DKR23: FINANCIAL MANAGEMENT

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References:

1. Chand and Jain – Financial Management
2. Pandey, M – Financial Management
3. Prasanna Chandra - Financial Management Theory and Practice
4. James C. Van Horns - Financial Management and Policy

DKR23: FINANCIAL MANAGEMENT

LESSON

1

INTRODUCTION TO FINANCIAL MANAGEMENT

- DEFINITION OF BUSINESS FINANCE
- TYPES OF FINANCE
- SCOPE OF FINANCIAL MANAGEMENT
- OBJECTIVES OF FINANCIAL MANAGEMENT
- APPROACHES TO FINANCIAL MANAGEMENT
- FUNCTIONS OF FINANCE MANAGER
- IMPORTANCE OF FINANCIAL MANAGEMENT
- MODEL QUESTIONS

INTRODUCTION

Business concern needs finance to meet their requirements in the economic world. Any kind of business activity depends on the finance. Hence, it is called as lifeblood of business organization. Whether the business concerns are big or small, they need finance to fulfil their business activities.

In the modern world, all the activities are concerned with the economic activities and very particular to earning profit through any venture or activities. The entire business activities are directly related with making profit. (According to the economics concept of factors of production, rent given to landlord, wage given to labour, interest given to capital and profit given to shareholders or proprietors), a business concern needs finance to meet all the requirements. Hence finance may be called as capital, investment, fund etc., but each term is having different meanings and unique characters. Increasing the profit is the main aim of any kind of economic activity.

MEANING OF FINANCE

Finance may be defined as the art and science of managing money. It includes financial service and financial instruments. Finance also is referred as the provision of money at the time when it is needed. Finance function is the procurement of funds and their effective utilization in business concerns.

The concept of finance includes capital, funds, money, and amount. But each word is having unique meaning. Studying and understanding the concept of finance become an important part of the business concern.

DEFINITION OF FINANCE

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

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

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

DEFINITION OF BUSINESS FINANCE

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

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

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

Corporate finance is concerned with budgeting, financial forecasting, cash management, credit administration, investment analysis and fund procurement of the business concern and the business concern needs to adopt modern technology and application suitable to the global environment.

According to the **Encyclopedia of Social Sciences**, "Corporation finance deals with the financial problems of corporate enterprises. These problems include the financial aspects of the promotion of new enterprises and their administration during early development, the accounting problems connected with the distinction between capital and income, the administrative questions created by growth and expansion, and finally, the financial adjustments required for the bolstering up or rehabilitation of a corporation which has come into financial difficulties".

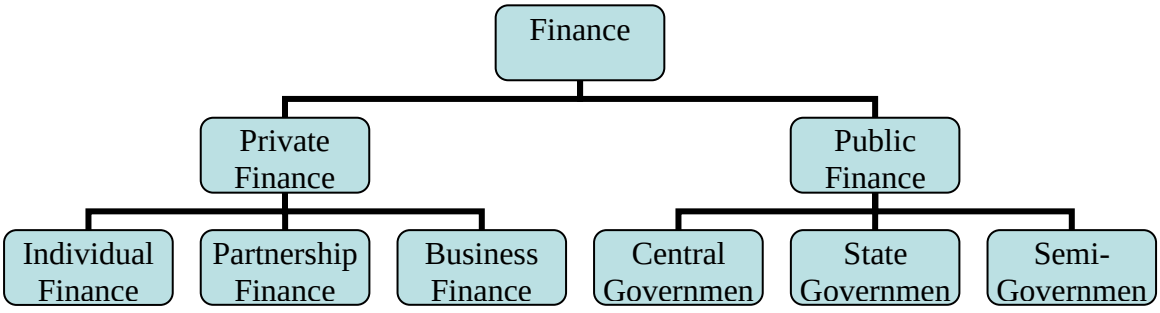


Fig. 1.1 Types of Finance

TYPES OF FINANCE

Finance can be classified into two major parts:

Finance is one of the important and integral part of business concerns, hence, it plays a major role in every part of the business activities. It is used in all the area of the activities under the different names.

Private Finance, which includes the Individual, Firms, Business or Corporate Financial activities to meet the requirements.

Public Finance which concerns with revenue and disbursement of Government such as Central Government, State Government and Semi-Government Financial matters.

DEFINITION OF FINANCIAL MANAGEMENT

Financial management is an integral part of overall management. It is concerned with the duties of the financial managers in the business firm.

The term financial management has been defined by **Solomon**, "It is concerned with the efficient use of an important economic resource namely, capital funds".

The most popular and acceptable definition of financial management as given by **S.C. Kuchal** is that "Financial Management deals with procurement of funds and their effective utilization in the business".

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

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

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

Thus, Financial Management is mainly concerned with the effective funds management in the business. In simple words, Financial Management as practiced by business firms can be called as Corporation Finance or Business Finance.

SCOPE OF FINANCIAL MANAGEMENT

Financial management is one of the important parts of overall management, which is directly related with various functional departments like personnel, marketing and production. Financial management covers wide area with multidimensional approaches. The following are the important scope of financial management.

FINANCIAL MANAGEMENT AND ECONOMICS

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

FINANCIAL MANAGEMENT AND ACCOUNTING

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

FINANCIAL MANAGEMENT AND MATHEMATICS

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

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

FINANCIAL MANAGEMENT AND PRODUCTION MANAGEMENT

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

FINANCIAL MANAGEMENT AND MARKETING

Produced goods are sold in the market with innovative and modern approaches. For this, the marketing department needs finance to meet their requirements.

The financial manager or finance department is responsible to allocate the adequate finance to the marketing department. Hence, marketing and financial management are interrelated and depends on each other.

FINANCIAL MANAGEMENT AND HUMAN RESOURCE

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

OBJECTIVES OF FINANCIAL MANAGEMENT

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

Profit maximization

Wealth maximization

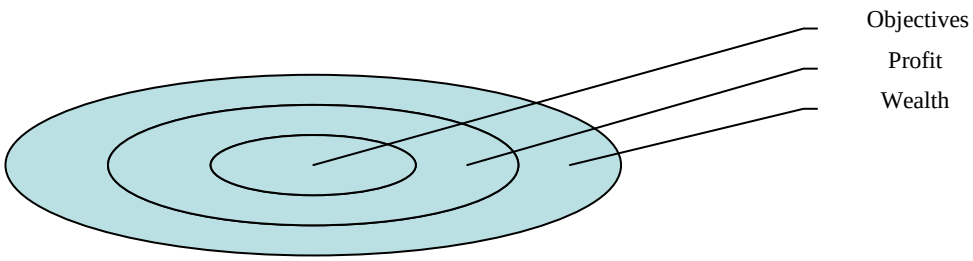


Fig. 1.2 Objectives of Financial Management

Profit Maximization

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

Profit maximization is also called as cashing per share maximization. It leads to maximize the business operation for profit maximization.

Ultimate aim of the business concern is earning profit, hence, it considers all the possible ways to increase the profitability of the concern.

Profit is the parameter of measuring the efficiency of the business concern. So it shows the entire position of the business concern.

Profit maximization objectives help to reduce the risk of the business.

Favourable Arguments for Profit Maximization

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

- Main aim is earning profit.
- Profit is the parameter of the business operation.
- Profit reduces risk of the business concern.
- Profit is the main source of finance.
- Profitability meets the social needs also.

Unfavourable Arguments for Profit Maximization

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

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

Drawbacks of Profit Maximization

Profit maximization objective consists of certain drawback also:

It is vague: In this objective, profit is not defined precisely or correctly. It creates some unnecessary opinion regarding earning habits of the business concern.

It ignores the time value of money: Profit maximization does not consider the time value of money or the net present value of the cash inflow. It leads certain differences between the actual cash inflow and net present cash flow during a particular period.

It ignores risk: Profit maximization does not consider risk of the business concern. Risks may be internal or external which will affect the overall operation of the business concern.

Wealth Maximization

Wealth maximization is one of the modern approaches, which involves latest innovations and improvements in the field of the business concern. The term wealth

means shareholder wealth or the wealth of the persons those who are involved in the business concern.

Wealth maximization is also known as value maximization or net present worth maximization. This objective is a universally accepted concept in the field of business.

Favourable Arguments for Wealth Maximization

Wealth maximization is superior to the profit maximization because the main aim of the business concern under this concept is to improve the value or wealth of the shareholders.

Wealth maximization considers the comparison of the value to cost associated with the business concern. Total value detected from the total cost incurred for the business operation. It provides extract value of the business concern.

- Wealth maximization considers both time and risk of the business concern.
- Wealth maximization provides efficient allocation of resources.
- It ensures the economic interest of the society.

Unfavourable Arguments for Wealth Maximization

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

APPROACHES TO FINANCIAL MANAGEMENT

Financial management approach measures the scope of the financial management in various fields, which include the essential part of the finance. Financial management is not a revolutionary concept but an evolutionary. The definition and scope of financial management has been changed from one period to another period and applied various

innovations. Theoretical points of view, financial management approach may be broadly divided into two major parts.

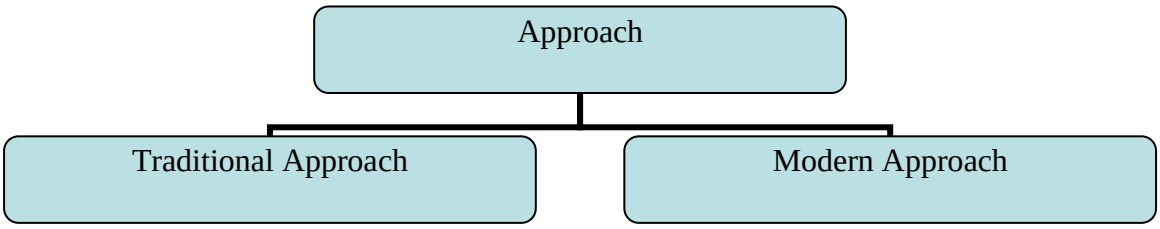


Fig. 1.3 Approaches to Finance Management

Traditional Approach

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

- Arrangement of funds from lending body.
- Arrangement of funds through various financial instruments.
- Finding out the various sources of funds.

FUNCTIONS OF FINANCE MANAGER

Finance function is one of the major parts of business organization, which involves the permanent, and continuous process of the business concern. Finance is one of the interrelated functions which deal with personal function, marketing function, production function and research and development activities of the business concern. At present, every business concern concentrates more on the field of finance because, it is a very emerging part which reflects the entire operational and profit ability position of the concern. Deciding the proper financial function is the essential and ultimate goal of the business organization.

Finance manager is one of the important role players in the field of finance function. He must have entire knowledge in the area of accounting, finance, economics and management. His position is highly critical and analytical to solve various problems

related to finance. A person who deals finance related activities may be called finance manager.

Finance manager performs the following major functions:

Forecasting Financial Requirements

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

Acquiring Necessary Capital

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

Investment Decision

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

Cash Management

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

Interrelation with Other Departments

Finance manager deals with various functional departments such as marketing, production, personel, system, research, development, etc. Finance manager should have sound knowledge not only in finance related area but also well versed in other areas. He

must maintain a good relationship with all the functional departments of the business organization.

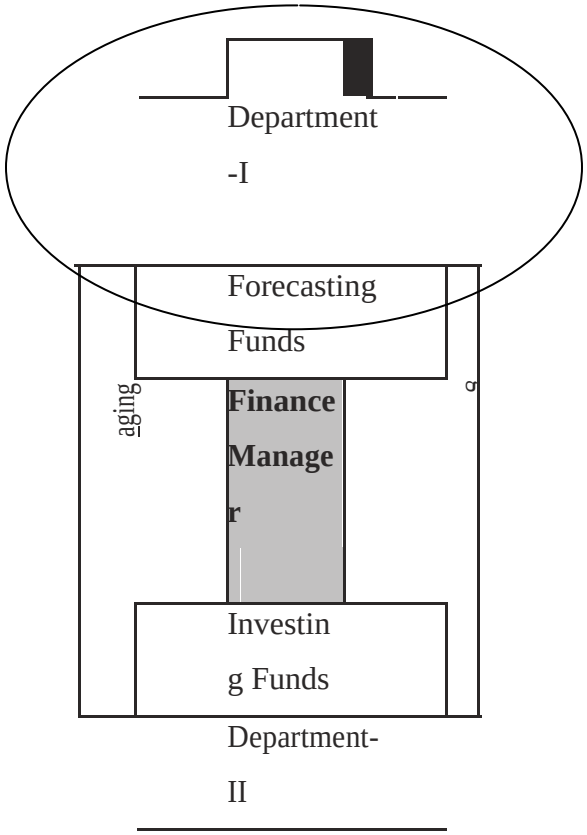


Fig 1.4 Functions of Financial Manager

IMPORTANCE OF FINANCIAL MANAGEMENT

Finance is the lifeblood of business organization. It needs to meet the requirement of the business concern. Each and every business concern must maintain adequate amount of finance for their smooth running of the business concern and also maintain the business carefully to achieve the goal of the business concern. The business goal can be achieved only with the help of effective management of finance. We can't neglect the importance of finance at any time at and at any situation. Some of the importance of the financial management is as follows:

Financial Planning

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

Acquisition of Funds

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

Proper Use of Funds

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

Financial Decision

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

Improve Profitability

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

MODEL QUESTIONS

1. What is finance? Define business finance.
2. Explain the types of finance.
3. Discuss the objectives of financial management.
4. Critically evaluate various approaches to the financial management.
5. Explain the scope of financial management.

LESSON

2

TIME VALUE OF MONEY CONCEPT & RISK ANALYSIS

- SIMPLE INTEREST
- COMPOUND INTEREST
- EFFECTIVE RATE OF INTEREST
- INTRODUCTION TO THE CONCEPT OF RETURN OF A SINGLE ASSET
- CONCEPT AND TYPES OF RISK
- MEASUREMENT OF RISK
- RELATIONSHIP BETWEEN THE RISK AND RETURN
- INDIAN FINANCIAL SYSTEM STRUCTURE AND FUNCTIONS
- MODEL QUESTIONS

Time Value of Money

Concept

Time value of money shows the relation of value of money with time. Time value of money is also value of interest which we have earned for giving money to other for specific period. Value of Rs. 1 which you have today is more valuable than what Rs. 1 you will receive after one year because you can invest today receive Rs. 1 in any scheme and you can earn minimum interest on it. It means today received money is important than tomorrow receivable money. Interest rate is the cost of borrowing money as a yearly percentage. For investors, interest rate is the rate earned on an investment as a yearly percentage.

Time value of money results from the concept of interest. So it now time to discuss Interest.

Simple Interest

It may be defined as Interest that is calculated as a simple percentage of the original principal amount. The formula for calculating simple interest is

$SI = P0\ (i)(n)$

Future value of an account at the end of n period

$FVn = P0 + SI = P0 + P0(i)(n)$

Compound Interest

If interest is calculated on original principal amount it is simple interest. When interest is calculated on total of previously earned interest and the original principal it compound interest. Naturally, the amount calculated on the basis of compound interest rate is higher than when calculated with the simple rate.

$FV_n = P_o\ (1+ i)^n$

Where,

$$i = \frac{\text{Annual rate of interest}}{\text{Number of payment periods per year}} = r/k$$

So, $FV_n = P_0\ (1 + r/k)^n$

When compounding is done k times a year at an annual interest rate r.

Or

$FV_n = P_o (i + FVIF)_{in}$

Where,

Effective Rate of Interest

It is the actual equivalent annual rate of interest at which an investment grows in value when interest is credited more often than once a year. If interest is paid m times in a year it can be found by calculating:

$Ei = (1+ i/m)^m -1$

Present Value

Present Value‖ is the current value of a ―Future Amount. It can also be defined as the amount to be invested today (Present Value) at a given rate over specified period to equal the Future Amount.

The present value of a sum of money to be received at a future date is determined by discounting the future value at the interest rate that the money could earn over the period. This process is known as **Discounting**. The present value interest factor declines as the interest rate rises and as the length of time increases.

$P_o = FV_n /(1+ i)^n$

$P_o = FV_n (1+ i)^{-n}$

Where,

FVn = Future value n years hence

I = Rate of interest per annum

n = Number of years for which discounting is done.

Discount (or) Present Value Technique: -

Present value V_o = Future value (V_n) x DF_{in}

Introduction to the Concept of Return of a Single Asset

Risk and Return of the investments are interrelated covenants in the selection any investments, which should be studied through the meaning and definition of risk and

return and their classification of themselves in the first part of this chapter and the relationship in between them is illustrated in the second half of the chapter.

Meaning of Return & Rate of Return

Return is the combination of both the regular income and capital appreciation of the investments. The regular income is nothing but dividend/interest income of the investments. The capital appreciations of the investments are nothing but the capital gains of the investments i.e. the difference in between the closing and opening price of the investments.

Return symbolized as follows

D1 + Pt – Pt – 1 / Pt – 1

These two categories, Earnings yield and Capital gains yield

*Earnings Yield = Earnings per share / Market price per share***

Concept and Types of Risk

The variability of the actual return from the expected return which is associated with the investment/asset known as risk of the investment. Variability of return means that the Deviation in between actual return and expected return which is in other words as variance i.e., the measure of statistics. Greater the variability means that Riskier the security/ investment. Lesser the variability means that More certain the returns, nothing but Least risky

Interest Rate Risk

It is risk – variability in a security's return resulting from the changes in the level of interest rates.

Market Risk

It refers to variability of returns due to fluctuations in the securities market which is more particularly to equities market due to the effect from the wars, depressions etc.

Inflation Risk

Rise in inflation leads to Reduction in the purchasing power which influences only few people to invest due to Interest Rate Risk which is nothing but the variability of return of the investment due to oscillation of interest rates due to deflationary and inflationary pressures.

Business Risk

Business risk is nothing but Operational risk which arises only due to the presence of the fixed cost of operations.

Financial Risk

Connected with the raising of fixed charge of funds viz Debt finance & Preference share capital. More the application of fixed charge of financial will lead to Greater the financial Risk which is nothing but the Trading on Equity.

Liquidity Risk

Liquidity risk reflects only due to the quality of benefits with reference to certainty of return to receive after some period which is normally revealed in terms of quality of benefits.

Measurement of Risk

Standard Deviation:

Greater the standard deviation - Greater the risk

Does not consider the variability of return to the expected value

This may be misleading - if they differ in the size of expected values

Coefficient of variation = S.D/ Mean

Risk and Return of the Portfolio

Portfolio is the Combination of two or more assets or investments

Portfolio Expected Return is the weighted average of the expected returns of the securities or assets in the portfolio. Weights are the Proportion of total funds in each security which form the portfolio Wj Kj.

Wj = funds proportion invested in the security.

Kj = expected return for security J.

Benefits of portfolio holdings are bearing certain benefits to single assets. Including the various types of industry securities - Diversification of assets. It is not the simple weighted average of individual security.

Risk is studied through the correlation/co-variance of the constituting assets of the portfolio. The Correlation among the securities should be relatively considered to maximize the return at the given level of risk or to minimize the risk.

Correlation of the expected returns of the constituent securities in the portfolio.

It is a Statistical expression which reveals the securities earning pattern in the portfolio together.

Diversification of the Risk of Portfolio

Diversification of the portfolio can be done through the selection of the securities which have negative correlation among them which formed the portfolio. The return of the risky and riskless assets is only having the possibilities to bring down the risk of the portfolio.

The risk of the portfolio cannot be simply reduced by way adopting the principle of correlation of returns among the securities in the portfolio. To reduce the risk of the portfolio, the classification of the risk has to be studied, which are as follows:

The risk can be further classified into two categories viz Systematic and Unsystematic risk of the securities

Systematic Risk: Which only requires the investors to expect additional return/ compensation to bear the

Unsystematic Risk: The investors are not given any such additional compensation to bear unlike the earlier. The relationship could be obviously understood through the study of Capital Asset Pricing Model (CAPM).

- Developed by William F. Sharpe
- Explains the relationship in between the risk and expected / required return
- Behaviour of the security prices
- Extends the mechanism to assess the dominance of a security on the total risk and return
- Highlights the importance of bearing risk through some premium
- No transaction costs - No intermediation cost during the transaction
- No single investor is to influence the market Risk and Return
- Highest return for given level of risk Or Lowest risk for a give n level of return
- Risk - Expected value, standard deviation

Relationship between the Risk and Return

Total Return - Risk free rate of return= Excess return (Risk premium)

Total return = Risk free return + Risk premium

Kj = Rf + bj (Km–Rf)

Bj is nothing but Beta of the security i.e., market responsiveness of the security. It is normally expressed as a b

b = Non Diversifiable risk of asset or Portfolio/ Risk of the Market Portfolio

Risk of the portfolio = after diversification, the risk of the market portfolio is non diversifiable

Indian Financial System Structure and Functions

Financial System is a set of institutional arrangements through which financial surpluses in the economy are mobilised from surplus units and transferred to deficit spenders.

The institutional arrangements include all conditions and mechanisms governing the production, distribution, exchange and holding of financial assets or instruments of all

kinds and the organisations as well as the manner of operations of financial markets and institutions of all descriptions.

Thus, there are four main constituents of financial system:

(a) Financial Assets

(b) Financial Markets,

(c) Financial Institutions and

(d) Financial Services

Financial assets are subdivided under two heads:

Primary securities and secondary securities. The former are financial claims against real-sector units, for example, bills, bonds, equities etc. They are created by real-sector units as ultimate borrowers for raising funds to finance their deficit spending. The secondary securities are financial claims issued by financial institutions or intermediaries against themselves to raise funds from public. For examples, bank deposits, life insurance policies, UTI units, IDBI bonds etc.

Functions of Financial System:

The financial system helps production, capital accumulation, and growth by

(i) encouraging savings,

(ii) mobilising them, and

(iii) allocating them among alternative uses and users.

Each of these functions is important and the efficiency of a given financial system depends on how well it performs each of these functions.

MODEL QUESTIONS

1. Explain the Time Value of Money
2. Discuss the Functions of Financial System.

LESSON

3

SOURCES OF CAPITAL

- INTRODUCTION
- SOURCES OF FINANCE
- LONG-TERM SOURCES
- SHORT-TERM SOURCES
- SECURITY FINANCE
- EQUITY SHARES
- PREFERENCE SHARES
- DEFERRED SHARES
- CREDITORSHIP SECURITIES
- DEBENTURE
- INTERNAL FINANCE
- LOAN FINANCING
- MODEL QUESTIONS

INTRODUCTION

Finance is the lifeblood of business concern, because it is interlinked with all activities performed by the business concern. In a human body, if blood circulation is not proper, body function will stop. Similarly, if the finance not being properly arranged, the business system will stop. Arrangement of the required finance to each department of business concern is highly a complex one and it needs careful decision. Quantum of finance may be depending upon the nature and situation of the business concern. But, the requirement of the finance may be broadly classified into two parts:

Long-term Financial Requirements or Fixed Capital Requirement

Financial requirement of the business differs from firm to firm and the nature of the requirements on the basis of terms or period of financial requirement, it may be long term and short-term financial requirements.

Long-term financial requirement means the finance needed to acquire land and building for business concern, purchase of plant and machinery and other fixed expenditure. Long-term financial requirement is also called as fixed capital requirements. Fixed capital is the capital, which is used to purchase the fixed assets of the firms such as land and building, furniture and fittings, plant and machinery, etc. Hence, it is also called a capital expenditure.

Short-term Financial Requirements or Working Capital Requirement

Apart from the capital expenditure of the firms, the firms should need certain expenditure like procurement of raw materials, payment of wages, day-to-day expenditures, etc. This kind of expenditure is to meet with the help of short-term financial requirements which will meet the operational expenditure of the firms. Short-term financial requirements are popularly known as working capital.

SOURCES OF FINANCE

Sources of finance mean the ways for mobilizing various terms of finance to the industrial concern. Sources of finance state that, how the companies are mobilizing finance for their requirements. The companies belong to the existing or the new which need sum amount of finance to meet the long-term and short-term requirements such as purchasing of fixed assets, construction of office building, purchase of raw materials and day-to-day expenses.

Sources of finance may be classified under various categories according to the following important heads:

Based on the Period

Sources of Finance may be classified under various categories based on the period.

Long-term sources: Finance may be mobilized by long-term or short-term. When the finance mobilized with large amount and the repayable over the period will be more than five years, it may be considered as long-term sources. Share capital, issue of debenture, long-term loans from financial institutions and commercial banks come under this kind of source of finance. Long-term source of finance needs to meet the capital expenditure of the firms such as purchase of fixed assets, land and buildings, etc.

Long-term sources of finance include:

- ✓ Equity Shares
- ✓ Preference Shares
- ✓ Debenture
- ✓ Long-term Loans
- ✓ Fixed Deposits

Short-term sources: Apart from the long-term source of finance, firms can generate finance with the help of short-term sources like loans and advances from commercial banks, moneylenders, etc. Short-term source of finance needs to meet the operational expenditure of the business concern.

Short-term source of finance include:

- ✓ Bank Credit
- ✓ Customer Advances
- ✓ Trade Credit
- ✓ Factoring
- ✓ Public Deposits
- ✓ Money Market Instruments

Based on Ownership

Sources of Finance may be classified under various categories based on the period:

An ownership source of finance include

Shares capital, earnings

Retained earnings

Surplus and Profits

Borrowed capital include

Debenture

Bonds

Public deposits

Loans from Bank and Financial Institutions.

Based on Sources of Generation

Sources of Finance may be classified into various categories based on the period.

Internal source of finance includes

Retained earnings

Depreciation funds

Surplus

External sources of finance may be include

Share capital

Debenture

Public deposits

Loans from Banks and Financial institutions

Based in Mode of Finance Security finance may be include

Shares capital

Debenture

Retained earnings may include

Retained earnings

Depreciation funds

Loan finance may include

Long-term loans from Financial Institutions

Short-term loans from Commercial banks.

The above classifications are based on the nature and how the finance is mobilized from various sources. But the above sources of finance can be divided into three major classifications:

- Security Finance
- Internal Finance
- Loans Finance

SECURITY FINANCE

If the finance is mobilized through issue of securities such as shares and debenture, it is called as security finance. It is also called as corporate securities. This type of finance plays a major role in the field of deciding the capital structure of the company.

Characters of Security Finance

Security finance consists of the following important characters:

Long-term sources of finance.

It is also called as corporate securities.

Security finance includes both shares and debentures.

It plays a major role in deciding the capital structure of the company.

Repayment of finance is very limited.

It is a major part of the company's total capitalization.

Types of Security Finance

- Security finance may be divided into two major types:
- Ownership securities or capital stock.
- Creditor ship securities or debt capital.

Ownership Securities

The ownership securities also called as capital stock, is commonly called as shares. Shares are the most Universal method of raising finance for the business concern. Ownership capital consists of the following types of securities.

- Equity Shares
- Preference Shares
- No par stock
- Deferred Shares

EQUITY SHARES

Equity Shares also known as ordinary shares, which means, other than preference shares. Equity shareholders are the real owners of the company. They have a control over the management of the company. Equity shareholders are eligible to get dividend if the company earns profit. Equity share capital cannot be redeemed during the lifetime of the company. The liability of the equity shareholders is the value of unpaid value of shares.

Features of Equity Shares

Equity shares consist of the following important features:

Maturity of the shares: Equity shares have permanent nature of capital, which has no maturity period. It cannot be redeemed during the lifetime of the company.

Residual claim on income: Equity shareholders have the right to get income left after paying fixed rate of dividend to preference shareholder. The earnings or the income available to the shareholders is equal to the profit after tax minus preference dividend.

Residual claims on assets: If the company wound up, the ordinary or equity shareholders have the right to get the claims on assets. These rights are only available to the equity shareholders.

Right to control: Equity shareholders are the real owners of the company. Hence, they have power to control the management of the company and they have power to take any decision regarding the business operation.

Voting rights: Equity shareholders have voting rights in the meeting of the company with the help of voting right power; they can change or remove any decision of the business concern. Equity shareholders only have voting rights in the company meeting and also they can nominate proxy to participate and vote in the meeting instead of the shareholder.

Pre-emptive right: Equity shareholder pre-emptive rights. The pre-emptive right is the legal right of the existing shareholders. It is attested by the company in the first opportunity to purchase additional equity shares in proportion to their current holding capacity.

Limited liability: Equity shareholders are having only limited liability to the value of shares they have purchased. If the shareholders are having fully paid up shares, they have no liability. For example: If the shareholder purchased 100 shares with the face value of Rs. 10 each. He paid only Rs. 900. His liability is only Rs. 100.

Total number of shares 100 Face value of shares Rs. 10

Total value of shares	100 × 10 = 1,000
Paid up value of shares	900
Unpaid value/liability	100

Liability of the shareholders is only unpaid value of the share (that is Rs. 100).

Advantages of Equity Shares

Equity shares are the most common and universally used shares to mobilize finance for the company. It consists of the following advantages.

Permanent sources of finance: Equity share capital is belonging to long-term permanent nature of sources of finance, hence, it can be used for long-term or fixed capital requirement of the business concern.

Voting rights: Equity shareholders are the real owners of the company who have voting rights. This type of advantage is available only to the equity shareholders.

No fixed dividend: Equity shares do not create any obligation to pay a fixed rate of dividend. If the company earns profit, equity shareholders are eligible for profit, they are eligible to get dividend otherwise, and they cannot claim any dividend from the company.

Less cost of capital: Cost of capital is the major factor, which affects the value of the company. If the company wants to increase the value of the company, they have to use more share capital because, it consists of less cost of capital (K_e) while compared to other sources of finance.

Retained earnings: When the company have more share capital, it will be suitable for retained earnings which is the less cost sources of finance while compared to other sources of finance.

Disadvantages of Equity Shares Irredeemable: Equity shares cannot be redeemed during the lifetime of the business concern. It is the most dangerous thing of over capitalization.

Obstacles in management: Equity shareholder can put obstacles in management by manipulation and organizing themselves. Because, they have power to contrast any decision which are against the wealth of the shareholders.

Leads to speculation: Equity shares dealings in share market lead to secularism during prosperous periods.

Limited income to investor: The Investors who desire to invest in safe securities with a fixed income have no attraction for equity shares.

No trading on equity: When the company raises capital only with the help of equity, the company cannot take the advantage of trading on equity.

PREFERENCE SHARES

The parts of corporate securities are called as preference shares. It is the shares, which have preferential right to get dividend and get back the initial investment at the time of winding up of the company. Preference shareholders are eligible to get fixed rate of dividend and they do not have voting rights.

Preference shares may be classified into the following major types:

Cumulative preference shares: Cumulative preference shares have right to claim dividends for those years which have no profits. If the company is unable to earn profit in any one or more years, C.P. Shares are unable to get any dividend but they have right to get the comparative dividend for the previous years if the company earned profit.

Non-cumulative preference shares: Non-cumulative preference shares have no right to enjoy the above benefits. They are eligible to get only dividend if the company earns profit during the years. Otherwise, they cannot claim any dividend.

Redeemable preference shares: When, the preference shares have a fixed maturity period it becomes redeemable preference shares. It can be redeemable during the lifetime of the company. The Company Act has provided certain restrictions on the return of the redeemable preference shares.

Irredeemable Preference Shares

Irredeemable preference shares can be redeemed only when the company goes for liquidator.

There is no fixed maturity period for such kind of preference shares.

Participating Preference Shares

Participating preference shareholders have right to participate extra profits after distributing the equity shareholders.

Non-Participating Preference Shares

Non-participating preference shareholders are not having any right to participate extra profits after distributing to the equity shareholders. Fixed rate of dividend is payable to the type of shareholders.

Convertible Preference Shares

Convertible preference sharesholders have right to convert their holding into equity shares after a specific period. The articles of association must authorize the right of conversion.

Non-convertible Preference Shares

There shares, cannot be converted into equity shares from preference shares.

Features of Preference Shares

The following are the important features of the preference shares:

Maturity period: Normally preference shares have no fixed maturity period except in the case of redeemable preference shares. Preference shares can be redeemable only at the time of the company liquidation.

Residual claims on income: Preferential shareholders have a residual claim on income. Fixed rate of dividend is payable to the preference shareholders.

Residual claims on assets: The first preference is given to the preference shareholders at the time of liquidation. If any extra Assets are available that should be distributed to equity shareholder.

Control of Management: Preference shareholder does not have any voting rights. Hence, they cannot have control over the management of the company.

Advantages of Preference Shares

Preference shares have the following important advantages.

Fixed dividend: The dividend rate is fixed in the case of preference shares. It is called as fixed income security because it provides a constant rate of income to the investors.

Cumulative dividends: Preference shares have another advantage which is called cumulative dividends. If the company does not earn any profit in any previous years, it can be cumulative with future period dividend.

Redemption: Preference Shares can be redeemable after a specific period except in the case of irredeemable preference shares. There is a fixed maturity period for repayment of the initial investment.

Participation: Participative preference sharesholders can participate in the surplus profit after distribution to the equity shareholders.

Convertibility: Convertibility preference shares can be converted into equity shares when the articles of association provide such conversion.

Disadvantages of Preference Shares

Expensive sources of finance: Preference shares have high expensive source of finance while compared to equity shares.

No voting right: Generally preference shareholders do not have any voting rights. Hence they cannot have the control over the management of the company.

Fixed dividend only: Preference shares can get only fixed rate of dividend. They may not enjoy more profits of the company.

Permanent burden: Cumulative preference shares become a permanent burden so far as the payment of dividend is concerned. Because the company must pay the dividend for the unprofitable periods also.

Taxation: In the taxation point of view, preference shares dividend is not a deductible expense while calculating tax. But, interest is a deductible expense. Hence, it has disadvantage on the tax deduction point of view.

DEFERRED SHARES

Deferred shares also called as founder shares because these shares were normally issued to founders. The shareholders have a preferential right to get dividend before the preference shares and equity shares. According to Companies Act 1956 no public limited company or which is a subsidiary of a public company can issue deferred shares.

These shares were issued to the founder at small denomination to control over the management by the virtue of their voting rights.

NO PAR SHARES

When the shares are having no face value, it is said to be no par shares. The company issues this kind of shares which is divided into a number of specific shares without any specific denomination. The value of shares can be measured by dividing the real net worth of the company with the total number of shares.

Value of number of share = Net worth / Total number of shares

CREDITORSHIP SECURITIES

Creditorship Securities also known as debt finance which means the finance is mobilized from the creditors. Debenture and Bonds are the two major parts of the Creditorship Securities.

Debentures

A Debenture is a document issued by the company. It is a certificate issued by the company under its seal acknowledging a debt.

According to the Companies Act 1956, "debenture includes debenture stock, bonds and any other securities of a company whether constituting a charge of the assets of the company or not."

Types of Debentures

Debentures may be divided into the following major types:

Unsecured debentures: Unsecured debentures are not given any security on assets of the company. It is also called simple or naked debentures. This type of debentures is treaded as unsecured creditors at the time of winding up of the company.

Secured debentures: Secured debentures are given security on assets of the company. It is also called as mortgaged debentures because these debentures are given against any mortgage of the assets of the company.

Redeemable debentures: These debentures are to be redeemed on the expiry of a certain period. The interest is paid periodically and the initial investment is returned after the fixed maturity period.

Irredeemable debentures: These kinds of debentures cannot be redeemable during the life time of the business concern.

Convertible debentures: Convertible debentures are the debentures whose holders have the option to get them converted wholly or partly into shares. These debentures are usually converted into equity shares. Conversion of the debentures may be:

- ✓ Non-convertible debentures
- ✓ Fully convertible debentures
- ✓ Partly convertible debentures

Other types: Debentures can also be classified into the following types. Some of the common types of the debentures are as follows:

- ✓ Collateral Debenture
- ✓ Guaranteed Debenture
- ✓ First Debenture
- ✓ Zero Coupon Bond
- ✓ Zero Interest Bond/Debenture

Features of Debentures

Maturity period: Debentures consist of long-term fixed maturity period. Normally, debentures consist of 10–20 years maturity period and are repayable with the principle investment at the end of the maturity period.

Residual claims in income: Debenture holders are eligible to get fixed rate of interest at every end of the accounting period. Debenture holders have priority of claim in income of the company over equity and preference shareholders.

Residual claims on asset: Debenture holders have priority of claims on Assets of the company over equity and preference shareholders. The Debenture holders may have either specific change on the Assets or floating change of the assets of the company. Specific change of Debenture holders are treated as secured creditors and floating change of Debenture holders are treated as unsecured creditors.

No voting rights: Debenture holders are considered as creditors of the company. Hence they have no voting rights. Debenture holders cannot have the control over the performance of the business concern.

Fixed rate of interest: Debentures yield fixed rate of interest till the maturity period. Hence the business will not affect the yield of the debenture.

Advantages of Debenture

Debenture is one of the major parts of the long-term sources of finance which of consists the following important advantages:

Long-term sources: Debenture is one of the long-term sources of finance to the company. Normally the maturity period is longer than the other sources of finance.

Fixed rate of interest: Fixed rate of interest is payable to debenture holders, hence it is most suitable of the companies earn higher profit. Generally, the rate of interest is lower than the other sources of long-term finance.

Trade on equity: A company can trade on equity by mixing debentures in its capital structure and thereby increase its earning per share. When the company applies the trade on equity concept, cost of capital will reduce and value of the company will increase.

Income tax deduction: Interest payable to debentures can be deducted from the total profit of the company. So it helps to reduce the tax burden of the company.

Protection: Various provisions of the debenture trust deed and the guidelines issued by the SEB1 protect the interest of debenture holders.

Disadvantages of Debenture

Debenture finance consists of the following major disadvantages:

Fixed rate of interest: Debenture consists of fixed rate of interest payable to securities. Even though the company is unable to earn profit, they have to pay the fixed rate of interest to debenture holders, hence, it is not suitable to those company earnings which fluctuate considerably.

No voting rights: Debenture holders do not have any voting rights. Hence, they cannot have the control over the management of the company.

Creditors of the company: Debenture holders are merely creditors and not the owners of the company. They do not have any claim in the surplus profits of the company.

High risk: Every additional issue of debentures becomes more risky and costly on account of higher expectation of debenture holders. This enhanced financial risk increases the cost of equity capital and the cost of raising finance through debentures which is also high because of high stamp duty.

Restrictions of further issues: The Company cannot raise further finance through debentures as the debentures are under the part of security of the assets already mortgaged to debenture holders.

INTERNAL FINANCE

A company can mobilize finance through external and internal sources. A new company may not raise internal sources of finance and they can raise finance only external sources such as shares, debentures and loans but an existing company can raise both internal and external sources of finance for their financial requirements. Internal finance is also one of the important sources of finance and it consists of cost of capital while compared to other sources of finance.

Internal source of finance may be broadly classified into two categories:

- Depreciation Funds
- Retained earnings

Depreciation Funds

Depreciation funds are the major part of internal sources of finance, which is used to meet the working capital requirements of the business concern. Depreciation means decrease in the value of asset due to wear and tear, lapse of time, obsolescence, exhaustion and accident. Generally depreciation is changed against fixed assets of the company at fixed rate for every year. The purpose of depreciation is replacement of the assets after the expired period. It is one kind of provision of fund, which is needed to reduce the tax burden and overall profitability of the company.

Retained Earnings

Retained earnings are another method of internal sources of finance. Actually is not a method of raising finance, but it is called as accumulation of profits by a company for its expansion and diversification activities.

Retained earnings are called under different names such as; self-finance, inter finance, and plugging back of profits. According to the Companies Act 1956 certain percentage, as prescribed by the central government (not exceeding 10%) of the net profits after tax of a financial year have to be compulsorily transferred to reserve by a company before declaring dividends for the year.

Under the retained earnings sources of finance, a part of the total profits is transferred to various reserves such as general reserve, replacement fund, reserve for repairs and renewals, reserve funds and secrete reserves, etc.

Advantages of Retained Earnings

Retained earnings consist of the following important advantages:

Useful for expansion and diversification: Retained earnings are most useful to expansion and diversification of the business activities.

Economical sources of finance: Retained earnings are one of the least costly sources of finance since it does not involve any floatation cost as in the case of raising of funds by issuing different types of securities.

No fixed obligation: If the companies use equity finance they have to pay dividend and if the companies use debt finance, they have to pay interest. But if the company uses retained earnings as sources of finance, they need not pay any fixed obligation regarding the payment of dividend or interest.

Flexible sources: Retained earnings allow the financial structure to remain completely flexible. The company need not raise loans for further requirements, if it has retained earnings.

Increase the share value: When the company uses the retained earnings as the sources of finance for their financial requirements, the cost of capital is very cheaper than the other sources of finance; Hence the value of the share will increase.

Avoid excessive tax: Retained earnings provide opportunities for evasion of excessive tax in a company when it has small number of shareholders.

Increase earning capacity: Retained earnings consist of least cost of capital and also it is most suitable to those companies which go for diversification and expansion.

Disadvantages of Retained Earnings

Retained earnings also have certain disadvantages:

Misuses: The management by manipulating the value of the shares in the stock market can misuse the retained earnings.

Leads to monopolies: Excessive use of retained earnings leads to monopolistic attitude of the company.

Over capitalization: Retained earnings lead to over capitalization, because if the company uses more and more retained earnings, it leads to insufficient source of finance.

Tax evasion: Retained earnings lead to tax evasion. Since, the company reduces tax burden through the retained earnings.

Dissatisfaction: If the company uses retained earnings as sources of finance, the shareholder can't get more dividends. So, the shareholder does not like to use the retained earnings as source of finance in all situations.

LOAN FINANCING

Loan financing is the important mode of finance raised by the company. Loan finance may be divided into two types:

- Long-Term Sources
- Short-Term Sources

Loan finance can be raised through the following important institutions.

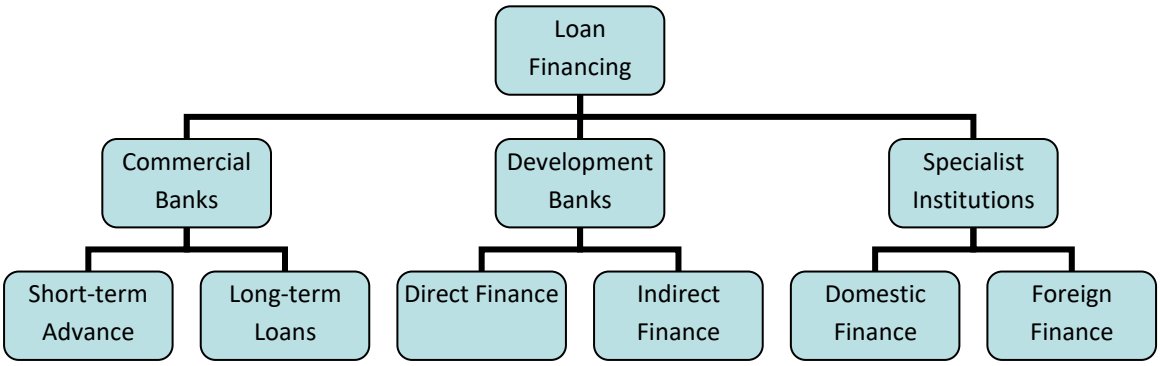


Fig. 3.1 Loan Financing

Financial Institutions

With the effect of the industrial revaluation, the government established nationwide and state wise financial industries to provide long-term financial assistance to industrial concerns in the country. Financial institutions play a key role in the field of industrial development and they are meeting the financial requirements of the business

concern. IFCI, ICICI, IDBI, SFC, EXIM Bank, ECGC are the famous financial institutions in the country.

Commercial Banks

Commercial Banks normally provide short-term finance which is repayable within a year.

The major finance of commercial banks is as follows:

Short-term advance: Commercial banks provide advance to their customers with or without securities. It is one of the most common and widely used short-term sources of finance, which are needed to meet the working capital requirement of the company.

It is a cheap source of finance, which is in the form of pledge, mortgage, and hypothecation and bills discounted and rediscounted.

Short-term Loans

Commercial banks also provide loans to the business concern to meet the short-term financial requirements. When a bank makes an advance in lump sum against some security it is termed as loan. Loan may be in the following form:

Cash credit: A cash credit is an arrangement by which a bank allows his customer to borrow money up to certain limit against the security of the commodity.

Overdraft: Overdraft is an arrangement with a bank by which a current account holder is allowed to withdraw more than the balance to his credit up to a certain limit without any securities.

Development Banks

Development banks were established mainly for the purpose of promotion and development the industrial sector in the country. Presently, large numbers of development banks are functioning with multidimensional activities. Development banks are also called as financial institutions or statutory financial institutions or statutory non-banking institutions. Development banks provide two important types of finance:

- Direct Finance
- Indirect Finance/Refinance

Presently the commercial banks are providing all kinds of financial services including development-banking services. And also nowadays development banks and specialisted

financial institutions are providing all kinds of financial services including commercial banking services. Diversified and global financial services are unavoidable to the present day economics. Hence, we can classify the financial institutions only by the structure and set up and not by the services provided by them.

MODEL QUESTIONS

1. Explain the various sources of financing.
2. What is meant by security financing?
3. What is debt financing?
4. Critically examine the advantages and disadvantages of equity shares.
5. Discuss the features of equity shares.
6. What are the merits of the deferred shares?
7. Explain the merits and demerits of preference shares?
8. List out the types of debentures.

LESSON

4

CAPITAL STRUCTURE

- INTRODUCTION OF CAPITAL STRUCTURE
- OPTIMUM CAPITAL STRUCTURE
- CAPITAL STRUCTURE THEORIES
- MODEL QUESTIONS

Introduction of capital structure

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

Meaning of Capital Structure

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.

The term capital structure refers to the relationship between the various long-term source financing such as equity capital, preference share capital and debt capital. Deciding the suitable capital structure is the important decision of the financial management because it is closely related to the value of the firm.

Capital structure is the permanent financing of the company represented primarily by long-term debt and equity.

Definition of Capital Structure

The following definitions clearly initiate the meaning and objective of the capital structures.

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

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

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

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.

Example

From the following information, calculate the capitalization, capital structure and financial structures.

Balance Sheet

Liabilities			**Assets**
Equity share capital	50,000	Fixed assets	25,000
Preference share capital	5,000	Good will	10,000
Debentures	6,000	Stock	15,000
Retained earnings	4,000	Bills receivable	5,000
Bills payable	2,000	Debtors	5,000
Creditors	3,000	Cash and bank	10,000
	70,000		70,000

(i) Calculation of Capitalization

S. No.	**Sources**	**Amount**
1.	Equity share capital	50,000
2.	Preference share capital	5,000
3.	Debentures	6,000
	Capitalization	**61,000**

(ii) Calculation of Capital Structures

S. No.	**Sources**	**Amount**	**Proportion**
1.	Equity share capital	50,000	76.92
2.	Preference share capital	5,000	7.69
3.	Debentures	6,000	9.23
4.	Retained earnings	4,000	6.16
		65,000	**100%**

(iii) Calculation of Financial Structure

S. No.	Sources	Amount	Proportion
1.	Equity share capital	50,000	71.42
2.	Preference share capital	5,000	7.14
3.	Debentures	6,000	8.58
4.	Retained earnings	4,000	5.72
5.	Bills payable	2,000	2.85
6.	Creditors	3,000	4.29
		70,000	**100%**

OPTIMUM CAPITAL STRUCTURE

Optimum capital structure is the capital structure at which the weighted average cost of capital is minimum and thereby the value of the firm is maximum.

Optimum capital structure may be defined as the capital structure or combination of debt and equity, that leads to the maximum value of the firm.

Objectives of Capital Structure

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

- Maximize the value of the firm.
- Minimize the overall cost of capital.

Forms of Capital Structure

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

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

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

FACTORS DETERMINING CAPITAL STRUCTURE

The following factors are considered while deciding the capital structure of the firm.

Leverage

It is the basic and important factor, which affect the capital structure. It uses the fixed cost financing such as debt, equity and preference share capital. It is closely related to the overall cost of capital.

Cost of Capital

Cost of capital constitutes the major part for deciding the capital structure of a firm. Normally long- term finance such as equity and debt consist of fixed cost while mobilization. When the cost of capital increases, value of the firm will also decrease. Hence the firm must take careful steps to reduce the cost of capital.

Nature of the business: Use of fixed interest/dividend bearing finance depends upon the nature of the business. If the business consists of long period of operation, it will apply for equity than debt, and it will reduce the cost of capital.

Size of the company: It also affects the capital structure of a firm. If the firm belongs to large scale, it can manage the financial requirements with the help of internal sources. But if it is small size, they will go for external finance. It consists of high cost of capital.

Legal requirements: Legal requirements are also one of the considerations while dividing the capital structure of a firm. For example, banking companies are restricted to raise funds from some sources.

Requirement of investors: In order to collect funds from different type of investors, it will be appropriate for the companies to issue different sources of securities.

Government policy

Promoter contribution is fixed by the company Act. It restricts to mobilize large, long-term funds from external sources. Hence the company must consider government policy regarding the capital structure.

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.

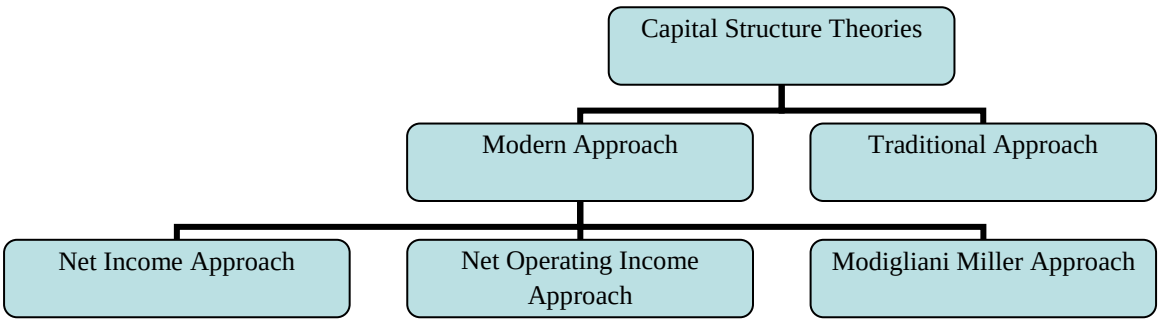


Fig. 4.1 Capital Structure Theories

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.

Exercise 1

ABC Ltd., needs Rs. 30,00,000 for the installation of a new factory. The new factory expects to yield annual earnings before interest and tax (EBIT) of Rs.5,00,000. In choosing a financial plan, ABC Ltd., has an objective of maximizing earnings per share (EPS). The company proposes to issuing ordinary shares and raising debit of Rs. 3,00,000 and Rs. 10,00,000 of Rs. 15,00,000. The current market price per share is Rs. 250 and is expected to drop to Rs. 200 if the funds are borrowed in excess of Rs. 12,00,000. Funds can be raised at the following rates.

up to Rs. 3,00,000 at 8%

–over Rs. 3,00,000 to Rs. 15,000,00 at 10%

–over Rs. 15,00,000 at 15%

Assuming a tax rate of 50% advise the company.

Solution

Earnings Before Interest and Tax (BIT) less Interest Earnings Before Tax less: Tax@50%.

Alternatives		
I (Rs. 3,00,000 debt)	II Rs. 10,00,000 debt)	III (Rs. 15,00,000 debt)
5,00,000 24,000	5,00,000 1,00,000	5,00,000 2,25,000
4,76,000 2,38,000	4,00,000 2,00,000	2,75,000 1,37,500
2,38,000 27,00,000 250 10800 2,38,000	2,00,000 20,00,000 250 8,000 2,00,000	1,37,500 15,00,000 200 7,500 1,37,500
No. of shares 10,800 Earnings per share 22.03	8,000 25	7,500 18.33

The secure alternative which gives the highest earnings per share is the best. Therefore the company is advised to revise Rs. 10,00,000 through debt amount Rs. 20,00,000 through ordinary shares.

Exercise 2

Compute the market value of the firm, value of shares and the average cost of capital from the following information.

Net operating income Rs. 1,00,000

Total investment Rs. 5,00,000

Equity capitalization Rate:

If the firm uses no debt 10%

If the firm uses Rs. 25,000 debentures 11%

If the firm uses Rs. 4,00,000 debentures 13%

Assume that Rs. 5,00,000 debentures can be raised at 6% rate of interest whereas Rs. 4,00,000 debentures can be raised at 7% rate of interest.

Solution

Computation of market value of firm value of shares and the average cost of capital.

Particulars	(a) No Debt	(b) Rs. 2,50,000 6% debentures	(c) Rs. 4,00,000 7% debentures
Net operating system	1,00,000	1,00,000	1,00,000
(–) Interest (i.e.) Cost of debt	_	15,000	28,000
Earnings available to Equity shareholders	1,00,000	85,000	72,000
Equity Capitalization Rate	10%	11%	13%
	10	100	100
Market value of shares	10,000 × 100	85,000 × 11	72,000 × 13
	Rs. 10,00,000/-	Rs.772727/-	Rs.553846/-

Market Value of firm	10,00,000 1,00,000 1,00,000	10,22,727 1,00,000 1, 00, 000	9,53,846 1,00,000 1, 00, 000
Average cost of capital Earnings Value of the firm EBIT V	× 100 10,00,000 =10%	× 100 10, 22, 727 =9.78%	× 100 9, 53, 846 =10.48%

Comments

From the above data, if debt of Rs. 2,50,000 is used, the value of the firm increases and the overall cost of capital decreases. But, if more debt is used to finance in place of equity i.e., Rs. 4,00,000 debentures, the value of the firm decreases and the overall cost of capital increases.

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:

- There are no corporate taxes.
- 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)	XXX
Less: interest on debenture (i)	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_o = EBIT/V(%)	XXX%

Exercise 3

A Company expects a net income of Rs. 1,00,000. It has Rs. 2,50,000, 8% debentures. The equality capitalization rate of the company is 10%. Calculate the value of the firm and overall capitalization rate according to the net income approach (ignoring income tax).

If the debenture debts are increased to Rs. 4,00,000. What shall be the value of the firm and the overall capitalization rate?

Solution

(a) Capitalization of the value of the firm

	Rs.
Net income	1,00,000
Less: Interest on 8% Debentures of Rs. 2,50,000	20,000
Earnings available to equality shareholders	80,000
Equity capitalization rate	10%

$$= \frac{80,000}{10} \times 100$$

Market value of equity = 8,00,000

Market value of debentures = 2,50,000

Value of the firm = 10,50,000

Calculation of overall capitalization rate

$$\text{Overall cost of capital } (K_o) = \frac{\text{Earnings}}{\text{Value of the firm}} \quad \frac{EBIT}{V}$$

1,00,000

$$10,50,000 \times 100$$

9.52%

Calculation of value of the firm if debenture debt is raised to Rs. 3,00,000.

		Rs.
Net income		1,00,000
Less: Interest on 8% Debentures of Rs. 4,00,000		32,000
Equity Capitalization rate		68,000
		10%
	100	
Market value of equity	=	68,000 × 10 = 6,80,000
	=	6,80,000
Market value of Debentures	=	4,00,000
Value of firm	=	10,80,000
		1,00,000
Overall cost of capital	=	10,80,000×10

= 9.26%

Thus, it is evident that with the increase in debt financing, the value of the firm has increased and the overall cost of capital has increased.

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;

Value of the firm (V) can be calculated with the help of the following formula

$V = EBIT / K_o$

Where,

V = Value of the firm

EBIT = Earnings before interest and tax

K_o = Overall cost of capital

Exercise 4

XYZ expects a net operating income of Rs. 2,00,000. It has 8,00,000, 6% debentures. The overall capitalization rate is 10%. Calculate the value of the firm and the equity capitalization rate (Cost of Equity) according to the net operating income approach.

If the debentures debt is increased to Rs. 10,00,000. What will be the effect on volume of the firm and the equity capitalization rate?

Solution

Net operating income = Rs. 2,00,000

Overall cost of capital = 10%

Market value of the firm (V)

$$= \frac{\text{EBIT}}{K_o}$$

100

$$= 2,00,000 \times \frac{}{10} = \text{Rs. } 20,00,000$$

Market value of the firm = Rs. 20,00,000

Less: market value of Debentures = Rs. ~~8,00,000~~ 12,00,000

Equity capitalization rate (or) cost of equity (K_e)

EBIT – I

~~V – D~~

Where, V = value of the firm

D = value of the debt capital

= 2,00,000 – 48,000 / 12.67% * 100

If the debentures debt is increased to Rs. 10,00,000, the value of the firm shall remain changed to Rs. 20,00,000. The equity capitalization rate will increase as follows:

EBIT − I

$$\frac{V - D}{}$$

= 2,00,000 – 60,000 / 100000 * 100

= 14%

Exercise 5

Abinaya company Ltd. expresses a net operating income of Rs. 2,00,000. It has Rs. 8,00,000 to 7% debentures. The overall capitalization rate is 10%.

Calculate the value of the firm and the equity captialization rate (or) cost of equity according to the net operating income approach.

If the debenture debt is increasesd to Rs. 12,00,000. What will be the effect on the value of the firm, the equity capitalization rate?

Solution

Net operating income = Rs. 2,00,000 Overall cost of capital = 10%

Market value of the firm (V)

$$\frac{\text{NOI(EBIT)}}{\text{Overall cost of capital (OK)}}$$

= 2,00,000×100/10

= Rs. 20,00,000

Market value of firm	=	Rs. 20,00,000
Less Market value of debentures	=	Rs. 8,00,000
Total marketing value of equity	=	Rs. 12,00,000

Equity capitalization rate (or) cost of equity (K_e)

= EBIT – I / V − D

= 200000 -56000 / 2000000-800000 * 100

= 144000 / 1200000 * 100

= 12%.

Where I = Interest of debt

V = Value of the firm

D = Value of debt capital

I = 8,00,000×7%=56,000

V = 20,00,000

D = 8,00,000

If the debenture debt is increased at Rs. 12,00,000, the value of the firm shall change to Rs. 20,00,000.

Equity Capitalization Rate (K_e)

= EBIT – I / V – D

= 200000 – 81000 / 2000000 – 1200000

= 14.5%

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.

Value of the firm can be calculated with the help of the following formula:

$$\frac{EBIT}{K_o}(1-t)$$

Where

EBIT = Earnings before interest and tax

K_o = Overall cost of capital

t = Tax rate

Exercise 6

There are two firms 'A' and 'B' which are exactly identical except that A does not use any debt in its financing, while B has Rs. 2,50,000, 6% Debentures in its financing. Both the firms have earnings before interest and tax of Rs. 75,000 and the equity capitalization rate is 10%. Assuming the corporation tax is 50%; calculate the value of the firm.

Solution

The market value of firm A which does not use any debt.

$$V_u = \frac{EBIT}{K_o}$$

$$= \frac{\text{Rs. } 7,50,000}{}$$

= 75000 * 100 / 10

= Rs.750000

The market value of firm B which uses debt financing of Rs. 2,50,000 $V_t = V_u + t$

V_u = 7,50,000, t = 50% of Rs. 2,50,000

= 7,50,000 + 1,25,000

= Rs. 8,75,000

MODEL QUESTIONS

1. Define capital structure.
2. Differentiate the capital structure and financial structure.
3. What is optimum capital structure?
4. Discuss the various factors affecting the capital structure.
5. Explain the capital structure theories.

LESSON

5

COST OF CAPITAL

- INTRODUCTION
- ASSUMPTION OF COST OF CAPITAL
- CLASSIFICATION OF COST OF CAPITAL
- IMPORTANCE OF COST OF CAPITAL
- COMPUTATION OF COST OF CAPITAL
- MODEL QUESTIONS

COST OF CAPITAL

INTRODUCTION

Cost of capital is an integral part of investment decision as it is used to measure the worth of investment proposal provided by the business concern. It is used as a discount rate in determining the present value of future cash flows associated with capital projects. Cost of capital is also called as cut-off rate, target rate, hurdle rate and required rate of return. When the firms are using different sources of finance, the finance manager must take careful decision with regard to the cost of capital; because it is closely associated with the value of the firm and the earning capacity of the firm.

Meaning of Cost of Capital

Cost of capital is the rate of return that a firm must earn on its project investments to maintain its market value and attract funds.

Cost of capital is the required rate of return on its investments which belongs to equity, debt and retained earnings. If a firm fails to earn return at the expected rate, the market value of the shares will fall and it will result in the reduction of overall wealth of the shareholders.

Definitions

The following important definitions are commonly used to understand the meaning and concept of the cost of capital.

According to the definition of **John J. Hampton** " Cost of capital is the rate of return the firm required from investment in order to increase the value of the firm in the market place".

According to the definition of **Solomon Ezra,** "Cost of capital is the minimum required rate of earnings or the cut-off rate of capital expenditure".

Assumption of Cost of Capital

Cost of capital is based on certain assumptions which are closely associated while calculating and measuring the cost of capital. It is to be considered that there are three basic concepts:

It is not a cost as such. It is merely a hurdle rate.

It is the minimum rate of return.

It consis of three important risks such as zero risk level, business risk and financial risk. Cost of capital can be measured with the help of the following equation.

$K = r_j + b + f.$

Where,

K = Cost of capital.

r_j = The riskless cost of the particular type of finance.

b = The business risk premium.

f = The financial risk premium.

CLASSIFICATION OF COST OF CAPITAL

Cost of capital may be classified into the following types on the basis of nature and usage:

- Explicit and Implicit Cost.
- Average and Marginal Cost.
- Historical and Future Cost.
- Specific and Combined Cost.

Explicit and Implicit Cost

The cost of capital may be explicit or implicit cost on the basis of the computation of cost of capital.

Explicit cost is the rate that the firm pays to procure financing. This may be calculated with the help of the following equation;

$$CIo = \sum_{t=1} \frac{CO}{(t - C)^t}$$

Where,

CI_o = initial cash inflow

C = outflow in the period concerned

N = duration for which the funds are provided

T = tax rate

Implicit cost is the rate of return associated with the best investment opportunity for the firm and its shareholders that will be forgone if the projects presently under consideration by the firm were accepted.

Average and Marginal Cost

Average cost of capital is the weighted average cost of each component of capital employed by the company. It considers weighted average cost of all kinds of financing such as equity, debt, retained earnings etc.

Marginal cost is the weighted average cost of new finance raised by the company. It is the additional cost of capital when the company goes for further raising of finance.

Historical and Future Cost

Historical cost is the cost which as already been incurred for financing a particular project.

It is based on the actual cost incurred in the previous project.

Future cost is the expected cost of financing in the proposed project. Expected cost is calculated on the basis of previous experience.

Specific and Combine Cost

The cost of each sources of capital such as equity, debt, retained earnings and loans is called as specific cost of capital. It is very useful to determine the each and every specific source of capital.

The composite or combined cost of capital is the combination of all sources of capital. It is also called as overall cost of capital. It is used to understand the total cost associated with the total finance of the firm.

IMPORTANCE OF COST OF CAPITAL

Computation of cost of capital is a very important part of the financial management to decide the capital structure of the business concern.

Importance to Capital Budgeting Decision

Capital budget decision largely depends on the cost of capital of each source. According to net present value method, present value of cash inflow must be more than the present value of cash outflow. Hence, cost of capital is used to capital budgeting decision.

Importance to Structure Decision

Capital structure is the mix or proportion of the different kinds of long term securities. A firm uses particular type of sources if the cost of capital is suitable. Hence, cost of capital helps to take decision regarding structure.

Importance to Evolution of Financial Performance

Cost of capital is one of the important determine which affects the capital budgeting, capital structure and value of the firm. Hence, it helps to evaluate the financial performance of the firm.

Importance to Other Financial Decisions

Apart from the above points, cost of capital is also used in some other areas such as, market value of share, earning capacity of securities etc. hence, it plays a major part in the financial management.

COMPUTATION OF COST OF CAPITAL

Computation of cost of capital consists of two important parts:

- Measurement of specific costs
- Measurement of overall cost of capital

Measurement of Cost of Capital

It refers to the cost of each specific sources of finance like:

- Cost of equity
- Cost of debt
- Cost of preference share
- Cost of retained earnings

Cost of Equity

Cost of equity capital is the rate at which investors discount the expected dividends of the firm to determine its share value.

Conceptually the cost of equity capital (K_e) defined as the "Minimum rate of return that a firm must earn on the equity financed portion of an investment project in order to leave unchanged the market price of the shares".

Cost of equity can be calculated from the following approach:

Dividend price (D/P) approach

Dividend price plus growth (D/P + g) approach

Earning price (E/P) approach

Realized yield approach.

Dividend Price Approach

The cost of equity capital will be that rate of expected dividend which will maintain the present market price of equity shares.

Dividend price approach can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p}$$

Where,

K_e = Cost of equity capital

D = Dividend per equity share

N_p = Net proceeds of an equity share

Exercise 1

A company issues 10,000 equity shares of Rs. 100 each at a premium of 10%. The company has been paying 25% dividend to equity shareholders for the past five years and expects to maintain the same in the future also. Compute the cost of equity capital. Will it make any difference if the market price of equity share is Rs. 175?

Solution

$$Ke = \frac{D}{Np}$$

$$\frac{25}{100} \times 100$$

22.72%

If the market price of a equity share is Rs. 175.

$$K_e = \frac{D}{N_p}$$

$$\frac{25}{175} \times 100$$

14.28%

Dividend Price Plus Growth Approach

The cost of equity is calculated on the basis of the expected dividend rate per share plus growth in dividend. It can be measured with the help of the following formula:

$$K_e = \frac{D}{N_p} + g$$

Where,

K_e = Cost of equity capital

D = Dividend per equity share

= Growth in expected dividend N_p = Net proceeds of an equity share

Exercise 2

A company plans to issue 10000 new shares of Rs. 100 each at a par. The floatation costs are expected to be 4% of the share price. The company pays a dividend of Rs. 12 per share initially and growth in dividends is expected to be 5%. Compute the cost of new issue of equity shares.

If the current market price of an equity share is Rs. 120. Calculate the cost of existing equity share capital

Solution

(a) $K_e = \frac{D}{N_p} + g$

$= \frac{12}{100 - 4} + 5 = 17.5\%$

(b) $K_e = \frac{D}{N_p} + g$

$$= \frac{12}{120} + 5\% = 15\%$$

Exercise 3

The current market price of the shares of A Ltd. is Rs. 95. The floatation costs are Rs. 5 per share amounts to Rs. 4.50 and is expected to grow at a rate of 7%. You are required to calculate the cost of equity share capital.

Solution

Market price Rs. 95

Dividend Rs. 4.50

Growth 7%.

$$Ke = \frac{D}{N_p} + g$$

$$\frac{4.50}{95} \times 100 + 7\%$$

4.73% + 7% = 11.73%

Earning Price Approach

Cost of equity determines the market price of the shares. It is based on the future earning prospects of the equity. The formula for calculating the cost of equity according to this approach is as follows.

$$K_e = \frac{E}{N_p}$$

Where,

K_e = Cost of equity capital

E = Earning per share

N_p = Net proceeds of an equity share

Exercise 4

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

The relevant information is as follows :

Number of existing equity shares =10 lakhs

Market value of existing share =Rs.100

Net earnings =Rs.100 lakhs

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

Solution

Cost of existing equity share capital:

$$K_e = \frac{E}{N_p}$$

$$\text{Earnings Per Share(EPS)} = \frac{100\text{lakhs}}{10\text{lakhs}} = \text{Rs.}10$$

$$Ke = \frac{}{100} \times 10$$

$$= 10\%$$

Cost of Equity Capital

$$K_e = \frac{E}{N P}$$

$$= \frac{10}{92 - 2} \times 100$$

$$= 11.11\%$$

Realized Yield Approach

It is the easy method for calculating cost of equity capital. Under this method, cost of equity is calculated on the basis of return actually realized by the investor in a company on their equity capital.

$$K_e = PVf \times D$$

Where,

K_e = Cost of equity capital.

PV*f* = Present value of discount factor.

D = Dividend per share.

Measurement of Overall Cost of Capital

It is also called as weighted average cost of capital and composite cost of capital. Weighted average cost of capital is the expected average future cost of funds over the long run found by weighting the cost of each specific type of capital by its proportion in the firms capital structure.

The computation of the overall cost of capital (K_o) involves the following steps.

Assigning weights to specific costs.

Multiplying the cost of each of the sources by the appropriate weights.

Dividing the total weighted cost by the total weights.

The overall cost of capital can be calculated with the help of the following formula;

$K_o = K_d W_d + K_p W_p + K_e W_e + K_r W_r$

Where,

K_o = Overall cost of capital

K_d = Cost of debt

K_p = Cost of preference share

K_e = Cost of equity

K_r = Cost of retained earnings

W_d= Percentage of debt of total capital

W_p = Percentage of preference share to total capital

W_e = Percentage of equity to total capital

W_r = Percentage of retained earnings

Weighted average cost of capital is calculated in the following formula also:

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

Where,

K_w = Weighted average cost of capital

X = Cost of specific sources of finance

W = Weight, proportion of specific sources of finance.

Exercise

A firm has the following capital structure and after-tax costs for the different sources of funds used :

Source of Funds	**Amount Rs.**	**Proportion %**	**After-tax cost %**
Debt	12,000	20	4
Preference Shares	15,000	25	8
Equity Shares	18,000	30	12
Retained Earnings	15,000	25	11
Total	60,000	100	

You are required to compute the weighted average cost of capital.

Exercise

A company has on its books the following amounts and specific costs of each type of capital.

Type of Capital	Book Value Rs.	Market Value Rs.	Specific Costs (%)
Debt	4,00,000	3,80,000	5
Preference	1,00,000	1,10,000	8
Equity	6,00,000	9,00,000	15
Retained Earnings	2,00,000	3,00,000	13
	13,00,000	16,90,000	

Determine the weighted average cost of capital using:

Book value weights, and

Market value weights.

How are they different? Can you think of a situation where the weighted average cost of capital would be the same using either of the weights?

Solution

Computation of Weighted Average Cost of Capital

A. Book Value

Source of Funds	Amount	Cost % (X)	Weighted Cost Proportion X Cost (XW)
Debt	4,00,000	5	20,000
Preference Shares	1,00,000	8	8,000
Equity Shares	6,00,000	15	90,000
Retained Earnings	2,00,000	13	26,000
	ΣW = 13,00,000		ΣXW = 1,44,000

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

$$Kw = \frac{1,44,000}{13,00,000} \times 100 = 11.1\%$$

Computation Weighted Average Cost of Capital

B. Market Value

Source of Funds	Amount	Cost % (X)	Weighted Cost Proportion X Cost (XW)
Debt	3,80,000	5	19,000
Preference Shares	1,10,000	8	8,800
Equity Shares	9,00,000	15	13,500
Retained Earnings	3,00,000	13	39,000
	ΣW = 16,90,000		Σ XW = 2,01,800

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

$$Kw = \frac{2,01,800}{16,90,000} \times 100 = 11.9\%$$

Exercise 13

ABC Ltd. has the following capital structure.

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

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

Solution

Solution showing weighted average cost of capital:

Particulars	Rs.	After	Weights	Cost
Equity	10,00,000	12%	33.33%	3.99
Preference	5,00,000	10%	16.67	1.67
8% Loan	15,00,000	4%	50.00	2.00
				7.66%

Weight average cost of capital = 7.66%

MODEL QUESTIONS

1. What is cost of capital?
2. Define cost of capital.
3. Cost of capital computation based on certain assumptions. Discuss.
4. Explain the classification of cost.
5. Mention the importance of cost of capital.
6. Explain the computation of specific sources of cost of capital.
7. How overall cost of capital is calculated?
8. Explain various approaches for calculation of cost of equity.

LESSON

6

LEVERAGE

- INTRODUCTION
- TYPES OF LEVERAGE
- DISTINGUISH B/W OPERATING LEVERAGE & FINANCIAL LEVERAGE
- FINANCIAL BEP
- MODEL QUESTIONS

INTRODUCTION

Financial decision is one of the integral and important parts of financial management in any kind of business concern. A sound financial decision must consider the board coverage of the financial mix (Capital Structure), total amount of capital (capitalization) and cost of capital (K_o). Capital structure is one of the significant things for the management, since it influences the debt equity mix of the business concern, which affects the shareholder's return and risk. Hence, deciding the debt-equity mix plays a major role in the part of the value of the company and market value of the shares. The debt equity mix of the company can be examined with the help of leverage.

The concept of leverage is discussed in this part. Types and effects of leverage is discussed in the part of EBIT and EPS.

Meaning of Leverage

The term leverage refers to an increased means of accomplishing some purpose. Leverage is used to lifting heavy objects, which may not be otherwise possible. In the financial point of view, leverage refers to furnish the ability to use fixed cost assets or funds to increase the return to its shareholders.

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 Leverage

Leverage can be classified into three major headings according to the nature of the finance mix of the company.

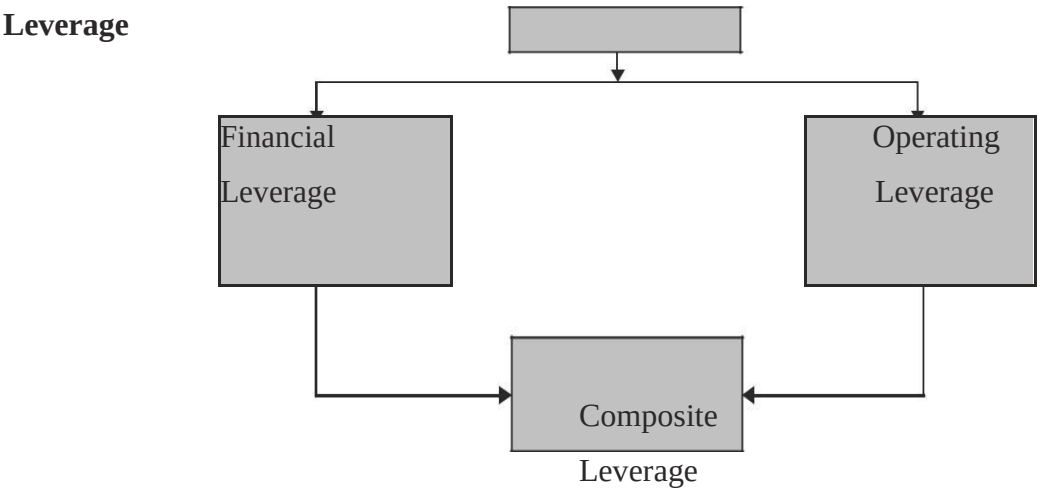


Fig. 6.1 Types of Leverage

The company may use finance or leverage or operating leverage, to increase the EBIT and EPS.

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.

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

OL = C / OP

OL = Operating Leverage

C = Contribution

OP = Operating Profits

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:

$$DOL = \frac{\text{Percentage change in profits}}{\text{Percentage change in sales}}$$

Exercise 1

From the following selected operating data, determine the degree of operating leverage. Which company has the greater amount of business risk? Why?

	Company A (Rs)	**Company B (Rs)**
Sales	25,00,000	30,00,000
Fixed costs	7,50,000	15,00,000

Variable expenses as a percentage of sales are 50% for company A and 25% for company B.

Solution

Statement of Profit

	Company A Rs.	**Company B Rs.**
Sales	25,00,000	30,00,000
Variable cost	12,50,000	7,50,000
Contribution	12,50,000	22,50,000
Fixed cost	7,50,000	15,00,000
Operating Profit	5,00,000	7,50,000

$$\text{“A” Company Leverage} = \frac{12,50,000}{5,00,000} = 2.5$$

$$\text{“B” Company Leverage} = \frac{2,25,000}{7,50,000} = 3$$

Comments

Operating leverage for B Company is higher than that of A Company; B Company has a higher degree of operating risk. The tendency of operating profit may vary portionately with sales, is higher for B Company as compared to A Company.

Uses of Operating Leverage

Operating leverage is one of the techniques to measure the impact of changes in sales which lead for change in the profits of the company.

If any change in the sales, it will lead to corresponding changes in profit.
Operating leverage helps to identify the position of fixed cost and variable cost.

Operating leverage measures the relationship between the sales and revenue of the company during a particular period.

Operating leverage helps to understand the level of fixed cost which is invested in the operating expenses of business activities.
Operating leverage describes the overall position of the fixed operating cost.

FINANCIAL LEVERAGE

Leverage activities with financing activities is 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, then 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:

FL = OP / PBT

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 earning before interest and tax (EBIT). This can be calculated by the following formula

DFL = Percentage change in Taxable Income / Percentage change in EBIT

Alternative Definition of Financial Leverage

According to **Gitmar**, "financial leverage is the ability of a firm to use fixed financial changes to magnify the effects of change in EBIT and EPS".

FL = EBIT / EPS

Where,

FL = Financial Leverage

EBIT = Earnings Before Interest and Tax

EPS = Earnings Per Share

Exercise

A Company has the following capital structure

	Rs.
Equity share capital	1,00,000
10% Prof. share capital	1,00,000
8% Debentures	1,25,000

The present EBIT is Rs. 50,000. Calculate the financial leverage assuring that the company is in 50% tax bracket.

Statement of Profit	Rs.
EBIT or OP	50000
Interest on Debenture (125000 * 8 * 100)	10000
EBT	40000
Income Tax	20000
Profit	20000

Financial Leverage = Operating Profit (OP) / Profit Before Tax (PBT)

= 50000 / 40000 = 1.25

Uses of Financial Leverage

Financial leverage helps to examine the relationship between EBIT and EPS. Financial leverage measures the percentage of change in taxable income to the percentage change in EBIT.

Financial leverage locates the correct profitable financial decision regarding capital structure of the company. Financial leverage is one of the important devices which is used to measure the fixed cost proportion with the total capital of the company. If the firm acquires fixed cost funds at a higher cost, then the earnings from those assets, the earning per share and return on equity capital will decrease.

The impact of financial leverage can be understood with the help of the following exercise.

Exercise 3

XYZ Ltd. decides to use two financial plans and they need Rs. 50,000 for total investment.

Particulars	Plan A	Plan B
Debenture (interest at 10%)	40,000	10,000
Equity share (Rs. 10 each)	10,000	40,000
Total investment needed	50,000	50,000
Number of equity shares	4,000	1,000

The earnings before interest and tax are assumed at Rs. 5,000, and 12,500. The tax rate is 50%. Calculate the EPS.

Solution

When EBIT is Rs. 5,000

Particulars	Plan A	Plan B
Earnings before interest and tax (EBIT)	5,000	5,000
Less : Interest on debt (10%)	4,000	1,000
Earnings before tax (EBT)	1,000	4,000
Less : Tax at 50%	500	2,000
Earnings available to equity shareholders.	Rs.500	Rs.2,000
No. of equity shares	1,000	4,000
Earnings per share (EPS) Earnings/No. of equity shares	Rs. 0.50	Rs. 0.50

When EBIT is Rs. 12,500

Particulars	Plan A	Plan B
Earnings before interest and tax (EBIT).	12,500	12,500
Less: Interest on debt (10%)	4,000	1,000
Leverage		89
Earning before tax (EBT)	8,500	11,500
Less : Tax at 50%	4,250	5,750
Earnings available to equity shareholders	4,250	5,750
No. of equity shares	1,000	4,000
Earning per share	4.25	1.44

DISTINGUISH BETWEEN OPERATING LEVERAGE AND FINANCIAL LEVERAGE

Operating Leverage/Financial Leverage

	Operating Leverage		Financial Leverage
1.	Operating leverage is associated with investment activities of the company.	1.	Financial leverage is associated with financing activities of the company.
2.	Operating leverage consists of fixed operating expenses of the company.	2.	Financial leverage consists of operating profit of the company.
3.	It represents the ability to use fixed operating cost.	3.	It represents the relationship between EBIT and EPS.
4.	Operating leverage can be calculated by $OL = \frac{C}{O}$.	4.	Financial leverage can be calculated by $FL = \frac{OP}{PB}$ = T .
5.	A percentage change in the profits resulting from a percentage change in the sales is called as degree of operating leverage.	5.	A percentage change in taxable profit is the result of percentage change in EBIT.
6.	Trading on equity is not possible while the company is operating leverage.	6.	Trading on equity is possible only when the company uses financial leverage.
7.	Operating leverage depends upon	7.	Financial leverage depends upon the

fixed cost and variable cost.	operating profits.
8. Tax rate and interest rate will not affect the operating leverage.	8. Financial leverage will change due to tax rate and interest rate.

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.

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.

Degree of Combined Leverage

The percentage change in a firm's earning per share (EPS) results from one percent change in sales. This is also equal to the firm's degree of

operating leverage (DOL) times its degree of financial leverage (DFL) at a particular level of sales.

Degree of Combined Leverage =

= Percentage change in EPS / Percentage change in Sales

Exercise 4

Kumar company has sales of Rs. 25,00,000. Variable cost of Rs. 12,50,000 and fixed cost of Rs. 50,000 and debt of Rs. 12,50,000 at 8% rate of interest. Calculate combined leverage.

Solution

Statement of Profit

Sales		25,00,000
Less:	Variable cost	15,00,000
	Contribution	10,00,000
Less:	Fixed cost	5,00,000
	Operating Profit	5,00,000

Combined leverage =Operating leverage×Financial leverage

Calculation of financial leverage

		10,00,00
Contribution		0
Operating Profit		2

Calculation of financial Leverage

Earning before Interest and Tax (EBIT)	5,00,000
Less: Interest on Debenture (8% of 12,50,000)	1,00,000
Earnings before Tax	4,00,000

Operating leverage = Operating Profit / Earning Before Tax = 5,00,000 / 4,00,000 = 1.25

Combined leverage = 2 × 1.25 = 2.5

MODEL QUESTIONS

1. Write a note on trading on equity.
2. What is meant by working capital leverage?
3. What is leverage? Mention different types of leverage?
4. Explain the operating leverage.
5. Discuss the concept of financial leverage.
6. How compared leverage is calculated?
7. Explain the working capital leverage.
8. What is point of indifference?
9. Distinguish the operating leverage from financial leverage.
10. Explain the uses of operating leverage.

LESSON

7

WORKING CAPITAL MANAGEMENT & MANAGEMENT OF RECEIVABLES

- INTRODUCTION OF WORKING CAPITAL
- TYPES OF WORKING CAPITAL
- IMPORTANT FACTORS OR DETERMINANTS OF WORKING CAPITAL
- EFFECTS OF ADEQUATE CAPITAL
- MANAGEMENT OF RECEIVABLES
- FEATURES OF RECEIVABLES
- BENEFITS OF RECEIVABLES
- COSTS ASSOCIATED WITH RECEIVABLES
- MODEL QUESTIONS

Introduction of working capital:

Working capital in that part of firms capital which is required for financing current assets such as cash, debtors, receivables inventories, marketable securities etc. Funds invested in such assets keep revolving with relative rapidity and are constantly converted in to cash. Hence working capital is also known as circulating capital, revolving capital, short term capital or liquid capital.

Types of Working capital:

1. **Gross working capital** – Refers to firms investments in current assets which are converted in to cash during an accounting year such as cash, bank balance, short term investments, debtors, bills receivable, inventory, short term loans and advances etc.
2. **Net working capital** – Refers to difference between current assets and current liabilities or excess of total current assets over total current liabilities.
3. **Operating cycle concept** – Refers to capital/ amount required in different forms at successive stages of manufacturing operation/ process. It represent cycle during which cash is reconverted in to cash again. In manufacturing process, cash is required for purchasing raw material- raw material is converted in to work in progress – which is converted in to finished product – finished products are sold on credit- than cash is realized out of credit sale. Total time taken in completing one cycle helps in ascertaining working capital requirements.
4. **Regular or permanent working capital** – Refers to minimum amount which permanently remain blocked and cannot be converted in to cash such as minimum amount blocked in raw material, finished product debtors etc.

5. **Variable or temporary working capital** – Refers to amount over and above permanent working capital i e difference between total working capital less permanent working capital.
6. **Seasonal working capital -** Refers to capital required to meet seasonal demand e.g. extra capital required for manufacturing coolers in summer, wollen garments in winter. It can be arranged through short term loans.
7. **Specific working capital** – Refers to part of capital required for meeting unforeseen contingencies such as strike, flood, war, slump etc.

Important factors or determinants of working capital:

i. **Nature of business:** firms dealing in luxury goods, construction business, steel industry etc need more capital while those dealing in fast moving consumer goods (FMCG‟s) need less working capital.

ii. **Size of business:** large size firms need more working capital as compared to small size firms.

iii. **Level of technology:** use of high level technology leads to fastening the process and reduce wastage and in such case, less working capital would be required.

iv. **Length of operating cycle:** longer is the operating cycle, higher would be the need of working capital.

v. **Seasonal nature:** firms dealing in goods of seasonal nature, higher capital during peak season would be required.

vi. **Credit policy:** If credit policy followed is liberal more working capital would be required and if the same is strict less working capital would be required.

vii. **Turnover of working capital:** If rate of turnover is more, less working capital would be required and this rate is less, more working capital would be required.

viii. **Dividend policy:** If a firm retains more profit and distributes less amount as dividend, less working capital would be required.

ix. **Profit margin:** If rate of margin of profit is more, less working capital would be required.

x. **Rate of growth:** If growth rate is high and firm is continuously expending/ diversifying its production & business, more working capital would be needed.

xi. **Other factors like** :

- Means of transport
- Availability of water, power nearly
- Political stability

Effects of Adequate capital

- Prompt payment to supplies & benefit of cash/ trade discount.
- Increase in good will/ image
- Easy loans from banks
- Increase in the efficiency of employee's executives/ directors.
- Increase in the productivity as well as profitability

Inadequate or short working capital

- Stock out situation may arise
- Losing customers
- Less profit
- Down fall of good will / image

Excess working capital

- Unnecessary piling of stock due to which loss of interest on amount blocked, theft, pilferage

- Lead to inefficiency of management
- Adversely effect production and profitability
- Dissatisfaction to share holders

Management of receivables:

Receivables are created on account of credit sales. They are represented in the balance sheet in the form of sundry debtors, trade debtors, book debts, accounts receivable, bills receivable etc. Receivables constitute around 15 to 20% of assets or around 1/3 of working capital in a big organization and substantial amount of working is blocked in this asset. Hence, their efficient management occupies great significance in financial management.

Receivable Management means matching the cost of increasing sales with the benefits arising out of increased sales and maximizing return on investment of firm under this head. Hence, the prime objective of receivables management is to:

- Optimize return on investment
- By minimizing costs associated with receivables

Features of receivables

- They involve risk based on present economic value and seller expects the same value ot a later date
- Implies futurity

Benefits of receivables

- Growth in sales- If a firm does not sell on credit, sales can’t grow

- Increase in profit – Growth in sales leads to increase in profit. At times, credit sales are at a price more than price of cash sales
- Enables to face competition in market

Costs associated with receivables

1. Carrying cost – cost of amount blocked in the form of
   - Interest if amount is borrowed
   - Opportunity cost if amount blocked is out of retained earnings.
2. Administrative costs – Cost incurred on maintaining staff, for keeping records and for process of collecting amount from debtors e.g.
   - Salary to staff
   - Cost of collecting information about debtors
   - Record keeping
   - Cost of collecting cheques
   - Cost on phone calls, reminders follow up
   - Cost on office space, equipment's etc and expenditure on staff assigned the duty of collection of amount from debtors.
3. Delinquency cost - cost on following up with delinquent debtors, reminders, legal charges etc.
4. Default cost – cost of debtors becoming bad debts

MODEL QUESTIONS

1. Elucidate the factors determining working capital requirement of an organization.

2. Prepare an estimate of working capital requirement from the following information

a). Project annual sales 1,00,000 units. b). Selling price Rs.8 per unit c). Percentage of net profit as sales 25% d). Average credit period allowed to customers is 8 weeks, e). Average credit period allowed by suppliers is 4 weeks. f). Average stock holding in terms of sales requirement. g). Allow 10% for contingencies.

3. The Performa cost sheet of a company provides the following data.

Cost Per unit	Rs.
Raw material	52.00
Direct Labor	19.50
Overheads	39.00
Total cost per unit	110.50
Profit	19.50
.Selling Price	130.00

Average raw material in stock one month, average material in process half a month, credit allowed to debtors two months. Time lag in payment of wages is 11/2 weeks, overheads one month, $1/4^{th}$ of sales are on cash basis. Cash balance is expected to be Rs. 1,20,000.

You are required to prepare a statement showing the working capital needed to finance level of activity of 70,000 units of output. You may assume that production is carried on evenly throughout the year, wages & overheads accrue similarly.

4**.** A trading company provides the following information. Annual sales during the year is Rs. 1,20,000. The sales analysis are;

Materials= 60%, Expenses= 15%, Profit= 25%

a). Average credit allowed to debtors 4/5 months.

b). Average credit period allowed by creditors 3/2 months.

c). Raw materials are remain in stores on average- 1 month.

d). Processing period on average- 2 months.

e). Finished goods remain in warehouse on average- 3 months.

f). Bank overdraft Rs. 90,000

g). 10% of the total working capital (including contingencies) is to be kept in hand for contingencies.

You are required to determine the working capital requirement on the basis of above information.

5. Balance sheet of Mani Ltd on 31-03-2008 as follows**:**

Liabilities	**Amount**	**Assets**	**Amount**
Equity capital (Rs.10 per share)	60,000	Net fixed assets	1,50,000
10% Debentures	80,000	Current Assets	50,000
Retained earnings	20,000		
Current Liabilities	40,000		
	2,00,000		**2,00,000**

The company total assets turnover ratio is 3. Its fixed operating cost are Rs. 1,00,000 and variable cost is 40%.

The income tax is 50%,

a). Calculate for the company all the three types of leverages.

b). Determine the likely level of EBIT if EPS is 1). Rs 1.00 2). Rs 3.00 3). Rs 0.

LESSON

8

CASH MANAGEMENT

*INTRODUCTION

*MOTIVES FOR HOLDING CASH

*FACETS OF CASH MANAGEMENT

*FACTORS DETERMINING THE OPTIMUM CASH BALANCE

**FUNCTIONS OF CASH MANAGEMENT*

*CASH BUDGET

*CASH MANAGEMENT MODELS

*MODEL QUESTIONS

-

Cash Management:

Introduction:

Cash is the most liquid asset that a business owns. Cash in the business enterprises may be compare s to the blood in the human body, which gives life and strength to the human body and the cash imparts life and strength, profits and solvency to the business organization.

Motives for Holding Cash:

1. **Transaction Motive:**

Transaction Motive requires a firm to hold cash to conduct its business in the ordinary course. The firm needs cash to make payments for purchases, wages, operating expenses and other payments. The need to hold cash arises because cash receipts and cash payments are not perfectly synchronized. So firm should maintain cash balance to make the required payment. If more cash is need for payments than receipts, it may be raised through bank overdraft. On the other hand if there are more cash receipts than payments, it may be spent on marketable securities.

2. **Precautionary Motive:**

Cash is also maintained by the firm to meet the unforeseen expenses at a future date. There are uncontrollable factors like government policies, competition, natural calamities, labour unrest which have heavy impact on the business operations. In such situations, the firm may require cash to meet additional obligations. Hence the firm should hold cash reserves to meet such contingencies. Such cash may be invested in the short term marketable securities which may provide the cash s and when necessary.

3. **Speculative Motive:**

To take the advantage of unexpected opportunities, a firm holds cash for investment in profit making opportunities. Such a motive is purely speculative in nature. For e.g. holding cash to rake advantage of an opportunity to purchase raw material at the reduced

price on the payment of immediate cash or delay that purchase of material in anticipation of declining prices. It may like to keep some cash balance to make profits by buying securities at the time when their prices fall on account of tight money conditions.

Cash Management:

Cash management is the corporate process of collecting and managing cash, as well as using it for (short-term) investing. It is a key component of ensuring a company's financial stability and solvency. Corporate treasurers or business managers are frequently responsible for overall cash management and the related responsibilities to remain solvent.

Successfully managing cash is an essential skill for small business developers, because they typically have less access to affordable credit and have a significant amount of upfront costs to manage while waiting for receivables. Wisely managing cash enables a company to meet unexpected expenses, and to handle regularly occurring events such as payroll distribution.

Cash management deals with the following:

1. Cash Planning
2. Managing Cash flows
3. Determining optimum cash balance

Following are some facets of cash management:

1. **Cash planning:**

   Cash planning is a technique to plan and control the use of cash. A projected cash flow statement may be prepared, based on the present business operations and anticipated future activities.
2. **Cash Budget / Cash Forecasts:**

   Cash budget is a summary statement of the firm’s expected cash flows and cash balances over the projected period. This information helps the finance manager to determine the future cash needs of the firm, plan for the financing of these needs

and exercise control over the cash and to reach liquidity of the firm. It is a forecast of expected cash intake and outlays.

The short- term forecast can be made with the help of cash flow projections. The finance, manager will make the estimate of likely receipts in the near future and the expected disbursement in that period. The long-term cash forecast are also essential for proper cash planning. Long-term forecast indicates company's future financial needs for working capital, capital projects etc. Both short term and long-term forecasts may be made with the help of the following methods:

- Receipts and disbursement method
- Adjusted net income method

a. **Receipts and disbursement method:**

In this method the receipts made payments of cash are estimated. The cash receipt may be from cash sales, collection from debtors, and sale of fixed assets. Payment may be made for cash purchases, to creditors for goods, purchases of fixed assets etc. the receipts and disbursement are to be equalled over a short as well as long periods. Any shortfall in receipts will have to be met from banks or other sources. Similarly surpluses cash may be invested in the risk free marketable securities.

b. **Adjusted net income method:**

This method also known as Sources and Uses approach. This method helps in projecting the company's need for cash at some future date and to see whether the company will be able to generate sufficient cash. If not, then it will have to decide about borrowing.

In preparing the adjusted net income forecast, items such as net income. Depreciation, tax, dividends can be easily determined from the company's annual operating budget. Difficulty is faced in estimating the working capital changes because they are influenced by factors such as fluctuation in raw material costs, changing demand for the company's products, for projecting working capital ratios relating to receivables and inventories may be used.

Objectives:

1) To provide cash needed to meet the obligations.
2) To minimize the idle cash held by the firm.
3) Meeting Cash Balances & Minimising idle balances.

Factors to be considered while determining the optimum cash balance:

1. Cash shortage costs.
2. Excess cash balance costs.
3. Procurement and management costs.
4. Compensating balance.
5. Synchronization of cash flows.
6. Uncertainty.
7. Firm's capacity to borrow in emergence.
8. Efficiency of Management.

Functions of cash management:

Cash management is the treasury function of a business, responsible for achieving optimal efficiency in two key areas: receivables, which is cash coming in, and payables, which is cash going out.

1. **Receivables management:**

When a business issues an invoice it is reported as a receivable, which is cash earned but yet to be received. Depending on the terms of the invoice, the business may

have to wait 30, 60 or 90 days for the cash to be received. It is common for a business to report increasing sales, yet still run into a cash crunch because of slow or poorly managed receivables. There are a number of things a business can do to accelerate its receivables and reduce payment float, including clarifying billing terms with customers, using an automated billing service to bill customers immediately, using electronic payment processing through a bank to collect payments, and staying on top of collections with an aging receivables report.

2. **Payables management:**

When a business controls its payables, it can better control its cash flow. By improving the overall efficiency of the payables process, a business can reduce costs and keep more cash working in the business. Payables management solutions, such as electronic payment processing, direct payroll deposit, and controlled disbursement can streamline and automate the payable functions.

Most of the receivables and payables management functions can be automated using business banking solutions. The digital age has opened up opportunities for smaller businesses to access the same large-scale cash management technologies used by bigger companies. The cost savings generated from more efficient cash management techniques easily offsets the costs. More importantly, management will be able to reallocate precious resources to growing the business.

Cash budget:

Cash budget is a summary statement of the firm's expected cash flows and cash balances over the projected period. This information helps the finance, manager to determine the future cash needs of the firm, plan for the financing of these needs and exercise control over the cash and to reach liquidity of the firm. It is a forecast of expected cash intake and outlays. The cash budget should be coordinated with the other activities of the business. The functional budgets may be adjusted according to the cash budgets.

The cash budget consists of three parts:

(1) The forecast of cash inflows.

(2) The forecast of cash outflows.

(3) The forecast of cash balance.

Objectives of cash budget:

Cash budget in a firm is prepared to accomplish the following objectives:

(1) To project firm's cash position in future period.

(2) To predict cash surplus or deficit for the ensuing months.

(3) To permit planning for financing in advance of need. By indicating when cash will be required, the budget helps the management to arrange in advance bank loans or other short-term credits, to prepare for a sale of securities or to make other preparations for new financing.

(4) To help in selection of proper source of financing cash requirements of the firm.

(5) To permit proper utilisation of idle cash.

(6) To maintain adequate balance between cash and working capital, sales, investments and loans.

(7) To exercise control over cash expenditure by limiting the spending of various departments.

Utility of cash budget:

1. Cash budget is an extremely important tool available in the hands of a finance manager for planning fund requirements and for controlling cash position in the firm. As a planning device, cash budget helps the finance manager to know in advance the cash position of the firm in different time periods.

2. The cash budget indicates in which months there will be cash surfeit and in which months the firm will experience cash drain and by how much.

3. With the help of this information finance manager can draw up a programme for financing cash requirements. It indicates the most opportune time to undertake the financing process. There will be two advantages if the finance manager knows in advance as to when additional funds will be required. First, funds will be available in hand when needed and there will be no idle funds.

4. In the absence of the cash budget it may be difficult to determine cash requirements in different months. If cash required is not available in time it will entail the firm in a

precarious position. The firm's output is reduced because of imbalance in financial structure and the rate of return consequently declines.

5. If the firm is marginal, the decline in profits could lead to disaster. Further, it would be difficult for the firm to meet its commitments and would consequently lose its credit standing. A firm with a poor credit standing stands little chance of success.

6. With the help of cash budget finance manager can determine precisely the months in which there will be cash surplus. Nevertheless, a reasonable amount of cash adds to a firm's debt paying power of the firm, holding excess cash for any period of time is largely a waste of resource yielding no return. This will result in the decline in profits.

7. The cash budget offsets the possibility of decline in profits because the finance manager in that case will invest idle cash in marketable securities. Thus, with the help of the cash budget, finance manager can maintain high liquidity without jeopardizing the firm's profitability.

8. The cash budget, besides indicating cash requirements, reflects the length of time for which funds will be needed. This will help the finance manager to decide the most likely source from which the funds can be obtained. A firm which stands in need of funds for a short-term duration will use a source different from the one requiring funds for a long time.

9. Bank loan is most appropriate source to cover temporary cash requirements while permanent funds requirements are met by selling stock and bonds. If long-term cash requirements are met through short-term funds, this will leave the company in considerable financial predicament.

10. The firm will have to either renew the loans to make it long-term or an entirely new loan must be negotiated. In either case the negotiations are on a much shorter notice than the original loan and the renewal or new loan will very likely be made with less favourable terms. Further, planning for cash may engender the confidence of suppliers of cash and credit to such an extent that they are more likely to grant loans on easier terms.

11. Usually bankers are loath to lend to companies which do not follow good managerial practices with respect to their financial requirements. However, when they grant loans they usually charge higher interest rates and place restrictive clauses in the loan contract.

When funds are obtained for period longer than necessary, the cost of capital will go up resulting in decline in profits.

12. Cash budget is also conducive to the formulation of sound dividend policy for the firm. As already stated, availability of adequate amount of cash is necessary for dividend payments. A firm may experience cash drain despite high earnings because of the fact that bulk of sales was affected through credit.

13. Even if the firm has sufficient cash in hand it may not be able to pay high dividends because of the need to repay loan or retire debt, to carry inventories and to meet other emergent requirements. Keeping the firm's cash position in mind finance manager can reach suitable dividend decision.

14. Cash budget is also a useful device to establish a sound basis for current control of the cash position. Cash budget sets the limitation on cash expenditure which must be observed by all those whose activities involve cash disbursements. With the help of cash budget reports which are prepared periodically finance manager can compare actual receipts and expenditure with the estimated figures.

15. With these reports finance manager can find out deviations and study reasons for variation and finally take steps to remedy the variations. But this tool is not devoid of its limitations. Errors in estimation anywhere along the logline of budget that must be prepared prior to the cash budget will obviously create inaccuracies in the cash forecast.

This means that cash budget should be reviewed from time to time against actual performance so that corrections can be made and plans adjusted accordingly.

Another drawback of the cash budget is that it fails to indicate time segments of cash flows. For example, if company has planned to invest money in short-term securities in the month of April, the budget would not indicate when in April. Will it be early or late April? It is quite possible that the company could run out of cash altogether by April 10 leaving it without adequate cash balance with which to meet wages bills.

Thus, the finance manager may find it useful to prepare more than one cash budget depending on how critical he feels his firm's cash position is. He may prepare a weekly forecast for the next 30 to 60 days, another for one year month by month and yet another long-range forecast for several years.

Cash Management Models:

There are two models in cash management:

1. William J. Baumol's Model
2. Miller and Orr model

William J. Baumol's Model:

According to this model the optimum cash balance is the trade off between the opportunity cost and the transaction cost. The optimum cash balance is reached at a point where the total cost is minimum. The Baumol's Model is based on the following assumptions:

1. The cash needs of the firm are known with certainty.
2. The opportunity cast of holding cash is known and it remains constants.
3. The transaction cost of converting securities into cash is known and remains constant.

The Baumol's Model can be represented algebraically.

C = square root of (2A*F/O)

Where, C = optimum balance

A = Annual cash Disbursements

F = Fixed cost per transaction

O = opportunity cost of holding cash

Miller and Orr Model:

The Miller and Orr Model provides two control limits.

1. The upper control limit
2. Lower control limit

When the cash balance touches the upper control limit, marketable securities are purchased to the extent to return back to normal cash balance. In the same manner when the cash balance touches the lower control point

the firm will sell the marketable securities to the extent to again to return to the normal cash balance.

MODEL QUESTIONS

1. Explain Cash Management Models
2. Discuss about Objectives of cash budget
3. Briefly explain Functions of cash management

LESSON

9

RECEIVABLE MANAGEMENT & CREDIT POLICY

- MEANING OF RECEIVABLES
- COSTS OF MAINTAINING RECEIVABLES
- DIMENSIONS OF RECEIVABLES MANAGEMENT
- FORMING OF CREDIT POLICY
- EXECUTING THE CREDIT POLICY
- FINANCING INVESTMENTS IN RECEIVABLES AND FACTORING
- MODEL QUESTIONS

Receivables Management:

Receivables constitute a significant portion of the current assets of a firm. But, for investments in the receivables, a firm has to incur certain costs. There is also a risk of bad debts also. It is therefore very necessary to have a proper control and management of receivables.

Meaning of Receivables: Receivables represents amount owed to the firm as a result of sale of goods or services in the ordinary course of business these are the claims of firm against its customers and form a part of the current assets. Receivables are also known as accounts Receivables; trade Receivables, customer Receivables, etc. the Receivables are carried for the customers. The period of credit and extent of Receivables depend upon the credit policy followed by the firm. The purpose of maintaining or investing in Receivables is to meet competition, and to increase the sale and profits of the business.

Costs of maintaining Receivables:

When a firm maintains receivables, some of the firm's resources remain blocked in them because there is a time lag between the credit sale to customer and receipt of cash from them as payment. Whether this additional finances is met from its own resources or from outside, it involves a cost to the firm in terms of interest (if financed from outside) or opportunity costs (if internal resources are used).

Administrative costs: When a company maintains receivables, it has to incur additional administrative expenses in the form of salaries to clerks who maintain records of debtors, expenses on investigating the creditworthiness of debtors etc.

Collection costs: These are costs, which the firm has to incur for collection of the amount at the appropriate time from the customers.

Defaulting costs: When customers make default in payment not only is the collection effort to be increased but the firm may also have to incur losses from bad debts.

Dimensions of Receivables Management:

Receivables management involves the careful consideration of the following steps:

- Forming of Credit Policy
- Executing the Credit Policy
- Formulating and Executing Collection policy

Forming of Credit Policy: A credit policy is related to decision such as Credit standards, length of credit periods, cash discount and discount period.

Credit standards: The volume of sales will be influence by the credit policy of the concern. By liberalizing the credit policy the volume of sales can be increased resulting into increased profits. The increased volume of sales is associated with the certain risks also. It will result in enhanced costs and risk of bad debts and delayed receipts. The increase in number of customers will increase the clerical work of maintaining the additional accounts and collecting of information about the credit worthiness of the customers. On the other hand, extending the credit only to credit worthy customers will save the cists like bad debts losses, collection costs, investigation costs etc. the restriction of credit to such customers only will certainly reduce sales volume, thus resulting n reduced profits. The credit should be liberalized only to the level where incremental revenue matches the additional costs. This the

optimum level of investment in receivables is achieved at a point where there is a trade off between the cists, profitability and liquidity

Length of Credit period: Length of Credit period means the period allowed to the customers for making the payment. The customers paying well in time may also be allowed certain cash discounts. There are no bindings on fixing the terms. The length of credit period and quantum of discount allowed determine the magnitude of investment in receivables. A firm may allow liberal credit terms to increase the volume of sales. The lengthening of this period will mean blocking of more money in receivables, which could have been, invested somewhere else to earn income. There may be an increase in debt collection costs and bad debts losses too. If the earnings from additional sales by Length of Credit period are more than the additional costs then the credit terms should le liberalized. A finance manager should determine the period where additional revenues equates the additional costs and should not extend credit beyond this period as the increases in the cost will be more than the increase in revenue.

Cash discount: cash discount is allowed to expedite the collection of receivables. The funds tied up in receivables are released. The concern will be able to use the additional funds received from expedited collection due to cash discount. The discount allowed involves cost. The finance manager should compare the earnings resulting from released funds and the cost of the discount. The discount should be allowed only if its cost is less than the earnings from additional funds. If the funds cannot be profitably employed then discount should not be allowed.

Discount period: The collection of receivables is influenced by the period allowed for availing the discount. The additional period allowed for this facility may prompt some more customers to avail discount and make payments. For example, if the firm allowing cash discount for payments

within 7 days now extends it to payments within 15 days. There may be more customers availing discount and paying early but there will be those also who were paying earlier within 7 days will now pay in 15 days. It will increase the collection period of the concern.

Executing the Credit Policy: The evaluation of credit applications and finding out the credit worthiness of customers should be undertaken.

Collecting the Credit information: The first step in implementing the credit policy will be to gather the information about the customers. The information should be adequate enough so that the proper analysis about the financial position of the customers is possible. The type of the information can be undertaken only up to a certain limit because it will involve cost. The cost incurred on collecting this information and the benefit from reduced bad debts losses will be compared. The credit information will certainly help in improving the quality of receivables but the cost of collecting information should not increase the reduction of bad debt losses. The information may be available from the financial statements of the applicant, credit rating agencies; reports from the banks, firm's records etc. a proper analysis of financial statements will be helpful in determining the creditworthiness of customers. Credit rating agencies supply information about various concerns. These agencies regularly collect the information about the business units from various sources and keep the information up to date. Credit information may be available with the banks also. The banks have their credit departments to analyze the financial position of customers. In case of old customer, businesses own records may help to know their credit worthiness. The frequency of payments, cash discount availed may help to form an opinion about the quality of the credit.

Credit analysis: After gathering the required information, the finance manager should analyze it to find out the credit worthiness of potential

customers and also to see whether they satisfy the standard of the concern or not. The credit analysis will determine the degree of risk associated with the account, the capacity of the customers to borrow and his ability and willingness to pay.

Credit Decision: The finance manager has to take the decision whether the credit is to be extended and if yes up to which level. He will match the creditworthiness of the customers with the credit standard of the company. If the customer's creditworthiness is above the credit standards then there is no problem in taking a decision. In case the customer's are below the company's standards then they should not be out rightly refused. Therefore they should be offered some alternatives facilities. A customer may be offered to pay on delivery on goods; invoices may be sent through bank and released after collecting dues.

Financing Investments in receivables and factoring: Receivables block a part of working capital. Efforts should be made so that the funds are nit tied up in receivables for longer periods. The finance manager should make the efforts to get the receivable financed so that working capital needs are met in time. The banks allow the raising of loans against security of receivables. Banks supply between 60-80% of the amount of receivables of dependable parties only. Then quality will determine the amount of loan. Beside banks, there may be other agencies, which can buy receivables and pay cash for them known as factoring. The factor will purchase only the accounts acceptable to him. The factoring may be with or without recourse. If it is without recourse then any bad debts loss taken up by the factor but if it is with recourse then bad debts loss will be recovered from the seller. The factor may suggest the customer for whom he will extend this facility.

Formulating and executing collection policy. The collection of amount due to the customers is very important. The concern should devise the procedures

to be followed when accounts become due after the expiry of credit period. The collection policy termed as strict and lenient. A strict policy of collection will involve more efforts on collection. This policy will enable the early collection of dues and will reduce bad debts losses. The money collects will be used for other purpose and the profits of the concern will go up. A lenient policy increases the debt collection period and more bad debts losses. The collection policy should weigh the various aspects associated with it, the gains and losses of such policy and its effects on the finances of the concerns. The collection policy should also devise the steps to be followed in collecting overdue amounts.

The steps should be like:

- Personal request through telephone
- Personal visit to customers

Taking help of collecting agencies

MODEL QUESTIONS

1. Define Account Receivables.
2. Elaborate the various factors affecting maintaining accounts receivables.

3. A firm is considering pushing up its sales by extending credit facilities to the following categories of customers.

i). Customers with a 10% risk of non-payment and

ii). Customers with a 30% risk of non-payment.

The incremental sales expected in case of category i). Rs.40, 000. ii). Rs. 50,000

The cost of production and selling costs are 60% of sales while the collection cost amount to i). 5% of sales in case of category ii). 10% of sales in case of category.

You are required to advise the firm about extending credit facilities to each of the above categories of customers.

4. Tamilnadu Enterprise Ltd. Dealing in sports goods has an annual sales of Rs. 5,00,000 and is currently extending 30 days credit. The company wants to pursue a

more liberal policy to improve sales. The following information is available.

Credit Policy	Average Collection period	Annual Sales (Rs)
M	45 days	5,60,000
N	60 days	6,00,000
O	75 days	6,20,000
P	90 days	6,30,000

The average collection period is 30 days.

Variable cost 80% of sales, fixed cost Rs. 60,000 p.a. required rate of return (Pre-tax) 20%

Assume 360 days in a year; determine which policy should the company adopt?

5.Tata Motors Ltd. Feels that it is possible to increase sales if credit terms are relaxed. Its sales at present is Rs. 5,00,000. Profit volume ratio is 30%. Fixed costs are Rs. 0,000. Bad debts 1% and account receivable turnover ratio is 10 times. The relaxed credit policy is expected to increase sales to Rs. 6,00,000. However, bad debts will rise to 2% of sales and account receivable turnover will decrease to 6 times. Assuming 20% return,should the firm relax its credit policy? Or not?

LESSON

1O

INVENTORY MANAGEMENT

- INTRODUCTION
- PURPOSE OF HOLDING INVENTORIES
- OBJECTIVES OF INVENTORY MANAGEMENT
- TOOLS AND TECHNIQUES OF INVENTORY MANAGEMENT
- JUST IN TIME (JIT) INVENTORY CONTROL SYSTEM
- MODEL QUESTIONS

Inventory Management:

Introduction:

Every enterprise needs inventory for smooth running of its activities. It serves as a link between production and distribution processes. There is generally a time lag between the recognition of needed and its fulfilment. The greater the time, higher the requirement of inventory. Thus it is very essential to have proper control and management of inventories.

Meaning of Inventory:

The inventory means stock of goods, or a list of goods in manufacturing concern, it may include raw material, work in progress and stores etc. it includes the following things:

Raw materials are those basic inputs that are converted into finished product through the manufacturing process. Thus, raw materials inventories are those units, which have been purchased and stored for future production.

Work-in-process inventories are semi-manufactured products. They represent products that need more work before they become finished products for sale.

Finished goods inventories are those completely manufactured products, which are ready for sale. Stocks of raw materials and work-in-process facilitate production, while stock of finished goods is required for smooth marketing operations.

Thus, inventories serve as a link between the production and consumption of goods. The levels of three kinds of inventories for a firm depend on the nature of its business. A manufacturing firm will have substantially high levels of all three kinds of

inventories, while a retail or wholesale firm will have a very high level of finished goods inventories and no raw material and work-in-process inventories. Within manufacturing firms, there will be differences. Large heavy engineering companies produce long production cycle products. Therefore, they carry large inventories. On the other hand, inventories of a consumer product company will not be large because of short production cycle and fast turnover. Supplies (or stores and spares) is a fourth type of inventory is also maintained by firms. Supplies include office and plant cleaning materials like soap, brooms, oil, fuel, light bulbs etc. These materials do not directly enter production, but are necessary for production process. Usually, these supplies are small part of the total inventory and do not involve significant investment. Therefore, a sophisticated system of inventory control may not be maintained for them.

The investment in inventory is very high in most of the undertakings engaged in manufacturing, wholesale and retail trade. The amount of investment is sometimes more in inventory than on other assets. In India, a study of 29 major industries has revealed that the average cost of the material is 64 paise and the cost of labour and overhead is 36 paise in a rupee. It is necessary for every management to give proper attention inventory management.

A proper planning of purchasing, handling, storing, and accounting should form a proper inventory management. An efficient system of inventory management will determine:

What to purchase?
How much to purchase?
where to purchase?
Where to store?

The purpose of inventory management is to keep the stocks in such a way that neither there is over stocking nor under stocking. The over stocking will mean a reduction of liquidity and starving for other production processes. On the other hand, under stockings, will result in stoppage of work. The investment in inventory should be left in reasonable limits.

Purpose of holding inventories:

There are three main purposes for holding the inventories:

1. The Transaction Motive: This facilitates the continuous production and timely execution of sales orders.

2. The Precautionary Motive: This necessitates the holding of inventories for meeting the unpredictable changes in demand and supply of material.

3. The Speculative Motive: This includes keeping inventories for taking the advantage of price fluctuations, saving in reordering costs and quantity discounts.

Objectives of Inventory Management:

The main objectives of inventory management are operational and financial. The operational objectives mean that the materials and spares should be available in sufficient quantity so that work is not disrupted for want of inventory. The financial objective mean that investment in inventories should not remain idle and minimum working capital should be locked in it. The following are the objectives of inventory management:

1. To ensure the continuous supply of raw material, spare and finished goods so that the production should not suffer at any time.
2. To avoid both over stocking and under stocking of inventory.
3. To maintain the investment in inventories at the optimum level as required the operational and sales activities.
4. To keep material cost under control so that they contribute in reducing the cist of production and overall costs.
5. To eliminate duplication in ordering stocks. This is possible with the help of centralized purchase.
6. To minimize the losses through pilferages, wastages and damages.
7. To design the proper organization for inventory management.

8. To ensure the perpetual inventory control so that the material shown in the stock ledgers should be actually lying in the stores.

9. To facilitate the furnishing of data for short term and long term planning and control of inventory

Tools and Techniques of Inventory Management:

Effective inventory management requires an effective control, system for inventories. A proper inventory control not only helps in solving the acute problem of liquidity but also increases the profits and causes substantial reduction in the working capital of the concern.

The following are the important tools and techniques in inventory management and control:

Determination of stock level
Determination of safety stock
Determination of economic order quantity
A.B.C. analysis
V E D analysis
Inventory turnover ratio
JIT Control system

1. **Determination of stock level:** Carrying too much and too little inventories is detrimental to the firm. If the inventory level is too little, the firm will face frequent stock outs involving heavy ordering costs and if the inventory if too high it will be unnecessary tie up of capital. Therefore an efficient inventory management requires that a firm should maintain an optimum level of inventory where inventory costs are minimum. Various stock levels are as follows:

a. **Minimum level:** This represents the quantity, which must be maintained in hand at all, times. If stocks are less than the minimum level than the work will stop due to shortage of material. Following factors are undertaken while fixing minimum stock level.

b. **Lead time:** The time taken in processing the order and then executing is known as lead time

c. **Rate of consumption:** It is the average consumption of material in the factory. Minimum stock Level = Re order level – (Normal consumption x Normal reorder period)

d. **Reorder level:** Re order level is fixed between minimum and maximum level. Reorder level = Maximum Consumption x Maximum reorder period

e. **Maximum Level:** It is the quantity of the material beyond which a firm should not exceeds its stocks. If the quantity exceed maximum level limit then it will be overstocking. Maximum Level = Reorder level + reorder quantity – (Minimum Consumption x Minimum reorder period)

f. **Average stock level:** Average Stock level = Minimum stock level + ½ of reorder quantity

2. **Determination of safety stock:** Safety stock is a buffer to meet some unanticipated increase in usage. The usage of inventory cannot be perfectly forecasted. It fluctuates over a period of time. Two costs are involved in the determination of this stock.

- Opportunity cost of stock out
- Carrying costs

The stock out of Raw Material would cause production disruption. The stock out of finished goods result into the failure of the firm in competition as the form cannot provide proper customer service.

3. **Economic Order Quantity:** A decision about how much to order has a great gignifi8cance in inventory management. The quantity to be purchased should be neither small nor big. EOQ is the size of lot to be purchased which is economically viable. This

is the quantity of the material, which can be purchased at minimum cost. Cost of managing the inventory is made up of two parts:-

Ordering Costs: This cost includes:

- Cost of staff posted for ordering of goods
- Expenses incurred on transportation of goods purchased.
- Inspection costs of incoming material
- Cost of stationery, postage, telephone charges.

Carrying costs: These are the costs for holding the inventories. It includes:

- The cost of capital invested in inventories.
- Cost of storage
- Insurance cost
- Cost of spoilage on handling of materials
- The loss of material due to deterioration.

The ordering and carrying costs of material being high, an effort should be made to minimize these costs. The quantity to be ordered should be large so that economy may be made in transport cost and discounts may also be earned.

VED Analysis: The VED analysis is generally used for spare parts. The requirement and urgency of spares parts is different from that of the material. Spare parts are classified as Vital (V), essential (E), and Desirable (D). The vital spares are must for running the concern smoothly and these must be stored adequately. The non-availability of spare parts will cause havoc on the concern. The E type of spares is also necessary but their stock may be kept at low figures. The stocking of D type of spares may be avoided at times. If the lead time of these spares is less, then stocking of these spares can be avoided. The classification of spares under these three categories is an important

decision. A wrong classification of any spare will create difficulties for production department. The classification should be left to the technical staff because they know the need urgency and use of these spares.

Inventory Turnover Ratio: This ratio is calculated to indicate whether the inventories have been used efficiently or not. The purpose is to ensure the blocking of only required minimum funds in inventory. This ratio is also known as Stock velocity.

$$\textbf{Inventory Turnover Ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory at cost}}$$

$$\textbf{Inventory Conversion period} = \frac{\text{Days in Year}}{\text{Inventory Turnover Ratio}}$$

Just In Time (JIT) Inventory Control System: Just in time philosophy, which aims at eliminating waste from every aspect of manufacturing and its related activities, was first developed in Japan. Toyota introduced this technique in 1950's in Japan, how U.S. companies started using this technique in 1980's. The term JIT refers to a management tool that helps produce only the needed quantities at the needed time.

Just in time inventory control system involves the purchase of materials in such a way that delivery of purchased material is assured just before their use or demand. The philosophy of JlT control system implies that the firm should maintain a minimum (zero level) of inventory and rely on suppliers to provide materials just in time to meet the requirements.

Objectives of JIT:

- Minimum (zero) inventory and its associated costs.
- Elimination of non-value added activities and all wastes.
- Minimum batch/lot size.

- Zero breakdowns and continuous flow of production.
- Ensure timely delivery schedules both inside and outside the firm.

Features of JIT:

- ✓ It emphasises that firms following traditional inventory control system overestimate ordering cost and underestimate carrying costs associated with holding of inventories.
- ✓ It advocates maintaining good relations with suppliers so as to enable purchases of right quantity of materials at right time.
- ✓ It involves frequent production/order runs because of smaller batch/lot sizes.
- ✓ It requires reduction in set up time as well as processing time.
- ✓ The major focus of JlT approach is to purchase or produce in response to need rather than as per the plans and forecasts.

Advantages of JIT Inventory Control System:

- ✓ The right quantities of materials are purchased or produced at the right time.
- ✓ Investment in inventory is reduced.
- ✓ Wastes are eliminated.
- ✓ Carrying or holding cost of inventory is also reduced because of reduced inventory.

Exercise:

The finance department of a Corporation provides the following information:

(i) The carrying costs per unit of inventory are Rs. 10

(ii) The fixed costs per order are Rs. 20]

(iii) The number of units required is 30,000 per year.

Determine the economic order quantity (EOQ) total number of orders in a year and the time gap between orders.

Solution: The economic order quantity may be found as follow

A = 30,000

S = Rs.20

I = Rs.10

Now, EOQ = (2 x 30,000x 20) ¸ 10)1/2 = 346 units

So, the EOQ is 346 units and the number of orders in a year would be 30,000/346 = 86.7 or 87 orders. The time gap between two orders would be 365/87 = 4.2 or 4 days.

MODEL QUESTIONS

1. Recite the term Inventory Management.
2. Distinguish between Ordering cost and Carrying cost.
3. Delineate the term EOQ.
4. Point out the objectives of Inventory Management.
5. List out the tools of inventory management.
6. Explain in detail about different methods of inventory management.
7. ɔap manufacturing company, manufacturing three products viz. A,B,C. In ɛct of which the following particulars are given.

Raw Materials	Usage per unit ofproduct (Kg)	Re-order quantity (Kg)	Price per kg (Paise)	Delivery period (Weeks)	Order level (Kg)	Minimum level(Kg)
A	10	10,000	10	1 to 3	8,000	-
B	4	5,000	30	3 to 5	4,750	-
C	6	10,000	15	2 to 4	-	2,000

Calculate i). EOQ ii). How many orders should the company place every year? iii). at what inventory level should an order be placed?

LESSON

11

CAPITAL BUDGETING

- INTRODUCTION
- FEATURES OF CAPITAL BUDGETING
- IMPORTANCE OF CAPITAL BUDGETING
- CAPITAL BUDGETING PROCESS
- OBJECTIVES OF CAPITAL BUDGETING
- TYPES OF CAPITAL BUDGETING (OR) INVESTMENT DECISIONS
- EVALUATION TECHNIQUES:
- RISK AND UNCERTAINTY IN CAPITAL BUDGETING
- MODEL QUESTIONS

Capital Budgeting:

Introduction: Capital Budgeting is the process of making investment decision in capital expenditure. It involves the planning and control of capital expenditure. It is the process of deciding whether or not to commit resources to particular long-term projects whose benefits are to be realized over a period of time.

According To Charles T Horn green: "Capital Budgeting is the long term planning for making and financing proposed capital outlays"

According To Lynch: "Capital Budgeting consists in planning development of available capital for the purpose of maximizing the long term profitability of the concern"

From the above definition, it may be concluded that it is the process by which the companies allocate funds to various investment projects designs to ensure profitability and growth.

Features of Capital Budgeting:

- Exchange of funds for future benefits:
- The future benefits are expected to be realized over a period of time.
- The funds are invested vested in long-term activities.
- They have a long term and significant effect on the profitability of the concern,
- They involve huge funds.

Importance of Capital Budgeting:

Large Investment: Capital budgeting decision involves large investment of funds. But the funds available with the firm are always limited and the demand for funds far exceeds the resources. Hence it is very important for a firm to plan and control its capital expenditure.

Long Term Commitment of Funds: capital expenditures involves not only large amount of funds but also funds for long term or permanent basis. The long term commitments of funds increases, the financial risk involved in the investment decision.

Greater the risk involved, greater is need for careful planning of capital expenditure i.e. Capital Budgeting.

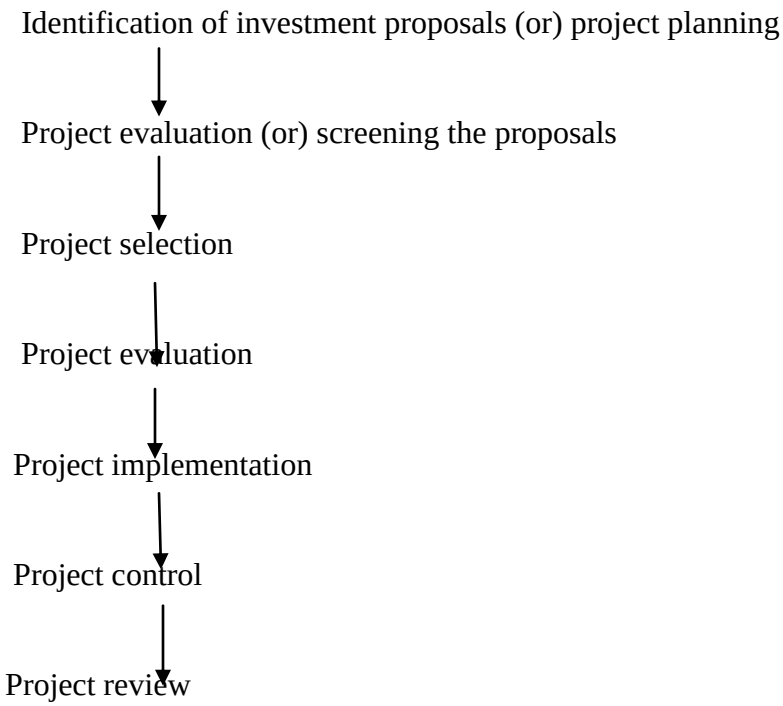
Irreversible Nature: The Capital expenditure decision is of irreversible nature. Once the decision for acquiring a permanent asset is taken, it becomes very difficult to dispose of these assets without incurring heavy losses.

Long term Effect on profitability: Capital budgeting decisions have a long term and significant effect on the profitability of a concern. Not only the present earnings of the firm are affected by the investments in capital asserts but also the future growth and profitability of the firm depends upon the investment decision taken today. An unwise decision may prove disastrous and fatal to the very existence of the concern.

Difficulties of investment Decisions: The long term investment decision are difficult to be taken because decision extends to a series of years beyond the current accounting period, uncertainties of future, higher degree of risk.

National Importance: Investment decision though taken by individual concern is of national importance because it determines employment, economic activities and growth.

Capital Budgeting process:



Identification of investment proposals (or) project planning:

Project planning invests the identification of potential investment opportunities after carrying out SWOT (Strength, Weakness, Opportunity and Threats) analysis.

Ex: Out of several opportunities (say A, B, C, D, E) A, C and E are expected to have potential investment opportunities.

Project evaluation:

Project evaluation involves:

a) Determination of cash inflows and cash outflows of each proposals.
b) Selection of capital budgeting techniques.
c) Appraisal of the projects using capital budgeting techniques selected.

Ex: Determination of cash inflows and cash outflows of proposal A, C and E. selection of capital budgeting technique (Say net present value) and calculating NPV of proposal A, C and E.

Project selection:

Project selection involves making choice of the project so as to maximize the shareholders wealth.

Ex: Making choice of for project E having target NPV.

Objectives of capital budgeting:

1. Selection of the right mix of profitable projects.
2. Control of capital expenditure.
3. Determining the required quantum and the right source of funds for investments.

Types of capital budgeting (or) Investment Decisions:

Capital budgeting (or) investment decision may be classified as follows:

Classification of capital budgeting:

1. On the basis of firm's existence
   A) Cost reduction decisions
      i) Replacement Decisions

ii) Modernization Decisions

B) Revenue Expansion Decisions

i) Expansion Decisions

ii) Diversification Decisions

iii) Set up of new business decisions

2. On the basis of decision situation

i) Mutually exclusive decisions

ii) Accept (or) project decisions

iii) Contingent decisions

On the basis of firm's existence:

i) Replacement decisions:

Replacing a fixed asset due to expiry of economic life of the asset is known as replacement decision.

Ex: Replacement of machinery on the expiry of its useful life.

ii) Modernization decision:

Replacing a fixed asset due to technological obsolescence is known as modernization decision.

Ex: Replacement of a Pentium IV computer by Intel.

iii) Expansion decisions:

Increasing existing production capacity is known as expansion decision.

Ex: Increasing out refining capacity from 1000 tons to 2000 tons.

Evaluation Techniques:

The commonly used methods are:

- Traditional Method
- Payback period method or pay out or pay off method
- Rate of return Method or Accounting Method
- Time adjusted Method or discounted method
- Net present value method
- Internal rate of return method
- Profitability Index

PayBack Period Method: It represents the period in which the total investments in permanent assts pay backs itself. This method is based on the principal that every capital expenditures pays itself back within a certain period out of the additional earnings generated from the capital assets thus it measures the period of time for the original cost of a project to be recovered from the additional earnings of the project itself.

In case of evaluation of a single project, it is adopted if it pays back itself within a period specified by the management and if the project does not pay back itself within the period specified by the management than it is rejected.

The payback period can be ascertained in the following manner: Calculate annual net earnings (profit) before depreciation and after taxes; these are called the annual cash flows.

Where the annual cash inflows are equal, divide the initial outlay (cost) of the project by annual cash flows, where the project generates constant annual cash inflows.

Where the annual cash inflows are unequal, the pat back period can be found by adding up the cash inflows until the total is equal to the initial cash outlay of project or original cost of the asset.

$$\text{Payback period} = \frac{\text{Cash outlay of the project or original cost of the asset}}{\text{Annual cash Inflows}}$$

Advantages of Pay Back Period method:

- It is simple to understand and easy to calculate.
- It saves in cost; it requires lesser time and labour as compared to other methods of capital budgeting.
- This method is particularly suited to firm, which has shortage of cash or whose liquidity position is not particularly good.

Disadvantages of Pay Back Period method:

- It does not take into account the cash inflows earned after the payback period and hence the true profitability of the project cannot be correctly assessed.
- It ignores the time value of money and does not consider the magnitude and timing of cash inflows. it treats all cash flows as equal though they occur in different time periods.
- It does not take into consideration the cost of capital, which is very important; factor in making sound investment decision.
- It treats each asset individually in isolation with other asset, which is not feasible in real practice.
- It does not measure the true profitability of the project, as the period considered under this method is limited to a short period only and not the full life of the asset.

Rate of Return Method: This method take into account the earnings expected from the investment over their whole life. It is known as accounting rate if Return method for the reasons that under this method, the accounting Concept of profit is used rather than cash inflows. According to this method, various projects are ranked in order of the rate of earnings or rate of return. The project with the higher rate of return is selected as compared to the one with the lower rate of return. This method can be used to make decisions as to accepting or rejecting a proposal. The expected return is determined and the project with a higher rate of return than the minimum rate specified by the firm called cut -off rate, is accepted and the one which gives a lower expected rate of return than the minimum rate is rejected.

The return in investment can be used in several ways as follows:

Average rate of return method (ARR): Under this method average profit after tax and deprecation is calculated and then it is divided by the total capital outlay or total investment in the project.

$$\frac{\text{Total Profits (after dep. \& taxes)}}{\text{Net Investment in project x No. Of years of profits}} \times 100$$

Or

$$\frac{\text{Average annual profit}}{\text{Net investment in the Project}} \times 100$$

Return per unit of investment method: This method is small variation of the average rate of return method. In this method, the total profit after tax and depreciation is divided by the total investment i.e.

$$\text{Return per Unit of Investment} = \frac{\text{Total profit (after depreciation and tax)}}{\text{Net investment in the project}} \times 100$$

Return on Average Investment method: In this method the return on average investment is calculated. Using of average investment for the purpose of return in investment is referred because the original investment is recovered over the life of the asset on account of depreciation charges.

$$\text{Return on Average Investment} = \frac{\text{Total profit (after depreciation and tax)}}{\text{Total Net investment}/2} \times 100$$

Advantages of Rate of Return Method:

- It is very simple to understand and easy to operate.
- This method is based upon the accounting concept of profits; it can be readily calculated from the financial data.
- It uses the entire earnings of the projects in calculating rate of return.

Disadvantages of Rate of Return Method:

- It does not take into consideration the cash flows, which are more important than the accounting profits.
- It ignores the time value of money as the profits earned at different points of time are given the equal weighs.

Time Adjusted or Discounted Cash Flows Methods:

The traditional methods of capital budgeting suffer from serious limitations that give the equal weights to present and future flow of income. These do not take into accounts the time value of money. Following are the discounted cash flow methods:

Net Present Value Method: This method is the modern method of evaluating the investment proposals. This method takes into consideration the time value of money and attempts to calculate the return in investments by introducing the factor of time element. It recognizes the fact that a rupee earned today is more valuable earned tomorrow. The net present value of all inflows and outflows of cash occurring during the entire life of the project is determined separately for each year by discounting these flows by the firm's cost of capital.

Following are the necessary steps for adopting the net present value method of evaluating investment proposals:

- Determine appropriate rate of interest that should be selected as the minimum required rate of return called discount rate.
- Compute the present value of total investment outlay.
- Compute the present value of total investment proceeds.
- Calculate the net present value of each project by subtracting the present value of cash inflows from the

present value of cash outflows for each project. If the net present value is positive or zero, the proposal may be accepted otherwise rejected.

Advantages of Net Present Value method:

1. It recognizes the time value of money and is suitable to be applied in situations with uniform cash outflows and cash flows at different period of time.
2. It takes into account the earnings over the entire life of the Projects and the true profitability of the investment Proposal can be evaluated.
3. It takes into consideration the on objective of maximum profitability.

Disadvantages of Net Present Value method:

- This method is more difficult to understand and operate.
- It is not easy to determine an appropriate discount rate.
- It may not give good results while comparing projects with unequal lives and investment of funds.

Internal Rate of Return Method: It is a modern technique of capital budgeting that takes into account the time value of money. It is also known as "time adjusted rate of return discounted cash flows" "yield method" "trial and error yield method"

Under this method, the cash flows of the project are discounted at a suitable rate by hit and trial method, which equates the net present value so calculated to the amount of the investment. Under this method, since the discount rate is determined internally, this method is called as the internal rate of return method. It can be defined as the rate of discount at which the present value of cash inflows is equal to the present value of cash outflows.

Steps required for calculating the internal rate of return:

- Determine the future net cash flows during the entire economic life of the project. The cash inflows are estimated for future profits before depreciation and after taxes.
- Determine the rate of discount at which the value of cash inflows is equal to the present value of cash outflows.
- Accept the proposal if the internal rate of return is higher than or equal to the minimum required rate of return.
- In case of alternative proposals select the proposals with the highest rate of return as long as the rates are higher than the cost of capital.

Determination of Internal Rate of Return:

1. When the annual net cash flows are equal over the life of the assets.

$$\text{Present value Factor} = \frac{\text{Initial Outlay}}{\text{Annual cash Flows}}$$

2. When the annual net cash flows care Unequal over the life of the assets.

Following are the steps:

- Prepare the cash flow table using an arbitrary assumed discount rate to discount the net cash flows to the present value.
- Find out the net present value by deducting from the present value of total cash flows calculated in above the initial cost of the investment
- If the NPV is positive, apply higher rate of discount.

- If the higher discount rate still gives a positive NPV, increase the discount rate further the NPV becomes become negative.
- If the NPV is negative at this higher rate, the internal rate of return must be between these two rates.

Advantages of Internal Rate of Return Method:

- It takes into account the time value of money and can be usefully applied in situations with even as well as uneven cash flows at different periods of time.
- It considers the profitability of the project for its entire economic life.
- It provides for uniform ranking of various proposals due to the % rate of return.

Disadvantages of Internal Rate of Return Method:

- It is difficult to understand.
- This method is based upon the assumption that the earnings are reinvested at the internal rate of return for the remaining life of the project, which is not a justified assumption particularly when the rate of return earned by the firm is not close to the internal rate of return.
- The result of NPV and IRR method may differ when the project under evaluation differ their size.

Profitability Index or PI: This is also known as benefit cost ratio. This is similar to NPV method. The major drawback of NPV method that not does not give satisfactory results while evaluating the projects requiring different initial investments. PI method provides solution to this. PI is calculated as:

$$PI = \frac{\text{Present value of cash Inflows}}{\text{Present value of cash outflows}}$$

If PI > 1 project will be accepted,

if PI<1 project is rejected

if PI= 1 then decision is based on non-financial consideration

Advantages of PI method:

- It considers Time value of money
- It considers all cash flow during life time of project.
- More reliable than NPV method when evaluating the projects requiring different initial investments.

Disadvantages of PI method:

- This method is difficult to understand.
- Calculations under this method arte complex

Exercises:

1. Calculate Average Rate of Return for the following information:

Year	0	1	2	3
Investment	100000			
Sales Revenue		120000	100000	80000
Operating Expenses (Excluding Depreciation)		60000	50000	40000
Depreciation		30000	30000	30000
Annual Income		30000	20000	10000

Average annual income = (30000+20000+10000)/3 = 20000

Average net book value if the investment = (100000+0)/2 = 50000

Accounting rate of return = 20000/50000 * 100 = 40%

2. The firm will accept the project if its target rate is less than 40%.

A ltd is considering the purchase of a new leather cutting machine to replace an existing machine which has a book value of Rs. 3000 and can be sold for Rs. 1500. The estimated salvage value of the old machine in four years would be zero, and it is depreciated on a straight line basis. The new machine will reduce costs (before tax) by Rs. 7000 per year i.e. Rs. 7000 cost savings over the old machine. The new machine has a four year life, costs Rs. 14000 and can be sold for an expected amount of Rs. 2000 at the end of the fourth year. Assuming straight line depreciation and a tax rate of 40%, calculate the cash flows associated with the investment and calculate the NPV of the project assuming the cost of funds to the firm is 12% and straight line method is used for tax purposes?

Year		0	1	2	3	4
1.	Net investment in new machine	(12500)				
2.	Savings in costs		7000	7000	7000	7000
3.	Incremental Depreciation		2250	2250	2250	2250
4.	Pre-Tax profits		4750	4750	4750	4750
5.	Less Tax		1900	1900	1900	1900
6.	Post-tax profits		2850	2850	2850	2850
7.	Initial Flow (=1)	(12500)				
8.	Operating Flow (= (6) + (3))		5100	5100	5100	5100
9.	Terminal Flow					2000
10.	Net Cash flow(=7+8+9)	12500	5100	5100	5100	7100

Year	1	2	3	4
Net cash flows	5100	5100	5100	7100
PVIF @k = 12%	0.893	0.797	0.712	0.636

Present Value (Rs.)	4554	4065	3631	4516

Net present value

= (-12500) + (4554 + 4065 + 3631 + 4516)

= Rs. (-12500 + 16766)

= Rs. 4266

The decision rule based on NPV is obvious. A project will be accepted if the NPV is positive and rejected if NPV is negative.

3. Project has the following patterns of cash flows:

Year	Cash Flow (Rs. In Lakh)
0	(10)
1	5
2	5
3	3.08
4	1.20

What is the IRR of this project?

Solution:

To determine the IRR, we have to compare the NPV of the project for different rates of interest until we find that rate of interest at which the NPV of the project is equal to zero. To reduce the number of iterations

involved in this hit and trial process, we can use the following short cut procedure:

Step 1

Find the average annual net cash flow based on given future net cash inflows.

= (5 + 5 + 3.08 + 1.20)/4

= 3.57

Step 2

Divide the initial outlay by the average annual net cash inflows i.e.

10/3.57 = 2.801

Step 3

From the PVIFA table find that interest rate at which the present value of an annuity of Rs. 1 will be nearly equal to 2.801 in 4 years i.e. the duration of the project. In this case the rate of interest will be equal to 15%.

We use 15% as the initial value for starting the hit and trial process and keep trying at successively higher rates of interest until we get an interest rate at which the NPV is zero.

The NPV at r = 15% will be equal to:

= - 10 + (5 * .0870) + (5 * .756) + (3.08 * .658) + (1.2 * .572) = 0.84 NPV at r = 16 % will be equal to:

= - 10 + (5 * .862) + (5 * .743) + (3.08 * .641) + (1.2 * .552) = .66 NPV at r = 18% will be equal to:

= - 10 + (5 * .848) + (5 * .719) + (3.08 * .0609) + (1.2 * .516) = .33 NPV at r = 20% will be equal to:

= -10 + (5 * .833) + (5 * .694) + (3.08 * .609) + (1.20 * .482) = 0

We find that at r= 20%, the NPV is zero and therefore the IRR of the project is 20%.

Risk and Uncertainty in Capital Budgeting:

All the techniques of capital budgeting require the estimation of future cash inflows and cash outflows. But due to uncertainties about the future, the estimates if demand, production, sales cannot be exact. All these elements of uncertainty have to be taken into account in the form of forcible risk while taking a decision on investment proposals.

The following two methods are suggested for accounting for risk in capital budgeting:

- Risk adjusted cut off rate or method of varying discount rate.
- Certainty equivalent method.

Risk adjusted cut off rate or method of varying discount rate: The simplest method for accounting for risk in capital budgeting is to increase the cut-off rate or the discount factor by certain % on account of risk. The projects which are more risky and which have greater variability in expected returns should discounted at higher rate as compared to the projects which are less risky and are expected to have lesser variability in returns.

The greater drawback of this method is that it is not possible to determine the risk premium rate appropriately and moreover it is the future cash flow, which is uncertain and requires the adjustment and not the discount rate.

Certainty Equivalent Method: Another simple method of accounting foe risk n capital budgeting is to reduce the expected cash flows by certain

amounts. It can be employed by multiplying the expected cash flows by certainty equivalent co-efficient as to convert the cash flow to certain cash flows.

MODEL QUESTIONS

1. Define Capital Budgeting.
2. State the term NPV and IRR.
3. List out the types of capital budgeting decisions.
4. Paraphrase the term Capital Rationing.
5. Recite the term Spontaneous financing.
6. Mention few objectives of capital budgeting.
7. The CRN Co .ltd is considering the purchase of a new machine. Two alternative machines (A and B) have been suggested each having an initial cost of Rs. 4,00,000 and Required Rs. 20,000 as additional working capital at the end of Ist year. Earning after taxation is expected to be as follows.

Year	Cashinflows	
	A (Rs.)	B(Rs.)
1	40,000	1,20,000
2	1,20,000	1,60,000
3	1,60,000	2,00,000
4	2,40,000	1,20,000
5	1,60,000	80,000

The company has target return on capital of 10% and on the basis, you are required to compare the profitability of the machines and state which alternatives you consider financially preferable.

8. Arun limited company is considering investing in a project requiring a capital outlay of Rs. 2,00,000. Forecast for annual income after depreciation but before tax is as follows

Year	Amount (Rs.)
1	1,00,000
2	1,00,000
3	80,000
4	80,000
5	40,000

Depreciation may be taken as 20% on original cost and taxation at 50% of net income. You are required to evaluate the project according to each of the following methods.

i). Pay-back period

ii). Rate of Return on original investment method.

iii). Rate of Return on average investment method.

iv). Discounted cash flow method taking cost of capita as 10% and

v). Net Present value index method.

LESSON

12

DIVIDEND POLICY

- INTRODUCTION OF DIVIDEND POLICY
- DIVIDEND DECISION AND VALUE OF FIRMS
- THE IRRELEVANCE CONCEPT OF DIVIDEND OR THE THEORY OF IRRELEVANCE
- MODIGLIANI AND MILLER APPROACH (MM MODEL)
- THE RELEVANCE CONCEPT OF DIVIDEND OR THE THEORY OF RELEVANCE
- WALTER'S APPROACH
- GORDON'S APPROACH
- DETERMINANTS OF DIVIDEND POLICY
- TYPES & FORMS OF DIVIDEND POLICY
- CAPITAL ASSET PRICING MODEL: (CAPM)
- MODEL QUESTIONS

Introduction of Dividend Policy:

The term dividend refers to that part of profits of a company which is distributed by the company among its shareholders. It is the reward of the shareholders for investments made by them in the shares of the company. The investors are interested in earning the maximum return on their investments and to maximize their wealth. A company, on the other hand, needs to provide funds to finance its long-term growth. If a company pays out as dividend most of what it earns, then for business requirements and further expansion it will have to depend upon outside resources such as issue of debt or new shares. Dividend policy of a firm, thus affects both the long-term financing and the wealth of shareholders.

Dividend Decision and Value of Firms: The value of the firm can be maximized if the shareholders' wealth is maximized. There are conflicting views regarding the impact of dividend decision on the valuation of the firm. According to one school of thought, dividend decision does not affect the share-holders' wealth and hence the valuation of the firm. On the other hand, according to the other school of thought, dividend decision materially affects the shareholders' wealth and also the valuation of the firm. Below are the views of the two schools of thought under two groups:

- The Irrelevance Concept of Dividend or the Theory of Irrelevance.
- The Relevance Concept of Dividend or the Theory of Relevance.

The Irrelevance Concept of Dividend or the Theory of Irrelevance:

Residual Approach: According to this theory, dividend decision has no effect on the wealth of the shareholders or the prices of the shares, and hence it is irrelevant so far as the valuation of the firm is concerned. This theory regards dividend decision merely as a part of financing decision because the earnings available may be retained in the business for re-investment. But, if the funds are not required in the business they may be distributed as dividends. This theory assumes that investors do not differentiate between dividends and retentions by the firm. Their basic desire is to earn higher return on their investment. In case the firm has profitable investment opportunities giving a higher rate of return than the cost of retained earnings, the investors would be content with the firm retaining the earnings to finance the same. However, if the firm is not in a position to find

profitable investment opportunities, the investors would prefer to receive the earnings in the form of dividends. Thus, a firm should retain the earnings if it has profitable investment opportunities otherwise it should pay them as dividends.

Modigliani and Miller Approach (MM Model): Modigliani and Miller have expressed in the most comprehensive manner in support of the theory of irrelevance. They maintain that dividend policy has no effect on the market price of the shares and the value of the firm is determined by the earning capacity of the firm or its investment policy. The splitting of earnings between retentions and dividends, may be in any manner the firm likes, does not affect the value of the firm. As observed by M.M. "Under conditions of perfect capital markets, 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 the shares.'"

Assumptions of MM Hypothesis:

- There are perfect capital markets.
- Investors behave rationally.
- Information about the company is available to all without any cost.
- There are no floatation and transaction costs.
- No investor is large enough to affect the market price of shares.
- There are no taxes or there are no differences in the tax rates applicable to dividends and capital gains.
- The firm has a rigid investment policy.

The Argument of MM: The argument given by MM in support of their hypothesis is that whatever increase in the value of the firm results from the payment of dividend, will be exactly off set by the decline in the market price of shares because of external financing and there will be no change in the total wealth of the shareholders. For example, if a company, having investment opportunities, distributes all its earnings among the shareholders, it will have to raise additional funds from external sources. This will result in

the increase in number of shares or payment of interest charges, resulting in fall in the earnings per share in the future. Thus whatever a shareholder gains on account of dividend payment is neutralized completely by the fall in the market price of shares due to decline in expected future earnings per share. To be more specific, the market price of a share in the beginning of a period is equal to the present value of dividends paid at the end of the period plus the market price of the shares at the end of the period. This can be put in the form of the following formula:

$$P_0 = \frac{D1+P1}{1+Ke}$$

Where, P_0 = Market price per share at the beginning of the period

D_1 = Dividend to be received at the end of the period.

P_1 = Market price per share at the end of the period.

Ke = Cost of equity capital or rate of capitalization.

The value of $P_{1\ can}$ be derived by the above equation as under:

$$P_1 = P_0 (1 = Ke) – D_1$$

The MM hypothesis can be explained in another form also presuming that investment required by the firm, on account of payment of dividends are financed out of the new issue of equity shares.

Further, the value of the firm can be ascertained with the help of the following formula:

$$\mathbf{n\ P_0 = \frac{(n + m)\ P\ 1 - (I - E)}{1+ke}}$$

Where, m = number of shares to be issued.

I = Investment required.

E = Total earnings of the firm during the period.

P_1 = Market price per share at the end of the period.

Ke = Cost of equity capital.

n = number of shares outstanding at the beginning of the period.

. D_1 = Dividend to be paid at the end of the period.

n P_0= Value of the firm

Criticism of MM Approach:

* Prefect capital market does not exist in reality
* Information about the company is not available to .all the persons.
* The firms have to incur flotation costs while issuing 'securities.
* Taxes do exit and there is normally different tax treatment for dividends and capital gains.
* The firms do not follow a rigid investment policy.
* The investors have to pay brokerage, fees, etc. while doing any transaction.
* Shareholders may prefer current income as compared to further gains.

The Relevance Concept of Dividend or The Theory of Relevance: The other school of thought on dividend decision holds that the dividend decisions considerably affect the value of the firm. The advocates of this school of thought include Myron Gordon, James Walter and Richardson. According to them dividends communicate information to the investors about the firms' profitability and hence dividend decision becomes relevant Those firms which pay higher dividends, will have greater value as compared to those which do not pay dividends or have a lower dividend payout ratio. We have examined below two theories representing this notion:

- Walter's Approach
- Gordon's Approach

Walter's Approach: Prof. Walter's approach supports the doctrine that dividend decisions are relevant and affect the value of the firm. Prof. Walter's model is based on the relationship between the firms's (i) return on investment. i.e., r. and (ii) the cost of capital or the required rate of return, i.e., k.

According to Prof. Walter, **If r > k** i.e., if the firm earns a higher rate of return on its investment than the required rate of return, the firm should retain the earnings. Such 'firms are termed as growth firm and the optimum pay-out would be zero in their case.

In case of declining firms which do not have profitable investments, i.e., **where r < k**, the shareholders would stand to gain if the firm distributes its earnings. For such firms, the optimum pay-out would be 100% and the firms should distribute the entire earnings as dividends.

In case of normal firms **where r = k,** the dividend policy will not affect the market value of shares as the shareholders will get the same return from the firm as expected by them. For such firms, there is no optimum dividend payout and the value of the firm would not change with the change in dividend rate.

Assumptions of Walter's Model:

* The investments of the firm are financed through retained earnings only and the firm does not use external sources of funds.

* The internal rate of return (r) and the cost of capital (k) of the firm are constant.

* Earnings and dividends do not change while determining the value.

The firm has a very long life.

Criticism of Walter's Model:

The basic assumption that investments are financed through retained earnings only is seldom true in real world. Firms do raise funds by external financing. The internal rate of return, i.e. r, also does not, remain constant. As a matter of fact, with increased investment the rate of return also changes. The assumption that cost of capital (k) will remain constant also does not hold good.

As a firm's risk pattern does not remain constant, it is not proper to assume that k will always remain constant.

Gordon's Approach: Myron Gordon has also developed a model on the lines of Prof. Walter suggesting that dividends are relevant and the dividend decision of the firm affects its value. His basic valuation model is based on the following assumptions:

* The firm is an all equity firm.
* No external financing is available or used. Retained earnings are the only source of finance.
* The rate of return on the firm's investment (r) is constant.
* The retention ratio (b) is constant. Thus, the growth rate of the firm g = br, is also constant.
* The cost of capital for the firm remains constant and it is greater than the growth rate, i.e. k > br.
* The firm has perpetual life.
* Corporate taxes do not exist.

Gordon's basic valuation formula can be simplified as under:

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

Where, P = Price of shares
E = Earnings per share b = Retention ratio
Ke = Cost of equity capital
br = g = Growth rate in r, i.e. rate of return on investment

The implications of Gordon's basic valuation model may be summarized as below:

* When r > k, the price per share increases as the dividend payout ratio decreases. Thus, growth firm

should distribute smaller dividends and should retain maximum earnings.

* When r = k, the price per share remains unchanged and is not affected by dividend policy. Thus, for a normal firm there is no optimum dividend payout.

* When r < k, the price per share increases as the dividend payout ratio increases. Thus, the shareholders of declining firm stand to gain if the firm distributes its earnings. For such firms, the optimum payout would be 100%.

Gordon's Revised Model: The basic assumption in Gordon's Basic Valuation Model that cost of capital (k) remains constant for a firm is not true in practice. Thus, Gordon revised his basic model to consider risk and uncertainty. In the revised model, he suggested that even when r = k, dividend policy affects the value of shares on account of uncertainty of future, shareholders discount future dividends at a higher rate than they discount near dividends. That is there is a twofold assumption, viz. (i) investors are risk averse, and (ii) they put a premium on a certain, return and discount/penalize uncertain returns. Because the investors are rational and they want to avoid risk, they prefer near dividends than future dividends. Stockholders often act on the principle that a bird in hand is worth than two in the bushes and for this reason are willing to pay a premium for the stock with the higher dividend rate, just as they discount the one with the lower rate. Thus, if dividend policy is considered in the context of uncertainty, the cost of capital cannot be assumed to be constant and so firm should set a high dividend payout ratio and offer a high dividend yield in order to minimize its cost of capital.

Determinants of Dividend Policy:

The payment of dividend involves some legal as well as financial considerations. The following are the important factors which determine the dividend policy of a firm:

Legal Restrictions: Legal provisions relating to dividends in the Companies Act, 1956 lay down a framework within which dividend policy is formulated. These provisions require that:

* Dividend can be paid only out of current profits or past profits after providing for depreciation or out of the moneys provided by Government for the payment of dividends in pursuance of a guarantee given by the Government.
* A company providing more than ten per cent dividend is required to transfer certain percentage of the current year's profits to reserves.
* The dividends cannot be paid out of capital, because it will amount to reduction of capital adversely affecting the security of its creditors.

Magnitude and Trend of Earnings: As dividends can be paid only out of present or past year's profits, earnings of a company fix the upper limits on dividends. The dividends should, generally, be paid out of current year's earnings only as the retained earnings of the previous year’s become more or less a part of permanent investment in the business to earn current profits. The past trend of the company's earnings should also be kept in consideration while making the dividend decision.

Desire and Type of Shareholders: Desires of shareholders for dividends depend upon their economic status. Investors, such as retired persons, widows and other economically weaker persons view dividends as a source

of funds to meet their day-to-day living expenses. To benefit such investors, the companies should pay regular dividends. On the other hand, a wealthy investor in a high income tax bracket may not benefit by high current dividend incomes. Such an investor may be interested in lower current dividends and high capital gains.

Nature of Industry: Certain industries have a comparatively steady and stable demand irrespective of the prevailing economic conditions. For instance, people used to drink liquor both in boom as well as in recession. Such firms expect regular earnings and hence can follow a consistent dividend policy. On the other hand, if the earnings are uncertain, as in the case of luxury goods, conservative policy should be followed.

Age of the Company: The age of the company also influences the dividend decision of a company. A newly established concern has to limit payment of dividend and retain substantial part of earnings for financing its future growth and development, while older companies which have established sufficient reserves can afford to pay liberal dividends.

Future Financial Requirements: The management of a concern has to reconcile the conflicting interests of shareholders and those of the company's financial needs. If a company has highly profitable investment opportunities it can convince the shareholders of the need for limitation of dividend to increase the future earnings.

Economic Policy: The dividend policy of a firm has also to be adjusted to the economic policy of the Government as was the case when the Temporary Restriction on Payment of Dividend Ordinance was in force. In 1974 and 1975, companies were allowed to pay dividends not more than 33 per cent of their profits or 12 per cent on the paid-up value of the shares, whichever was lower.

Taxation Policy: The taxation policy of the Government also affects the dividend decision of a firm. A high or low rate of business taxation affects the net earnings of company (after tax) and thereby its dividend policy. Similarly, a firm's dividend policy may be dictated by the income-tax status of its shareholders. If the dividend income of shareholders is heavily taxed being in high income bracket, the shareholders may forego cash dividend and prefer bonus shares and capital gains.

Inflation: Inflation acts as a constraint in the payment of dividends. when prices .rise, funds generated by depreciation would not be adequate to replace fixed assets, and hence to maintain the same assets and capital intact, substantial part of the current earnings would be retained. Otherwise, imaginary and inflated book profits in the days of rising prices would amount to payment of dividends much more than warranted by the real profits, out of the equity capital resulting in erosion of capital.

Control Objectives: As in case of a high dividend pay-out ratio, the retained earnings are insignificant and the company will have to issue new shares to raise funds to finance its future requirements. The control of the existing shareholders will be diluted if they cannot buy the additional shares issued by the company.

Requirements of Institutional Investors: Dividend policy of a company can be affected by the requirements of institutional investors such as financial institutions, banks insurance corporations, etc. These investors usually favour a policy of regular payment of cash dividends and stipulate their own terms with regard to payment of dividend on equity shares.

Stability of Dividends: Stability of dividend simply refers to the payment of dividend regularly and shareholders, generally, prefer payment of such regular dividends. Some companies follow a policy of constant dividend per share while others follow a policy of constant payout ratio and while there

are some other who follows a policy of constant low dividend per share plus an extra dividend in the years of high profits.

Liquid Resources: The dividend policy of a firm is also influenced by the availability of liquid resources. Although, a firm may have sufficient available profits to declare dividends, yet it may not be desirable to pay dividends if it does not have sufficient liquid resources. If a company does not have liquid resources, it is better to declare stock-dividend i.e. issue of bonus shares to the existing shareholders. The issue of bonus shares also amounts to distribution of firm's earnings among the existing shareholders without affecting its cash position.

Types of Dividend Policy:

Regular Dividend Policy: Payment of dividend at the usual rate is termed as regular dividend. The investors such as retired persons, widows and other economically weaker persons prefer to get regular dividends.

Advantages of Regular Dividend Policy: (i) It establishes a profitable record of the company. (ii) It creates confidence amongst the shareholders. (iii) It aids in long-term financing and renders financing easier. (iv) It stabilizes the market value of shares. (v) The ordinary shareholders view dividends as a source of funds to meet their day-to-day living expenses. (vi) If profits are not distributed regularly and are retained, the shareholders may have to pay a higher rate of tax in the year when accumulated profits are distributed. However, it must be remembered that regular dividends can be maintained only by companies of long standing and stable earnings.

Stable Dividend Policy: The term 'stability of dividends' means consistency in the stream of dividend payments. In more precise terms, it means payment

of certain minimum amount of dividend regularly. A stable dividend policy may be established in any of the following three forms:

- **Constant dividend per share:** Policy of paying fixed dividend per share irrespective of the level of earnings year after year. Such firms, usually, create a 'Reserve for Dividend Equalization' to enable them pay the fixed dividend even in the year when the earnings are not sufficient.
- **Constant payout ratio:** Constant pay-out ratio means payment of a fixed percentage of net earnings as dividends every year. The amount of dividend in such a policy fluctuates in direct proportion to the earnings of the company.
- **Stable rupee dividend plus extra dividend:** Some' companies follow a policy of paying constant low dividend per share plus an extra dividend in the years of high profits. Such a policy is most suitable to the firm having fluctuating earnings from year to year.

Advantages of Stable Dividend Policy: (i) It is sign of continued normal operations of the company. (ii) It stabilizes the market value of shares (iii) It creates confidence among the investors, improves credit standing and makes financing easier (iv) It provides a source of livelihood to those investors who view dividends as a source of fund to meet day-to-day expenses (v) It meets the requirements of institutional investors who prefer companies with stable divide.

Irregular Dividend Policy: Some companies follow irregular dividend payments on account of the following: (i) Uncertainty of earnings (ii) Unsuccessful business operations(iii) Lack of liquid resources

No Dividend Policy: A company can follow a policy of paying no dividends presently because of its unfavorable working capital position or on account of requirements of funds for future expansion and growth.

Forms of Dividend:

Dividends can be classified in various forms. Dividends paid in the ordinary course of bus in known as **Profit dividends**, while dividends paid out of capital are known as **Liquidation dividends.** A dividend which is declared between two annual general meetings is called **interim dividend**, while the dividend recommended to the shareholders at the annual general meeting is known as **final dividend**.

Classification on the basis of medium in which they are paid:

Cash Dividend: A cash dividend is a usual method of paying dividends. Payment of cash results in outflow of funds and reduces the company's net worth, though the shareholders get a opportunity to invest the cash in any manner they desire. This is why the ordinary shareholders prefer to dividends in cash.

Scrip or Bond Dividend: A scrip dividend promises to pay the shareholders at a future specific date. In case a company does not have sufficient funds to pay dividends in cash, it may issue notes or bonds for amount due to the shareholders. The objective of scrip dividend is to postpone the immediate Payment. A scrip dividend bears interest and is accepted as a collateral security.

Property Dividend: Property dividends are paid in the form of some assets other than cash are distributed under exceptional circumstances and are not popular in India.

Stock Dividend: Stock dividend means the issue of bonus shares to the existing shareholders. If a company does not have liquid resources it is better to declare stock dividend. Stock dividend amounts to capitalization of earnings and distribution of profits among the existing shareholders without affecting the cash position of the firm. This has been discussed in detail under "Bonus Issue".

Bonus Issue:

A company can pay bonus to its shareholders either in cash or in the form of shares. Many a times, a company is not in a position to pay bonus in cash in spite of sufficient profits because of unsatisfactory cash position or because of its adverse effects on the working capital of the company. In such cases, if the articles of association of the company provide, it can pay bonus to its shareholder in the form of shares by making partly paid shares as fully paid or by the issue of fully paid bonus shares. Issue of bonus shares in lieu of dividend is not allowed as according to Section 205 of the Companies Act, 1956, no dividend can be paid except in cash. It cannot be termed as a gift because it only represents the past sacrifice of the shareholders.

When a company accumulates huge profits and reserves, its balance sheet does not reveal a true picture about the capital structure of the company and the shareholders do not get fair return on their capital. Thus, if the Articles of Association of the company so permit, the excess amount can be distributed among the existing shareholders of the company by way of issue of bonus shares.

Objectives of Bonus Issue:

* To bring the amount of issued and paid up capital in line with the capital employed so as to depict more realistic earning capacity of the company.

* To bring down the abnormally high rate of dividend on its capital so as to avoid labour problems such as demand for higher wages and to restrict the entry of new entrepreneurs due to the attraction of abnormal profits.

* To pay bonus to the shareholders of the company without affecting its liquidity and the earning capacity of the company.
* To make the nominal value and the market value of the shares of the company comparable.
* To correct the balance sheet so as to give a realistic view of the capital structure of the company.

Advantages of issue of Bonus Shares:

Advantages from the viewpoint of the company:

* It makes available capital to carry and a larger and more profitable business.
* It is felt that financing helps the company to get rid of market influences.
* When a company pays bonus to its shareholders in the value of shares and not in cash, its liquid resources are maintained and the working capital of the company is not affected.
* It enables a company to make use of its profits on a permanent basis and increases credit worthiness of the company.
* It is the cheapest method of raising additional capital for the expansion of the business.
* Abnormally high rate of dividend can be reduced by issuing bonus shares which enables a company to restrict entry of new entrepreneurs into the business and thereby reduces competition.
* The balance sheet of the company will reveal a more realistic picture of the capital structure and the capacity of the company.

Advantages from the viewpoint of investors or shareholders:

- The bonus shares are a permanent source of income to the investors. Even if the rate of dividend falls, the total amount of dividend may increase as the investor gets dividend on a larger number of shares.
- The investors can easily sell these shares and get immediate cash, if they so desire.

Disadvantages of Bonus Shares:

- The issue of bonus shares leads to a drastic fall in the future rate of dividend as it is only the capital that increases and not the actual resources of the company. The earnings do not usually increase with the issue of bonus shares.
- The fail in the future rate of dividend results in the fall of the market price of shares considerably, this may cause unhappiness· among the shareholders.
- The reserves of the company after the bonus issue decline and leave lesser security to investors.

Exercises:

1. A Company belongs to a risk class of 10%. It currently has 25000 outstanding shares selling at Rs. 100 each. The firm is contemplating the declaration of a dividend of Rs. 5 per share at the end of a current financial year. It expects a net income of Rs. 2500000 and has a proposal for making a new investment of Rs. 500000. Show according to MM approach, the payment of dividend does not affect the value of the firm.

Solution:

a. Value of the firm, when dividends are paid:

i. Price per share at the end of year 1, Po = (1/1 + ke) (D1 + P1)

Rs.100 = (1/1 + .10)(Rs 5 + P1)

Rs.110 = Rs 5 + P1

P1 = 105

ii. Amount required to be raised from the issue of new shares,

$\Delta nP1 = I – (E – nD1)$

= Rs 500000 – (Rs 250000 – 125000) = Rs 375000

iii. Number of additional shares to be issued,

Δn= Rs 375000/Rs. 105 = 75000/21 Shares

iv. Value of the firm,

$nPo = [(n + \Delta n)P1 – I + E]/(1 + ke)$

=[25000/1 + 75000/21] (Rs 105) – Rs 500000 + Rs 250000 =Rs 2750000/1.10 = Rs 2500000

b. Value of the firm when dividends are not paid:

i. Price per share at the end of year 1, Rs 100 = P1/1.10 Or P1 = 110

ii. Amount required to be raised from issue of new shares, $\Delta nP1$ = (Rs 500000 – Rs 250000) = Rs 250000

iii. Number of additional shares to be issued,

= Rs 250000/Rs 110 = 25000/11 shares

iv. Value of the firm

= [25000/1 +25000/11] (Rs 110) – Rs 500000 + 250000

= Rs 2750000/1.1 = Rs. 2500000

2. The following information is available in respect of a firm:

Capitalization Rate (ke) = 0.10, Earnings per share (E) = Rs 10

Assumed rate of return on investments (r): (i) 15

Calculate the effect of dividend policy on the market price of shares, using walter's model.

Ans. Dividend Policy and Value of Shares (Walter"s Model) when r = 15%

D/P ratio = 0 (Dividend per share
= 0) P = (D + r/ke(E – D)/ke
P = [0 + (0.15/0.10)(10 – 0)]/0.10 = Rs. 150
D/P ratio = 25 (Dividend per share = Rs 2.5)
D/P ratio = 50 (Dividend per share = Rs 5)
D/P ratio = 100 (Dividend per share = Rs10) P = [10 + (0.15/0.10)(10 – 10)]/0.10 = Rs. 100

Capital Asset Pricing Model: (CAPM)

Overview:

The model takes into account the asset's sensitivity to non-diversifiable risk (also known as systematic risk or market risk), often represented by the quantity beta (β) in the financial industry, as well as the expected return of the market and the expected return of a theoretical risk-free asset. CAPM assumes a particular form of utility functions (in which only first and second moments matter, that is risk is measured by variance, for example a quadratic utility) or alternatively asset returns whose probability distributions are completely described by the first two moments (for example, the normal distribution) and zero transaction costs (necessary for diversification to get rid of all idiosyncratic risk). Under these conditions, CAPM shows that the cost of equity capital is determined only by beta. Despite it failing numerous empirical tests and the existence of more modern approaches to asset pricing and portfolio selection (such as arbitrage pricing theory and Merton's portfolio problem), the CAPM still remains popular due to its simplicity and utility in a variety of situations.

Security market line:

The SML essentially graphs the results from the capital asset pricing model (CAPM) formula. The x-axis represents the risk (beta), and the y-axis represents the expected return. The market risk premium is determined from the slope of the SML.

The relationship between β and required return is plotted on the securities market line (SML), which shows expected return as a function of β. The intercept is the nominal risk-free rate available for the market, while the slope is the market premium, $E(R_m) - R_f$. It is a useful tool in determining if an asset being considered for a portfolio offers a reasonable expected return for risk. Individual securities are plotted on the SML graph. If the security's expected return versus risk is plotted above the SML, it is undervalued since the investor can expect a greater return for the inherent risk. And a security plotted below the SML is overvalued since the investor would be accepting less return for the amount of risk assumed.

Asset Pricing:

Once the expected/required rate of return E (Ri) is calculated using CAPM, we can compare this required rate of return to the asset's estimated rate of return over a specific investment horizon to determine whether it would be an appropriate investment. To make this comparison, you need an independent estimate of the return outlook for the security based on either fundamental or technical analysis techniques, including P/E, M/B etc.

Assuming that the CAPM is correct, an asset is correctly priced when its estimated price is the same as the present value of future cash flows of the asset, discounted at the rate suggested by CAPM. If the estimated price is higher than the CAPM valuation, then the asset is undervalued (and overvalued when the estimated price is below the CAPM valuation).

Asset – specified required return:

The CAPM returns the asset-appropriate required return or discount ratei.e. the rate at which future cash flows produced by the asset should be discounted given that asset's relative riskiness. Betas exceeding one signify more than average "riskiness"; betas below one indicate lower than average.

Risk and Diversification:

The risk of a portfolio comprises systematic risk, also known as undiversifiable risk, and unsystematic risk which is also known as idiosyncratic risk or diversifiable risk. Systematic risk refers to the risk common to all securities—i.e. market risk. Unsystematic risk is the risk associated with individual assets. Unsystematic risk can be diversified away to smaller levels by including a greater number of assets in the portfolio (specific risks "average out"). The same is not possible for systematic risk within one market. Depending on the market, a portfolio of approximately 30–40 securities in developed markets such as the UK or US will render the portfolio sufficiently diversified such that risk exposure is limited to systematic risk only. In developing markets a larger number is required, due to the higher asset volatilities.

A rational investor should not take on any diversifiable risk, as only non-diversifiable risks are rewarded within the scope of this model. Therefore, the required return on an asset, that is, the return that compensates for risk taken, must be linked to its riskiness in a portfolio context—i.e. its contribution to overall portfolio riskiness—as opposed to its "stand alone risk." In the CAPM context, portfolio risk is represented by higher variance i.e. less predictability. In other words, the beta of the portfolio is the defining factor in rewarding the systematic exposure taken by an investor.

Efficient Frontier:

The CAPM assumes that the risk-return profile of a portfolio can be optimized—an optimal portfolio displays the lowest possible level of risk for its level of return. Additionally, since each additional asset introduced into a portfolio further diversifies the portfolio, the optimal portfolio must comprise every asset, (assuming no trading costs) with each asset value-weighted to achieve the above (assuming that any asset is infinitely divisible). All such optimal portfolios, i.e., one for each level of return, comprise the efficient frontier.

Assumptions of CAPM:

1. Aim to maximize economic utilities (Asset quantities are given and fixed).
2. Rational and risk-averse.

3. Broadly diversified across a range of investments.
4. Price takers, i.e., they cannot influence prices.
5. Lend and borrow unlimited amounts under the risk free rate of interest.
6. Trade without transaction or taxation costs.
7. Deal with securities that are all highly divisible into small parcels (All assets are perfectly divisible and liquid).
8. Have homogeneous expectations.
9. Assume all information is available at the same time to all investors.

MODEL QUESTIONS

1. Describe in detail about the factors affect company's Dividend Policy.
2. The following information is available in respect of a firm. Capitalization rate = 15%. EPS= Rs.100. Assume rate of return on investment is (i) 20% (ii) 15% (iii) 10%. Show the effect of dividend policy on market price of shares applying Walter's formula when dividend payout ratio is (i) 0% (ii) 20% (iii) 40% (iv) 80% (v) 100%

REFERENCES:

1. M.Y. Khan and P.K.Jain Financial management, Text, Problems and cases Tata McGraw Hill, 7th edition, 2012.
2. I. M. Pandey Financial Management, Vikas Publishing House Pvt. Ltd., 10th edition, 2012.
3. Prasanna Chandra, Financial Management, 7th edition, Tata McGraw Hill, 2012.
4. S.N.Maheswari, Financial Management, 13th Edition, Sultan Chand & Sons, 2013.
5. P.C.Tulsian, Financial Mangement, 2nd Edition, S.Chand & Company, 2014.
6. P.V.Kulkarani and B.G.Sathya Prasad, Financial Management, 15th Edition, Himalaya Publishing House, 2013.