats the entire subject of finance from the outsider's point of view (investment banks, lenders, others) rather than the financial decision-makers viewpoint in the firm.
 - ii) It places much importance on corporation finance and too little on the financing problems of non-corporate enterprises.
 - iii) The sequence of treatment was on certain episodic events like formation, issuance of capital, major expansion, merger, reorganisation and liquidation during the life cycle of an enterprise.
 - iv) It placed heavy emphasis on long term financing, institutions, instruments, procedures used in capital markets and legal aspects of financial events.
1. That is it lacks emphasis on the problems of working capital management.
 2. It was criticised throughout the period of its dominance, but the criticism is based on matters of treatment and emphasis.
 3. Traditional Phase was only outsiders looking approach due to its over emphasis on episodic events and lack of importance to day-to-day problems.

2. The Transitional Phase:

1. It began around the early 1940s and continued through the early 1950s.
2. The nature of financial management in this phase is almost similar to that of earlier phase but more emphasis was given to day-to-day (working capital) problems faced by the finance managers.
3. Capital budgeting techniques were developed in this phase only.
4. Much more details of this phase are given in the book titled "essays on business finance".

3. The Modern Phase:

1. It began in the mid 1950s. It has showed commendable development with a combination of ideas from economic and statistics that has lead financial management to be more analytical and quantitative.
2. The main issue of this phase was rational matching of funds to their uses, which leads to the maximisation of shareholders wealth.
3. This phase witnessed significant developments. The areas of advancements are: capital structure.

4. The study says the costs of capital and capital structure are independent in nature.
5. Dividend policy, suggests that there is the effect of dividend policy on the value of the firm.
6. This phase has also seen one of the first applications of linear programming.
7. For estimation of opportunity cost of funds, multiple rates of return give way to calculate multiple rates of a project.
8. Investment decisions under conditions of uncertainty, gives formulas for determination of expected cash inflows and variance of net present value of projects and gives how probabilistic information helps the firm to optimise investment decisions involving risk.
9. Portfolio analysis gives the idea for allocation a fixed sum of money among the available investment securities.
10. Capital assets pricing model (CAPM), suggests that some of the risks in investments can be neutralised by holding diversified portfolio of securities.
11. Arbitrate Pricing Model (APM), argued that the expected return must be related to risk in such a way that no single investor could create unlimited wealth through arbitrate. CAPM is still widely used in the real world, but APM is slowly gaining momentum.
12. Agency theory emphasises the role of financial contracts in creating and controlling agency problems.
13. Option Pricing Theory (OPT) applied Martingale pricing principle to the pricing of real estates.
14. Cash management of models (working capital management) by Baumol Model, Miller and Orglers. Baumol model helps to determine optimum cash conversion size; Miller model reorder point and upper control points and Orglers model helps to determine optimal cash management strategy by adoption of linear programming application.
15. Further new means of raising finance with the introduction of new capital market instruments, such as FADs, PSBs and CAPPs, etc.
16. Financial engineering that involves the design, development and implementation of innovative financial instruments and formulation of creative optional solutions to problems in finance. While the above developed areas of finance are remarkable, but understanding the international dimension of corporate finance was little, which is not sufficient in the globalised era.

THE ROLE OF FINANCE FUNCTION IN THE CONTEMPORARY SCENARIO.

- Today's highly dynamic business environment is driven by opening and expanding global markets; multiple corporate governance requirements; pressure on improving efficiency, cost cutting, demand for higher return on investment; greater stress on timely valuable information; rapid changes in technology and increased use of technology, sharp focus on aligning the companies towards the customer needs and increasing focus on core unpredictable activities.
- It indicates that the business environment is diverse multi-faced and unpredictable. Not only the business environment at the same time, we have seen major accounting scandals around the world-Enron, Parmalat, WorldCom, Qwest Communications, Tyco International, Health South Corporation, Adelphia, Peregrine Systems, AIG and Satyam Computer services.
- These scandals have occurred due to the misdeeds like overstating revenues, understating expenses, overstating value of assets, underreporting the liabilities, misuse of funds, some cases with billions and dollars due to the collapsed share prices, shook public confidence in the global security markets.
- Therefore, today's business environment place extraordinary demands on corporate executives and particularly the burden of finance function is accelerated without limit.
- As a result, in recent years, executive roles have been forced to evolve and in some instances, change dramatically and companies restructured their traditional models to become leaner, faster and more responsive.
- Finance function plays a pivotal role in restructuring traditional models and it has become core of business operations, reporting and ensuring financial integration than ever before.
- The role of finance manager is no longer confined to accounting, number crunching, financial reporting and risk management and finance manager once considered as an executive with proficiency in figures, is no longer confined to the game of numbers. Having undergone the changes over the period of time, they now play a major role in driving the business for their organisation by acting as strategic business partner of the chief executive officer (CEO).
- Put in simple words, the role and responsibilities of finance manager have become complex and demanding and require constant reinvention of the role.

The following are the new functions of finance manager:

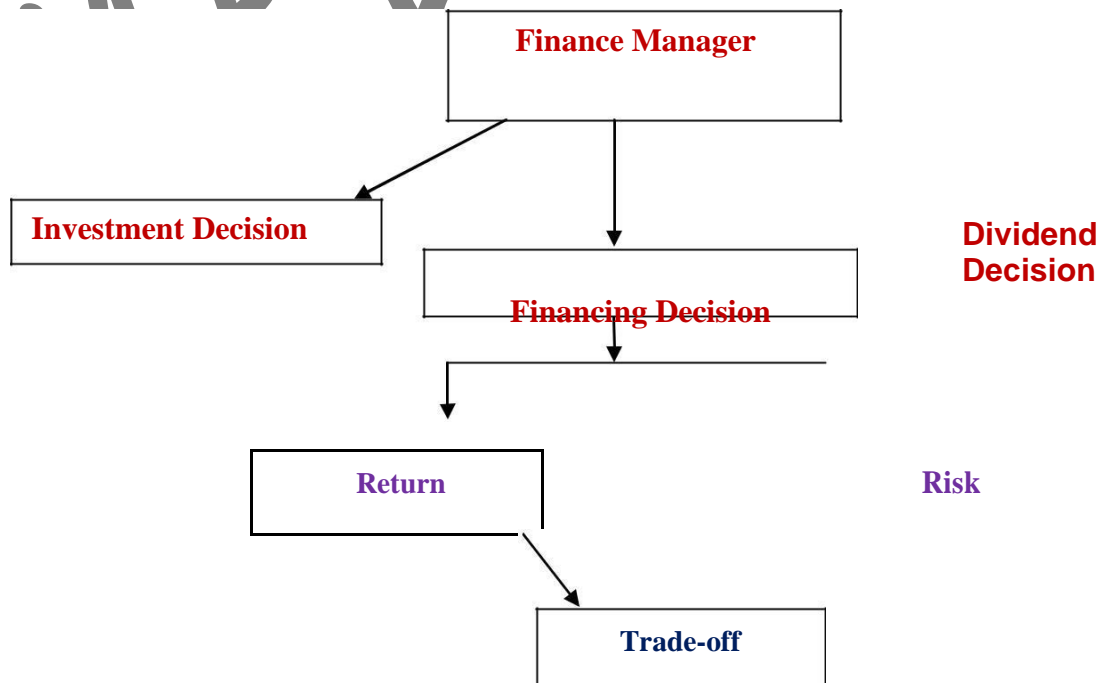
1. Continuous focus on margins and ensure that the organisation stays committed to value creation.
2. Work across the functional divide of the company and exhibit leadership skills.

3. Understand what's driving the numbers and provide operation insights, including a sense of external market issues and internal operating trends and become key strategy player.
4. Aware and use the highly innovative financial instruments.
5. Know the emergence of capital market as central stage for raising money.
6. Adding more value to the business through innovations in impacting human capital.
7. Must balance the need to cut overhead with the need to create a finance organisation able to meet long-term goals by---designing financial processes, systems and organise that can support the business in the future and initiating cost reductions that further cut organisational fat, but not operational muscle.
8. Liaison / connection to the financial community, investors and regulators (rating agencies, investment and commercial bankers and peers), which are valuable information sources for strategic and tactical decisions.
9. Assess probable acquisitions, contemplating initial negotiation, carrying out due diligence, communicating to employees and investors about the horizontal integration.
10. Deal with the post-merger integration in the light of people issues.
11. Deal with the new legislation (New Companies Bill, limited liability of Partnership) and regulations merely add more formality and , to an extent , bureaucracy, to what most already subscribe to as best practices in financial reporting.
12. Be one of the undisputed arbiters in matters of financial ethics, with the backing of legislation and stiff penalties.
13. Finance managers are central to changes in audit and control practices. Corporate governance is a key issue that must be continuously monitored and he/she should not push the limit of the P&L and growth.
14. Be aware of the proposed changes in financial reporting systems such as International Finance Reporting Standards (IFRS), Goods and Services Tax (GST), Direct Tax Code(DTC) and Extensible Business Reporting Language(EBRL). Adapting and optimising within changing tax reforms would become imperative for them and their organisation.
15. Research reports reveal that today companies want to see how they collaborate with and influence of CEO and board of directors; how they can go beyond books of accounts and contribute to the business with a better understanding of customer needs and issues; understand why a particular market is an important; Why a business tie-up is necessary; why sales are not happening; how a company can motivate and retain people; how to rightsizing; and how to take strategic decisions related to supply chains, pricing and production.
16. Therefore, finance function should have to face lightening changes taking place in business environment and coping with such changes is critical for any finance

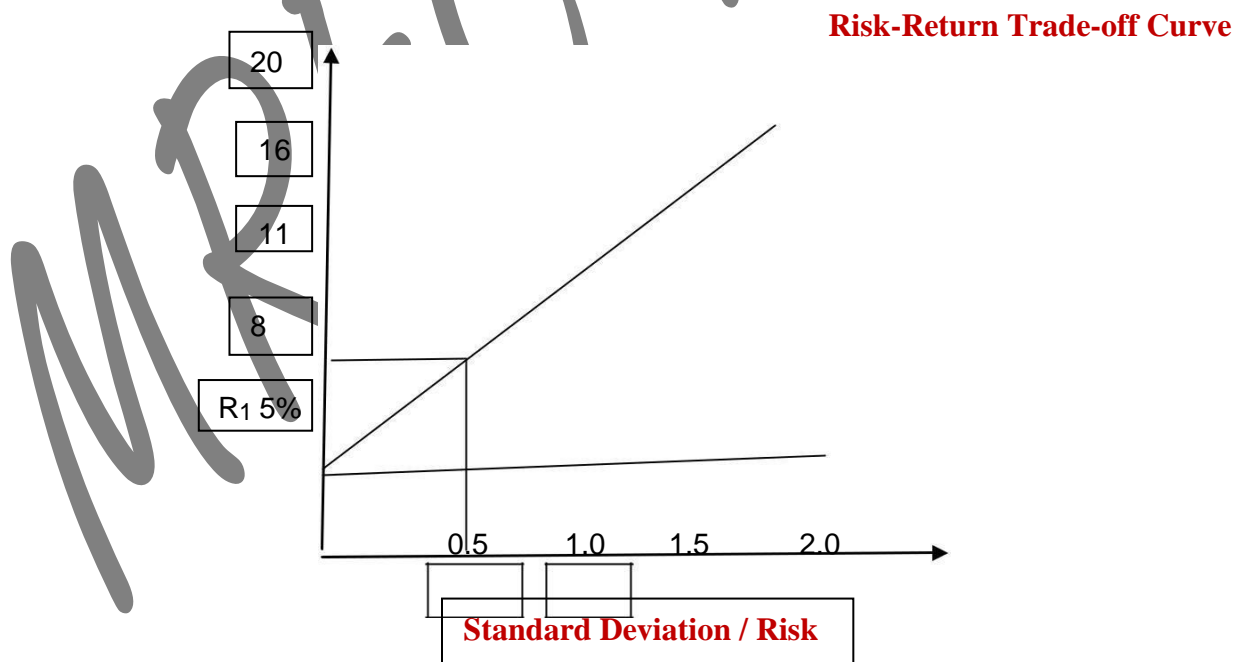
manager to ensure that the business and function remain contemporary and socially relevant.

RISK-RETURN TRADE-OFF

- i. Risk is present in every business decision, whether it is corporate decision or personal decision.
- ii. When we say risk, most of us think in the negative sense.
- iii. For example, driving a two wheeler too fast is risky, because it may lead to accident, which in turn may take like of the people sitting on the vehicle and people moving on the road.
- iv. A student planning to take slips with him/her for examination and trying to copy from them.
- v. It is risky when he / she is caught by the room supervisor or squad.
- vi. According to the business dictionary risk refers, threat or damage injury or liability or loss of other negative occurrence caused by external or internal vulnerabilities.
- vii. But, from business point of view risk is the variability in an expected return. In other words, business people see the risk in broader perspective. They see risk in the business when they realize less return than expected.
- viii. Actual return may be less than the expected return, because of risks like, business risk, financial risk, default risk, delivery risk, interest rate risk, exchange rate risk, liquidity risk, investment risk and political risk.
- ix. For example, selection of an asset for production department or developing a new product or financial decisions like- developing capital structure, working capital management, and dividend decision. Therefore, the decision makers have to assess risk and return of investing on asset before taking any financial decision.



- i. One should keep in mind that the objective of measuring risk is not to eliminate or avoid it- because it is not feasible to do so.
- ii. But it helps us in assessing and determining whether the proposed investment is worth or not. In other words, assessing risk helps come up with the appropriate risk adjusted discount rate to convert future cash inflows into present values.
- iii. There is relation between the risk and return. Any decision that involves more risk generally we can expect more returns from taking that decision, and vice versa.
- iv. In some decisions we do not assume any risk or assume zero risk, but we get some return. Return on this type of investment / decision is known as risk free return (R_1). For example, investing in bank fixed deposits, because the bank account is insured by Central Bank- Reserve Bank of India.
- v. Return determined on the basis of total assets. There are a good number of techniques available for measuring risk like range, standard deviation and coefficient of variation, but generally risk is measured with the help of standard deviation.
- vi. Less standard deviation indicates less risk and vice versa.
- vii. From the following figure we can understand that higher the risk and higher the expected return and vice versa.
- viii. But we can earn 5% return (R_1) without assuming any risk. In other words, we can earn risk free return.



- i. Anyone who assumes higher risk may expect higher return, and lower risk lower return.
- ii. When the risk increases from 0.5 to 2.0, the expected return also increased from 5 per cent to 20 per cent.

- iii. But one thing we need to understand is that there is no equal proportion of increase in the expected return. For example, when the standard deviation increased from zero to 0.5, the return is increased by only 3%.

From the following illustration, (working capital decision/policy) we can understand the relationship between risk and return.

From the following information, comment on risk and return by calculating current ratio and return on total assets ratio.

Particulars	Case 1 (Rs.)	Present Position (Rs.)	Case 2 (Rs.)
Fixed Assets	60,00,000	60,00,000	60,00,000
Current Assets	10,00,000	20,00,000	30,00,000
Current Liabilities	10,00,000	10,00,000	10,00,000
Total Assets	70,00,000	80,00,000	90,00,000
Net Profit (EBIT)	15,00,000	15,00,000	15,00,000

Solution:

Current ratio helps study the short-term position and return on total assets indicates the return.

Particulars	Case 1 (Rs.)	Present Position (Rs.)	Case 2 (Rs.)
Current Ratio (Current Assets / Current Liabilities)	1.0	2.0	3.0
Return on Total Assets Ratio (%) (EBIT / Total Assets)	21.43	18.75	16.67

- i. Current ratio tells the short term liquidity position of firm. Risk is measured by calculating current ratio, high current ratio indicates strong liquidity position (less risk) when compared to standard and current policy is less risky and vice-versa.
- ii. Return is measured by calculating return on total assets. From the above calculation we can observe that current ratio increased when current ratio is 2 and it is increased (by one time) when current assets decreased (by one time). In other words, case 1 (decreasing current assets is risky), and case 2 (increasing current assets) is less risky when compared to the present position. Return on total assets increased in case1 and decreased in case 2, because of increased risk and decreased risk respectively.

- iii. Put in simple words, in Case 1, decreasing current assets increases risk but provides higher return, and in Case 2 increasing current assets reduces risk and return. There is appositive correlation between risk and return. The same way increasing liabilities increases risk and return and decrease in current liabilities reduces risk and return.

TIME VALUE OF MONEY

- i. The simple concept of time value of money is that the value of the money received today is more than the value of same amount of money received after a certain period.
- ii. In other words, money received in the future is not as valuable as money received today. The sooner one receives money, the better it is.
- iii. Taking the case of a rational human being, given the option to receive a fixed amount of money at either of two time periods, he will prefer to receive it at the earliest.
- iv. If you are given the choice of receiving Rs.1,000 today or after one year, you will definitely opt to receive today than after one year.
- v. This is because of you value the current receipt of money higher than future receipt of money after one year.
- vi. The phenomenon is referred to as time preference for money.

REASONS FOR TIME PREFERENCE MONEY:

1. The future is always uncertain and involves risk. An individual can never be certain of getting cash inflows in future and hence he will like to receive money today instead of waiting for the future.
2. People generally prefer to use their money for satisfying their present needs in buying more food or clothes or another car than deferring them for future.
 - i. The present needs are considered urgent as compared to future needs.
 - ii. Moreover, there may also be a fear in one's mind that he may not be able to use the money in future for fear of illness or death.
3. Money has time value because of the opportunities available to invest money received at earlier dates at some interest or otherwise to enhance future earnings. For example, if you have Rs.100 today, you can put it in your bank account and earn interest. After one year the interest would be Rs.8 (taking rate of interest at 8% p.a.) and you would have Rs.108 at the end of the year. So, if you have a choice between Rs.108 next year or Rs.100 next year. Any rational person would prefer the larger amount.

TECHNIQUES OF TIME VALUE OF MONEY:

There are two techniques for adjusting the time value of money:

Compounding Technique
Discounting or Present Value Technique

The time preference for money encourages a person to receive the money at present instead of waiting for future. But he may like to wait if he is duly compensated for the waiting time by way of ensuring more money in future.

The future value at the end of period I can be calculated by a simple formula given below:

$$V_1 = V_0 (1+i)$$

Where V_1 = Future value at the period I

V_0 = Value of money at time O i.e., original sum of money.

i = Interest Rate.

COMPOUNDING FACTORS TABLES:

We have noted above that as n becomes large, the calculation of $(1+i)^n$ becomes difficult. Such calculations can be made with the help of as per Compound Factor Tables.

Using the Compound Factor Tables, the future value of money can be calculated as below:

$$V_n = V_0(CF_{i, n})$$

Where $CF_{i, n}$ is compound factor at (i) present and n periods.

DOUBLING PERIOD:

Compound factor tables can be easily used to calculate the Doubling period, i.e., the length of period which an amount is going to take to double at a certain given rate of interest.

So far we have considered only one compounding of interest annually. But in many cases, interest may have to be compounded more than one year. For example, banks may allow interest on quarterly basis or a company may allow compounding of interest twice a year on 30th June and 31st December every year. The future value of money in such cases can be calculated below:

$$V_n = V_0(1+i/m)^{m \times n}$$

Where V_n = future value of money after n years.

V_0 = Value of money at time O, i.e., original sum of money.

i= interest rate

m = number of times (frequency) of compounding per year.

EFFECTIVE RATE OF INTEREST IN CASE OF MULTI-PERIOD COMPOUNDING:

- i. We have noticed above that amount grows faster in case of multi-period compounding, i.e., when frequency of interest compounding is more than once a year.
- ii. It is so because the actual rate of interest realised, called effective rate in case of multi-period compounding is more than the parent annual rate of interest called nominal rate.
- iii. Effective rate of interest in case of multi-period compounding can also be calculated with the use of following formula:

$$\text{EIR} = \left[1 + \frac{i}{m} \right]^m - 1$$

UNIT-II

THE INVESTMENT PROCESS

MEANING OF CAPITAL BUDGETING:

Capital budgeting is the process of making investment decisions in capital expenditures. A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over a period of time exceeding one year.

DEFINITIONS OF CAPITAL BUDGETING

1. According to Charles T. Horngreen, “ capital budgeting is long term planning for making and financing proposed capital outlays.”
2. According to Richard and Greenlaw, “ capital budgeting as acquiring inputs with long run return.”
3. In the words of Lynch, “ capital budgeting consists in planning development of available capital for the purpose of maximising the long term profitability of the concern.”

SIGNIFICANCE OF CAPITAL BUDGETING

1. Indirect Forecast of sales:

- i. The Investment in fixed assets is related to future sales of the firm during the life time of the assets purchased.
- ii. It shows the possibility of expanding the production facilities to cover additional sales shown in the sales budget.
- iii. Any failure to make the sales forecast accurately would result in over investment or under investment in fixed assets and any erroneous forecast of asset needs may lead the firm to serious economic results.

2. Comparative study of Alternative Projects:

- i. Capital budgeting makes a comparative study of the alternative projects for the replacement of assets which were wearing out or in danger of becoming obsolete so as to make the best possible investment in the replacement of assets.
- ii. For this purpose, the profitability of each project is estimated.

3. Timing of Assets-Acquisition:

- i. Proper capital budgeting leads to proper timing of assets-acquisition and improvement in quality of assets purchased.
- ii. It is due to the nature of the demand and supply of capital goods.
- iii. The demand of capital goods does not arise until sales impinge on productive capacity and such situation occur only immediately. On the other hand, supply of capital goods with their availability is one of the functions of capital budgeting.

4. Cash Forecast:

- i. Capital investment requires substantial funds which can only be arranged by making determined efforts to ensure their availability at the right time.
- ii. Thus it facilities cash forecast.
- iii. Wealth Maximization of shareholders:
- iv. The impact of long term capital investment decisions is far reaching.
- v. It protects the interests of the shareholders and the enterprise because it avoids over-investment and under-investment in fixed assets.
- vi. By selecting the most profitable projects, the management facilitates the wealth maximization of equity shareholders.

5. Other Factors:

- i. It assist in formulating a sound depreciation and assets replacement policy. It may be useful in considering the cost reduction.
- ii. A reduction campaign may necessitate the consideration of purchasing most up-to-date and modern equipment.
- iii. The feasibility of replacing manual work by machinery may be seen from the capital forecast be comparing the manual cost with the capital cost.
- iv. The capital cost of improving working conditions or safety can be obtained through capital expenditure forecasting.
- v. It facilitates the management in making of the long-term planning of an assists in the formulation of general policy.
- vi. It studies the impact of capital investment on the revenue expenditure of the firm such as depreciation, insurance on fixed assets.

LIMITATIONS OF CAPITAL BUDGETING:

1. Uncertainty in future:

The Capital budgeting proposals are infested with the uncertainty in future. All data used in the evaluation of proposals is the estimates. The data is error-prone more with the human judgement, bias or discretion in the identification of cash inflows and cash out flows. Even advanced capital budgeting techniques such as sensitivity analysis cannot be useful if the data is erroneous.

2. Qualitative factors ignored:

In capital budgeting, we consider only such factors which can be quantified in terms of money. Factors such as improved morale of employees as a result of implementation of proposals are not focused. The other factors in the business environment such as social, political and economic conditions and so on, are not reflected here.

3. Volatile business conditions:

The factors influencing investment decisions include technological advancement, government policies, sales forecast, attitudes of management, estimated cash flows discount factor and rate of return. Any change in one or more of these factors is going to affect the capital budgeting decisions. .

4. Unrealistic Assumptions:

There are certain unrealistic assumptions underlying capital budgeting process. They are i) There is no risk and uncertainty in the business environment. This is not correct. The future of the business is full of uncertainty and we apply the management techniques to minimise the risk. ii) The cash flows are received in lump sum at the end of the given period. iii) The key variables such as sales revenue, costs , price or investments and so on are taken based on past data. Particularly in times of raising prices , these seldom hold good for future. iv) The cost of capital and discount rates are one and the same.

COST OF CAPITAL

INTRODUCTION OF COST OF CAPITAL

The cost of capital is the measurement of the sacrifice made by an investor in order to capital formation with a view to get a fair return as his investment as a reward is the measurement of disutility of funds in the present as compared to the return expected in future. The cost of capital is the required rate of return to justify the use of capital so that the expected rate of return can be maintained on equity share and market value per share remains unchanged or should not be reduced at least.

MEANING & DEFINITIONS OF COST OF CAPITAL

“The cost of capital is the rate of return that a firm must earn on its project investment to maintain its market value of the firm to remain unchanged and attract fund.”

According to James C. Van Home, “The cost of capital represents a cut-off rate of the allocation of capital to investment of project. It is the rate of return on a project that will leave unchanged the market price of the stock.”

According to Salomon Ezra, “The cost of capital in any discounting rate, used to value cash stream.”

According to Salomon Ezra, “The cost of capital is the minimum required of a earnings on the cut-off rate of capital expenditures.”

SIGNIFICANCE / IMPORTANCE OF COST OF CAPITAL

- The cost of capital is a very important concept in financial management decision making. The concept, is however a recent development and has relevance in almost every financial decision making but prior to the development, the problem was or bypassed. There are almost 5 important reasons for management to aware the cost of capital (K_o).

1. Capital Budgeting Decision:

- i. Cost of capital may be used as the measuring road for adopting an investment proposal.
- ii. The firm naturally, will choose the project which gives a satisfactory return on investment which would in no case be less than the cost of capital incurred for its financing.
- iii. In various methods of capital budgeting, cost of capital is the key factor in deciding the project out of various proposals pending before the management.
- iv. It measures the financial performance and determines the acceptability of all investment opportunities.

2. Designing the corporate Financial Structure:

- i. The cost of capital is significant in designing the firm’s capital structure.
- ii. The cost of the capital is influenced by the chances in capital structure.

- iii. A capable financial executive always keeps an eye on capital market fluctuations and tries to achieve the sound and economical capital structure for the firm.
- iv. He may try to substitute the various methods of finance in an attempt to minimise the cost of capital so as to increase the market price and earning per share.

3. Deciding about the method of Financing:

- i. A capable financial executive must have knowledge of the fluctuations in the capital market and should analyze the rate of interest on loans and normal dividends and normal dividend rates in the market from time to time.
- ii. Whenever company requires additional finance, he may have a better choice of the source of finance which bears the minimum cost of capital.
- iii. Although cost of capital is an important factor in such decisions, but equally important the considerations of relating control and of avoiding risk.
- iv. Performance of Top Management:
- v. The cost of capital can be used to evaluate the financial performance of the top executives.
- vi. Evaluation of the financial performance will involve a comparison of actual profitability of the projects and taken with the projected overall cost of capital and an appraisal of the actual cost incurred in raising the required funds.

5. Other Areas:

The concept of cost of capital is also important in many others areas of decision making, such as dividend decisions, working capital policy etc. The cost of capital is considered as a standard of comparison for making different business decisions. Such importance of cost of capital has been presented below:

1. Making Investment Decision:

- i. Cost of capital is used as discount factor in determining the net present value.
- ii. Similarly, the actual rate of return of a project is compared with the cost of capital of the firm.
- iii. Thus the cost of capital has a significant role in making investment decisions.

2. Designing Capital Structure:

- i. The proportion of debt and equity is called capital structure.

- ii. The proportion which can minimize the cost of capital and maximize the value of the firm is called optimal capital structure.
- iii. Cost of capital helps to design the capital structure considering the cost of each sources of financing.
- iv. Investor's expectations effect of tax and potentiality of growth.

3. Evaluating the Performance:

- i. Cost of capital is the benchmark of evaluating the performance of different departments.
- ii. The department is considered the best which can provide the highest positive net present value to the firm.
- iii. The activities of different departments are expanded or dropped out on the basis of their performance.

4. Formulating Dividend Policy:

- i. Out of the total profit of the firm, a certain portion is paid to shareholders as dividend. However, the firm can retain all the profits in the business.
- ii. If it has the opportunity of investing in such projects which can provide higher rate of return in comparison of cost of capital.
- iii. On the other hand, all the profit can be distributed as dividend if the firm has no opportunity investing the profit.
- iv. Therefore, cost of capital plays a key role formulating the dividend policy.

IMPORTANCE OF COST OF CAPITAL IN CAPITAL BUDGETING DECISIONS

- i. The concept of cost of capital is very essential in the financial management.
- ii. It is useful in capital budgeting and in making decision related to capital structure planning.
- iii. The performance of the firm is analyzed with the help of concepts of cost of capital and useful in taking other financial decisions.

1. CAPITAL BUDGETING DECISIONS:

- i. According its James T.S.Posterfield, "the concept of capital has assumed growing importance largely because of the need to devise a rational mechanism for making investment decisions of the firm".
- ii. Cost of capital is taken into consideration while making capital budgeting decisions.
- iii. With the help of cost of capital, firms accept or reject the projects.
- iv. It is very useful in capital budgeting decision.
- v.

2. CAPITAL STRUCTURE DECISIONS:

- i. In order to run a business smoothly, firm must maintain an appropriate level of debt and equity mix to finance the assets.
- ii. At the time of preparing optimal capital structure, management must concentrate on maximizing the value of the firm and minimizing the cost of

capital.

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3. ANALYZING FINANCIAL PERFORMANCE:

- i. According to S.K.Bhattacharya, the concept of cost of capital is used to evaluate the financial performance of top management.
- ii. At the time of evaluating the performance of top management, the actual profitability of project is compared with overall estimated cost of capital.
- iii. If profitability is more, then performance is satisfactory.

4. Other Financial Decisions:

Many other financial decisions can be made with the help of cost of capital such as dividend policy, capitalization of profits, working capital etc.

MEASUREMENT OF COST OF CAPITAL

- a. The cost of capital is very important for making decisions. Cost of capital involves different costs related to different sources of finance.
- b. It is necessary for every firm to compute cost of capital before making decisions. The evaluation process of cost of capital involves two steps.
 - i) Calculation of different costs which are the sources of finance.
 - ii) The overall cost is calculated by combining different costs into a composite cost.
- c. Hence it is essential to compute the specific cost of each source to evaluate minimum obligation of company i.e., composite cost of raising capital.
 1. Cost of Debt
 2. Cost of Preferential Capital
 3. Cost of Equity Capital
 4. Cost of Retained Earnings.

1. COST OF DEBT:

The rate of interest which is paid on debt is termed as cost of debt. For calculation of the cost of debt following are required.

- i. Net proceeds of debentures, amount of interest paid periodically and the principal quality of debt. The cost of debt before tax is calculated from following formula.
- ii. $K_{dh} = I / P$

iii. Where K_{dh} = Before tax cost of debt

- i. I = Interest
- ii. P = Principal

When firm raises debt at premium or discount, then P is not the face value of securities but it is the amount of net proceeds received from the issue. In this case the formula will be,

iv. $K_{dh} = I / NP$

v. Where K_{dh} = Before tax cost of debt

- i. I = Interest
- ii. P = Principal
- iii. NP = Net Proceeds

When firm raises capital from debt a sufficient amount of tax is saved because interest is treated as deductible expense in calculation of tax. Hence it reduces tax.

The cost of debt after tax is calculated as follows:

➤ $K_{dh} = K_{dh} (I-t) = I / NP (I-t)$

➤ Where K_{dh} = After tax cost of debt
I = Interest

P = Principal

NP = Net Proceeds

t = Rate of Tax.

COST OF REDEEMABLE DEBT

The debt which is issued to be redeemed after specific period of time is known as redeemable debt. The cost of redeemable debt capital before tax is calculated as follows:

$$K_{dh} = \frac{I + I/n (RV-NP)}{I/2 (RV-NP)}$$

Where

I = Annual Interest. n = No. of years in which debt is to be redeemed. RV = Redeemable value of debt. NP = Net Proceeds of debentures.

Cost of Redeemable Debt

The debt which is issued to be redeemed after specific period of time is known as redeemable debt. The cost of redeemable debt after tax is calculated as follows:

$$K_{dh} = \frac{I(I-t) + I/n(RV-NP)}{I/2(RV+NP)}$$

Where

I = Annual Interest. T=Tax Rate. n = Number of years in which debt is to be redeemed. RV = Redeemable value of debt. NP = Net Proceeds of debentures.

2. Cost of Preference Capital (KP):

- i. Preference shares are the fixed cost bearing securities.
- ii. In case of preference shares, the rate of dividend is fixed in advance at the time of issue.
- iii. Preference shareholders have a preferential rights unlike equity shareholders with regard to payment of dividend and return of principle amount.
- iv. Preference dividend is paid from after tax profits, so adjustments are not made in tax at the time of calculating cost of preference shares.
- v. Preference dividend is considered as an appropriation of profits and not as a charge on profits.
- vi. There are two types of preference capital. They are i) Irredeemable preference capital.

ii) REDEEMABLE PREFERENCE CAPITAL.

i) Irredeemable preference capital:

Irredeemable Preference capital involves perpetual payment of dividend to preference shareholders at a prescribed rate.

$$K_p = D_p / N_p \text{ (Where preference shares are issued at a premium or discount)}$$

Where KP = Cost of preference capital
DP = Annual Preferential Dividend
P= Net Proceeds of preference

sharecapital ii) Redeemable preference capital:

Redeemable Preference shares are those which can be redeemed or recovered on maturity of issue or after specific period of time.

$$K_p = D_p + \frac{P_n - P}{n}$$

$$\frac{P_n + P}{2} \times \frac{n}{100}$$

Where K = Cost of the preferential capital

P= Net Proceeds on issue of Pref.shares

D= Annual Preference Dividend

P_n= Amount payable at the time of redemption

N= Redemption period of preference shares.

3. Cost of Equity Share Capital (K_e)

- i. The cost of equity capital is the return which is expected by its investors.
- ii. In order to provide expected returns to the equity shareholders, company must earn minimum rate of return which is necessary to have a constant market price of the shares. The expectations of the shareholders must be considered before issuing new equity shares for raising additional capital.
- iii. The calculation of cost of equity shares is a complicated process because interest or dividend is not paid on fixed rate and also there is no legal commitment to pay dividend to equity shareholders.
- iv. Hence market value of shares depends upon the amount of dividend paid and the rate of dividend depends on the degree of the business and financial risk.
- v. Following are the approaches or methods through which cost of equity shares can be computed.

i) Dividend Yield Method:

In this method the cost of equity capital is considered as a discount rate at which current value of expected future dividend per share is equal to net proceeds or market price of a share. In this approach the cost of equity shares will be,

$$K_e = (D / NP) \times 100 \text{ or } (D / MP) \times 100$$

Where K = Cost of capital, D= Expected Dividend per share

NP= Net Proceeds per share, MP= Market price share

ii) Dividend Yield with Annual Growth Rate:

This method is used in the situation where dividend pay-out ratio remains constant and dividends are expected to grow at a constant rate of the firm,

then this method is suitable to calculate cost of equity capital. In this method, dividends are the growth rate from the basis for the cost of equity capital.

$$K_e = (D_1 / NP) + G = \frac{D_0(1+g)}{NP} + G$$

Where D_1 = Expected dividend per share at the end of year, G = Rate of Growth in dividend, D_0 = Previous year dividend. When the cost existing equity share capital is calculated, then net must be replaced with market price. $K_e = (D_1 / MP) + G$

iii) Earnings Yield Method:

In this method, the cost of equity capital is considered as the discount rate at which the current value of expected future EPS is equal to the prevailing market price or net proceeds of the shares. In this method the cost of equity capital is

$$K_e = \text{Earnings per share} / \text{Net Proceeds} = \text{EPS} / \text{NP}$$

The earnings yield method is applicable in the following situations for the calculating cost of capital.

- i) When it is expected that earnings per share remains constant.
- ii) In times when the dividend pay-out ratio is 100% or Retention ratio is zero.
- iii) When market price of the share is effected only by the earnings per share.

When firm expects that earnings on new equity shares capital is equal to present rate of earnings.

iv) Capital Asset Pricing Model/ Approach

This method separates the cost of equity into risk free return which is available for investing in government bonds and an additional risk premium which is for investing in a specific share or investment.

The risk premium involves the average return on the overall market portfolio and the beta factor i.e., the risk factor of the particular investment.

The cost of equality for an investment with the help of CAPM approach is calculated as follows:

- a. $K_e = R_f + b_i (R_m - R_f)$
- b. Where K_e = Cost of Capital, R_f = Risk free rate of return,
- c. b_i = Beta of the Investment, R_m = Average Market Return.

v) Bond Yield with Risk Premium Approach

According to bond yield with risk premium approach, the required rate of return of the equity shareholders of a firm is equal to the return on long term bonds and risk premium.

$K_e = \text{Return on long term bonds} + \text{Risk Premium.}$

This approach explains that risk of equity investors is much greater than risk of bond investors. Hence required rate of return of the equity investor involves premium for higher risk. There is no theoretical basis to calculate the risk premium.

vi) Realised Yield Method:

- i. The problem of evaluating the expectations of the investors relating to future dividends and earnings can be solved with the help of realized yield method.
- ii. It is difficult to calculate accurate future dividends and earnings because of they are dependent on many uncertain factors.
- iii. Hence the realized yield method is suitable, which considers the actual average rate of return realized in the past to calculate the cost of equity share capital.
- iv. In order to calculate the average rate of return realized, the dividend received in the past and the gain realized at the time of the sale of shares must be taken into consideration.
- v. The realized yield method has the following assumptions.
 - a) The firm will have constant risk for a specific period of time.
 - b) The expectations of the shareholders are dependent on past realized yield.
 - c) Investors assume that they get same rate of return as the realized yield even if they invest somewhere else.
 - d) It is assumed that there are no remarkable changes in market price of shares.

4. Cost of Retained Earnings:

As, firms do not pay any dividends on retained earnings, hence no cost is involved in retained earnings.

The cost of retained earnings can be evaluated as rate of return acquired by the shareholders from an alternative by investing after tax dividends. It is similar to the opportunity cost of dividend which is sacrificed by the shareholders.

The cost of retained earnings can be calculated as follows:

$$K_r = \frac{D_1}{MP} + G$$

Where,

K_r = Cost of Retained Earnings

D = Expected Dividend

MP = Market price per share

G = Growth Rate.

In spite of 100% payout ratio, shareholders are unable to get whole amount of retained earnings in the form of dividends. Shareholders need to pay tax on dividend income. Some alternative way is to be made with regard to tax, following formula is useful.

$$k_r = \frac{D}{NP} + G \times (1-t) \times (1-b)$$

Where, k_r = cost of Retained earnings

d = Expected Dividend

G = Growth Rate

NP = Net proceeds of equity share

T = Tax Rate

B = cost of purchasing new securities

k_r = Rate of return available to shareholders.

DIFFERENCES BETWEEN DEBT AND EQUITY

DEBT	EQUITY
1. Debt refers to a sum of money that is lent to another party on the repayment of principal amount of a loan.	Equity refers to the value of ordinary shares and preference shares.
2. In debt, investment risk is less for both investors and creditors.	In equity investment risk is high for the both investors and creditors.

3. Cash receipts are fixed.	Cash receipts are variable.
4. Debt management involves the provision for contractual future cash payments and holds an impact on credit ratings of a firm.	. Equity has discretionary dividends and is effected by dilution/ takeover.
5. Debts have tax-deductable interest.	In equity, tax is not deductible from dividends.
6. It acts as a liability in the balance sheet.	It acts as an asset under a name and shareholders' equity of balance sheet.
7. Transactions related to debt effects the income statement.	Transactions related to the equity do not effect the income statement.
8. Transactions related to the equity do not effect the income statement.	Transactions related to the equity do not effect the income statement.
9. Lenders have limited voting rights.	9. Equity holders have voting rights apart from other managerial rights.

INVESTMENT DECISION PROCESS

1. Ascertainment of Project:

Identifying the project for investment is the first step in capital budgeting.

From various projects, the project needs to be ascertained by department officer or head for analysis and the suitable project is selected according to corporate strategies and submitted to the capital expenditure planning committee for large organization or else to concerned head for long term investment decisions.

2. Project Selection:

Different projects are checked thoroughly by capital expenditure planning committee and selection is based on the corporate strategy.

3. Project Analysis:

In this step, profitability of different projects is analyzed.

It may be classified into independent project, dependent project and mutually exclusive project.

The methods by which profitability of project can be ascertained are Pay-back period, Rate of Return, Net Present Value, Internal Rate of Return etc.

4. Determining Priorities:

Giving priorities helps the firm or an individual to work smoothly.

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By analyzing the project, one can know the profitability, urgency and risk involved and can accordingly select the project.

Ranking different projects is required for the firm.

5. Project Approval:

After meeting all the requirements stated in the above step the project is approved and included in capital expenditure budget.

Then the amount from which fixed assets are purchased in budget period is estimated.

6. Project Implementation:

Implementing the project is an important aspect for capital expenditure committee as they have to consider the profitability of the project with time and cost limit.

To overcome the delays in net work techniques such as PERT and CPM are useful for managing the project.

7. Project Performance Review:

The final step is to check whether all the above steps are running smoothly or not and if any problem occurred, it can be rectified with corrective actions.

The project expenditure needs to be compared with post completion expense of the investment process, the actual return generating from investment, everything needs to be properly viewed. Finally the performance can be known.

DEVELOPING CASH FLOW DATA FOR NEW PROJECTS

Cash flow is the amount obtained by subtraction of cash expenses from cash revenues. Usually investment decisions have three types of cash flows. They are (i) Initial Investment (ii) Operating cash flows (iii) Terminal cash flows

(i) Initial Investment:

The capital expenditure incurred in the beginning of the period, $t=0$, to acquire asset is known as initial investment.

It involves cost of new asset to acquire land, building, machinery etc., and also includes expenses like insurance, freight, installation cost etc., net working capital and opportunity cost which is incurred by the firm.

(ii) Operating Cash flows / New Annual Cash Flows:

Operating cash flows are the expected future benefits that are generated from investment in capital assets.

These operating cash flows are evaluated on after-tax basis.

In order to find the net annual cash flows depreciation is added and tax is deducted.

Net Cash Inflows =

Cash Revenues- cash Expenses-Tax

OR

Net Cash Inflow = Net Earnings after tax+ Depreciation.

(iii) Terminal Cash flows:

Terminal cash flows is the value of asset that is obtained by the firm in the last year of the asset when it is sold as scrap.

When firm makes a replacement decision in which old asset is replaced for new asset, the reduction in cost of new asset due to sale value of old asset is known as terminal flow of asset replaced.

CONVENTIONAL AND NON-CONVENTIONAL CASH FLOWS ARE A

PATTERN:

Conventional cash flows are those in which initial cash outflows is followed by a sequence of equal or unequal amount of cash inflows. Usually, this pattern is followed by many capital investment decisions.

Non conventional cash flows are a pattern of cash flow in which more than one cash outflows are followed by series of cash inflows of equal or different amounts. Usually, this pattern is used when a machine is purchased and requires some cost in between its usage time.

APPROACHES TO RECONCILIATION

The conflicts in project ranking may arise due to size disparity, time disparity and life disparity

i) Time Disparity:

Usually, the difference between NPV and IRR methods due to differences in timing of cash flows. When large cash inflows are made in initial stage of project.

It leads to higher rate of return and if large cash inflows are made in final stage of project.

In order to maximize the shareholders wealth firm must select the project with higher NPV. In case of mutually exclusive projects, NPV must be selected.

ii) Size Disparity:

The conflicts between NPV and IRR methods may arise due to unequal amount of cash outflows.

As NPV method give clear results and focus on objective of shareholders wealth maximization , the project which gives higher NPV must be accepted.

The result of NPV is same as the results of internal rate of return on incremental investment.

iii) Life Disparity:

When two mutually exclusive projects have different life spans they result in conflict between NPV and IRR rules.

Let us assume two projects A and B are mutually exclusive and both have same amount of initial outcome.

But project A generate cash inflows at the end of first year, whereas project B provide cash inflows at the end of fifth year.

When NPV method is used project is more profitable and in terms of IRR.

Project A is the best. Firm must select the project with higher NPV because it emphasis on wealth maximization principle.

CLASSIFICATION (TYPES) OF SHARES

SHARE CAPITAL:

The capital of a company is usually divided into certain indivisible units of a fixed amount known as “Shares”.

Under the companies Act, 1956, a public company can issue three types of shares viz.,

(1) Equity Shares (2) Preference Shares

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(3) Differed Shares.

A private company which is not a subsidiary of a public company can, however, issue any kind of shares.

1. EQUITY SHARES:

Equity shares are those which not preference shares.

These shares do not enjoy any preferential right in respect of dividend or repayment of capital.

Dividend on these shares is paid at a rate recommended by the directors and declared by the company in general meeting.

Dividend on equity shares is payable after dividend has been paid on preference shares.

2. PREFERENCE SHARES:

Preference shares are those shares which have i) a preferential right to be paid dividend at a fixed rate during the life time of the company.

ii) A Preferential right to be repaid capital when the company goes into liquidation.

Preference shares may of several types. They are

(i) Cumulative Preference Shares (ii) Non-Cumulative Preference Shares (iii) Participating Preference Shares (iv) Non-Participating Preference Shares (v) Redeemable Preference shares (vi) Irredeemable Preference Shares (vii) Convertible Preference Shares (viii) Non-convertible Preference Shares.

TYPES OF PREFERENCE SHARES

(i) Cumulative Preference Shares:

In case of such shares, if dividend in any year cannot be paid due to non-availability of profit, the holders of these shares are entitled to get such arrears dividend out of subsequent year of years.

(ii) Non-Cumulative Preference Shares:

In case of such shares, if dividend in any year cannot be paid, the right to receive dividend for that year lapses, and holders are not entitled to get such arrear dividend

out of profits of subsequent years.

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(iii) Participating Preference Shares:

The holders of these shares, in addition to a fixed rate of dividend and entitled to share with the equity shareholders, the balance of profits in some proportion after the rights of the equity shareholders have been reasonably met. These shareholders are sometimes also allowed to share in surplus assets on the company being wound up.

(iv) Non-Participating Preference Shares:

The shareholders of these shares are entitled to a fixed rate of dividend only and do not share in the surplus profits or assets which all go to the equity share holders.

(v) Redeemable Preference Shares:

These shares, in addition to the preferential right in respect of dividend, enjoy the right to be redeemed. i.e., to be paid back to the shareholders within the life of the company subject to the terms of the issue and the fulfillment of certain conditions laid down in Sec.80 of the companies Act.

(vi) Irredeemable Preference Shares:

The amount of irredeemable preference shares (like the amounts of equity share) can be paid back only when the company is wound up. After the commencement of the companies (Amendment) Act, 1988, no company limited by shares shall issue any preference share which is irredeemable or redeemable after the expiry of a period of ten years from the date of issue.

(vii) Convertible Preference Shares:

These shares are given the right of being converted into equity shares within a specified period or at a specified date according to the terms of issue.

(viii) Non-convertible Preference Shares:

The shares which cannot be converted into equity shares are known as non-convertible preference shares.

3. Deferred Shares:

These shareholders get their dividend only when all other shareholders are fully satisfied. Thus, deferred shares rank last so far as payment of dividend and return of capital concerned. These shares were earlier issued to Promoters or Founders for services rendered to the company. This was supposed to be the best method of remunerating the founders of the company. So these shares are also called Founders Shares or Promoters Shares. When a company issues deferred shares, maximum amount of dividend payable on ordinary shares is fixed. The deferred shareholders are paid their dividend only after the maximum percentage of dividend is paid to

equity shareholders. So deferred shareholders get their dividend only when the company makes high profits. But with the prosperity of the companies, the deferred shares began to fetch large yield. Under the present Act, these shares cannot be issued by a public company. According to companies Act, 1956 no public company or a private company which is a subsidiary of a public company can issue deferred shares.

CAPITAL BUDGETING PROCESS

According to the definition of **G.C. Philippatos**, “capital budgeting is concerned with the allocation of the firms 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”.

According to the definition of **Lyrich**, “capital budgeting consists in planning development of available capital for the purpose of maximizing the long-term profitability of the concern”.

1. **Identification of various investments proposals:** The capital budgeting may have various investment proposals. The proposal for the investment opportunities may be defined from the top management or may be even from the lower rank. The heads of various department analyse the various investment decisions, and will select proposals submitted to the planning committee of competent authority.
2. **Screening or matching the proposals:** The planning committee will analyse the various proposals and screenings. The selected proposals are considered with the available resources of the concern. Here resources referred as the financial part of the proposal. This reduces the gap between the resources and the investment cost.
3. **Evaluation:** After screening, the proposals are evaluated with the help of various methods, such as payback period proposal, net discovered present value method, accounting rate of return and risk analysis. Each method of evaluation used in detail in the later part of this chapter. The proposals are evaluated by.
 - (a) Independent proposals
 - (b) Contingent of dependent proposals
 - (c) Partially exclusive proposals.

Independent proposals are not compared with other proposals and the same may be accepted or rejected. Whereas higher proposals acceptance depends upon the other one or more proposals. For example, the expansion of plant machinery leads to constructing of new building, additional manpower etc. Mutually exclusive projects are those which competed with other proposals and to implement the proposals after considering the risk and return, market demand etc.

4. **Fixing property:** After the evolution, the planning committee will predict which proposals will give more profit or economic consideration. If the projects or

proposals are not suitable for the concern's financial condition, the projects are rejected without considering other nature of the proposals.

5. Final approval: The planning committee approves the final proposals, with the help of the following:

- (a) Profitability
- (b) Economic constituents
- (c) Financial violability
- (d) Market conditions.

The planning committee prepares the cost estimation and submits to the management.

6. Implementing: The competent authority spends the money and implements the proposals. While implementing the proposals, assign responsibilities to the proposals, assign responsibilities for completing it, within the time allotted and reduce the cost for this purpose. The network techniques used such as PERT and CPM. It helps the management for monitoring and containing the implementation of the proposals.

7. Performance review of feedback: The final stage of capital budgeting is actual results compared with the standard results. The adverse or unfavourable results identified and removing the various difficulties of the project. This is helpful for the future of the proposals.

METHODS OF CAPITAL BUDGETING OF EVALUATION

The methods of evaluations are classified as follows:

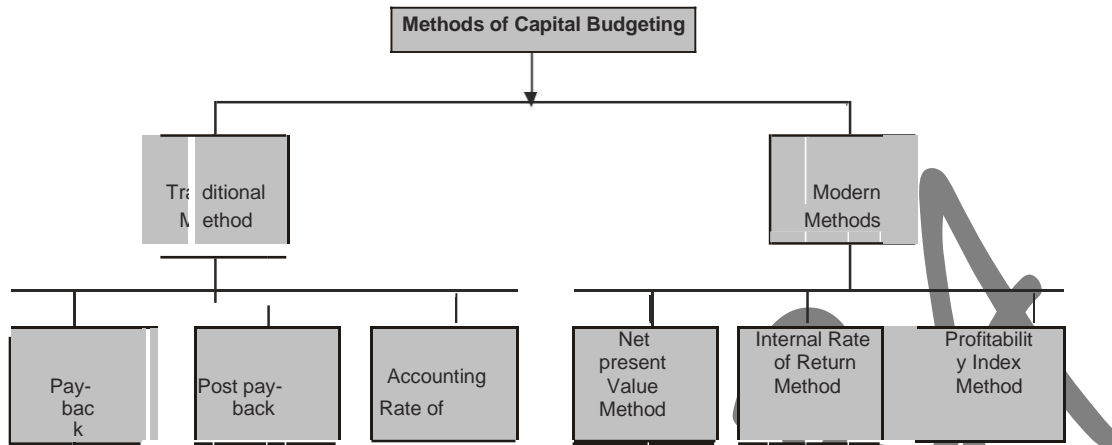
(A) Traditional methods (or Non-discount methods)

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

(B) Modern methods (or Discount methods)

- (i) Net Present Value Method
- (ii) Internal Rate of Return Method

(iii) Profitability Index Method



Pay-back Period

Pay-back period is the time required to recover the initial investment in a project.

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

Merits of Pay-back method

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.

For example, if an investment of Rs. 10,000 in a machine is expected to produce annual cash inflow of Rs. 2,500 for 6 years, then

$$\text{Payback Period} = \frac{\text{Rs. 10,000}}{\text{Rs. 2,500}} = 4 \text{ yrs.}$$

In the case of uneven cash inflows - When a project's cash flows are not equal, but

vary from year to year, i.e., they are of non-conventional nature, the calculation of

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payback period takes a cumulative form of annual cash inflows. In such a situation, payback period is calculated by the process of cumulating cash inflows till the time when cumulative cash inflows become equal to the original investment outlay.

Exercise

Certain projects require an initial cash outflow of Rs. 25,000. The cash inflows for 6 years are Rs. 5,000, Rs. 8,000, Rs. 10,000, Rs. 12,000, Rs. 7,000 and Rs. 3,000.

Solution

Yea	Cash Inflows	Cumulative Cash
1	5,000	5,000
2	8,000	13,000
3	10,000	23,000
4	12,000	35,000
5	7,000	42,000
6	3,000	45,000

The above calculation shows that in 3 years Rs. 23,000 has been recovered Rs. 2,000, is balance out of cash outflow. In the 4th year the cash inflow is Rs. 12,000. It means the pay-back period is three to four years, calculated as follows

$$\begin{aligned} \text{Pay-back period} &= 3 \text{ years} + \frac{2000}{12000} \times 12 \text{ months} \\ &= 3 \text{ years } 2 \text{ months.} \end{aligned}$$

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.

$$\text{Average Rate of Return} = \frac{\text{Average Profits (after taxes)}}{\text{Total Outlay of the Project}} \times 100$$

The average investments - Any of the following three formulae may be applied to calculate average investment:

- (a) $\text{Initial Investment}/2$
- (b) $\text{Initial Investment} + \text{Scrap Value}/2$

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.

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.

$$\text{NPV} = \text{Total Present value of Future Cash inflows} - \text{Initial Investment.}$$

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.

Illustration : Suppose a project costs Rs. 5,000. Its estimated economic life is 2 years. The firm's cost of capital is estimated to be 10%. The estimated cash inflows from the project are Rs. 2,800 p.a. Calculate its NPV.

Solution : As the firm's cash inflows are of conventional pattern (i.e. even amount), the compound value factor can be used for calculating their NPV.

$$\begin{aligned} \text{Total Present Value} &= \\ &= \text{Rs. } 2,800 \times 1.813 \end{aligned}$$

Rs. 5,272

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Less Cost of the Project

5,000

Net Present Value

272

Exercise 6

From the following information, calculate the net present value of the two project and suggest which of the two projects should be accepted a discount rate of the two.

	Project X	Project Y
Initial Investment	Rs. 20,000	Rs. 30,000
Estimated Life	5 years	5 years
Scrap Value	Rs. 1,000	Rs. 2,000

The profits before depreciation and after taxation (cash flows) are as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
	Rs.	Rs.	Rs.	Rs.	Rs.
Project x	5,000	10,000	10,000	3,000	2,000
Project y	20,000	10,000	5,000	3,000	2,000

Note : The following are the present value factors @ 10% p.a.

Year	1	2	3	4	5	6
Factor	0.90	0.82	0.751	0.68	0.62	0.56

Solution

Year	Cash Inflows		Present Value of	Present Value of Net Cash Inflow	
	Project X	Project Y		Project X	Project Y
1	5,000	20,000	0.909	4,545	18,180
2	10,000	10,000	0.826	8,260	8,260
3	10,000	5,000	0.751	7,510	3,755
4	3,000	3,000	0.683	2,049	2,049
5	2,000	2,000	0.621	1,242	1,242
Scrap	1,000	2,000	0.621	621	1,245
Total present valueInitial investments				24,227	34,728
Net present value				20,000	30,000
				4,227	4,728

Project Y should be selected as net present value of project Y is higher.

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.

Merits

1. It considers 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 methods.
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.

A. Profitability Index Method

This method is also known as Benefit-Cost Ratio. One major demerit of NPV method is that it cannot be applied to compare those mutually exclusive projects which differ in costs substantially. To compare and evaluate such projects, the profitability index should be calculated. The profitability index is the relationship that exists between the present values of net cash inflows and cost outlays of the projects. It can be calculated in two manners:

$$(i) \text{ Gross BCR} = \frac{\text{Total Present Values of Cash Inflows}}{\text{Initial Investment}}$$

$$(ii) \text{ Net BCR} = \frac{\text{Net Present Values of Cash Inflows}}{\text{Initial Investment}}$$

RISK AND UNCERTAINTY IN CAPITAL BUDGETING

Capital budgeting requires the projection of cash inflow and outflow of the future. The future is always uncertain, estimate of demand, production, selling price, cost etc., cannot be exact.

For example: The product at any time it becomes obsolete therefore, the future is unexpected. The following methods for considering the accounting of risk in capital budgeting. Various evaluation methods are used for risk and uncertainty in capital budgeting is as follows:

Risk-adjusted cut off rate (or method of varying discount rate)

Certainly equivalent method.

Sensitivity technique.
 Probability technique
 Standard deviation method .
 Co-efficient of variation method.
 Decision tree analysis.

(i) **Risk-adjusted cut-off rate (or Method of varying)**

This is one of the simplest methods while calculating the risk in capital budgeting increase cut of rate or discount factor by certain percentage an account of risk.

Exercise The Ramakrishna Ltd., in considering the purchase of a new investment. Two alternative investments are available (X and Y) each costing Rs. 150000. Cash inflows are expected to be as follows:

Cash Inflows

Year	Investment X Rs.	Investment Y Rs.
1	60,000	65,000
2	45,000	55,000
3	35,000	40,000
4	30,000	40,000

The company has a target return on capital of 10%. Risk premium rate are 2% and 8% respectively for investment X and Y. Which investment should be preferred?

Solution

The profitability of the two investments can be compared on the basis of net present values cash inflows adjusted for risk premium rates as follows:

Investment				Investment Y		
Year	Discount Factor 10% + 2%	Cash Inflow	Present Value Rs.	Discount Factor 10% + 8%	Cash Inflow	Present Values
1	0.893	60,00	53,580	0.847	85,000	71,995
2	0.797	45,00	35,865	0.718	55,000	39,490
3	0.712	35,00	24,920	0.609	40,000	24,360
4	0.635	30,00	19,050	0.516	40,000	20,640
			1,33,415			1,56,485

Investment X

Net present value = 133415 – 150000

= -Rs. 16585

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Investment Y

$$\begin{aligned} \text{Net present value} &= 156485 - 150000 \\ &= \text{Rs. } 6485 \end{aligned}$$

As even at a higher discount rate investment Y gives a higher net present value, investment Y should be preferred.

(ii) Certainly equivalent method

It is also another simplest method for calculating risk in capital budgeting info reduces expected cash inflows by certain amounts it can be employed by multiplying the expected cash inflows by certainly equivalent co-efficient in order the uncertain cash inflow to certain cash inflows.

Exercise

There are two projects A and B. Each involves an investment of Rs. 50,000. The expected cash inflows and the certainly co-efficient are as under:

Year	Project		Project	
	Cash inflows	Certainly co-	Cash inflows	Certainly Co-
1	35,000	.8	25,000	.9
2	30,000	.7	35,000	.8
3	20,000	.9	20,000	.7

Risk-free cut-off rate is 10%. Suggest which of the two projects. Should be preferred. **Solution**

Calculations of cash Inflows with certainly:

Yea	Project			Project		
	Cash Inflow	Certainly Co-	Certain	Cash Inflow	Certainly Co-	Certain
1	35,00	.8	28,00	25,000	.9	22,500
2	30,00	.7	21,00	35,000	.8	28,000
3	20,00	.9	18,00	20,000	.7	14,000

Calculation of present values of cash inflows:

Year	Project		Project		
	Discount Factor @	Cash Inflow	Present t	Cash Inflow	Present Value
1	0.909	28,00	25,452	22,50	20,453
2	0.826	21,00	17,346	28,00	23,128
3	0.751	18,00	13,518	14,00	10,514
Total			56,316		54,095

Project A	Project B
Net present value = Rs. 56,316 – 50,000 = Rs. 6,316	54,095 – 50,000 Rs. 4,095

As the net present value of project A is more than that of project B. Project A should be preferred

(iii) Sensitivity technique

When cash inflows are sensitive under different circumstances more than one forecast of the future cash inflows may be made. These inflows may be regarded on 'Optimistic', 'most likely' and 'pessimistic'. Further cash inflows may be discounted to find out the net present values under these three different situations. If the net present values under the three situations differ widely it implies that there is a great risk in the project and the investor's decision to accept or reject a project will depend upon his risk bearing activities.

(iv) Probability technique

Probability technique refers to the each event of future happenings are assigned with relative frequency probability. Probability means the likelihood of future event. The cash inflows of the future years further discounted with the probability. The higher present value may be accepted.

(v) Standard deviation method

Two Projects have the same cash outflow and their net values are also the same, standard deviations of the expected cash inflows of the two Projects may be calculated to measure the comparative risk of the Projects. The project having a higher standard deviation is said to be more risky as compared to the other.

(vi) Co-efficient of variation method

Co-efficient of variation is a relative measure of dispersion. If the projects have the same cost but different net present values, relative measure, i.e., Co-efficient of variation should be risk induced

(vii) Decision tree analysis

In the modern business world, putting the investments are become more complex and taking decisions in the risky situations. So, the decision tree analysis helpful for taking risky and complex decisions, because it consider all the possible events and each possible events are assigned with the probability.

Construction of Decision Tree

1. Defined the problem
2. Evaluate the different alternatives
3. Indicating the decision points
4. Assign the probabilities of the monetary values
5. Analysis the alternatives.

UNIT-III

CAPITAL STRUCTURE DECISIONS

INTRODUCTION:

Capital structure in simple words refers to debt equity ratio of a company. In other words it refers to the proportion of debt in the investments of the company. It is important for a company to have an appropriate capital structure.

MEANING OF CAPITALIZATION:

In broad sense, capitalization is synonymous with financial planning, covering decisions regarding the amount of capital to be raised, the relative proportions of the various classes of securities to be issued and the administration of capital.

In its narrow sense, capitalization means the amount at which a firm's business can be valued, the sum total of all long-term securities issued by a company and the surpluses not meant for distribution.

DEFINITIONS OF CAPITALIZATION:

1. According to Doris, "capitalization is the total accounting value of the capital stock, surplus in whatever form it may appear and long-term debts"
2. According to A.S.Dewing, "The term capitalization or the valuation of the capital includes the capital stock and debts".
3. According to A.F.Lincoln, "capitalization refers to the sum of the outstanding stocks and funded obligations which may represent wholly fictitious values".
4. According to G.W.Gerstenberg, "For all practical purposes, capitalization means the total accounting value of all capital regularly employed in the business".
5. According to Pearson and Hunt, "The term capitalization is used to mean the total of the funds raised on a long term basis, whether debt, preferred, equity or common equity. The common equity, of course, includes all values belonging to that interest and not merely stated value of the common stock".
6. According to W.H. Husband and D.C.Dockerary, "capitalization includes the amount of capital to be raised, the securities through which is to be raised and the relative proportion of various classes of securities to be issued and also the administration of capital".

ESTIMATION OF CAPITAL REQUIREMENT:

The financial manager should keep in mind the future requirements of funds for expansion and growth of the company, while estimating the capital needs. On the other hand, while estimating the capital requirements of the newly promoted company, the financial manager should give due consideration to the following factors.

1. Expenses for Promotion:

Required in case of a new company, these include expenses incurred on discovery of business idea and examine its viability, registration of the company, establishment of organization, commencement of business.

2. Cost of Fixed Assets:

Fixed assets including land and building, plant and machinery, furniture and fixtures etc., need a careful capital requirements estimation.

3. Cost of Current Assets:

This is the capital required for financing the acquisition of current assets such as stocks, debtors, bills receivables, prepaid expenses etc.

4. Cost of Financing:

Every company has to incur a huge amount of expenditure for raising finance which include advertisement, listing, brokerage, commission etc. 5. Cost of Fictitious Assets: Most of the companies require to pay huge amount for purchase of intangible assets such as goodwill, patents, trademarks and copyrights etc.

5. Cost of Sustenance and Development:

While in the initial years, a business may need funds to meet its losses.

In later years, it needs funds for diversification, expansion and growth, as well as for replacement and renovation of old fixed assets, modernization, innovation, research and development.

FACTORS DETERMINING CAPITAL STRUCTURE

1. Trading on Equity:

The word equity denotes the ownership of the company.

Trading on equity means taking advantage of equity share capital to borrowed on reasonable basis.

It refers to additional profits that equity shareholders earn because of issuance of debentures and preference shares.

It is based on the thought that if the rate of dividend on preference capital and the rate of interest on borrowed capital is lower than the general rate of company's earnings, equity shareholders are at advantage which means a company should go for a judicious blend of preference shares, equity shares as well as debentures.

Trading on equity becomes more important when expectations of shareholders are high.

2. Degree of Control:

In a company, it is the directors who are so called elected representatives of equity shareholders.

These members have got maximum voting rights in a concern as compared to the preference shareholders and debenture holders.

Preference share holders have reasonably less voting rights while debenture holders have no voting rights.

If the company's management policies are such that they want to retain their voting rights in their hands, the capital structure consists of debenture holders and loans rather than equity shares.

3. Flexibility in Financial Plan:

In an enterprise, the capital structure should be such that there is both contractions as well as relaxation in plans.

Debentures and loans can be refunded back as the time requires.

While equity capital cannot be refunded at any point which provides rigidity to plans.

Therefore, in order to make the capital structure possible, the company should go for issue of debentures and other loans.

4. Choice of Investors:

The company's policy generally is to have different categories of investors for securities.

Therefore, a capital structure should give enough choice to all kind of investors to invest.

Bold and adventurous investors generally go for equity shares and loans and debentures are generally raised keeping into mind conscious investors.

5. Capital Market Condition:

In the lifetime of the company, the market price of the shares has got an important influence. During the depression period, the company's capital structure generally consists of debentures and loans. While in period of Boom and Inflation, the capital should consist of share capital generally equity shares.

6. Period of Financing:

When company wants to raise finance for short period, it goes for loans from banks and other institutions; while for long period it goes for issue of shares and debentures.

7. Cost of Financing:

In a capital structure, the company has to look to the factor of cost when securities are raised.

It is seen that debentures at the time of profit earning of the company prove to be a cheaper source of finance as compared to equity shares where equity shareholders demand an extra share in profits.

8. Stability of Sales:

An established business which has a growing market and high sales turnover, the company is in position to meet fixed commitments.

Interest on debentures has to be paid regardless of profit.

Therefore, when sales are high, thereby the profits are high and company is in better position to meet such fixed commitments like interest on debentures and dividends on preference shares.

If company is having unstable sale, then the company is not in position to meet fixed obligations. So, equity capital proves to be safe in such cases.

9. Size of a Company:

Small size business firms 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.

The bigger size, the wider is total capitalization.

FEATURES OF CAPITAL STRUCTURE

Financial manager should develop an appropriate capital structure, which is helpful to maximize shareholders wealth. This can be possible when all factors which are relevant to the company's capital structure and properly analyzed, balanced and considered.

1. Profitability:

The company should make maximum use of leverage at a minimum cost. In other words, it should generate maximum returns to owners without adding additional cost.

2. Flexibility:

Flexible capital structure means it should allow the existing capital structure to change according to the changing conditions without increasing cost.

It should be possible for the company to provide funds whenever needed to finance its possible activities.

The company should be able to raise funds whenever the need arises and also retire debts whenever it becomes too costly to continue with particular source.

3. Solvency:

The use of excessive debt threatens the solvency of the company. Debt should be used till the point where debt does not add significant risk, otherwise use of debt should be avoided.

4. Control:

The capital structure should involve minimum dilution of the control of the company.

A company that issues more and more equity dilutes the power of existing shareholders as number of shareholders increases.

Also raising of additional funds through public issue may lead to dilution of control.

5. Cost of Capital:

If the cost of any component of capital structure of the company like interest payment on debts is very high then it can increase the overall cost of the capital of the company.

In such case the company should minimize the use of that component of capital structure in its total capital structure.

6. Flotation Cost :

It is the cost involved in issuing a security or a debt.

If such cost is too high for new issue of any component of capital structure, then the use of such a source of fund should be minimized.

TYPES OF CAPITAL STRUCTURE

MEANING OF CAPITAL STRUCTURE

Capital structure refers to the kinds of securities and the proportionate amounts that make up capitalization. It is the mix of different sources of long-term sources such as equity shares, preference shares, debentures, long-term loans and retained earnings.

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”.

FINANCIAL STRUCTURE

The term financial structure is different from the capital structure. Financial structure shows the pattern total financing. It measures the extent to which total funds are available to finance the total assets of the business.

Financial Structure = Total liabilities

Or

Financial Structure = Capital Structure + Current liabilities.

The following points indicate the difference between the financial structure and capital structure.

Financial Structures	Capital Structures
1. It includes both long-term and short-term sources of funds	1. It includes only the long-term sources of funds.
2. It means the entire liabilities side of the balance sheet.	2. It means only the long-term liabilities of the company.
3. Financial structures consist of all sources of capital.	3. It consist of equity, preference and retained earning capital.
4. It will not be more important while determining the value of the firm.	4. It is one of the major determinations of the value of the firm.

CAPITALIZATION

Capitalization is one of the most important parts of financial decision, which is related to the total amount of capital employed in the business concern.

According to **Guthman and Dougall**, “capitalization is the sum of the par value of stocks and bonds outstanding”.

“Capitalization is the balance sheet value of stocks and bonds outstands”.

— **Bonneville and Dewey**

TYPES OF CAPITALIZATION

Capitalization may be classified into the following three important types based on its nature:

- Over Capitalization
- Under Capitalization
- Water Capitalization

Over Capitalization

Over capitalization refers to the company which possesses an excess of capital in

relation to its activity level and requirements. In simple means, over capitalization is more capital than actually required and the funds are not properly used.

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According to **Bonneville, Dewey and Kelly**, over capitalization means, “when a business is unable to earn fair rate on its outstanding securities”.

Example

A company is earning a sum of Rs. 50,000 and the rate of return expected is 10%. This company will be said to be properly capitalized. Suppose the capital investment of the company is Rs. 60,000, it will be over capitalization to the extent of Rs. 1,00,000. The new rate of earning would be:

$$50,000/60,000 \times 100 = 8.33\%$$

When the company has over capitalization, the rate of earnings will be reduced from 10% to 8.33%.

Causes of Over Capitalization

Over capitalization arise due to the following important causes:

- Over issue of capital by the company.
- Borrowing large amount of capital at a higher rate of interest.
- Providing inadequate depreciation to the fixed assets.
- Excessive payment for acquisition of goodwill.
- High rate of taxation.
- Under estimation of capitalization rate.

Effects of Over Capitalization

Over capitalization leads to the following important effects:

- Reduce the rate of earning capacity of the shares.
- Difficulties in obtaining necessary capital to the business concern.
- It leads to fall in the market price of the shares.
- It creates problems on re-organization.
- It leads under or mis-utilisation of available resources.

Remedies for Over Capitalization

Over capitalization can be reduced with the help of effective management and systematic design of the capital structure. The following are the major steps to reduce over capitalization.

- Efficient management can reduce over capitalization.
- Redemption of preference share capital which consists of high rate of dividend.
- Reorganization of equity share capital.
- Reduction of debt capital

Under Capitalization

Under capitalization is the opposite concept of over capitalization and it will occur when

the company's actual capitalization is lower than the capitalization as warranted by its

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earning capacity. Under capitalization is not the so called inadequate capital.

Under capitalization can be defined by **Gerstenberg**, “a corporation may be undercapitalized when the rate of profit is exceptionally high in the same industry”.

Hoagland defined under capitalization as “an excess of true assets value over the aggregate of stocks and bonds outstanding”.

Causes of Under Capitalization

Under capitalization arises due to the following important causes:

- Under estimation of capital requirements.
- Under estimation of initial and future earnings.
- Maintaining high standards of efficiency.
- Conservative dividend policy.
- Desire of control and trading on equity.

Effects of Under Capitalization

Under Capitalization leads certain effects in the company and its shareholders.

- It leads to manipulate the market value of shares.
- It increases the marketability of the shares.
- It may lead to more government control and higher taxation.
- Consumers feel that they are exploited by the company.
- It leads to high competition.

Remedies of Under Capitalization

Under Capitalization may be corrected by taking the following remedial measures:

1. Under capitalization can be compensated with the help of fresh issue of shares.
2. Increasing the par value of share may help to reduce under capitalization.
3. Under capitalization may be corrected by the issue of bonus shares to the existing shareholders.
4. Reducing the dividend per share by way of splitting up of shares.

Watered Capitalization

If the stock or capital of the company is not mentioned by assets of equivalent value, it is called as watered stock. In simple words, watered capital means that the realizable value of assets of the company is less than its book value.

According to **Hoagland's** definition, “A stock is said to be watered when its true value is less than its book value.”

Causes of Watered Capital

Generally watered capital arises at the time of incorporation of a company but it also

arises during the life time of the business. The following are the main causes of watered capital:

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1. Acquiring the assets of the company at high price.
2. Adopting ineffective depreciation policy.
3. Worthless intangible assets are purchased at higher price.

Definition of Leverage

James Horne has defined leverage as, “the employment of an asset or fund for which the firm pays a fixed cost or fixed return.

TYPES OF LEVERAGES

OPERATING LEVERAGE

The leverage associated with investment activities is called as operating leverage. It is caused due to fixed operating expenses in the company. Operating leverage may be defined as the company’s ability to use fixed operating costs to magnify the effects of changes in sales on its earnings before interest and taxes. Operating leverage consists of two important costs viz., fixed cost and variable cost. When the company is said to have a high degree of operating leverage if it employs a great amount of fixed cost and smaller amount of variable cost. Thus, the degree of operating leverage depends upon the amount of various cost structure. Operating leverage can be determined with the help of a break even analysis.

Degree of Operating Leverage

The degree of operating leverage may be defined as percentage change in the profits resulting from a percentage change in the sales. It can be calculated with the help of the following formula:

FINANCIAL LEVERAGE

Leverage activities with financing activities are called financial leverage. Financial leverage represents the relationship between the company’s earnings before interest and taxes (EBIT) or operating profit and the earning available to equity shareholders.

Financial leverage is defined as “the ability of a firm to use fixed financial charges to magnify the effects of changes in EBIT on the earnings per share”. It involves the use of funds obtained at a fixed cost in the hope of increasing the return to the shareholders. “The use of long-term fixed interest bearing debt and preference share capital along with share capital is called financial leverage or trading on equity”.

Financial leverage may be favourable or unfavourable depends upon the use of fixed cost funds. Favourable financial leverage occurs when the company earns more on the assets purchased with the funds, than the fixed cost of their use. Hence, it is also called as positive financial leverage. Unfavourable financial leverage occurs when the company does not earn as much as the funds cost. Hence, it is also called as negative financial leverage.

Financial leverage can be calculated with the help of the following formula:

$$\frac{OP}{FL} = \frac{PBT}{PBT - I}$$

Where

FL = Financial leverage

OP = Operating profit

(EBIT) PBT = Profit before tax.

Degree of Financial Leverage

Degree of financial leverage may be defined as the percentage change in taxable profit as a result of percentage change in earnings before interest and tax (EBIT). This can be calculated by the following formula

$$DFL = \frac{\text{Percentage change in taxable Income}}{\text{Percentage change in EBIT}}$$

DISTINGUISH BETWEEN OPERATING LEVERAGE AND FINANCIAL LEVERAGE

Operating Leverage	Financial Leverage
<ol style="list-style-type: none"> 1. Operating leverage is associated with investment activities of the company. 2. Operating leverage consists of fixed operating expenses of the company. 3. It represents the ability to use fixed operating cost. 4. Operating leverage can be calculated by $OL = \frac{C}{OP}$ 5. A percentage change in the profits resulting from a percentage change in the sales is called as degree of operating leverage. 6. Trading on equity is not possible while the company is operating leverage. 7. Operating leverage depends upon fixed cost and variable cost. 8. Tax rate and interest rate will not affect the operating leverage. 	<ol style="list-style-type: none"> 1. Financial leverage is associated with financing activities of the company. 2. Financial leverage consists of operating profit of the company. 3. It represents the relationship between EBIT and EPS. 4. Financial leverage can be calculated by $FL = \frac{OP}{PBT}$ 5. A percentage change in taxable profit is the result of percentage change in EBIT. 6. Trading on equity is possible only when the company uses financial leverage. 7. Financial leverage depends upon the operating profits. 8. Financial leverage will change due to tax rate and interest rate.

COMBINED LEVERAGE

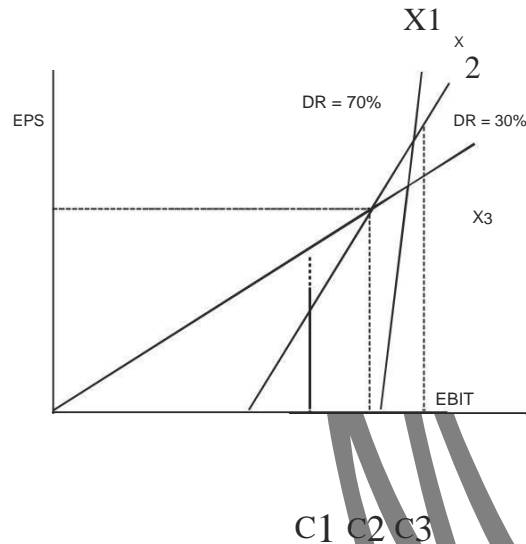
When the company uses both financial and operating leverage to magnification of any change in sales into a larger relative changes in earning per share. Combined leverage is also called as composite leverage or total leverage.

Combined leverage express the relationship between the revenue in the account of sales and the taxable income.

Combined leverage can be calculated with the help of the following formulas:

$$CL = OL \times FL$$

EBIT - EPS Break even chart for three different financing alternatives



Where,

DR= Debt Ratio

C1, C2, C3 = Indifference

Point X1, X2, X3 =
Financial BEP

Financial BEP

It is the level of EBIT which covers all fixed financing costs of the company. It is the level of EBIT at which EPS is zero.

Indifference Point

It is the point at which different sets of debt ratios (percentage of debt to total capital employed in the company) gives the same EPS.

CAPITAL STRUCTURE THEORIES

Capital structure is the major part of the firm's financial decision which affects the value of the firm and it leads to change EBIT and market value of the shares. There is a relationship among the capital structure, cost of capital and value of the firm. The aim of effective capital structure is to maximize the value of the firm and to reduce the cost of capital.

There are two major theories explaining the relationship between capital structure, cost of capital and value of the firm.

Traditional Approach

It is the mix of Net Income approach and Net Operating Income approach. Hence, it is also called as intermediate approach. According to the traditional approach, mix of debt and equity capital can increase the value of the firm by reducing overall cost of capital up

to certain level of debt. Traditional approach states that the K_O decreases only within the Responsible limit of financial leverage and when reaching the minimum level, it starts increasing with financial leverage.

Assumptions

Capital structure theories are based on certain assumption to analysis in a single and convenient manner:

- There are only two sources of funds used by a firm; debt and shares.
- The firm pays 100% of its earning as dividend.
- The total assets are given and do not change.
- The total finance remains constant.
- The operating profits (EBIT) are not expected to grow.
- The business risk remains constant.
- The firm has a perpetual life.
- The investors behave rationally.

Net Income (NI) Approach

Net income approach suggested by the Durand. According to this approach, the capital structure decision is relevant to the valuation of the firm. In other words, a change in the capital structure leads to a corresponding change in the overall cost of capital as well as the total value of the firm.

According to this approach, use more debt finance to reduce the overall cost of capital and increase the value of firm.

Net income approach is based on the following three important assumptions:

1. There are no corporate taxes.
2. The cost debt is less than the cost of equity.

The use of debt does not change the risk perception of the investor

where

$$V = S + B$$

V = Value of firm

S = Market value of equity

B = Market value of debt

Market value of the equity can be ascertained by the following formula:

$$S = \frac{NI}{K_e}$$

where

NI = Earnings available to equity shareholder

K_e = Cost of equity/equity capitalization rate

Format for calculating value of the firm on the basis of NI approach.

Particulars	Amount
Net operating income (EBIT) Less: interest on debenture (i)	XXX XXX
Earnings available to equity holder (NI)	XXX
Equity capitalization rate (K_e)	XXX
Market value of equity (S)	XXX
Market value of debt (B)	XXX
Total value of the firm (S+B)	XXX
Overall cost of capital = $K = \frac{EBIT}{V}(\%)$	XXX

Net Operating Income (NOI) Approach

Another modern theory of capital structure, suggested by **Durand**. This is just the opposite to the Net Income approach. According to this approach, Capital Structure decision is irrelevant to the valuation of the firm. The market value of the firm is not at all affected by the capital structure changes.

According to this approach, the change in capital structure will not lead to any change in the total value of the firm and market price of shares as well as the overall cost of capital.

NI approach is based on the following important assumptions;

The overall cost of capital remains constant;

There are no corporate taxes;

The market capitalizes the value of the firm as a whole;

Modigliani and Miller Approach

Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words MM approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm.

Modigliani and Miller approach is based on the following important assumptions:

- There is a perfect capital market.
- There are no retained earnings.
- There are no corporate taxes.
- The investors act rationally.
- The dividend payout ratio is 100%.
- The business consists of the same level of business risk.

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UNIT-IV

DIVIDEND DECISION

Meaning of Dividend

Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders.

According to the **Institute of Chartered Accountant of India**, dividend is defined as “a distribution to shareholders out of profits or reserves available for this purpose”.

TYPES OF DIVIDEND/ FORM OF DIVIDEND

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, Dividends are classified into:

- A. Cash dividend
- B. Stock dividend
- C. Bond dividend
- D. Property dividend

Cash Dividend

If the dividend is paid in the form of cash to the shareholders, it is called cash dividend. It is paid periodically out the business concerns EAIT (Earnings after interest and tax). Cash dividends are common and popular types followed by majority of the business concerns.

Stock Dividend

Stock dividend is paid in the form of the company stock due to raising of more finance. Under this type, cash is retained by the business concern. Stock dividend may be bonus issue. This issue is given only to the existing shareholders of the business concern.

Bond Dividend

Bond dividend is also known as script dividend. If the company does not have sufficient funds to pay cash dividend, the company promises to pay the shareholder at a future specific date with the help of issue of bond or notes.

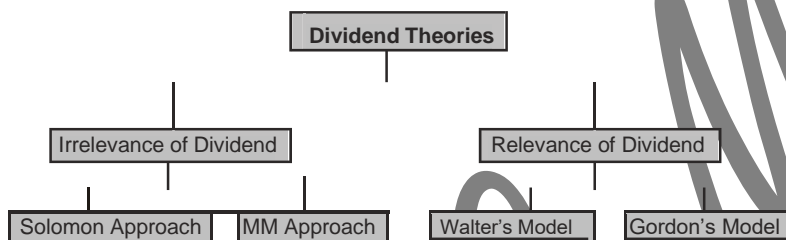
Property Dividend

Property dividends are paid in the form of some assets other than cash. It will be distributed under exceptional circumstances. This type of dividend is not published in India.

DIVIDEND DECISION

Dividend decision of the business concern is one of the crucial parts of the financial manager, because it determines the amount of profit to be distributed among shareholders and amount of profit to be treated as retained earnings for financing its long term growth. Hence, dividend decision plays a very important part in the financial management.

Dividend decision consists of two important concepts which are based on the relationship between dividend decision and value of the firm.



Irrelevance of Dividend

According to professors **Solomon, Modigliani and Miller**, dividend policy has no effect on the share price of the company. There is no relation between the dividend rate and value of the firm. Dividend decision is irrelevant of the value of the firm. Modigliani and Miller contributed a major approach to prove the irrelevance dividend concept.

Modigliani and Miller's Approach

According to MM, under a perfect market condition, the dividend policy of the company is irrelevant and it does not affect the value of the firm.

“Under conditions of perfect market, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of shares”.

Assumptions

MM approach is based on the following important assumptions:

1. Perfect capital market.
2. Investors are rational.

3. There is no tax.
4. The firm has fixed investment policy.
5. No risk or uncertainty.

Criticism of MM approach

MM approach assumes that tax does not exist. It is not applicable in the practical life of the firm.

MM approach assumes that, there is no risk and uncertain of the investment. It is also not applicable in present day business life.

MM approach does not consider floatation cost and transaction cost. It leads to affect the value of the firm.

MM approach considers only single decrement rate, it does not exist in real practice.

MM approach assumes that, investor behaves rationally. But we cannot give assurance that all the investors will behave rationally.

RELEVANCE OF DIVIDEND

According to this concept, dividend policy is considered to affect the value of the firm. Dividend relevance implies that shareholders prefer current dividend and there is no direct relationship between dividend policy and value of the firm. Relevance of dividend concept is supported by two eminent persons like Walter and Gordon.

Walter's Model

Prof. James E. Walter argues that the dividend policy almost always affects the value of the firm.

Walter model is based in the relationship between the following important factors:

- Rate of return r
- Cost of capital (k)

According to the Walter's model, if $r > k$, the firm is able to earn more than what the shareholders could by reinvesting, if the earnings are paid to them. The implication of $r > k$ is that the shareholders can earn a higher return by investing elsewhere.

If the firm has $r = k$, it is a matter of indifferent whether earnings are retained or distributed.

Assumptions

Walters's model is based on the following important assumptions:

1. The firm uses only internal finance.
2. The firm does not use debt or equity finance.
3. The firm has constant return and cost of capital.
4. The firm has 100 percent payout.
5. The firm has constant EPS and dividend.
6. The firm has a very long life.

Walter has evolved a mathematical formula for determining the value of market share.

$$P = \frac{D + \frac{E - D}{k_e}}{k_e}$$

Where,

P = Market price of an equity share

D = Dividend per share

r = Internal rate of return

E = Earnings per share

k_e = Cost of equity capital

Criticism of Walter's Model

The following are some of the important criticisms against Walter model:

Walter model assumes that there is no extracted finance used by the firm. It is not practically applicable.

There is no possibility of constant return. Return may increase or decrease, depending upon the business situation. Hence, it is not applicable.

According to Walter model, it is based on constant cost of capital. But it is not applicable in the real life of the business.

Gordon's Model

Myron Gordon suggest one of the popular model which assume that dividend policy of a firm affects its value, and it is based on the following important assumptions:

1. The firm is an all equity firm.
2. The firm has no external finance.
3. Cost of capital and return are constant.
4. The firm has perpetual life.
5. There are no taxes.
6. Constant relation ratio ($g=br$).

7. Cost of capital is greater than growth rate ($K_e > br$).

Gordon's model can be proved with the help of the following formula:

$$P = \frac{E(1-b)}{K_e - br}$$

Where,

P = Price of a share

E = Earnings per share

$1 - b$ = D/p ratio (i.e., percentage of earnings distributed as dividends) K_e = Capitalization rate

br = Growth rate = rate of return on investment of an all equity firm.

Criticism of Gordon's Model

Gordon's model consists of the following important criticisms:

Gordon model assumes that there is no debt and equity finance used by the firm. It is not applicable to present day business.

K_e and r cannot be constant in the real practice.

According to Gordon's model, there are no tax paid by the firm. It is not practically applicable

FACTORS DETERMINING DIVIDEND POLICY

Profitable Position of the Firm

Dividend decision depends on the profitable position of the business concern. When the firm earns more profit, they can distribute more dividends to the shareholders.

Uncertainty of Future Income

Future income is a very important factor, which affects the dividend policy. When the shareholder needs regular income, the firm should maintain regular dividend policy.

Legal Constrains

The Companies Act 1956 has put several restrictions regarding payments and declaration of dividends. Similarly, Income Tax Act, 1961 also lays down certain restrictions on payment of dividends.

Liquidity Position

Liquidity position of the firms leads to easy payments of dividend. If the firms have high liquidity, the firms can provide cash dividend otherwise, they have to pay stock dividend.

Sources of Finance

If the firm has finance sources, it will be easy to mobilize large finance. The firm shall not go for retained earnings.

Growth Rate of the Firm

High growth rate implies that the firm can distribute more dividends to its shareholders.

Tax Policy

Tax policy of the government also affects the dividend policy of the firm. When the government gives tax incentives, the company pays more dividends.

Capital Market Conditions

Due to the capital market conditions, dividend policy may be affected. If the capital market is perfect, it leads to improve the higher dividend.

TYPES OF DIVIDEND POLICY

Dividend policy depends upon the nature of the firm, type of shareholder and profitable position. On the basis of the dividend declaration by the firm, the dividend policy may be classified under the following types:

- Regular dividend policy
- Stable dividend policy
- Irregular dividend policy
- No dividend policy.

Regular Dividend Policy

Dividend payable at the usual rate is called as regular dividend policy. This type of policy is suitable to the small investors, retired persons and others.

Stable Dividend Policy

Stable dividend policy means payment of certain minimum amount of dividend regularly. This dividend policy consists of the following three important forms:

- Constant dividend per share
- Constant payout ratio
- Stable rupee dividend plus extra dividend.

Irregular Dividend Policy

When the companies are facing constraints of earnings and unsuccessful business operation, they may follow irregular dividend policy. It is one of the temporary arrangements to meet the financial problems. These types are having adequate profit. For others no dividend is distributed.

No Dividend Policy

Sometimes the company may follow no dividend policy because of its unfavourable working capital position of the amount required for future growth of the concerns.

MEANING OF WORKING CAPITAL

According to the definition of **J.S.Mill**, "The sum of the current asset is the working capital of a business".

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".

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

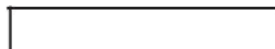
Net Working Capital is the specific concept, which, considers both current assets and current liability of the concern.

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

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

capital; it is reverse, it is said to be Negative working capital.



Working Capital

Current Asset

Current Liability

Cash in

Hand Cash

at Bank

Bills

Receivable

Sundry

Debtors

Short-term Loans

Advances

Inventories

Prepaid Expenses

Accrued Income

B

Sundry

i

Creditors

l

Outstanding Expenses

l

Short-term Loans and

s

Advances Dividend Payable

P

Bank Overdraft

a

Provision for

y

Taxation

a

b

l

e

FACTORS DETERMINING WORKING CAPITAL REQUIREMENTS

- 1. Nature of business:** Working Capital of the business concerns largely depend upon the nature of the business. If the business concerns follow rigid credit policy and sell goods only for cash, they can maintain lesser amount of Working Capital. A transport company maintains lesser amount of Working Capital while a construction company maintains larger amount of Working Capital.
- 2. Production cycle:** Amount of Working Capital depends upon the length of the production cycle. If the production cycle length is small, they need to maintain lesser amount of Working Capital. If it is not, they have to maintain large amount of Working Capital.

- 3. Business cycle:** Business fluctuations lead to cyclical and seasonal changes in the business condition and it will affect the requirements of the Working Capital. In the booming conditions, the Working Capital requirement is larger and in the depression condition, requirement of Working Capital will reduce. Better business

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results lead to increase the Working Capital requirements.

4. **Production policy:** It is also one of the factors which affects the Working Capital requirement of the business concern. If the company maintains the continues production policy, there is a need of regular Working Capital. If the production policy of the company depends upon the situation or conditions, Working Capital requirement will depend upon the conditions laid down by the company.
5. **Credit policy:** Credit policy of sales and purchase also affect the Working Capital requirements of the business concern. If the company maintains liberal credit policy to collect the payments from its customers, they have to maintain more Working Capital. If the company pays the dues on the last date it will create the cash maintenance in hand and bank.
6. **Growth and expansion:** During the growth and expansion of the business concern, Working Capital requirements are higher, because it needs some additional Working Capital and incurs some extra expenses at the initial stages.
7. **Availability of raw materials:** Major part of the Working Capital requirements are largely depend on the availability of raw materials. Raw materials are the basic components of the production process. If the raw material is not readily available, it leads to production stoppage. So, the concern must maintain adequate raw material; for that purpose, they have to spend some amount of Working Capital.
8. **Earning capacity:** If the business concern consists of high level of earning capacity, they can generate more Working Capital, with the help of cash from operation. Earning capacity is also one of the factors which determines the Working Capital requirements of the business concern.

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.

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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)

Each component of the operating cycle can be calculated by the following formula:

$$R = \frac{\text{Average Stock of Raw Material}}{\text{Average Raw Material Consumption Per Day}}$$

$$W = \frac{\text{Average Work in Process Inventory}}{\text{Average Cost of Production Per Day}}$$

$$F = \frac{\text{Average Finished Stock Inventory}}{\text{Average Cost of Goods Sold Per Day}}$$

$$D = \frac{\text{Average Book Debts}}{\text{Average Credit Sales Per Day}}$$

$$C = \frac{\text{Average Trade Creditors}}{\text{Average Credit Purchase Per Day}}$$

UNIT-V

MANAGEMENT OF CURRENT ASSETS

CASH MANAGEMENT

Business concern needs cash to make payments for acquisition of resources and services for the normal conduct of business. Cash is one of the important and key parts of the current assets.

Cash is the money which a business concern can disburse immediately without any restriction. The term cash includes coins, currency, cheques held by the business concern and balance in its bank accounts. Management of cash consists of cash inflow and outflows, cash flow within the concern and cash balance held by the concern etc.

Motives for Holding Cash

1. Transaction motive

It is a motive for holding cash or near cash to meet routine cash requirements to finance transaction in the normal course of business. Cash is needed to make purchases of raw materials, pay expenses, taxes, dividends etc.

2. Precautionary motive

It is the motive for holding cash or near cash as a cushion to meet unexpected contingencies. Cash is needed to meet the unexpected situation like, floods strikes etc.

3. Speculative motive

It is the motive for holding cash to quickly take advantage of opportunities typically outside the normal course of business. Certain amount of cash is needed to meet an opportunity to purchase raw materials at a reduced price or make purchase at favorable prices .

4. Compensating motive

It is a motive for holding cash to compensate banks for providing certain services or loans. Banks provide variety of services to the business concern, such as clearance of cheque, transfer of funds etc.

Cash Management Techniques

Managing cash flow constitutes two important parts:

- A. Speedy Cash Collections .
- B. Slowing Disbursements.

Speedy Cash Collections

Business concern must concentrate in the field of Speedy Cash Collections from customers. For that, the concern prepares systematic plan and refined techniques. These techniques aim at, the customer who should be encouraged to pay as quickly as possible and the payment from customer without delay. Speedy Cash Collection business concern applies some of the important techniques as follows:

Prompt Payment by Customers

Business concern should encourage the customer to pay promptly with the help of offering discounts, special offer etc. It helps to reduce the delaying payment of customers and the firm can avoid delays from the customers. The firms may use some of the techniques for prompt payments like billing devices, self address cover with stamp etc.

Early Conversion of Payments into Cash

Business concern should take careful action regarding the quick conversion of the payment into cash. For this purpose, the firms may use some of the techniques like postal float, processing float, bank float and deposit float.

Concentration Banking

It is a collection procedure in which payments are made to regionally dispersed collection centers, and deposited in local banks for quick clearing. It is a system of decentralized billing and multiple collection points.

Lock Box System

It is a collection procedure in which payers send their payment or cheques to a nearby post box that is cleared by the firm's bank. Several times that the bank deposit the cheque in the firms account. Under the lock box system, business concerns hire a post office lock box at important collection centers where the customers remit payments. The local banks are authorized to open the box and pick up the remittances received from the customers. As a result, there is some extra savings in mailing time compared to concentration bank

Slowing Disbursement

An effective cash management is not only in the part of speedy collection of its cash and receivables but also it should concentrate to slowing their disbursement of cash to the customers or suppliers. Slowing disbursement of cash is not the meaning of delaying the payment or avoiding the payment. Slowing disbursement of cash is possible with the help of the following methods:

- 1. Avoiding the early payment of cash**

The firm should pay its payable only on the last day of the payment. If the firm

avoids early payment of cash, the firm can retain the cash with it and that can be used for other purpose.

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2. Centralized disbursement system

Decentralized collection system will provide the speedy cash collections. Hence centralized disbursement of cash system takes time for collection from our accounts as well as we can pay on the date.

Cash Management Models

Cash management models analyse methods which provide certain framework as to how the cash management is conducted in the firm. Cash management models are the development of the theoretical concepts into analytical approaches with the mathematical applications. There are three cash management models which are very popular in the field of finance.

1. Baumol model

The basic objective of the Baumol model is to determine the minimum cost amount of cash conversion and the lost opportunity cost.

It is a model that provides for cost efficient transactional balances and assumes that the demand for cash can be predicated with certainty and determines the optimal conversion size. Total conversion cost per period can be calculated with the help of the following formula:

$$t = \frac{Tb}{C}$$

where,

T = Total transaction cash needs for the period

b = Cost per conversion

C = Value of marketable securities

Opportunity cost can be calculated with the help of the following formula;

$$i = \frac{C}{2}$$

where,

i = interest rate earned

C/2 = Average cash balance

Optimal cash conversion can be calculated with the help of the following formula;

$$C = \sqrt{\frac{2bT}{i}}$$

where,

C = Optimal conversion amount

b = Cost of conversion into cash per lot or transaction T =
Projected cash

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requirement

i = interest rate earned

2. Miller-Orr model

This model was suggested by Miller Orr. This model is to determine the optimum cash balance level which minimises the cost of management of cash. Miller-Orr Model can be calculated with the help of the following formula;

$$C = \frac{bE(N)}{t} + iE(M)$$

where

C = Total cost of cash management

b = fixed cost per conversion

E(M) = expected average daily cash balance

E(N) = expected number of conversion

t = Number of days in the period

i = lost opportunity cost

3. Orgler's model

Orgler model provides for integration of cash management with production and other aspects of the business concern. Multiple linear programming is used to determine the optimal cash management.

Orgler's model is formulated, based on the set of objectives of the firm and specifying the set of constraints of the firm.

RECEIVABLE MANAGEMENT

The term receivable is defined as debt owed to the concern by customers arising from sale of goods or services in the ordinary course of business. Receivables are also one of the major parts of the current assets of the business concerns. It arises only due to credit sales to customers, hence, it is also known as Account Receivables or Bills Receivables.

Management of account receivable is defined as the process of making decision resulting to the investment of funds in these assets which will result in maximizing the overall return on the investment of the firm.

The objective of receivable management is to promote sales and profit until that point is reached where the return on investment in further funding receivables is less than the cost of funds raised to finance that additional credit.

The costs associated with the extension of credit and accounts receivables are identified as follows:

A. Collection

Cost

- B. Capital Cost
- C. Administrative Cost
- D. Default Cost.

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Collection Cost

This cost incurred in collecting the receivables from the customers to whom credit sales have been made.

Capital Cost

This is the cost on the use of additional capital to support credit sales which alternatively could have been employed elsewhere.

Administrative Cost

This is an additional administrative cost for maintaining account receivable in the form of salaries to the staff kept for maintaining accounting records relating to customers, cost of investigation etc.

Default Cost

Default costs are the over dues that cannot be recovered. Business concern may not be able to recover the over dues because of the inability of the customers.

Factors Considering the Receivable Size

Receivables size of the business concern depends upon various factors. Some of the important factors are as follows:

1. Sales Level

Sales level is one of the important factors which determine the size of receivable of the firm. If the firm wants to increase the sales level, they have to liberalize their credit policy and terms and conditions. When the firms maintain more sales, there will be a possibility of large size of receivable.

2. Credit Policy

Credit policy is the determination of credit standards and analysis. It may vary from firm to firm or even some times product to product in the same industry. Liberal credit policy leads to increase the sales volume and also increases the size of receivable. Stringent credit policy reduces the size of the receivable.

3. Credit Terms

Credit terms specify the repayment terms required of credit receivables, depend upon the credit terms, size of the receivables may increase or decrease. Hence, credit term is one of the factors which affect the size of receivable.

4. Credit Period

It is the time for which trade credit is extended to customer in the case of credit sales.

Normally it is expressed in terms of 'Net days'.

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5. Cash Discount

Cash discount is the incentive to the customers to make early payment of the due date. A special discount will be provided to the customer for his payment before the due date.

6. Management of Receivable

It is also one of the factors which affect the size of receivable in the firm. When the management involves systematic approaches to the receivable, the firm can reduce the size of receivable.

INVENTORY MANAGEMENT

Inventories constitute the most significant part of current assets of the business concern. It is also essential for smooth running of the business activities.

Meaning

The dictionary meaning of the inventory is stock of goods or a list of goods. In accounting language, inventory means stock of finished goods. In a manufacturing point of view, inventory includes, raw material, work in process, stores, etc

Kinds of Inventories

Inventories can be classified into five major categories.

A. Raw Material

It is basic and important part of inventories. These are goods which have not yet been committed to production in a manufacturing business concern.

B. Work in Progress

These include those materials which have been committed to production process but have not yet been completed.

C. Consumables

These are the materials which are needed to smooth running of the manufacturing process.

D. Finished Goods

These are the final output of the production process of the business concern. It is ready for consumers.

E. Spares

It is also a part of inventories, which includes small spares and parts.

Techniques of Inventory Management

Inventory management consists of effective control and administration of inventories. Inventory control refers to a system which ensures supply of required quantity and quality of inventories at the required time and at the same time prevents unnecessary investment in inventories. It needs the following important techniques

Techniques based on the order quantity of Inventories

Order quantity of inventories can be determined with the help of the following techniques:

Stock Level

Stock level is the level of stock which is maintained by the business concern at all times. Therefore, the business concern must maintain optimum level of stock to smooth running of the business process. Different level of stock can be determined based on the volume of the stock.

Minimum Level

The business concern must maintain minimum level of stock at all times. If the stocks are less than the minimum level, then the work will stop due to shortage of material.

Re-order Level

Re-ordering level is fixed between minimum level and maximum level. Re-order level is the level when the business concern makes fresh order at this level.

Re-order level = maximum consumption × maximum Re-order period.

Maximum Level

It is the maximum limit of the quantity of inventories, the business concern must maintain. If the quantity exceeds maximum level limit then it will be overstocking.

Maximum level = Re-order level + Re-order quantity – (Minimum consumption × Minimum delivery period)

Danger Level

It is the level below the minimum level. It leads to stoppage of the production process.

Danger level = Average consumption × $\frac{\text{Maximum re-order period}}{\text{for emergency purchase}}$

Average Stock Level

It is calculated such as,

$$\text{Average stock level} = \text{Minimum stock level} + \frac{1}{2} \text{ of re-order quantity maximum level}$$

Lead Time

Lead time is the time normally taken in receiving delivery after placing orders with suppliers. The time taken in processing the order and then executing it is known as lead time.

Safety Stock

Safety stock implies extra inventories that can be drawn down when actual lead time and/or usage rates are greater than expected. Safety stocks are determined by opportunity cost and carrying cost of inventories. If the business concerns maintain low level of safety stock, it will lead to larger opportunity cost and the larger quantity of safety stock involves higher carrying costs.

Economic Order Quantity (EOQ)

EOQ refers to the level of inventory at which the total cost of inventory comprising ordering cost and carrying cost. Determining an optimum level involves two types of cost such as ordering cost and carrying cost. The EOQ is that inventory level that minimizes the total of ordering or carrying cost.

EOQ can be calculated with the help of the mathematical formula:

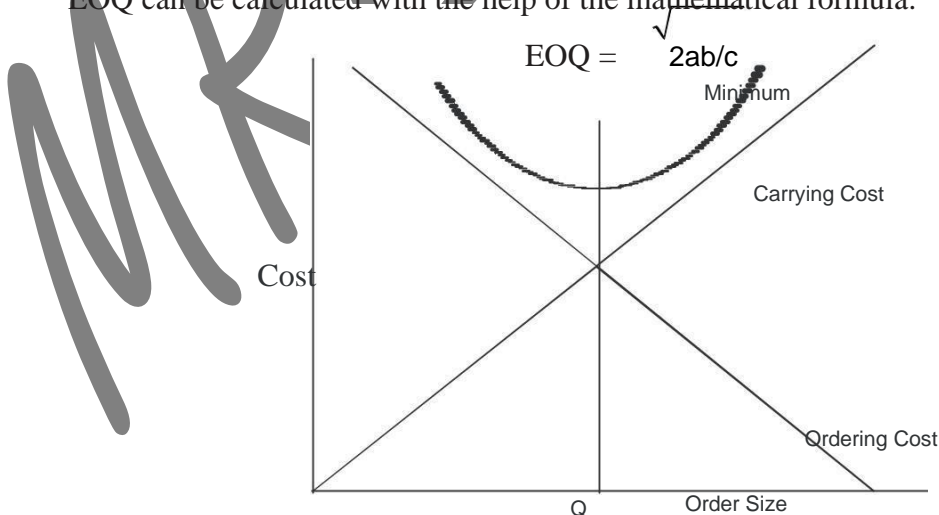


Fig. 11.3 Economic Order Quantity

TECHNIQUES BASED ON THE CLASSIFICATION OF INVENTORIES ABC analysis

It is the inventory management techniques that divide inventory into three categories based on the value and volume of the inventories; 10% of the inventory's item contributes to 70% of value of consumption and this category is known as A category. About 20% of the inventory item contributes about 20% of value of consumption and this category is called category B and 70% of inventory item contributes only 10% of value of consumption and this category is called C category.

Inventory Breakdown Between Value and Volume

Categor	Volume	Value
A	10	70
	20	20
Total	100	100

ABC analysis can be explained with the help of the following Graphical presentation.

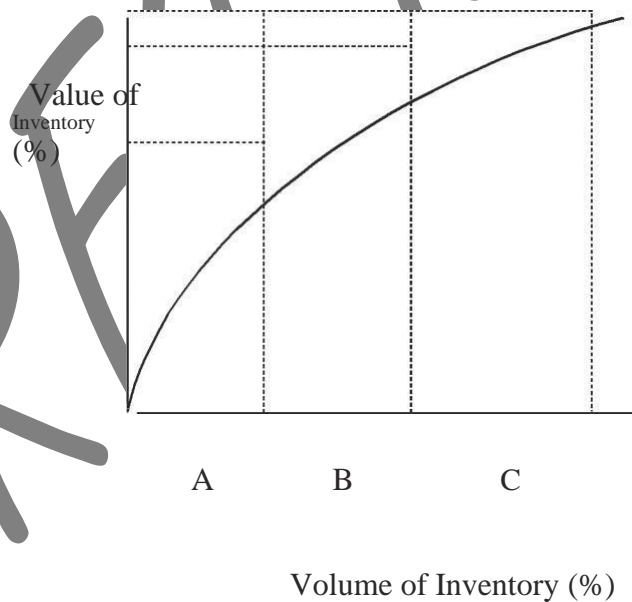


Fig. 11.4 ABC Analysis

Aging Schedule of Inventories

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Inventories are classified according to the period of their holding and also this method helps to identify the movement of the inventories. Hence, it is also called as, FNSD analysis.

where,

F = Fast moving inventories

N = Normal moving
inventories

S = Slow
moving inventories

D = Dead moving inventories

This analysis is mainly calculated for the purpose of taking disposal decision of the inventories.

VED Analysis

This technique is ideally suited for spare parts in the inventory management like ABC analysis. Inventories are classified into three categories on the basis of usage of the inventories.

V = Vital item of inventories

E = Essential item of
inventories

D = Desirable item of
inventories

HML Analysis

Under this analysis, inventories are classified into three categories on the basis of the value of the inventories.

H = High value of inventories

M = Medium value of
inventories

L = Low value of
inventories

TECHNIQUES ON THE BASIS OF RECORDS

A. Inventory budget

It is a kind of functional budget which facilitates the estimated inventory required for the business concern during a particular period. This budget is prepared based on the past experience.

B. Inventory reports

Preparation of periodical inventory reports provides information regarding the order level, quantity to be procured and all other information related to inventories. On the basis of these reports, Management takes necessary decision regarding inventory control and Management in the business concern.

According to Kohler's Dictionary for Accountants, inventory is defined as "raw materials and supplies, goods finished and in process of manufacture and merchandise on hand, in transit and owned, in storage or consigned to other at the end of an accounting period."

According to Accounting Standards-A(AS-2) 'INVENTORIES' mean tangible property held

- 1) For sale.
- 2) In the process of production for sale.
- 3) For computation in the production of goods or services for sale, inventories are normally classified in the financial statements as current assets as under:
 - i) Raw materials and components,
 - ii) Work-in-progress.
 - iii) Finished goods.
 - iv) Stores and spares.

Objectives of Inventory Control:

- i) To determine the cashment income.
- ii) To present true and correct view of financial affairs.
- iii) To compute the ratios.

Valuation of Inventories

Inventories are valued at different methods depending upon the situation and nature of manufacturing process. Some of the major methods of inventory valuation are mentioned as follows:

1. First in First Out Method (FIFO)
2. Last in First Out Method (LIFO)
3. Highest in First Out Method (HIFO)
4. Nearest in First Out Method (NIFO)
5. Average Price Method
6. Base Stock Method
7. Standard Price Method
8. Market Price Method

Methods of Valuation of Inventory:

1. First in First Out Method (FIFO):

Under this method materials are first issued from the earliest consignment on hand and priced at the cost at which that consignment was placed in stores.

In other words, materials received first are issued first.

The units in the opening stock of materials are treated as if they are issued first.

The units from the first purchase issued next and so on until the units left in the closing stock of materials are valued at the latest cost of purchases.

It follows that unit costs are apportioned to cost of production according to their chronological order of receipts in the store.

This method is the most suitable in times of falling prices because the issue price of materials to jobs or works orders will be high while the cost of replacement of materials will be low.

But in case of rising prices this method is not suitable because the issue price of materials to production will be low while the cost of replacement of materials will be high.

Two points should be noted (i) materials are charged at the actual cost price and at the oldest price of materials in stock. (ii) Stock of materials in hand is valued at the latest purchase prices.

Advantages of FIFO Method:

1. The main advantage of FIFO method is that it is simple to understand and easy to operate.
2. Closing stock valuation is at cost as well as at the latest market prices.
3. Materials are issued at actual cost. Thus, no unrealised profit / loss results from the use of this method.
4. This method is based on a realistic assumption that materials which are received first are issued first.
5. It is a logical method because it takes into consideration the normal procedure of utilising first those materials which are received first. Materials are issued in order of purchases, so materials received first are utilised first.
6. Under this method, materials are issued at the purchase price; so the cost of jobs or work orders is correctly ascertained so far as cost of materials is concerned. Thus, this method recovers the cost price of materials.
7. This method is suitable when prices are falling.
8. Closing stock of raw materials will be valued at the market price as the closing stock under this method would consist of recent purchase of materials.

9. This method is also useful when transactions are not too many and prices of materials are fairly steady.

Disadvantages of FIFO Method:

1. Materials are not charged at the current market prices. Therefore, in times of rising prices, charge to production is unduly low.
2. This method sometimes produces unfair results as between one job and another job.
3. When transactions are large in number and the price fluctuates very frequently, the method involves more calculations and increases the possibility of errors.
4. This method increases the possibility of clerical errors, if consignments are received frequently at fluctuating prices as every time an issue of materials is made, the store ledger clerk will have to go through this record to ascertain the price to be charged.
5. In case of fluctuations in price of materials, comparison between one job and the other becomes difficult because one job started a few minutes later than another of the same nature may be issued materials at different prices, merely because the earlier job exhausted the supply of the lower priced materials in stock.
6. For pricing one requisition more than one price has often to be taken.
7. When prices rise, the issue price does not reflect the market price as materials are issued from the earliest consignments. Therefore, the charge to production is low because the cost of replacing the material consumed will be higher than the price of issue.

2. Last in First Out Method (LIFO):

As against the First in First Out method the issues under this method are priced in the reverse order of purchase i.e., the price of the latest available consignment is taken.

This method is sometimes known as the replacement cost method because materials are issued at the current cost to jobs or work orders except when purchases were made long ago. This method is suitable in times of rising prices because material will be issued from the latest consignment at a price which is closely related to the current price levels.

Valuing materials issues at the price of the latest available consignment will help the management in fixing the competitive selling prices of the products. This method was first introduced in the U.S.A. during the Second World War to get the advantage of rising prices.

Two important points in this method are (i) issues are priced at actual cost and at the latest prices paid. (ii) Closing stock is valued at the older prices and is completely out of line with current prices.

Advantages of LIFO Method:

1. The value of materials issued is closely related to current market prices.
2. As materials are issued at actual cost, it does not result in any unrealised profit or loss.
3. When prices are rising, the higher prices of the most recent purchases are charged to production. This reduces profit figure and results in Income tax saving.
4. Like FIFO method, this is simple to operate and is useful when transactions are not too many and the prices are fairly steady.
5. like FIFO method, this method recovers cost from production because actual cost of material is charged to production.
6. Production is charged at the recent prices because materials are issued from the latest consignment. Thus, effect of current market prices of materials is reflected in the cost of sales provided the materials are recently purchased.
7. in times of rising prices, LIFO method of pricing issues is suitable because materials are issued at the current market prices which are high. This method thus helps in showing a lower profit because of increased charge to production during periods of rising prices and lower profit produces burden of income tax.

Disadvantages of LIFO Method:

1. Although stock is valued at cost, the price is that of the earliest materials purchased, so that stock value does not represent its current value.
2. This method is not realistic as it does not conform to the physical flow of materials.
3. Like FIFO, in this method also, the material cost of similar jobs may differ simply because the prior job exhausted the supply of lower priced stock. This renders comparisons between jobs different.
4. When prices fluctuate very often, the calculations complicate the stores account and increase the possibility of clerical errors.

5. Like FIFO method, this may lead to clerical errors as every time an issue is made, the stores ledger clerk will have to go through the record to ascertain the price to be charged.

6. Like FIFO method, comparison between one job and the other job will become difficult because one job started a few minutes after another of the same type may bear a different charge for materials consumed, merely because the earlier job exhausted the supply of the lower priced or higher priced materials in stock.

7. For pricing a single requisition, more than one price has often to be adopted.

8. the stock in hand is valued at price which does not reflect current market price. Consequently, closing stock will be understated or overstated in the Balance Sheet.

Point of Difference	FIFO method	LIFO method
1. Assumption	It assumes that materials which are received first are issued first.	It assumes that materials which are received last are issued first.
2. Cost of materials	Cost of materials issued at the older prices.	Cost of materials issued is at the latest prices paid.
3. Value of closing stock	Closing stock is valued at the latest prices paid.	Closing stock is valued at the price of oldest materials in stock.
4. When prices are rising	When prices show a rising trend, FIFO reports higher profit and resultantly highest tax liability.	When prices are rising, LIFO shows lower profits because higher costs are matched against current revenues. Tax liability is thus reduced.
5. When prices are falling	When prices of materials are declining, FIFO shows lower profits and thus lower tax liability.	When prices are declining, LIFO shows higher profits and thus higher tax liability.

Differences Between FIFO and LIFO Methods:

3. Average Price Method:

These methods are based on the assumption that when materials purchased in different lots is stored together, their identity is lost, and therefore, these should be charged at an average price. Basically average prices of two types. They are (i) Simple Average Price method (ii) Weighted Average Price Method.

i) Simple Average Price Method

Simple average price is calculated by adding all the different prices and dividing by the number of such prices. It does not take into account quantities of materials while computing average price.

For instance, when 100 units are purchased @Rs.9 per unit and 900 units are purchased @Rs.7 per unit, the simple average price will be $= \frac{9+7}{2} = \text{Rs.8}$

Advantages:

The only advantage of this method is that it is simple to understand and easy to operate.

Disadvantages:

1. Materials are not charged out at actual cost. Thus, unrealised profit or loss will usually arise out of pricing.
2. This method is unscientific and usually produces unsatisfactory results. The value of closing stock may be a negative figure which is quite absurd.

ii) Weighted Average Price Method

This method gives due weight to the quantities held at each price when calculating the average price.

The weighted average price is calculated by dividing the total cost of materials in stock from which the materials to be priced could have been drawn, by that total quantity of materials in that stock.

The simple formula is that weighted average price at any time is the balance value figure divided by the balance units figure. Thus Weighted Average Price =

$$\frac{\text{Total cost of Materials in stock}}{\text{Total quantity of materials in stock}}$$

Advantages:

1. This method is rational, systematic and not subject to manipulation. It is representative of the prices that prevailed during the entire period rather than of the price at the beginning, end or at one point of issue during the period because it is based on the average of the material costs of the various lots available in the store.
2. This method evens out the effect of widely varying prices of different purchases.
3. The new issue price is calculated only at the time of each new purchase and not at the time of each issue. This reduces the work of making calculations.
4. No unrealised profit or loss arises.
5. This method recovers the cost of materials from production.
6. Issue prices are not to be calculated each time issues are made, issue prices are changed only when new lot of materials is received.

7. Average price method is considered to be the best method when prices fluctuate considerably because this method tends to smooth out fluctuations in prices.
8. This method maintains the issue prices as near to the market price possible.
9. This method eliminates the necessity for adjustments in stock valuation.

Disadvantages:

1. Where receipts are numerous, this method requires a good deal of calculations.
2. Issue prices generally run to a number of decimal points.
3. Materials are not issued at the current market prices.
4. Closing stock is not valued at current cost.
5. Issue price of materials does not represent actual cost price of materials issued but it represents average cost of materials in stores. At the time of rising prices, it overstates profit but not as much as FIFO because average price is lower than the most recent price.
6. A fresh rate calculation will have to be made as soon as a new lot of materials is purchased which may involve tedious calculations. Thus, there are chances of clerical errors.

4. Inflated Price Method

There are some materials which are subjected to natural wastage.

Examples are

- i) Materials lost due to loading and unloading and
- ii) Timber lost due to seasoning. In such cases, the materials are issued at an inflated price (a price higher than the actual cost) so as to recover the cost of natural wastage of materials from the production. In this way, the total cost of the material is recovered from the production.

5. Specific Price/ Identification Method

Under this method, materials issued to production are priced at their purchase prices.

The basic assumption in following this method is that materials in the stores are capable of being identified as belonging to specific lots.

Identification can be made by placing some distinguishing mark usually price tag on every lot. When materials are issued, price tags are removed and forwarded to the costing department for ascertaining the material cost of production. This method is simple in its mechanism and operation.

6. Base Stock Method

Each concern always maintains a minimum quantity of material in stock. This minimum quantity is known as safety or base stock and this should be used only when an emergency arises.

The base stock is created out of the first lot of the material purchased and, therefore, it is always valued at the cost price of the first lot and is carried forward as a fixed asset.

This method works with some other method and is generally used with FIFO or LIFO method.

Therefore, the advantages or disadvantages of the method (with which the base stock is used) will arise.

Any quantity over and above the base stock is issued in accordance with the other method which is used in conjunction with this method.

The objective of this method is to issue the material according to the current prices.

This objective will be achieved only when the LIFO method is used together with Base stock method.

7. Highest in First Out Method (HIFO)

This method is based on the assumption that the closing stock of materials should always remain at the minimum value; so the issues are priced at highest value of the available consignments in the store.

This method is not popular as it always undervalues the stock which amounts to creating a secret reserve.

This method is mainly used in case of cost plus contracts or monopoly products as it is helpful in increasing the price of the contract or products.

8. Market Price Method

Market price can either be the replacement price or the realisable price.

The replacement price is used in case of the items which are held in stock for use in production while realisable price is used in respect of the items which are kept in stock for sale.

Under this method, materials are issued at a price at which they can be replaced.

Therefore, cost of the materials issued is not considered but materials are issued at the market price prevailing on the date of issue.

This method is considered to be the best method where quotations have to be sent because quotations sent would reflect the latest competitive conditions so far as materials are concerned.

This method discloses whether the buying is efficient or inefficient. There will be efficiency in buying if the market price is higher than the cost price and inefficiency if reverse is the case.

Stock Levels

There are five levels of stocks should be calculated under valuation of inventory.

They are 1. Re-Order Level

2. Maximum Stock Level
3. Minimum Stock Level
4. Average Stock Level
5. Danger Level

1. Re-Order Level:

This is that level of material to be reordered should be calculated as follows:

$$\text{Re-ordering Level} = \text{Maximum Consumption} \times \text{Maximum Re-order Period}$$

2. Minimum Stock Level =

$$\text{Minimum Stock Level} = \text{Re-ordering Level} - (\text{Normal Consumption} \times \text{Normal Re-order Period})$$

3. Maximum Stock Level =

$$\text{Maximum Stock Level} = \text{Re-ordering Level} + \text{Re-ordering Quantity} - (\text{Minimum Consumption} \times \text{Minimum Re-ordering Period})$$

4. Average Stock Level

$$\text{Average Stock Level} = \frac{1}{2} (\text{Minimum Stock Level} + \text{Maximum Stock Level})$$

OR

$$\text{Minimum Stock Level} + \frac{1}{2} \text{ of Re-order Quantity.}$$

5. Danger Level =

Average consumption X Maximum re-orders period for emergency purchases.

6. Economic Ordering Quantity (EOQ)

= Economic Ordering Quantity (EOQ)

$$Q = \sqrt{(2CO) / I}$$

Where Q = Quantity to be Ordered.

C = Consumption of the material consumed in units during a year.

O = Cost of placing one order including the cost of receiving the goods.

I = Interest payment including variable cost of storing per unit per year i.e., holding costs of inventory.

1. Prepare Stores Ledger under FIFO, LIFO, SIMPLE AVERAGE AND WEIGHTED AVERAGE methods from the following

2008 July 1st Opening Stock of 1,000 units @Rs 5 each

July 2nd Received 2,000 units @ Rs.7 each

July 3rd Issued 2,500 units

July 4th Received 1,000 Units @ Rs.8 each

July 5th Issued 800 units

July 31st Stock verification report revealed that shortage of material was 100 units.

Trade credit

In any normal business practice, buyers are not generally required to pay cash on delivery for the goods and services they order. Instead, the sellers invoice or bill the buyers on delivery according to the terms of the particular trade or line of business. That is, sellers extend credit to buyers, and this extension of credit provides a temporary source of funds to the buyer in the form of accounts payable. Because suppliers are generally more liberal in extending credit than banks are, trade credit has become the most important source of short-term business funds in terms of total volume of credit supplied.

Forms of Trade Credit

There are three avenues of trade credit extension: (1) the open account, which is by far the most common; (2) the promissory note; (3) the trade acceptance.

Open-account credit is ordinarily extended only after the seller conducts a fairly Extensible investigation of the buyer's credit standing and reputation. The open account derives its name from the fact that the buyer does not sign a formal debt instrument evidencing the amount he owes the seller, as would be the case if he applied for and obtained bank credit.

a promissory note may be used in the transaction. A promissory note is written promise by one person to another to pay on demand or at a fixed or determinable

future time a certain sum of money to order of bearer. The promissory note is generally an interest-bearing instrument. Buyers are required to sign such notes most often in cases where their open accounts have become delinquent and the seller wishes to obtain a formal acknowledgement of the debt, a definite maturity date, and, at times, a return in the form of interest on the funds thus committed.

Trade acceptances are used in place of the open account. A trade acceptance is generated when a seller, after receiving a purchase order from a customer, draws a time draft on that customer in the amount of the order. A time draft is an unconditional order to pay a certain sum of money at a fixed or determinable future time. The seller then sends the draft through his own bank, together with an order bill of lading from the carrier by which the goods are shipped, for presentation to and acceptance by the customer. An order bill of lading must be presented to the carrier to secure the release of the goods shipped at their destination.

WORKING CAPITAL AND BANKING COMMITTEE

Banking finance to working capital requirements is a very important part of the business concern. Banks provide finance to business concerns to meet the requirements. To regulate and control bank finance, RBI constitutes committees. These committees submit reports with findings and recommendations to formulate the finance policy of the banks. The major committee and the recommendations are as follows :

Committee	Year	Major Recommendations
DEHEJIA	1969	Appraisal of credit applications received by banks for
TANDON	1975	Banks must carry out the realize appraisal for granting loan Fixation of norms for bank lending to industry.
CHORE	1980	No bifurcation of cash credit accounts separate limits for peak level and non peak level requirements.
MARATHE	1984	Second method of lending to industry, introduction of Fast track concept.
KANNAN	1997	Regular conduct with the borrowers, periodical Monitoring the credit disposition.