BHARATHIDASAN UNIVERSITY

CONSTITUENT COLLEGE OF ARTS AND SCIENCE

NAGAPATTINAM-611106

M.B.A

CORE COURSE - X

FINANCIAL MANAGEMENT

AUTHORS

Dr. J.JEYANTHI, M.B.A., M.Phil., NET, Ph.D
Head, Department of Business Administration,
Bharathidasan University Constituent College,
Nagapattinam – 611 006

CORE COURSE - X : FINANCIAL MANAGEMENT

Objectives

The purpose of this course is to acquaint the students with the broad framework offinancial decision making in a business unit.

Unit I

Financial Management- meaning, scope, objectives and functions.Financial Analysis andControl; Overview of Indian Financial System- Legal, Regulatory and tax framework.

Unit II

Time value of Money; Instruments of Long Term Finance, Cost of Different Sources ofRaising Capital. Cost of Capital - Computation for each source of finance and weightedaverage cost of capital - EBIT -EPS Analysis - Operating Leverage - Financial Leverage -problems

Unit III

Investment and Capital Structure Decisions - Net Income Approach - Net OperatingIncome Approach - MM Approach; Valuation and Rates of Return; Method of CapitalBudgeting.

Unit IV

Working Capital Management - Definition and Objectives - Working Capital Policies -Factors affecting Working Capital requirements - Forecasting Working Capitalrequirements (problems) - Cash Management - Receivables Management and – InventoryManagement - Working Capital Financing - Sources of Working Capital andImplications of various Committee Reports.

Unit V

Internal Financing and Dividend Policy - Types of Divided Policy - Dividend Policy andshare valuation - CAPM.Financial Modeling.

Recommended Text Book :

1. Financial Management by I.M. PandeyVikas Publishing House PVT Ltd.,.Email :p.thanigaimalai@vikaspublishing.com

2. Financial Management Theory and practice by Prasannachandra Tata Mcgraw Hill co.Chennai. Email : mark_pani@mcgrawhill.com

3. Financial Management By Rajiv Srivstava& Anil Misra, Oxford University Press,Chennai. Email : v.anand@oup.com

4. Financial management – PreetisinghAne books – PVT Ltd., Chennai. E-mail :anebooks_tnairtelmail.com.

5. Financial Management By D. Chandra Bose, PHI learning India PVT Ltd.,www.phindia.com

6. Financial Management Text and cases – cengage learning – By Brigham &EhrhardtIndia edition.

7. Financial Management Text, problem and cases – My.Khan and PK. Jain Tata McgrawHill Co.

8. Financial Management – Bhabatosh Banerjee – PHI Learning PVT Ltd.,

9. Financial Management India Edition, James C.VAN Horne &Joh. M.Wachowfcz, PHIlearning Private Ltd.,

10. Financial Management – By P. Periasamy Tata Mcgraw Hill Co.

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UNIT - I

Lesson – 1

FINANCE

INTRODUCTION

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

MEANING OF FINANCE

Finance is the life blood of business. Without adequate finance, no business can service and without efficient finance management, no business can prosper and grow. Finance is required for establishing developing and operating the business efficiently. The success of business depends upon supply of finance and its efficient management.

DEFINITION

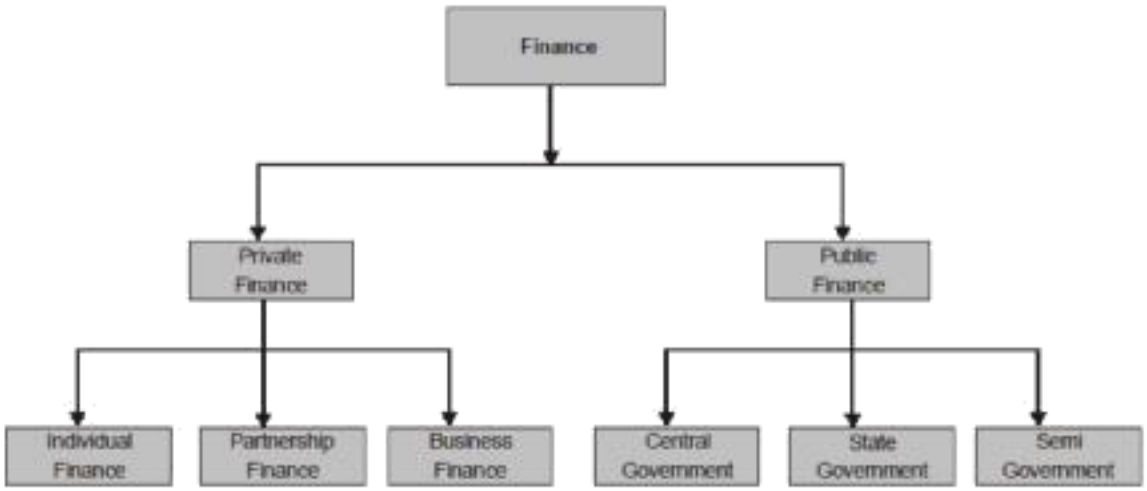
Finance may be defined as the provision of money at the time when it is required. Finance refers to the management of flow of money through an organization.

According to WHEELER**,** business finance may be defined as "that business activity which is concerned with the acquisition and conservation of capital funds in meeting the financial needs and overall objectives of the business enterprise."

According to GUTHMANN and DOUGALL, business finance may be broadly defined as "the activity concerned with the planning, raising, controlling and administering the funds used in the business."

TYPES OF FINANCE

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. Finance can be classified into two major parts:



1.Private finance

2.Public finance

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.

Conclusion

The secret to a rewarding business is finance and without it, it's virtually impossible to achieve your primary goal of profitability, not to mention the luxuries like marketing, employees and further down the line, expansion.

Questions

1. What do you mean by finance?
2. Define finance
3. What are the types of finance?

Lesson – 2

FINANCIAL MANAGEMENT

INTRODUCTION

Finance is the life blood of and nerve centre of a business, just as circulation of blood is essential in the human body for maintain life; finance is very essential for smooth running of the business. It has been rightly termed as universal lubricant that keeps the firm dynamic. No business, whether big, medium or small can be started without an adequate amount of finance. Right from the very beginning i.e., conceiving an idea to business, finance is needed to promote or establish the business, acquire fixed assets, make investigations such as market surveys etc., develop product, keep men and machines at work, encourage management to make progress and create values. Finance has thus become an integral part of the firm. Unless the finance is managed in a profitable manner, the firm cannot reach its full potentials for growth and success. In order to manage finance, a new management discipline was conceived. Such discipline is known as financial management. This chapter is designed to give an overall view on the concept of financial management.

MEANING OF FINANCIAL MANAGEMENT

Finance is called science of money. It is not only act of making money available, but its administration and control so that it could be properly utilized. The world "Financial Management" is the composition of two words ie. **Financial and Management**. Financial means procuring or raising of money supply (funds) and allocating (using) those resources (funds) on the basis of monetary requirements of the business. The word Management means planning, organizing, coordinating and controlling human activities with reference to finance function for achieving goals/ objectives of organization. Besides raising and utilization of funds, finance also includes

distribution of funds in the form of dividend to shareholders and retention of profit for growth and developments.

DEFINITION OF FINANCIAL MANAGEMENT:

The term financial management has been defined differently by various authors. Some of the authoritative definitions are as follows:

i. **S.C.Kuchhal:** Financial management is concerned with the managerial decisions that result in the acquisition and financing of short term and long term credits for the firm.

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

iii. **Solomon:** Financial management is concerned with the efficient use of an important economic resource, namely capital funds.

iv. **J.L. Massie**: Financial management is the operational activity of a business that is responsible for obtaining and effectively utilizing the funds necessary for efficient operations.

v. **Archer and Ambrosio**: Financial management is the application of the planning and control function to the finance function.

Hence, three key areas of finance are:

I – Raisingof funds –Based on the total requirements ofcapital/funds for use in fixed assets, current assets as well as intangible assets like goodwill, patent, trade mark, brand etc. crucial decision are:

- When to raise (time)
- Sources from which to raise
- How much (quantum of money)
- In which form (debt or equity)
- Cost of raising funds

II – Investment of funds –Funds raised need to be allocated/invested in:

Fixed assets –also known as capital assets or capitalbudgetingdecision.Thesedecisions are based upon cost and return analysis through various techniques.

Current assets –also known on working capitalmanagement. These are assets for day today running the business like cash, receivables, inventory, short form investments etc. Decision about investment of funds is taken keeping in view two important aspects.

- Profitability
- Liquidity

III - Distribution of funds - Profit earned need to be distributed inthe form of dividend. Higher the rates of dividend, higher world are the price of shares in market. Another crucial decision under it would be the quantum of profit to be retained. The retained profit is cost free money to the organization.

Hence in brief the financial management is management of funds which can be explained through following chart.

SCOPE OF FINANCIAL MANAGEMENT

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

- **Estimating financial requirements:**

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

- **Deciding capital structure:**

Capital structure refers to kind and proportion of different securities for raising funds. After deciding the quantum of funds required it should be decided which type of securities should be raised. It may be wise to finance fixed assets through long term debts. Even here if gestation period is longer than share capital may be the most suitable. Long term funds should be employed to finance working capital also, if not wholly then partially. Entirely depending on overdrafts and cash credits for meeting working capital needs may not be suitable. A decision about various sources for funds should be linked to the cost of raising funds.

- **Selecting a source of finance:**

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

- **Selecting a pattern of investment:**

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

- **Proper cash management:**

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

- **Implementing financial controls:**

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

- **Proper use of surpluses:**

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

IMPORTANCE OF FINANCIAL MANAGEMENT

I – Importance to all types of organizations

i. Business organizations

Financial management isimportant to all types of business organization i.e. Small size, medium size or a large size organization. As the size grows,financial decisions become more and more complex as the amount involves also is large.

ii. Charitable organization / nonprofit organization / Trust

In all those organizations, finance is a crucial aspect tobe managed. A finance manager has to concentrate more on collection of donations/ revenues etc. and has to ensure that every rupee spent is justified and is towards achieving Goals of organization.

iii. **Government / Govt. or public sector undertaking**

In central/ state Govt. finance is a key/ important portfolio generally given to most capable or competent person. Preparation of budget, monitoring capital /revenue receipt and expenditure are key functions to be performed by the person in charge of finance. Similarly, in a Govt. or public sector organization, financial controller or Chief finance officer has to play a key role in performing/ taking all three financial decisions i.e. raising of funds, investment of funds and distributing funds.

iv. Other organizations

In all other organizations or even in a family finance is a key area to be looked in to seriously by a competent person so that things do not go out of gear.

II– Importance to all stake holders: - Financial Management is important to all stake holders as explained below:

Shareholders–Share holders are interested in gettingoptimumdividend and maximizing their wealth which is basic objective of financial management.

Investors / creditors –these stake holders are interestedin safety of their funds, timely repayment of the principal amount as well as interest on the same. All these aspect are to be ensured by the person managing funds/ finance.

Employees –They are interested in getting timelypayment of their salary/ wages, bonus, incentives and their retirement benefits which are possible only if funds are managed properly and organization is working in profit.

Customers – They are interested in quality products atreasonable rates which are possible only through efficient management of organization including management of funds.

Public –Public at large is interested in general publicwelfare activities under corporate social responsibility and this aspect is possible only when organization earns adequate profit.

Government –Govt. is interested in timely payment oftaxes and other revenues from business world where again efficient finance manager has a definite role to play.

Management –Management is interested in overall image building, increase in the market share, optimizing shareholders wealth and profit and all these aspect greatly depends upon efficient management of financial resources.

III– Importance of financial management to all deportments of an organization.

A large size company has many departments like (besides finance dept.)

- Production/ Manufacturing Dept.
- Marketing Dept.
- Personnel Dept.
- Material/ Inventory Dept.

All these departments look for availability of adequate funds so that they could manage their individual responsibilities in an efficient manner. Lot of funds are required in production/manufacturing dept. for ongoing / completing the production process as well as maintaining adequate stock to make available goods for the marketing dept. for sale. Hence, finance department through efficient management of funds has to ensure that adequate funds are made available to all department and these departments at no stage starve for want of funds. Hence, efficient financial management is of utmost importance to all other department of the organization.

Conclusion

Performance evaluation will help a company to understand different sides of their business operations on one hand where by analyzing performance in a certain period and help the company to forecast their future business performances. This information obtained on business performances can be used by number of parties, different stakeholders which include shareholders, creditors, employees, tax authorities, government, media, etc. All the mentioned parties can use these information of performance evaluation with an aim to assess the business operations of the firm, future of the company and can contribute towards decision making process of the company as evaluation will bring a clear image on the organizations' financial health or status, the financial feasibility, profitability and resource management. Also with the right information investors and shareholders will be able to make the right decision in terms of their investments where proper opportunities can be identified regarding the potential of positive outcome of it.

Questions

1. Define Financial Management

2. What do you mean by financial management?
3. What are the key areas of finance?
4. State the scope of financial management
5. Explain the importance of financial management.

Lesson – 3

OBJECTIVES OF FINANCIAL MANAGEMENT

Introduction

It is an advanced goal compared to profit maximization. Survival of company is an important consideration when the financial manager makes any financialdecisions. One incorrect decision may lead company to be bankrupt. Maintaining proper cash flow is a short run objective of financial management.

Objectives of Financial Management

There are two objectives of financial management viz.

- Profit maximization
- Wealth maximization

There are two schools of thought in this regard i.e. traditional and modern. While tradition approach favours profit maximization as key objective, the modern thinker's favours shareholders wealth maximization as key objective of financial management. Traditional thinkers believe that profit is appropriate yardstick to measure operational efficiency of an enterprise. They are of the view that a firm should undertake only those activities that increase the profit.

PROFIT MAXIMIZATION

Profit maximization is one of the basic objectives of financial management. According to this concept, a firm should undertake all those activities which add to its profits and eliminate all others which reduce its profits. This objective highlights the fact that all decisions-financing, dividend and investment, should result in profit maximization. Following arguments are given in favour of profit maximization concept.

i. Profit is a yardstick of efficiency on the basis of which economic efficiency of a business can be evaluated.

ii. It helps in efficient allocation and utilization of scarce means because only such resources are applied which maximize the profits.

iii. The rate of return on capital employed is considered as the best measurement of the profits.

iv. Profits act as motivator which helps the business organization to be more efficient through hard work.

v. By maximizing profits, social and economic welfare is also maximized.

Modern thinkers criticize the profit maximization objective on the following grounds:

- Profit is an ambiguous concept–Profit can be longterm or short term, profit before Tax or after Tax, profit can be operating profit or gross profit etc. The economist's concept of profit is different than accountant's concept of profit.
- Profit motto may lead to exploitation of customers, workers, employees and ignore ethical trade practices.
- Profit motto also ignores social considerations or corporate social responsibility or general public welfare.
- Profit always goes hand- to hand with risk. The owners of business will not like to earn more and more profit by accepting more risk.
- The profit maximization was taken as objective when business was self-financed and self-controlled.

Today, most of large business under taking witness a divergence between ownership and management and business is dependent largely on loan and borrowed funds and only a small fraction being financed out of owner's funds. Hence, profit maximization will only act as a narrow objective.

WEALTH MAXIMIZATION

Another basic objective of financial management is maximization of shareholders' wealth. This objective is also known as value maximization or net present-worth maximization. According to this concept, finance manager should take such decisions which increase net present value of the firm and should not undertake any activity which decrease net present value. This concept eliminates all the three basic criticisms of the profit maximization concept.

In view of above, modern thinkers consider wealth maximization as key objective of financial management. This is also known as value maximization or net present worth maximizations. This shareholders wealth maximization is evident from increase in the price of shares in the market. They are of the view that wealth maximization is supposed to be superior over profit maximization due to following reasons:

- This uses the concept of future expected cash flows rather than ambiguous term of profit.
- In takes in to accent time value of money.
- It also takes care of risk factors associated with project as the discount rate used for calculating present value is generally a risk adjusted discount rate.
- It is consistent with the objective of maximizing owner's welfare.

Equity shares of a company are traded in stock market and stock market quotation of a share serves as an index of performance of the company. The wealth of equity share holders in maximized only when market value of equity share of the company is maximized. In this context, the term wealth maximization is redefined as value maximization.

At macro level, a firm has obligation to the society which is fulfilled by maximizing production of goods and services at least cost, thereby maximizing wealth of society.

PROFIT MAXIMIZATION Vs WEALTH MAXIMIZATION

S.NO.	PROFITMAXIMIZATION	WEALTH MAXIMIZATION
1)	Profitsareearnedmaximized, Sothatfirmcan over-come future riskswhich are uncertain.	Wealth is maximized, so that wealth of share-holders can be maximized.
2)	Profitmaximizationis ayards Stickforcalculatingefficiency Andeconomicprosperity of the concern.	InwealthMaximizationstockholders current wealthisevaluated in order to maximizethe value of shares in the market.
3)	Profit is measured in terms of efficiency of the firm.	Wealth is measured in terms of Market price of shares.
4)	Profit maximization Involves problem of	Wealth maximization involves problems related to

	uncertainty because profits			Maximizing		shareholder's
	are uncertain.			wealth or wealth of the firm		

Conclusion

Financial management is primarily concerned with the optimal use of finance - the most notable scarce resource in modern societies. Financial management decisions can be grouped into four broad categories namely, investment decision, capital structure decision, working capital decision and dividend policy decision. All these decisions aim at maximizing the return and minimizing the risk. To ensure this, each of the above decisions is related to the objectives of financial management, viz., maximization of the wealth of the owners in private sector corporate enterprises.

Question

1. Explain the objectives of financial management
2. Difference between profit maximization Vs wealth maximization

Lesson – 4

FUNCTIONS OF FINANCIAL MANAGER

Introduction

The role of the financial manager, particularly in business, is changing in response to technological advances that have significantly reduced the amount of time it takes to produce financial reports. Financial managers now perform more data analysis and use it to offer senior managers ideas on how to maximize profits. They often work on teams, acting as business advisors to top management. Financial managers need to keep abreast of the latest computer technology in order to increase the efficiency of their firm's financial operations.

FUNCTIONS OF FINANCIAL MANAGER

A financial manager of a large organization has a very crucial responsibility to shoulder as he has to take all decision about raising & utilization of resources have been taken efficiently and at no time resources should remain idle. As the size of organization grows and volume of financial transactions increases, his role and functions assumes greater importance. The key functions of a financial manager can be as follows:

PRIMARY FUNCTIONS

Key management functions

Planning –A financial manager has to make financial planning in the form of short term and long term plans and frame policies relating to sources of finance, investment of funds including capital expenditure and distribution of profit.

Organizing –creating and monitoring properorganizational structure of finance looking to the needs of organization.

Coordination –A financial manager has to coordinate with all other department so that no department suffers for want of funds.

Controlling –A financial manager has to fix/ set standards of performance, compare actual with standards fixed and exercise control on differences. He can apply techniques of budgetary control and for this; he has to develop a system of collecting/ processing/analyzing information.

Functions relating to finance:

Acquisition/raising of funds –He has to ensure adequate quantum of funds from right source, right cost, right time, right form and at minimum cost.

Allocation/ investment of funds –In fixed assets(long term assets) through appropriate techniques of capital investment as well as allocation of funds in current assets like cash, receivables, inventory short term investment keeping in view liquidity & profitability.

Distribution of income (profit) –In the form ofdividend (dividenddecision) and retained earnings for growth and development of business.

Subsidiary functions: Besides core functions as above, a financial manager has to perform following equally important functions such as:

Maintaining liquidity –Adequate liquidity need to be maintained for paying obligations in time as well as meeting day to day expenses and for this, he has to keep close eyes on cash in-flows, cash out flows. Hence cash budget and cash for-casting becomes his important function.

Profitability – For ensuring adequate profit andmaximizing share holders wealth a financial manager has to look in to:

- Profit planning
- Price fixation of goods & services
- Cost of funds/capital
- Cost control

Evaluation of financial performance & reporting –AFinancial manager has to periodically review financial performance against set standards, take corrective measures as well as report performance to the board & management for facilitating timely decisions pertaining to finance at top level.

Upkeep of records and other routine functions –Afinancial manager has to look in to following aspects:

- supervision of cash receipts
- safe custody of valuables & securities
- maintenance of account
- internal audit
- compliance of govt. regulations

FUNCTIONS OF MODERN AGE FINANCIAL MANAGER

Achieving corporate goals

Goals of different departments have to be achieved to increased market share of company's products.

Financial projections / fore casting

For next 5-10years consisting of cost & revenues for coming long term period keeping in view companies long term plans.

Corporate Governance

For image building in theeyes of all stake holders of the company, transparency in systems procedure and adherence of laws as well as rules & regulations.

Merger and acquisitions initiative

- For including new product lines
- Technological tie-up/ collaboration with foreign firms
- Financial restructuring for increasing profitability
- Tie-up arrangements for greater penetration in new markets in the country & abroad.

Risk management

- Preparing strategies forcombating risks arising out ofinternal &external factors.
- A Financial manager has to keep close eyes on risk factors as a result of policy changes not only in the country but also due to developments taking place in foreign countries. This has become important due to globalization effect.

Financial engineering

A Financial manager has to keep himselfabreast with new techniques of financial analysis and new financial instruments coming in market. In financial engineering, a financial manager has to work on finding out solutions to the problem through complex mathematical models and high speed computer solutions.

NATURE OF FINANCE FUNCTION

The finance function is the process of acquiring and utilizing funds of a business. Finance functions are related to overall management of an organization. Finance function is concerned with the policy decisions such as line of business, size of firm, type of equipment used, use of debt, liquidity

position. These policy decisions determine the size of the profitability and riskiness of the business of the firm. Prof. K.M.Upadhyay has outlined the nature of finance function as follows:

- In most of the organizations, financial operations are centralized. This results in economies.Finance functions are performed in all business firms, irrespective of their sizes /legal forms of organization.
- They contribute to the survival and growth of the firm.
- Finance function is primarily involved with the data analysis for use in decision making.
- Finance functions are concerned with the basic business activities of a firm, in addition to external environmental factors which affect basic business activities, namely, production and marketing.
- Finance functions comprise control functions also
- The central focus of finance function is valuation of the firm.
- Finance is something different from Accounting as well as Economics but it uses information of accounting for making effective decisions. Accounting deals with recording, reporting and evaluating the business transactions, whereas Finance is termed as managerial or decision making process.
- Economics deals with evaluating the allocation of resources in economy and also related to costs and profits, demand and supply and production and consumption. Economics also consider those transactions which involve goods and services either in return of cash or not.

Economics is easy to understand when divided into two parts.

Micro Economics:

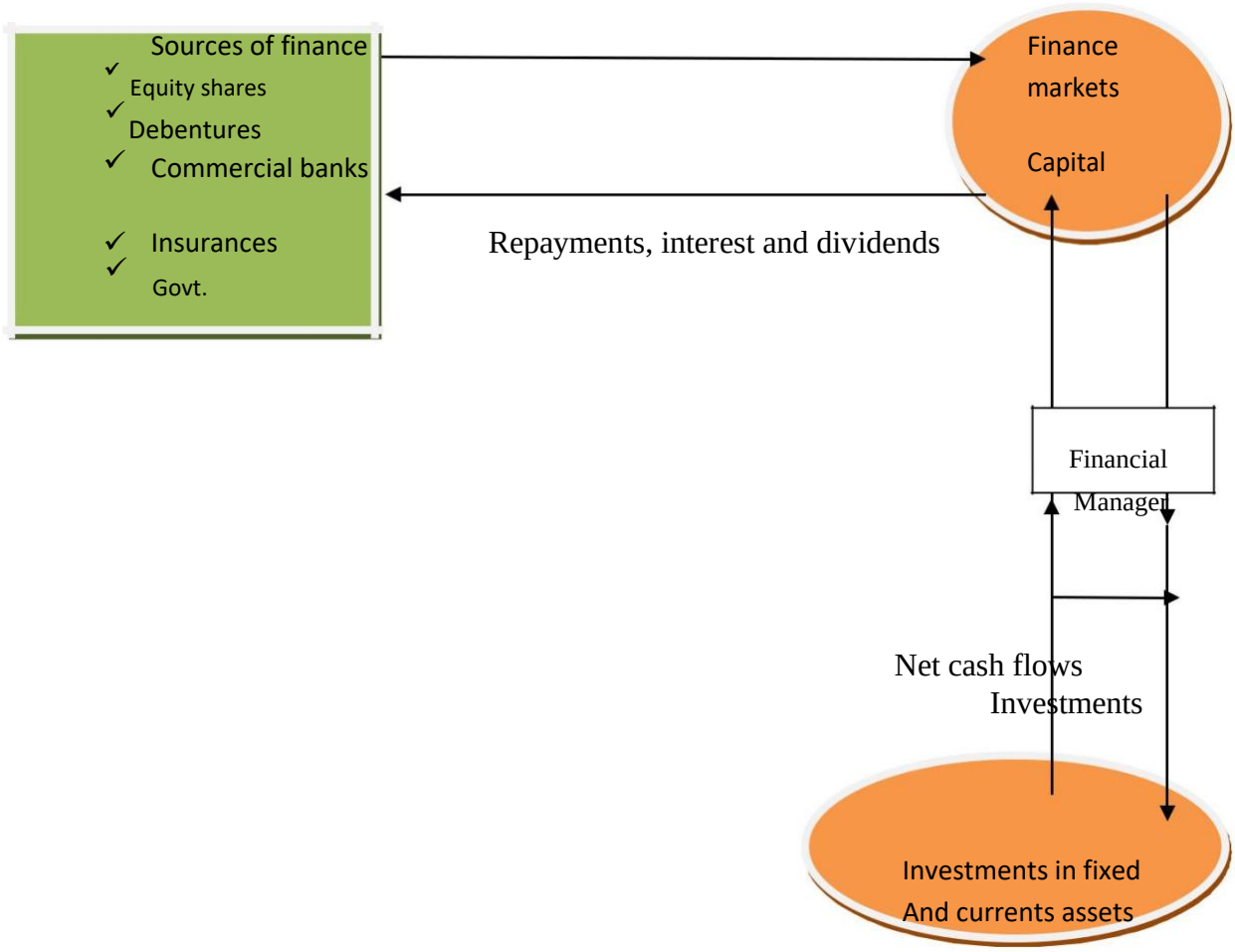
It is also known as price theory or theory of the firm. Micro economics explains the behavior of rational persons in making decisions related to pricing and production.

Macro Economics:

Macro Economics is a broad concept as it takes into consideration overall economic situation of a nation. It uses gross national product (GNP) and useful in forecasting. In order to manage problems related to money principles developed by financial managers, economics, accounting are used.

Hence, finance makes use of economic tools. From Micro economics it uses theories and assumptions. From Macro economics it uses forecasting models. Even though finance is concerned with individual firm and economics is concerned with forecasting of an industry.

OVERVIEW OF INDIAN FINANCIAL SYSTEM



Due to recent trends in business environment, financial managers are identifying new ways through which finance function can generate great value to their organization.

Current Business Environment: The progress in financial analytics is because ofdevelopment of new business models, trends in role of traditional finance department, alternations in business processes and progress in technology. Finance function in this vital environment emerged with enormous opportunities and challenges.

New Business Model: At the time when internet was introduced, three new e-business models have evolved. They are business-to-business (B2B), business-to- customer (B2C) and business-to-

employees (B2E) future of financial analytics can be improved with the help of this new model of business.

Traditionally, financial analytical is emphasizing on utilization of tangible assets like cash, machinery etc, whereas some companies are mainly focused on intangible assets which are not easy to evaluate and control. Hence financial analytics solved this problem by:

- Recognizing the complete performance of organization.
- Determining the source through which value of intangible assets can be evaluated and increased.
- Predict the trends in market.
- The abilities of information system are encouraged.
- Minimizes the operating costs and enterprise-wide investments are effectively controlled and upgrade the business processes.

Changing Role of the Finance Department: The role of finance function has been changing simultaneously with the changes in economy. These changes are mainly due to Enterprise Resource Planning (ERP), shared services and alternations in its reporting role.

- In the field of transaction processing, the role of financial staff has been widened up because of automated financial transactions. Now financial executives are not just processing and balancing transactions but they are focusing on decision-making processes.
- International organizations are facilitating their customers by providing financial information and facility to update both finance and non-finance functions from any place around the world. It resulted in the department of decision support in the organization.
- Finance professionals are held responsible for supplying suitable analytical tools and methods to decision makers.

Business Processes: With the evolution of business processes, queriesregarding business are becoming more complicated. In order to solve, it requires analytics with high level of data integration and organizational collaboration. In the last few decades, organizations are replacing function based legacy systems with new methods like ERP, BRP etc., in order to get accurate and consistent financial and non-financial information.In 1990's organizations were applying some modern systems like supply chain management, Customer Relationship Management (CRM) and

many others to encourage their transactions. Overall organizations were building strong relations with customers.

Technology: With the developments in technology, ERP, internet, data warehousinghave also improved. Internet helps in increasing the sources of acquiring financial data, whereas ERP vendors are building their own financial analytics which helps I n evaluating the performance, planning and estimating, management and statutory reporting and financial consolidation.Till now, data warehousing solutions used to emphasize on developing elements of analytical infrastructure such as data stores, data marts and reporting applications but in future these data ware housings provide advances analytical abilities to data stores.

Integrated Analytics: To survive in this competitive environment, organizationsmust have advanced level of integrated financial analytics. Integrated financial analytics are useful for organizations to evaluate, combine and share information inside and outside the organization.Hence, with the progress in role of finance function, the financial analytics are used in organizations effectively.

Conclusion

In exploring how managers in health care encounter and apply management knowledge, our study has focused on three main aspects: management and leadership in the health-care context, knowledge, knowledge mobilization and learning processes, and NoPs and CoPs. In this final chapter, we summaries our main conclusions in each of these areas, preceding this with a consideration of the effects of organizational and managerial diversity, before turning to assess the limitations and implications for future research and, finally, drawing out the recommendations from our study.

Questions

1. State the functions of finance manager
2. Explain the functions of modern financial manager.
3. State the nature of finance function.
4. Briefly explain the overview of Indian financial system.

UNIT - II

Lesson – 5

TIME VALUE OF MONEY

Introduction

The time value of money describes the greater benefit of receiving money now rather than later. It is founded on time preference.

The principle of the time value of money explains why interest is paid or earned: Interest, whether it is on a bank deposit or debt, compensates the depositor or lender for the time value of money.

It also underlies investment. Investors are willing to forgo spending their money now if they expect a favorable return on their investment in the future.

Meaning

The time value of money is one of the basic theories of financial management. The theory of states that the value of money you have now is greater than a reliable promise to receive the same amount of money at a future date. This may sound simple, but it underpins the concept of interest, and can be used to compare investments, such as loans, bonds, mortgages, leases and savings.

Uses

Calculations involving the time value of money allow people to find and compare the value of future payments. To do this, five figures come into play: interest rate, number of periods or number of times interest or dividend payments are made, payments, present value and future value.

There are always five variables of Time value of money

Every time value of money problem has five variables. Present value(PV), Future value (FV), Number of periods (N), interest rate (i), and a payment amount (PMT). In many cases, one of these variables will be equal to zero, so the problem will effectively have only four variables.

Future Value

The time value of money tells us what the present value of an investment will grow to by a given date. This is its future value. The difference between the present value and the future value depends on how many compounding periods are involved in the investment, and on the interest rate. Future value calculations can tell you how much money you will have in three years if you put Rs.15,000 in a savings account today that pays 5 percent interest compounded annually.

Certain Payments

When investors buy bonds or pay money into an interest bearing account, they are exchanging that money for a promise of more money on a certain date. The theory of the time value of money allows investors to use a mathematical formula, called risk free rate of return, to calculate today's value of that future money, and decide whether it is worth investing.

Uncertain Payments

Some types of investments do not guarantee a payout after a certain period of time. If a future payment is not guaranteed, you must adjust its value based on the risk involved, as well as the time value.

SIGNIFICANCE OF THE CONCEPT OF TIME VALUE OF MONEY

Time value of money is a widely used concept in literature of finance. Financial decision models based on finance theories basically deal with maximization of economic welfare of shareholders. The concept of time value of money contributes to this aspect to a greater extent. The significance of the concept of time value of money could be stated as below:

Investment Decision

Investment decision is concerned with the allocation of capital into long-term investment projects. The cash flow from long-term investment occurs at different point in time in the future. They are not comparable to each other and against the cost of the project spent at present. To make them comparable, the future cash flows are discounted back to present value.

The concept of time value of money is useful to securities investors. They use valuation models while making investment in securities such as stock and bonds. These security valuation models consider time value of cash flows from securities.

Financing Decision

Financing decision is concerned with designing optimum capital structure and raising funds from least cost sources. The concept of time value of money is equally useful in financing decision, especially when we deal with comparing the cost of different sources of financing. The effective rate of interest of each source of financing is calculated based on time value of money concept. Similarly, in leasing versus buying decision, we calculate the present value of cost of leasing and

cost of buying. The present value of costs of two alternatives are compared against each other to decide on appropriate source of financing.

TIME VALUE MONEY

Compound value of Lumpsum

1. Mr. John deposits Rs. 50,000 for 3 years at 10%. What is the compound value of his deposits?

Principal Investment	50000
Interest 1 year at 10%	5000
	45000
II year at 10%	4500
	40500
IIIyear at 10%	4050
	36450

Formula Method

Fv $=P(1+i)^n$

$=50000(1+10)^3$

$= 50000(1.331)$

$= 66550$

2. **Doubling Period**

i) Rule of 72 = 72/Rate of interest If interest is 12%

ii) Rule of 69 = 0.35+69/Rate of interest If interest is 18%

72/12=6 years

0.35+69/18

If interest rate 10% = 0.35+69/10 = 7.25

If interest rate 12% = 0.35+69/12 = 6.10

3. **Present value of series of payment**

Calculate the present value of cash flow

Year	1	2	3
Expected cash flow	1000	2000	3000

Interest rate = 10%

Formula Method

Pv $= F_1/(1+i)^1 + F_2/(1+i)^2 + \ldots\ldots\ldots\ldots F_n/(1+i)^n$

Pv $= 1000/(1+10)^1 + 2000/(1+10)^2 + 3000/(1+10)^3$

Pv $= 1000/1.1 + 2000/1.21 + 3000/1.331$

Pv $= 909+1653+2254 = 4816$

4. **Multiple compounding**

Calculate compound value of Rs. 10,000 at the end of 3 years. 12% rate of interest. When interest is calculate (a) yearly basis (b) Quarterly basis

$Vn = Vo(1+i/m)^{m*n}$

a). Vo = 10000, i = 0.12, m = 1, n = 3

$Vn = 10000\ (1+0.12/1)^{1*3}$

Vn= 10000 X 1.405

Vn = Rs. 14,050

b) m = 4

$Vn = 10000\ (1+0.12/4)^{4*3}$

Vn= 10000 X 1.426

Vn = Rs. 14,260

5. **Effective rate of interest**

$EIR = (1+i/m)^{m} – 1$

i = normal interest rate

m = frequency of compounding year

A company offers 12% rate of interest on deposits. What is the effective rate of interest. If the compounding is done (i) half yearly (ii) quarter yearly (iii) monthly

a). half yearly m = 2 , i = 0.12

$EIR = (1+0.12/2)^{2} – 1$

$= (1+ 0.06)^{2} – 1$

= 1.1236-1

EIR = 0.1236 (or) 12.36%

b). Quarter yearly basis m = 4

$EIR = (1+0.12/4)^{4} – 1$

$= (1+ 0.03)^{4} – 1$

= 1.126-1

EIR = 0.126 (or) 12.6%

C). Monthly basis m = 12

$EIR = (1+0.12/12)^{12} – 1$

$= (1+ 0.01)^{12} – 1$

= 1.127-1

EIR = 0.127 (or) 12.7%

INSTRUMENTS OF LONG TERM & SHORT TERM FINANCING

Financing is a very important part of every business. Firms often need financing to pay for their assets, equipment, and other important items. Financing can be either long-term or short-term. As is obvious, long-term financing is more expensive as compared to short-term financing.

There are different vehicles through which long-term and short-term financing is made available. This chapter deals with the major vehicles of both types of financing.

The common sources of financing are capital that is generated by the firm itself and sometimes, it is capital from external funders, which is usually obtained after issuance of new debt and equity.

A firm's management is responsible for matching the long-term or short-term financing mix. This mix is applicable to the assets that are to be financed as closely as possible, regarding timing and cash flows.

I. Long-Term Financing

Long-term financing is usually needed for acquiring new equipment, R&D, cash flow enhancement, and company expansion. Some of the major methods for long-term financing are discussed below.

1. Equity Financing

Equity financing includes preferred stocks and common stocks. This method is less risky in respect to cash flow commitments. However, equity financing often results in dissolution of share ownership and it also decreases earnings.

The cost associated with equity is generally higher than the cost associated with debt, which is again a deductible expense. Therefore, equity financing can also result in an enhanced hurdle rate that may cancel any reduction in the cash flow risk.

2. Corporate Bond

A corporate bond is a special kind of bond issued by any corporation to collect money effectively in an aim to expand its business. This tern is usually used for long-term debt instruments that generally have a maturity date after one year after their issue date at the minimum.

Some corporate bonds may have an associated call option that permits the issuer to redeem it before it reaches the maturity. All other types of bonds that are known as convertible bonds that offer investors the option to convert the bond to equity.

3. Capital Notes

Capital notes are a type of convertible security that are exercisable into shares. They are one type of equity vehicle. Capital notes resemble warrants, except the fact that they usually don't have the expiry date or an exercise price. That is why the entire consideration the company aims to receive, for the future issuance of the shares, is generally paid at the time of issuance of capital notes.

Many times, capital notes are issued with a debt-for-equity swap restructuring. Instead of offering the shares (that replace debt) in the present, the company provides its creditors with convertible securities – the capital notes – and hence the dilution occurs later.

II. Short-Term Financing

Short-term financing with a time duration of up to one year is used to help corporations increase inventory orders, payrolls, and daily supplies. Short-term financing can be done using the following financial instruments −

1. Commercial Paper

Commercial Paper is an unsecured promissory note with a pre-noted maturity time of 1 to 364 days in the global money market. Originally, it is issued by large corporations to raise money to meet the short-term debt obligations.

It is backed by the bank that issues it or by the corporation that promises to pay the face value on maturity. Firms with excellent credit ratings can sell their commercial papers at a good price.

Asset-backed commercial paper (ABCP) is collateralized by other financial assets. ABCP is a very short-term instrument with 1 and 180 days' maturity from issuance. ACBCP is typically issued by a bank or other financial institution.

2. Promissory Note

It is a negotiable instrument where the maker or issuer makes an issue-less promise in writing to pay back a pre-decided sum of money to the payee at a fixed maturity date or on demand of the payee, under specific terms.

3. **Asset-based Loan**

It is a type of loan, which is often short term, and is secured by a company's assets. Real estate, accounts receivable (A/R), inventory and equipment are the most common assets used to back the loan. The given loan is either backed by a single category of assets or by a combination of assets.

4. **Repurchase Agreements**

Repurchase agreements are extremely short-term loans. They usually have a maturity of less than two weeks and most frequently they have a maturity of just one day! Repurchase agreements are arranged by selling securities with an agreement to purchase them back at a fixed cost on a given date.

5. **Letter of Credit**

A financial institution or a similar party issues this document to a seller of goods or services. The seller provides that the issuer will definitely pay the seller for goods or services delivered to a third-party buyer.

The issuer then seeks reimbursement to be met by the buyer or by the buyer's bank. The document is in fact a guarantee offered to the seller that it will be paid on time by the issuer of the letter of credit, even if the buyer fails to pay.

Conclusion

Time value of money concepts are at the core of valuation and other finance and commercial real estate topics. This article provides a solid foundation for understanding time value of money at an intuitive level and it also gives you the tools needed to solve any time value of money problem. The time value of money is required as a basic building block in finance and mastering these concepts will pay dividends for years to come.

Questions:

1. Define Time value of money
2. What are the uses of Time value of money? Explain the variable of Time value of money.
3. State the significance of the concept of Time value of money

4. Calculate the compound value of Rs. 20,000 invested. Now the period of 5 years at the time of preference value of 8%.
5. A deposit Rs. 5,000 to pay at 6% a rate of interest. How many years will be amount double? Work out the problem using Rule 72 and 69?
6. Calculate the compounded value of Rs. 5,000 at the end of 5 years, 8% interest. When the interest is calculated (a) yearly basis (b) half yearly basis (c) quarterly basis.
7. State the long term & short term finance

Lesson – 6

COST OF CAPITAL

Introduction

The cost of capital of a firm is the minimum rate of return expected by its investors. It is the weighted average cost of various sources of finance used by a firm. The capital used by a firm may be in the form of debt, preference capital, retained earnings and equity shares. The concept of cost of capital is very important in the financial management. A decision to invest in a particular project depends upon the cost of capital of the firm or the cut off rate which is the minimum rate of return expected by the investors.

DEFINITIONS

James C.Van Horne defines cost of capital as,"a cut-off rate for the allocation of capital to investments of projects. It is the rate of return on a project that will leave unchanged the market price of the stock.

According to Solomon Ezra, "Cost of capital is the minimum required rate of earning or the cut-off rate of capital expenditures".

Significance of Cost of Capital:

The concept of cost of capital plays a vital role in decision-making process of financial management. The financial leverage, capital structure, dividend policy, working capital management, financial decision, appraisal of financial performance of top management etc. are greatly influenced by the cost of capital.

The significance or importance of cost of capital may be stated in the following ways:

***1*. Maximization of the Value of the Firm:**

For the purpose of maximization of value of the firm, a firm tries to minimize the average cost of capital. There should be judicious mix of debt and equity in the capital structure of a firm so that the business does not to bear undue financial risk.

***2.* Capital Budgeting Decisions:**

Proper estimate of cost of capital is important for a firm in taking capital budgeting decisions. Generally cost of capital is the discount rate used in evaluating the desirability of the investment project. In the internal rate of return method, the project will be accepted if it has a rate of return greater than the cost of capital.

In calculating the net present value of the expected future cash flows from the project, the cost of capital is used as the rate of discounting. Therefore, cost of capital acts as a standard for allocating the firm's investible funds in the most optimum manner. For this reason, cost of capital is also referred to as cut-off rate, target rate, hurdle rate, minimum required rate of return etc.

***3*. Decisions Regarding Leasing:**

Estimation of cost of capital is necessary in taking leasing decisions of business concern.

***4.* Management of Working Capital:**

In management of working capital the cost of capital may be used to calculate the cost of carrying investment in receivables and to evaluate alternative policies regarding receivables. It is also used in inventory management also.

***5*. Dividend Decisions:**

Cost of capital is significant factor in taking dividend decisions. The dividend policy of a firm should be formulated according to the nature of the firm— whether it is a growth firm, normal firm or declining firm. However, the nature of the firm is determined by comparing the internal rate of return (r) and the cost of capital (k) i.e., $r > k$, $r = k$, or $r < k$ which indicate growth firm, normal firm and decline firm, respectively.

6.* Determination of Capital Structure*:

Cost of capital influences the capital structure of a firm. In designing optimum capital structure that is the proportion of debt and equity, due importance is given to the overall or weighted average cost of capital of the firm. The objective of the firm should be to choose such a mix of debt and equity so that the overall cost of capital is minimized.

***7.* Evaluation of Financial Performance:**

The concept of cost of capital can be used to evaluate the financial performance of top management. This can be done by comparing the actual profitability of the investment project undertaken by the firm with the overall cost of capital.

Measurement of Cost of Capital:

Cost of capital is measured for different sources of capital structure of a firm. It includes cost of debenture, cost of loan capital, cost of equity share capital, cost of preference share capital, cost of retained earnings etc.

The measurement of cost of capital of different sources of capital structure is discussed:

***A.* Cost of Debentures:**

The capital structure of a firm normally includes the debt capital. Debt may be in the form of debentures bonds, term loans from financial institutions and banks etc. The amount of interest payable for issuing debenture is considered to be the cost of debenture or debt capital (K_d). Cost

of debt capital is much cheaper than the cost of capital raised from other sources, because interest paid on debt capital is tax deductible.

The cost of debenture is calculated in the following ways:

(i**) When the debentures are issued and redeemable at par: $K_d = r (1 – t)$**

whereK_d = Cost of debenture

r = Fixed interest rate

t = Tax rate

(ii) When the debentures are issued at a premium or discount but redeemable at par

$K_d = I/NP (1 – t)$

where, K_d = Cost of debenture

I = Annual interest payment

t = Tax rate

Np = Net proceeds from the issue of debenture.

(iii) When the debentures are redeemable at a premium or discount and are redeemable after 'n' period:

K_d

$I(1-t)+1/N(R_v – NP) / ½ (R_V – NP)$

whereK_d = Cost of debenture .

I = Annual interest payment

t = Tax rate

NP = Net proceeds from the issue of debentures

Ry = Redeemable value of debenture at the time of maturity

Example 1:

(a) A company issues Rs. 1,00,000, 15% Debentures of Rs. 100 each. The company is in 40% tax bracket. You are required to compute the cost of debt after tax, if debentures are issued at (i) Par, (ii) 10% discount, and (iii) 10% premium.

(b) If brokerage is paid at 5%, what will be the cost of debentures if issue is at par?

(a) We know, Cost of Debenture $K_d = \frac{I}{NP}(1-t)$

(i) Issued at par : $K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 1,00,000}(1 - 0.4) = 0.09$ or 9%.

(ii) Issued at discount of 10%

$K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 90,000}(1 - 0.4) = 0.10$ or 10%

(iii) Issued at 10% premium

$K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 1,10,000}(1 - 0.4) = 0.0818$ or 8.18%.

(b) If brokerage is paid @ 5% and debentures are issued at par

$K_d = \frac{\text{Rs. } 15,000}{\text{Rs. } 95,000 \text{ (i.e., Rs. } 1,00,000 - \text{Rs. } 5,000)}(1 - 0.4) = 0.0947$ or 9.47%.

Example 2:

ZED Ltd. has issued 12% Debentures of face value of Rs. 100 for Rs. 60 lakh. The floating charge of the issue is 5% on face value. The interest is payable annually and the debentures are redeemable at a premium of 10% after 10 years.

What will be the cost of debentures if the tax is 50%?

Solution :

We know, Cost of Debenture $K_d = \frac{I(1-t) + \frac{1}{n}(R-P)}{\frac{1}{2}(R+P)}$

Here, I = Rs. 12, t = 50% or 0.50, P = Rs. 100 – 5 = Rs. 95, n = 10 years.

R = Rs. 100 + 10% of Rs. 100 = Rs. 110.

$K_d = \frac{12(1-0.5)+\frac{1}{10}(110-95)}{\frac{1}{2}(110+95)} = \frac{6+1.5}{102.5} = 0.073 = 7.3\%.$

B. Cost of Preference Share Capital:

For preference shares, the dividend rate can be considered as its cost, since it is this amount which the company wants to pay against the preference shares. Like debentures, the issue expenses or the discount/premium on issue/redemption are also to be taken into account.

(i) The cost of preference shares (K_P) = D_P / NP

Where, D_P = Preference dividend per share

NP = Net proceeds from the issue of preference shares.

(ii) If the preference shares are redeemable after a period of 'n', the cost of preference shares (K_P) will be:

$$K_P = \frac{D_P + \frac{1}{n}(R_V - NP)}{\frac{1}{2}(R_V + NP)}$$

where NP = Net proceeds from the issue of preference shares

R_V = Net amount required for redemption of preference shares

D_P = Annual dividend amount.

There is no tax advantage for cost of preference shares, as its dividend is not allowed deduction from income for income tax purposes. The students should note that both in the case of debt and preference shares, the cost of capital is computed with reference to the obligations incurred and proceeds received. The net proceeds received must be taken into account while computing cost of capital**.**

Example 3:

A company issues 10% Preference shares of the face value of Rs. 100 each. Floatation costs are estimated at 5% of the expected sale price.

What will be the cost of preference share capital (K_P), if preference shares are issued (i) at par, (ii) at 10% premium and (iii) at 5% discount? Ignore dividend tax.

Solution:

We know, cost of preference share capital (K_P) = D_P/P

(i) **When preference shares are issued at par** i.e., at Rs. 100 per share, $K_p = \frac{\text{Rs. } 10}{\text{Rs. } 95} =$ 0.1052 or 10.52%, where, D_p = 10% of Rs. 100 = Rs. 10, P = Rs. 100 – 5% of Rs. 100 = Rs. 95.

(ii) When preference shares are issued at 10% premium (i.e., at Rs. 110 per share)

$K_p = \frac{\text{Rs. } 10}{\text{Rs. } 104.50} = 0.0956$ or 9.56%,

where D_p = 10% of Rs. 100 = Rs. 10. P = Rs. 110 – 5% of Rs. 110 = Rs. 104.50.

(iii) When preference shares are issued at 5% discount (i.e., at Rs. 95 per share)

$K_p = \frac{\text{Rs. } 10}{\text{Rs. } 90.25} = 0.1108$ or 11.08%.

where D_p = 10% of Rs. 100 = Rs. 10, P = Rs. 95 – 5% of Rs. 95 = Rs. 90.25.

Example 4:

Ruby Ltd. issues 12%. Preference Shares of Rs. 100 each at par redeemable after 10 years at 10% premium.

What will be the cost of preference share capital?

Solution :

We know, cost of preference share $(K_P) = \dfrac{D_P + \frac{1}{n}(R - P)}{\frac{1}{2} \times (R + P)}$

Here, D_P = 12% of Rs. 100 = Rs. 12, R = Rs. 110 (at 10% premium)

P = Rs. 100 (at par), n = 10 years.

$$K_P = \frac{Rs.12 + \frac{1}{10}(Rs.110 - Rs.100)}{\frac{1}{2} \times Rs.\ (110 + 100)} = \frac{Rs.\ 12 + Re.\ 1}{Rs.\ 105} = \frac{Rs.\ 13}{Rs.\ 105} = 0.1238 = 12.38\%$$

Example 5:

A company issues 12% redeemable preference shares of Rs. 100 each at 5% premium redeemable after 15 years at 10% premium. If the floatation cost of each share is Rs. 2, what is the value of K_P(Cost of preference share) to the company?

Solution :

$$K_P = \frac{D_P + \frac{1}{n}(R_V - NP)}{\frac{1}{2}(R_V + NP)}$$

Here, D_P = 12% of Rs. 100 = Rs. 12, R_V = Rs. 110 (at a 10% premium)

N_P = Rs. 100 + 5% of Rs. 100 – Rs. 2 = Rs. 103, n = 15 years

$$K_P = \frac{Rs.\ 12 + \frac{1}{15}(110 - 103)}{\frac{1}{2}(110 + 103)} = \frac{Rs.\ (12 + 0.467)}{Rs.\ 106.50} = 11.706\%.$$

C. Cost of Equity or Ordinary Shares:

The funds required for a project may be raised by the issue of equity shares which are of permanent nature. These funds need not be repayable during the lifetime of the organisation. Calculation of the cost of equity shares is complicated because, unlike debt and preference shares, there is no fixed rate of interest or dividend payment.

Cost of equity share is calculated by considering the earnings of the company, market value of the shares, dividend per share and the growth rate of dividend or earnings.

(i) Dividend/Price Ratio Method:

An investors buys equity shares of a particular company as he expects a certain return (i.e. dividend). The expected rate of dividend per share on the current market price per share is the

cost of equity share capital. Thus the cost of equity share capital is computed on the basis of the present value of the expected future stream of dividends.

Thus, the cost of equity share capital (K_e) is measured by:

K_e = where D = Dividend per share

P = Current market price per share.

If dividends are expected to grow at a constant rate of 'g' then cost of equity share capital (K_e) will be $K_e = D/P + g$.

This method is suitable for those entities where growth rate in dividend is relatively stable. But this method ignores the capital appreciation in the value of shares. A company which declares a higher amount of dividend out of given quantum of earnings will be placed at a premium as compared to a company which earns the same amount of profits but utilizes a major part of it in financing its expansion programme.

Example 6:

XY Company's share is currently quoted in market at Rs. 60. It pays a dividend of Rs. 3 per share and investors expect a growth rate of 10% per year.

You are required to calculate:

(i) The company's cost of equity capital.

(ii) The indicated market price per share, if anticipated growth rate is 12%.

(iii) The market price, if the company's cost of equity capital is 12%, anticipated growth rate is 10% p.a., and dividend of Rs. 3 per share is to be maintained.

Solution :

We know, cost of Equity Capital $(K_e) = \frac{D}{P} + g$.

(i) $K_e = \frac{\text{Rs. } 3}{\text{Rs. } 60} + 0.10 = 0.05 + 0.10 = 0.15 \text{ or } 15\%$

(ii) Market Price (P) $= \frac{\text{Dividend (D)}}{\text{Cost of equity capital } (K_e) - \text{Growth rate (g)}}$

$= \frac{\text{Rs. } 3}{15\% - 12\%} = \frac{\text{Rs. } 3}{3\%} = \text{Rs. } 100.$

(iii) Market Price (P) $= \frac{\text{Rs. } 3}{12\% - 10\%} = \frac{\text{Rs. } 3}{2\%} = \text{Rs. } 150.$

Example 7:

The current market price of a share is Rs. 100. The firm needs Rs. 1,00,000 for expansion and the new shares can be sold at only Rs. 95. The expected dividend at the end of the current year is Rs. 4.75 per share with a growth rate of 6%.

Calculate the cost of capital of new equity.

Solution:

We know, cost of Equity Capital (K_e) = D/P + g

(i) When current market price of share (P) = Rs. 100

K = Rs 4.75 / Rs. 100 + 6% = 0.0475 + 0.06 = 0.1075 or 10.75%.

(ii) Cost of new Equity Capital = Rs. 4.75 / Rs. 95 + 6% = 0.11 or, 11%.

Example 8:

A company's share is currently quoted in the market at Rs. 20. The company pays a dividend of Rs. 2 per share and the investors expect a growth rate of 5% per year.

You are required to calculate (a) Cost of equity capital of the company, and (b) the market price per share, if the anticipated growth rate of dividend is 7%.

Solution:

(a) Cost of equity share capital (K_e) = D/P +g = Rs. 2/Rs. 20 + 5% = 15%

(b) K_e = D/P + g

or, 0.15 = Rs. 2 / P + 0.07 or, P = 2/0.08 = Rs. 25.

Example 9:

Green Diesel Ltd. has its equity shares of Rs. 10 each quoted in a stock exchange at a market price of Rs. 28. A constant expected annual growth rate of 6% and a dividend of Rs. 1.80 per share has been paid for the current year.

Calculate the cost of equity share capital.

Solution:

D_0 (1 + g)/ P_0 + g = 1.80 (1 + .06)/ 28 + 0.06

= 0.0681 + 0.06 = 12.81%

(ii) Earnings/Price Ratio Method:

This method takes into consideration the earnings per share (EPS) and the market price of share. Thus, the cost of equity share capital will be based upon the expected rate of earnings of a company. The argument is that each investor expects a certain amount of earnings whether distributed or not, from the company in whose shares he invests.

If the earnings are not distributed as dividends, it is kept in the retained earnings and it causes future growth in the earnings of the company as well as the increase in market price of the share.

Thus, the cost of equity capital (K_e) is measured by:

K_e = E/P where E = Current earnings per share

P = Market price per share.

If the future earnings per share will grow at a constant rate 'g' then cost of equity share capital (K_e) will be

K_e = E/P+ g.

This method is similar to dividend/price method. But it ignores the factor of capital appreciation or depreciation in the market value of shares. Adjustment of Floatation Cost There are costs of floating shares in market and include brokerage, underwriting commission etc. paid to brokers, underwriters etc.

These costs are to be adjusted with the current market price of the share at the time of computing cost of equity share capital since the full market value per share cannot be realised. So the market price per share will be adjusted by (1 – f) where 'f' stands for the rate of floatation cost.

Thus, using the Earnings growth model the cost of equity share capital will be:

K_e = E / P (1 – f) + g

Example 10:

The share capital of a company is represented by 10,000 Equity Shares of Rs. 10 each, fully paid. The current market price of the share is Rs. 40. Earnings available to the equity shareholders amount to Rs. 60,000 at the end of a period.

Calculate the cost of equity share capital using Earning/Price ratio.

Solution :

We know, Cost of Equity Capital = $\frac{E}{P}$

E = Earnings per share = $\frac{\text{Rs. } 60{,}000}{10{,}000}$ = Rs. 6.

P = Current market price = Rs. 40.

Cost of Equity Capital (K_e) = $\frac{\text{Rs. } 6}{\text{Rs. } 40}$ = 0.15% or 15%.

Example 11:

A company plans to issue 10,000 new Equity Shares of Rs. 10 each to raise additional capital. The cost of floatation is expected to be 5%. Its current market price per share is Rs. 40.

If the earnings per share is Rs. 7.25, find out the cost of new equity.

Solution :

Let K_e be the cost of New Equity.

$$K_e = \frac{E}{P(1-f)} \qquad \text{where } E = \text{Rs. } 7.25$$

$$= \frac{7.25}{40(1-0.05)} \qquad P = \text{Rs. } 40$$

$$= \frac{7.25}{38} = 0.1907 \text{ or } 19.07\% \qquad f = 5\% = .05.$$

D. Cost of Retained Earnings:

The profits retained by a company for using in the expansion of the business also entail cost. When earnings are retained in the business, shareholders are forced to forego dividends. The dividends forgone by the equity shareholders are, in fact, an opportunity cost. Thus retained earnings involve opportunity cost.

If earnings are not retained they are passed on to the equity shareholders who, in turn, invest the same in new equity shares and earn a return on it. In such a case, the cost of retained earnings (K_r) would be adjusted by the personal tax rate and applicable brokerage, commission etc. if any.

Therefore, $K_r = K_e (1-t)(1-f)$, where $K_e = \frac{D}{P} + g$

t = Shareholders personal tax rate.

f = rate of floatation cost.

Many accountants consider the cost of retained earnings as the same as that of the cost of equity share capital. However, if the cost of equity share capital i9 computed on the basis of dividend growth model (i.e., D/P + g), a separate cost of retained earnings need not be computed since the cost of retained earnings is automatically included in the cost of equity share capital.

Therefore, $K_r = K_e = D/P + g$.

Example 12:

It is given that the cost of equity of a company is 20%, marginal tax rate of the shareholders is 30% and the Broker's Commission is 2% of the investment in share. The company proposes to utilize its retained earnings to the extent of Rs. 6,00,000.

Find out the cost of retained earnings.

Solution :

We know that cost of retained earnings

$K_r = K_e(1 - t)(1 - f)$ Here $K_e = 20\% = 0.20$

or $K_r = 0.20(1 - 0.30)(1 - 0.02)$ $t = 30\% = 0.30$

$= 0.1372$ or, 13.72%. $f = 2\% = 0.02$.

E. Overall or Weighted Average Cost of Capital:

A firm may procure long-term funds from various sources like equity share capital, preference share capital, debentures, term loans, retained earnings etc. at different costs depending on the risk perceived by the investors.

When all these costs of different forms of long-term funds are weighted by their relative proportions to get overall cost of capital it is termed as weighted average cost of capital. It is also known as composite cost of capital. While taking financial decisions, the weighted or composite cost of capital is considered.

The weighted average cost of capital is used by an enterprise because of the following reasons:

(i) It is useful in taking capital budgeting/investment decisions.

(ii) It recognizes the various sources of finance from which the investment proposal derives its life-blood (i.e., finance).

(iii) It indicates an optimum combination of various sources of finance for the enhancement of the market value of the firm.

(iv) It provides a basis for comparison among projects as a standard or cut-off rate.

I. Computation of Weighted Average Cost of Capital:

Computation of Weighted Average cost of capital is made in the following ways:

(i) The specific cost of each source of funds (i.e., cost of equity, preference shares, debts, retained earnings etc.) is to be calculated.

(ii) Weights (i.e., proportion of each, source of fund in the capital structure) are to be computed and assigned to each type of funds. This implies multiplication of each source of capital by appropriate weights.

Generally, the-following weights are assigned:

(a) Book values of various sources of funds

(b) Market values of various sources of capital

(c) Marginal book values of various sources of capital.

Book values of weights are based on the values reflected by the balance sheet of a concern, prepared under historical basis and ignoring price level changes. Most of the financial analysts prefer to use market value as the weights to calculate the weighted average cost of capital as it reflects the current cost of capital.

But the determination of market value involves some difficulties for which the measurement of cost of capital becomes very difficult.

(iii) Add all the weighted component costs to obtain the firm's weighted average cost of capital.

Therefore, weighted average cost of capital (K_o) is to be calculated by using the following formula:

$K_o = K_1w_1 + K_2w_2 + \ldots\ldots\ldots\ldots$

where K_1, K_2 …….. are component costs and W_1, W_2 …….. are weights.

Example 13:

Jamuna Ltd has the following capital structure and, after tax, costs for the different sources of fund used:

Source	Amount (Rs.)	After-tax Cost
Equity share capital	6,00,000	13%
Preference share capital	3,00,000	8%
Debentures	2,40,000	5%
Retained earnings	60,000	9%

You are required to calculate the Weighted Average Cost of Capital.

Solution :

Computation of Weighted Average Cost of Capital

Source (1)	Amount Rs. (2)	Proportion (3)	After-tax Cost (4)	Weighted Cost (5) = (3) × (4)
Equity share capital	6,00,000	0.50	0.13	0.065
Preference share capital	3,00,000	0.25	0.08	0.02
Debentures	2,40,000	0.20	0..05	0.01
Retained earnings	60,000	0.05	0.09	0.0045
	12,00,000	1.00		0.0995

∴ Weighted Average Cost of Capital (K_o) = 0.0995 × 100 = 9.95%.

Example 14:

Excel Ltd. has assets of Rs. 1,60,000 which have been financed with Rs. 52,000 of debt and Rs. 90,000 of equity and a general reserve of Rs. 18,000. The firm's total profits after interest and taxes for the year ended 31st March 2006 were Rs. 13,500. It pays 8% interest on borrowed

funds and is in the 50% tax bracket. It has 900 equity shares of Rs. 100 each selling at a market price of Rs. 120 per share.

What is the Weighted Average Cost of Capital?

Solution :

(1) Earnings per Share = $\frac{\text{Earnings after interest and taxes}}{\text{Number of Equity Shares}} = \frac{13,500}{900}$ = Rs. 15.

(2) Computation of specific cost of each source :

(i) Cost of Debt (K_d) = r(1 – t) = 8% (1 – 0.5) = 4%

(ii) Cost of Equity (K_e) = $\frac{EPS}{P} = \frac{\text{Rs. 15}}{\text{Rs. 120}}$ = 0.125 or 12.5%.

(iii) Cost of retained earnings (K_r) is equivalent to cost of equity (K_e) i.e., 12.5%.

Statement Showing the Weighted Average Cost of Capital

Source (1)	Amount (Rs.) (2)	Proportion (3)	After-tax Cost (4)	Weighted Cost (5) = (3) × (4)
Equity share capital	90,000	0.5625	0.125	0.070
Reserves	18,000	0.1125	0.125	0.014
Debt	52,000	0.325	0.04	0.013
	1,60,000	1.00		0.097

∴ Weighted Average Cost of Capital (K_o) = 0.097 × 100 = 9.7%.

Example 15:

RIL Ltd. opts for the following capital structure:

Equity Shares (1,00,000 shares)	50,00,000
1.5% Debentures	50,00,000
Total	1,00,00,000

The company is expected to declare a dividend of Rs. 5 per share. The market price per share is Rs. 50. The dividend is expected to grow at 10%.

Compute weighted average cost of capital of RIL Ltd. assuming 50% tax rate.

[C.U. B.Com. (Hons.) 2008]

Solution :

Computation of specific cost of each source :

(i) Cost of Debenture (K_d) = r (1 – t) = 15% (1 – 0.5) = 7.5%

(ii) Cost of Equity share (K_e) = $\frac{D}{P} + g = \frac{\text{Rs. 5}}{\text{Rs. 50}}$ + 10% = 20%

Statement Showing Weighted Average Cost of Capital

Source (1)	Amount (Rs.) (2)	Proportion (3)	After-tax Cost (4)	Weighted Cost (5) = (3) × (4)
Equity share capital	50,00,000	0.50	0.20	0.1000
Debentures	50,00,000	0.50	0.075	0.0375
	10,00,000	1.00		0.1375

∴ Weighted Average Cost of Capital (K_o) = 0.1375 × 100 = 13.75%

Example 16:

In considering the most desirable capital structure for a company, the following estimates of the cost Debt and Equity Capital (after tax) have been made at various levels of debt-equity mix:

Debt as percentage of total capital employed	Cost of debt %	Cost of equity %
0	5.0	12.00
10	5.0	12.00
20	5.0	12.50
30	5.50	13.0
40	6.0	14.0
50	6.50	16.0
60	7.0	20.0

You are required to determine the optimum debt-equity mix for the company by calculating composite cost of capital.

Solution :

Computation of Composite Cost of Capital

Proportion of Debt	Cost of Debt	Weighted Cost of Debt	Proportion of Equity	Cost of Equity	Weighted Cost of Equity	Composite Cost of Capital (%)
(1)	(2)	(3) = (1) × (2)	(4) = 1 – (1)	(5)	(6) = (4) × (5)	(7) = (3) + (6)
0.0	5	0	1	12.0	12.0	12.0
0.1	5	0.5	0.9	12.0	10.8	11.3
0.2	5	1.0	0.8	12.50	10.0	11.0
0.3	5.5	1.65	0.7	13.0	9.1	10.75
0.4	6.0	2.4	0.6	14.0	8.4	10.80
0.5	6.5	3.25	0.5	16.0	8.0	11.25
0.6	7.0	4.20	0.4	20.0	8.0	12.20

Optimal debt-equity mix for the company is at the point where the composite cost of capital is minimum. Hence, the composite cost of capital is minimum (10.75%) at the debt-equity mix of 3: 7 (i.e., 30% debt and 70% equity). Therefore, 30% of debt and 70% equity mix would be an optimal debt-equity mix for the company.

Conclusion

All businesses and investment projects need capital to operate. However, financial capital — the money tied up in the business, is not free. A project's cost of capital is the minimum expected rate of return the project needs to offer investors to attract money. Simply put, the cost of capital is the expected rate of return the market requires to commit capital to an investment. Thus, the cost of financial capital to a firm is the return the firm's investors (debt and equity holders) receive from lending their savings to be used by the firm's portfolio of investment projects.

Questions:

1. Define cost of capital
2. State the significance of cost of capital
3. What is meant by preference share capital
4. What is cost of equity capital
5. What is meant by dividend price ratio?
6. Write the formulae of earning price ratio
7. What is retained earnings
8. What is weighted average capital? And what are the reasons for using an enterprises of weighted average capital
9. A company issues 10% irredeemable debenture of Rs. 1,00,000. The com., 55% tax bracket. Calculate to Cost of debt. Before tax . If the debenture issued (i) at par (ii) 10% discount (iii) 10% premium.
10. The firms issues debenture of Rs. 1,00,000 at a realize Rs. 98,000. After allowing 2% commissions to brokers. The debentures carry out interest rate of 10%. The debentures are due for maturity at the end of the 10 years. You are require to calculate the effective cost of debt. Before tax.
11. A co., issues preference share capital of Rs. 1,00,000 by issue of 10% preference share of Rs. 100 each. Calculate cost of preference capital. When they are issued at (i) 10% premium and (ii)10% discount.
12. A co., has 10% redeemable preference share of Rs. 1,00,000 at the end of the 10^{th} year of their issue. The under writing cost came to 2%. Calculate the effective cost of preference share capital.

13. The current market price if an equity share of A ltd is Rs. 95. The flotation cost are Rs. 5 per. Share. Dividend P.s. amounts to Rs. 4.50 and is expected to grow at a rate of 7%. You are require to calculate the cost of equity share capital.
14. The firm is Ke(return available to share holder) is 15%. The average tax rate of share holders is 40% and it is expected that 2% is brokerage cost that share holders will have to pay while investing them dividends in alternative security. What is the cost of retained earnings.
15. From the following capital structure of a company calculate the over all cost of capital using (a) book value weights and (b) market value weight.

Sources	Book Value	Market value
Equity share (10p.s)	45,000	90,000
Retained earnings	15,000	-
Preference share capital	10,000	10,000
Debentures	30,000	30,000

The after tax cost of different shares of finance is as follows:

Equity share capital 14%, Retained earnings 13%, preference capital 10% and Debenture 5%.

Lesson – 7

EBIT – EPS ANALYSIS

Introduction

EBIT-EPS analysis gives a scientific basis for comparison among various financial plans and shows ways to maximize EPS. Hence EBIT-EPS analysis may be defined as 'a tool of financial planning that evaluates various alternatives of financing a project under varying levels of EBIT and suggests the best alternative having highest EPS and determines the most profitable level of EBIT'.

Concept of EBIT-EPS Analysis:

The EBIT-EBT analysis is the method that studies the leverage, i.e. comparing alternative methods of financing at different levels of EBIT. Simply put, EBIT-EPS analysis examines the effect of financial leverage on the EPS with varying levels of EBIT or under alternative financial plans.

Advantages of EBIT-EPS Analysis:

We have seen that EBIT-EPS analysis examines the effect of financial leverage on the behavior of EPS under various financing plans with varying levels of EBIT. It helps a firm in determining optimum financial planning having highest EPS.

Various advantages derived from EBIT-EPS analysis may be enumerated below:

Financial Planning:

Use of EBIT-EPS analysis is indispensable for determining sources of funds. In case of financial planning the objective of the firm lies in maximizing EPS. EBIT-EPS analysis evaluates the alternatives and finds the level of EBIT that maximizes EPS.

Comparative Analysis:

EBIT-EPS analysis is useful in evaluating the relative efficiency of departments, product lines and markets. It identifies the EBIT earned by these different departments, product lines and from various markets, which helps financial planners rank them according to profitability and also assess the risk associated with each.

Performance Evaluation:

This analysis is useful in comparative evaluation of performances of various sources of funds. It evaluates whether a fund obtained from a source is used in a project that produces a rate of return higher than its cost.

Determining Optimum Mix:

EBIT-EPS analysis is advantageous in selecting the optimum mix of debt and equity. By emphasizing on the relative value of EPS, this analysis determines the optimum mix of debt and equity in the capital structure. It helps determine the alternative that gives the highest value of EPS as the most profitable financing plan or the most profitable level of EBIT as the case may be.

Limitations of EBIT-EPS Analysis:

Finance managers are very much interested in knowing the sensitivity of the earnings per share with the changes in EBIT; this is clearly available with the help of EBIT-EPS analysis but this technique also suffers from certain limitations, as described below

No Consideration for Risk:

Leverage increases the level of risk, but this technique ignores the risk factor. When a corporation, on its borrowed capital, earns more than the interest it has to pay on debt, any financial planning can be accepted irrespective of risk. But in times of poor business the reverse of this situation arises—which attracts high degree of risk. This aspect is not dealt in EBIT-EPS analysis.

Contradictory Results:

It gives a contradictory result where under different alternative financing plans new equity shares are not taken into consideration. Even the comparison becomes difficult if the number of alternatives increase and sometimes it also gives erroneous result under such situation.

Over-capitalization:

This analysis cannot determine the state of over-capitalization of a firm. Beyond a certain point, additional capital cannot be employed to produce a return in excess of the payments that must be made for its use. But this aspect is ignored in EBIT-EPS analysis.

Problem (1). Ankim Ltd., has an EBIT of Rs 3, 20,000. Its capital structure is given as under:

	Rs
Equity Share Capital of Rs 10 each	4,00,000
13% Preference Share Capital	1,00,000
9% Debentures	2,00,000

The company is in the tax bracket of 50%.

You are required to calculate the Earning Per Share.

Solution: Computation for EPS

	Rs
EBIT	3,20,000
Less: Interest $\left(2,00,000 \times \frac{9}{100}\right)$	18,000
EBT	3,02,000
Less: Tax @ 50%	1,51,000
EAT	1,51,000
Less: Preference Dividend $\left(1,00,000 \times \frac{13}{100}\right)$	13,000
Earnings available to equity shareholders	1,38,000

Number of equity shares = 40,000

$$\therefore \quad \text{Earnings per share} = \frac{\text{Earnings available to equity shareholders}}{\text{Number of equity shares}}$$

$$= \frac{\text{Rs } 1,38,000}{40,000} = \text{Rs } 3.45$$

Indifference Points:

The indifference point, often called as a breakeven point, is highly important in financial planning because, at EBIT amounts in excess of the EBIT indifference level, the more heavily levered financing plan will generate a higher EPS. On the other hand, at EBIT amounts below the EBIT indifference points the financing plan involving less leverage will generate a higher EPS.

i. Concept:

Indifference points refer to the EBIT level at which the EPS is same for two alternative financial plans. According to J. C. Van Home, 'Indifference point refers to that EBIT level at which EPS remains the same irrespective of debt equity mix'. The management is indifferent in choosing any of the alternative financial plans at this level because all the financial plans are equally desirable. The indifference point is the cut-off level of EBIT below which financial leverage is disadvantageous. Beyond the indifference point level of EBIT the benefit of financial leverage with respect to EPS starts operating.

The indifference level of EBIT is significant because the financial planner may decide to take the debt advantage if the expected EBIT crosses this level. Beyond this level of EBIT the firm will be able to magnify the effect of increase in EBIT on the EPS.

In other words, financial leverage will be favorable beyond the indifference level of EBIT and will lead to an increase in the EPS. If the expected EBIT is less than the indifference point then the

financial planners will opt for equity for financing projects, because below this level, EPS will be more for less levered firm.

ii. Computation:

We have seen that indifference point refers to the level of EBIT at which EPS is the same for two different financial plans. So the level of that EBIT can easily be computed. There are two approaches to calculate indifference point: Mathematical approach and graphical approach.

Mathematical Approach:

Under the mathematical approach, the indifference point may be obtained by solving equations. Let us present the income statement given in Table 5.1 with the following symbols in Table 5.4. We are starting from EBIT only.

TABLE 5.4 Income Statement Presented with Symbols

EBIT	X
Less: Interest (I)	I
EBT	$(X - I)$
Less: Tax(at t% on EBT)	$(X - I)t$
EAT	$(X - I)(1 - t)$
Less Preference Dividend	P_d
Earnings available to Equity Shareholder	$(X - I)(1 - t) - P_d$

$$\text{EPS} = \frac{(X-I)(1-t)-P_d}{N}$$

Where, N represents number of equity shares.

In case of financing, three types of sources may be opted: Equity, debt and preference shares. So we may have four possible combinations Equity, Equity-Debt, Equity- Preference Shares and Equity- Debt-Preference Shares.

So, EPS under various alternatives will be as follows:

Equity-Debt: $\text{EPS} = \frac{(X-I)(1-t)}{N}$

Equity-Preference Shares: $\text{EPS} = \frac{X(1-t)-P_d}{N}$

Equity-Debt-Preference Shares: $\text{EPS} = \frac{(X-I)(1-t)-P_d}{N}$

Note:

The symbols have their usual meaning.

The indifference point between any two financial plans may be obtained by equalizing the respective equations of EPS and solving them to find the value of X.

Problem 2

Debarathi Co. Ltd., is planning an expansion programme. It requires Rs 20 lakhs of external financing for which it is considering two alternatives. The first alternative calls for issuing 15,000 equity shares of Rs 100 each and 5,000 10% Preference Shares of Rs 100 each; the second alternative requires 10,000 equity shares of Rs 100 each, 2,000 10% Preference Shares of Rs 100 each and Rs 8,00,000 Debentures carrying 9% interest. The company is in the tax bracket of 50%. You are required to calculate the indifference point for the plans and verify your answer by calculating the EPS.

Solution:

Computation of EPS under Different Plans

	Plan I	Plan II
EBIT	1,36,000	1,36,000
Less: Interest		72,000
EBT	1,36,000	64,000
Less: Tax	68,000	32,000
EAT	68,000	32,000
Less: Preference Dividend	50,000	20,000
Earnings available to equity shareholders	18,000	12,000
No. of equity shares	15,000	10,000
$\therefore$ EPS = Earning available to equity shareholders / Number of equity shares	18,000 / 15,000	12,000 / 10,000
	= Rs 1.20	= Rs 1.20

Graphical Approach:

The indifference point may also be obtained using a graphical approach. In Figure 5.1 we have measured EBIT along the horizontal axis and EPS along the vertical axis. Suppose we have two financial plans before us: Financing by equity only and financing by equity and debt. Different combinations of EBIT and EPS may be plotted against each plan. Under Plan-I the EPS will be zero when EBIT is nil so it will start from the origin.

The curve depicting Plan I starts from the origin. For Plan-II EBIT will have some positive figure equal to the amount of interest to make EPS zero. So the curve depicting Plan-II will start from the positive intercept of X axis. The two lines intersect at point E where the level of EBIT and EPS both are same under both the financial plans. Point E is the indifference point. The value corresponding to X axis is EBIT and the value corresponding to 7 axis is EPS.

These can be found drawing two perpendiculars from the indifference point—one on X axis and the other on Taxis. Similarly we can obtain the indifference point between any two financial plans having various financing options. The area above the indifference point is the debt advantage zone and the area below the indifference point is equity advantage zone.

Above the indifference point the Plan-II is profitable, i.e. financial leverage is advantageous. Below the indifference point Plan I is advantageous, i.e. financial leverage is not profitable. This can be found by observing Figure 5.1. Above the indifference point EPS will be higher for same level of EBIT for Plan II. Below the indifference point EPS will be higher for same level of EBIT for Plan I. The graphical approach of indifference point gives a better understanding of EBIT-EPS analysis.

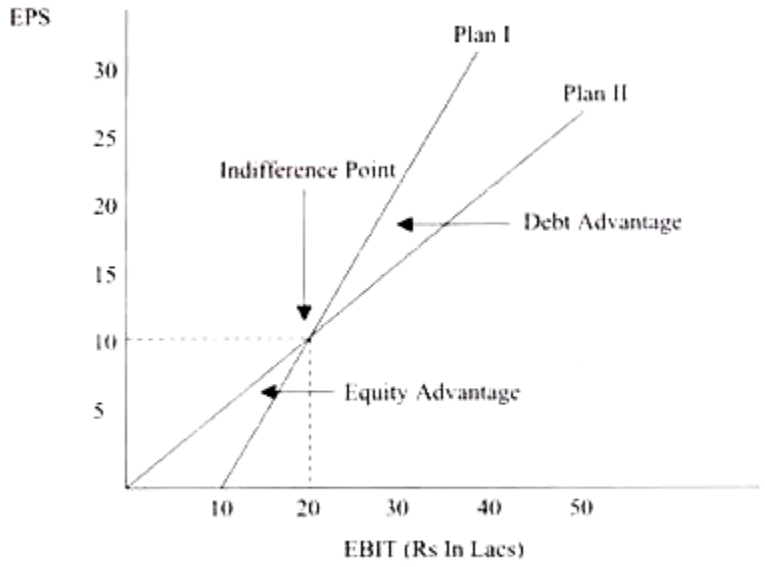


FIGURE 5.1 Graphical Presentation of Indifference Point

Financial Breakeven Point:

In general, the term Breakeven Point (BEP) refers to the point where the total cost line and sales line intersect. It indicates the level of production and sales where there is no profit and no loss because here the contribution just equals to the fixed costs. Similarly financial breakeven point is the level of EBIT at which after paying interest, tax and preference dividend, nothing remains for the equity shareholders.

In other words, financial breakeven point refers to that level of EBIT at which the firm can satisfy all fixed financial charges. EBIT less than this level will result in negative EPS. Therefore EPS is

zero at this level of EBIT. Thus financial breakeven point refers to the level of EBIT at which financial profit is nil.

Financial Break Even Point (FBEP) is expressed as ratio with the following equation:

$$\text{FBEP} = \frac{(\text{EBIT} - I)(1 - t) - P_d}{N} = 0$$

Or $$(\text{EBIT} - I)(1 - t) - P_d = 0$$

Or $$(\text{EBIT} - I) = \frac{P_d}{(1 - t)}$$

Or, $$\text{EBIT} = I + \frac{P_d}{(1 - t)}$$

where, EBIT = Earnings before Interest and Tax,
I = Interest,
t = Rate of Tax,
P_d = Preference Dividend, and
N = Number of Equity Shares.

It is to be noted here that beyond the financial breakeven point increase in EBIT will result in proportional increase in EPS.

Problem - 3:

A company has formulated the following financing plans to finance Rs 15, 00,000 which is required for financing a new project.

	Plan I (Rs)	Plan II (Rs)	Plan III (Rs)
Equity Share Capital (Rs 10 each)	15,00,000	10,00,000	7,50,000
8% Debentures	–	5,00,000	2,50,000
10% Preference Share Capital	–	–	5,00,000
	15,00,000	15,00,000	15,00,000

Compute the financial breakeven point for each alternative plan assuming tax rate at 50%.

Solution: We know that the financial breakeven point is the EBIT where EPS is 0.

$$\therefore \quad \text{FBEP} = \frac{(\text{EBIT} - I)(1 - t) - P_d}{N} = 0$$

Financial breakeven point for Plan I:

$$\frac{(\text{EBIT} - 0)(1 - 0.5) - 0}{1,50,000} = 0$$

$$\Rightarrow \quad 0.5\ \text{EBIT} - 0 = 0$$

$$\therefore \quad \text{EBIT} - 0 = 0$$

Financial breakeven point is 0

Financial breakeven point for Plan II:

$$\frac{(\text{EBIT} - 40,000)(1 - 0.5) - 0}{1,00,000} = 0$$

$$\Rightarrow \quad 0.5\ \text{EBIT} - 20,000 = 0$$

$$\therefore \quad \text{EBIT} = 40,000$$

Financial breakeven point is 40,000

Financial breakeven point for Plan III:

$$= \frac{(\text{EBIT} - 20,000)(1 - 0.5) - 50,000}{75,000} = 0$$

$$\Rightarrow \quad 0.5\ \text{EBIT} - 10,000 - 50,000 = 0$$

$$0.5\ \text{EBIT} = 60,000$$

$$\therefore \quad \text{EBIT} = 1,20,000$$

Financial breakeven point is 1,20,000

Problem – 4

Capital Structure	**Plan I**	**Plan II**	**Plan III**	**Plan IV**
Equity Share of 100 each	10,00,000	5,00,000	5,00,000	2,50,000
12% Preference Share	-----	-----	2,50,000	2,50,000
10% Debt	------	5,00,000	2,50,000	5,00,000
Total Capital Employed	10,00,000	10,00,000	10,00,000	10,00,000

Particulars	**Plan I**	**Plan II**	**Plan III**	**Plan IV**
EBIT (ROI 25%)	5,00,000	5,00,000	5,00,000	5,00,000
Less: Interest	--------	50,000	25,000	50,000
EBT	5,00,000	4,50,000	4,75,000	4,50,000
Less: Tax (50%)	2,50,000	2,25,000	2,37,500	2,25,000
EAT	2,50,000	2,25,000	2,37,500	2,25,000

Less: Preference Dividend	---------	----------	50,000	30,000
Earnings to Equity				
Shareholder	2,50,000	2,25,000	1,87,500	1,95,000
Number of shares	10,000	5,000	5,000	2,500
EPS(Rs.)	25	45	41.5	78

In the above example, alternative IV seems to be best alternative with EPS of Rs. 78. The EPS is Rs. 25 when no debt is used in the capital structure. The EBIT of Rs. 5,00,000 on investment of RS 10,00,000 turn out to be 50%. After tax ROI will be 25%. But the use of cheaper source of finance such as debt at 10% cost and preference share at 12% cost will increase earnings per share. Thus, use of more and more debt or fixed payment capital will lead to increase in EPS to the shareholders.

Thus, we can conclude the followings:

1. Financial leverage (use of debt) has a favourable impact on the EPS only when ROI is more than cost of debt (net of tax).
2. The EPS keeps increasing with the use of debt content in the capital structure till ROI is more than cost of debt.
3. Financial leverage will have unfavourable impact on EPS if ROI is less than cost of debt at any point of time.

Conclusion

The analysis of the effect of different patterns of financing or the financial leverage on the level of returns available to the shareholders, under different assumptions of EBIT is known as EBIT-EPS analysis. A firm has various options regarding the combinations of various sources to finance its investment activities. The firms may opt to be an all-equity firm (and having no borrowed funds) or equity-preference firm (having no borrowed funds) or any of the numerous possibility of combinations of equity, preference shares and borrowed funds. However, for all these possibilities, the sales level and the level of EBIT is irrelevant as the pattern of financing does not have any bearing on the sales or the EBIT level. In fact, the sales and the EBIT level are affected by the investment decisions.

Questions

1. What is meant by EBIT – EPS analysis

2. What are the concepts of EBIT & EPS analysis and explain the advantage and limitations of EBIT and EPS analysis
3. A company having equity share capital of Rs. 4,00,000 divided into shares of Rs. 100 each. The company wants to raise additional fund of Rs. 2,00,000 for its diversification programme. The company has following alternatives for raising the fund:

   Plan I: Issue of 20,000 Equity Shares of 100 each

   Plan II: Issue of 20,000 Preference Shares of 100 each

   Plan III: Issue of 10% Debentures of Rs. 100 each

   The expected current EBIT level of the company in present scenario is Rs. 1,00,000. The EBIT will change according to general economic conditions as given below:

   Good Conditions: EBIT Rs. 1,20,000

   Bad Conditions: EBIT Rs. 80,000

   Calculate EPS in all the cases and analyse the results.

   Assume tax rate of 50%.

Lesson – 8

LEVERAGES

Introduction

Leverage, as a business term, refers to debt or to the borrowing of funds to finance the purchase of a company's assets. Business ownerscan use either debt or equity to finance or buy the company's assets. Using debt, or leverage, increases the company's risk of bankruptcy. It also increases the company's returns; specifically its return on equity. This is true because, if debt financing is used rather than equity financing, then the owner's equity is not diluted by issuing more shares of stock.

Meaning

Leverage is a practice which can help a business drive up its gains / losses. In business language, if a firm has fixed expenses in P/L account or debt in capital structure, the firm is said to be levered. Nowadays, almost no business is away from it but very few have struck a balance.

TYPES OF LEVERAGE

There is a different basis for classifying business expenses. For our convenience, let us classify fixed expenses into operating fixed expenses such as depreciation on fixed expenses, salaries etc, and financial fixed expenses such as interest and dividend on preference shares. Similar to them, leverages are also of two types – financial and operating.

FINANCIAL LEVERAGE (FL)

It is a leverage created with the help of debt component in the capital structure of a company. Higher the debt, higher would be the FL because with higher debt comes the higher amount of interest that needs to be paid. It can be both good and bad for a business depending on the situation. If a firm is able to generate a higher return on investment (ROI) than the interest rate it is paying, leverage will have its positive effect shareholder's return. The darker side is that if the said situation is opposite, higher leverage can take a business to a worst situation like bankruptcy.

OPERATING LEVERAGE (OL)

Just like the financial, it is a result of operating fixed expenses. Higher the fixed expense, higher is the OL. Like the FL had an impact on the shareholder's return or say earnings per share, OL directly impacts the operating profits (Profits before Interest and Taxes (PBIT)). Under good economic Conditions, an increase of 1% in sales will have more than 1% change in operating profits.

COMBINED LEVERAGE (CL)

It means combination if operating and financial leverages. It express the effect of changes on sale over changes in taxable profit.

Problem 1 Calculate the operating financial and combined leverage from the following information

Sales	- 35000
Interest	- 2500
Variable costs	- 20000
Fixed cost	- 10000

Solution

Sales	35000
Less: Variable cost	20000
Contribution	15000
Less: Fixed cost	10000
Operating profit (EBIT)	5000
Less: Interest	2500
Profit before tax (EBIT)	2500

a) Operating Leverage
Contribution / Operating profit (Or) Contribution / EBIT
= 15000/5000 = 3 times

b) Financial Leverage
Operating profit / Profit before tax (Or) EBIT / EBT
=5000/2500 = 2 times

c) Combined Leverage
Operating leverage X Financial Leverage
= 3X2 = 6

Problem 2.A firm has sales of Rs. 10,00,000, variable cost of Rs. 7,00,000 and fixed costs of Rs. 2,00,000 and debt of Rs. 5,00,000 at 10% rate of interest. What are the operating, financial and combined leverages. If the firm wants to double its earnings before interest and tax (EBIT), how much of a rise in sales would be needed on a percentage basis?

Solution:

Statement of Existing Profit

Sales	Rs.10,00,000
Less Variable cost	7,00,000
Contribution	3,00,000
Less fixed cost	2,00,000
EBIT	1,00,000
Less Interest @ 10% on 5,00,000	50,000
Profit after Tax	50,000
Operating leverage	Contribution/ EBIT = 3,00,000/1,00,000 = 3
Financial Leverage	EBIT/PBT = 1,00,000/50,000 = 2
Combined Leverage	= 3x 2= 6

Statement of sales needed to double EBIT

Operating Leverage is 3 times i.e. 33 – 1/3% increase in sales volume causes a 100% increase in operating profit or EBIT. Thus, at the sales of Rs. 13,33,333, operating profit or EBIT will become Rs. 2,00,000 i.e. double existing one.

Verification:

Sales	Rs.13,33,333
Variable cost (70%)	9,33,333
Contribution	4,00,000
Fixed Costs	2,00,000
EBIT	2,00,000

Problem 3 The balance sheet of Well Established Company is as follows:

Liabilities	Amount	Assets	Amount
Equity share capital	60,000	Fixed Assets	1,50,000
Retained Earnings	20,000	Current Assets	50,000
10% long term debt	80,000		
Current Liabilities	40,000		----------
	2,00,000		2,00,000

The company's total assets turnover ratio is 3, its fixed operating costs are Rs.1,00,000 and its variable operating cost ratio is 40%. The income tax rate is 50%. Calculate the different types of leverages given that the face value of share is Rs.10.

Solution: Total Assets Turnover Ratio = Sales / Total Assets

3 = Sales/2,00,000

Sales	6,00,000
Variable Operating Cost (40%)	2,40,000
Contribution	3,60,000
Less Fixed Operating Cost	1,00,000
EBIT	2,60,000
Less interest (10% of 80,000)	8,000
PBT	2,52,000
Tax at 50%	1,26,000
PAT	1,26,000
Number of shares	6,000
EPS	Rs.21

Degree of Operating Leverage = Contribution/EBIT

= 3,60,000/2,60,000 = 1.38

Degree of Financial leverage = EBIT / PBT

= 2,60,000/2,52,000 = 1.03

Degree of Combined Leverage =1.38 x 1.03 = 1.42

Problem 4: The following information is available for ABC & Co.

EBIT Rs. 11,20,000

Profit before Tax 3,20,000

Fixed Costs 7,00,000

Calculate % change in EPS if the sales are expected to increase by 5%.

Solution: In order to find out the % change in EPS as a result of % change in sales, the combined leverage should be calculated as follows:

Operating Leverage = Contribution/ EBIT

= Rs.11,20,000 + Rs. 7,00,000/11,20,000

= 1.625

Financial Leverage = EBIT / Profit before Tax

= Rs. 11,20,000/3,20,000

= 3.5

Combined Leverage = Contribution/ Profit before Tax = OL x FL

= 1.625 x 3.5 = 5.69

The combined leverage of 5.69 implies that for 1% change in sales level, the % change in EPS would be 5.69% So, if the sales are expected to increase by 5%, then the % increase in EPS would be 5 x 5.69 = 28.45%.

Problem 5: The data relating to two companies are as given below**:**

	Company A	Company B
Capital	Rs.6,00,000	Rs.3,50,000
Debentures	Rs. 4,00,000	6,50,000
Output (units) per annum	60,000	15,000
Selling price/unit	Rs.30	250
Fixed costs per annum	7,00,000	14,00,000
Variable cost per unit	10	75

You are required to calculate the Operating leverage, Financial leverage and Combined Leverage of two companies.

Solution: Computation of Operating leverage, Financial Leverage and Combined leverage

	Company A	**Company B**
Output (units) per annum	60,000	15,000
Selling price/unit	Rs.30	250
Sales Revenue	18,00,000	37,50,000
Less variable costs		
@ Rs.10 and Rs.75	6,00,000	11,25,000
Contribution	12,00,000	26,25,000
Less fixed costs	7,00,000	14,00,000
EBIT	5,00,000	12,25,000
Less Interest @ 12%		
on debentures	48,000	78,000
PBT	4,52,000	11,47,000

DOL = Contribution/EBIT	12,00,000/5,00,000 = 2.4	26,25,000/12,25,000 = 2.14
DFL = EBIT/ PBT	5,00,000/4,52,000 = 1.11	12,25,000/11,47,000 =1.07
DCL = DOL x DFL	2.14 x 1.11 = 2.66	2.14 x 1.07 = 2.2

Problem – 6 Following information is taken from the records of a hypothetical company:

Installed capacity	1,000 units
Operating capacity	800 units
Selling price per unit	₹ 10
Variable cost per unit	₹ 7

Calculate operating leverage under the following situations:

Fixed cost :	₹
Situations A	800
Situation B	1,200
Situation C	1,500

Solution:

	Situation A	*Situation B*	*Situation C*
	₹	₹	₹
Sales	8,000	8,000	8,000
Less : Variable cost	5,600	5,600	5,600
Contribution (C)	2,400	2,400	2,400
Less : Fixed Cost (F)	800	1,200	1,500
Operating Profit (OP)	1,600	1,200	900
Operating leverage	2,400	2,400	2,400
$\left(\frac{C}{OP}\right)$	1,600	1,200	900
	1.5	2.0	2.67
Break Even Point (BEP) $\left(\frac{F}{C} \times S\right)$	2,667	4,000	5,000
Margin of Safety Ratio $\left(\frac{OP}{C}\right)$	66.7%	50%	37.5%
Percentage of sales at break even point	33.3%	50%	62.5%

Conclusion

Leverage is the key by which a firm increases its sales. A firm with high sales growth should be able to obtain more funds initially. Because leverage increases the firm's earning per share as well as retained earnings. These high amounts of financial assets provide the firm with the necessary financial capital to fund future expansionary investment projects. As a result firm's financial assets increase. The last result indicates a firm's ability to obtain financial resources provides some information about its future growth.

So, in total we can say that Leverage has a great impact on a company's performance and growth. But the firms should use leverage considering its capability of taking risk.

Questions

1. Distinguish between operating leverage and financial leverage. How the two leverages can be measured?

2. Explain the concept of financial leverage. Examine the impact of financial leverage on the EPS. Does the financial Leverage always increases the EPS?

3. From the following details calculate leverages
   Production (units) - 3,00,000
   Fixed cost Rs. 3,50,000
   Variable cost (pu) – Rs. 1
   Interest Expenses Rs. 1,50,000
   Selling price (pu) Rs. 3

4. The installed capacity of a factor is 600 units. Actual capacity used is 400 units. Selling price pu. Is Rs. 10. Variable cost is Rs. 6 pu. Calculate operating leveraged in each case of the following
   3 – situations
   1. When fixed cost are Rs. 400
   2. When fixed cost are Rs.1000
   3. When fixed cost are Rs.1200

5. Calculate leverages under situations A, B &C and financial plans I, II, & III respectively from the following information relating to the operating and capital structure of XYZ co.,

also find out the combination of operating and financial leverages which give the highest vale and least value. How are these calculations useful to financial manner in a company?

Installed capacity 1200 units

Actual production & sales 800 units

Selling price p.u Rs. 15

Variable cost p.u Rs. 10

Fixed cost :

Situations A: Rs. 1000

Situations B : Rs. 2000

Situations C : Rs. 3,000

Financial plan

Capital structure	I	II	III
Equity	5000	7500	2500
Debenture	5000	2500	7500

Cost of debt is 12%

UNIT –III

Lesson – 9

INVESTMENT AND CAPITAL STRUCTURE DECISION

INTRODUCTION

The word Capital refers to be the total investment of a company of firm in money, tangible and intangible assets. Whereas budgeting defined by the "**Rowland** and **William**" it may be said to be the art of building budgets. Budgets are a blue printof aplan and action expressed in quantities and manners. Investment decision is the process of making investment decisions in capital expenditure. A capital expenditure may be defined as an expenditure the benefits of which are expected to be received over period of time exceeding one year. The main characteristic of a capital expenditure is that the expenditure is incurred at one point of time whereas benefits of the expenditure are realized at different points of time in future. The examples of capital expenditure:

- Purchase of fixed assets such as land and building, plant and machinery, good will, etc.
- The expenditure relating to addition, expansion, improvement and alteration to the fixed assets.
- The replacement of fixed assets.
- Research and development project.

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 sources 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.

DEFINITON OF CAPITAL STRUCTURE

- According to the definition of Gerestenbeg, "Capital Structure of a company refers to the composition or make up of its capitalization and it includes all long-term capital resources".
- According to the definition of James C. Van Horne, "The mix of a firm′s permanent long-term financing represented by debt, preferred stock, and common stock equity".

- According to the definition of Persona 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

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.

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

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.

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 = NI/K e

NI = Earnings available to equity shareholder capitalization rate

Ke = Cost of equity/equity

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 Ko 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.

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:

V=EBIT/ K (l-t)

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V=EBIT/ K (l-t)

I. NI Approaches

Problem – 1 Excellent Manufacturing Company expects to earn net operating income of Rs. 1, 50,000 annually. The Company has Rs. 6.00,000 8% debentures. The cost of equity capital of the Company is 10%. What would be the value of Company? Also calculate overall cost of capital.

Solution:

Calculation of Value of Excellent Manufacturing Company

	Rs.
Net Operating Income (NOI)	1,50,000
Less interest on 8% debentures (I)	48,000
Earnings available to equityholders (NI)	1,02,000
Equity capitalisation rate (K_e)	0.10
Market value of Equity $(S)=\frac{NI}{K_e}$	10,20,000
Market value of debt (B)	6,00,000
Total value of the firm ($S+B$) = V	16,20,000

Overall cost of capital $= K_0 = \frac{EBIT}{V} = \frac{\text{Rs.}1,50,000}{16,20,000}$

$= .093$

$= 9.3\%$ approximately.

II. NOI Approaches

Problem – 2

Canon Manufacturing Company has annual net operating income of Rs. 150000. The Company has Rs. 6,00,000 8% debentures. The overall cost of capital of the Company is 10%. What would be the value of the Company?

Solution:

Value of Canon Company has been computed as below:

	Rs.
Net Operating Income (NOI)	1,50,000
Overall capitalisation rate (K_o)	0.10
Total Market value of the company (V)	15,00,000
Total value of debt (B)	6,00,000
Total Market value of Equity (S)	9,00,000

Equity capitalisation rate $K_e = \frac{EBIT - I}{V - B}$

$= \frac{\text{Earnings available to equity-holders}}{\text{Total market value of equity shares}}$

$= \frac{\text{Rs.}1,50,000 - 45,000}{\text{Rs.}9,00,000} = 11.33\%$

The overall cost of capital to verify the validity of the NOI approach :

$= K_0 = K_i(B/V) + K_e(S/V)$

$= 8\%\left(\frac{\text{Rs.}6,00,000 - 96,000}{\text{Rs.}15,00,000}\right) + 11.33\%\left(\frac{\text{Rs.}9,00,000}{\text{Rs.}15,00,000}\right)$

$= 10\%$

III. Traditional approaches

Problem – 3 Sneh Steel Ltd. is expecting a net operating income of Rs. 3,00,000 on a total investment of Rs. 20,00,000. The equity capitalization rate is 10 percent, the firm has no debt; but it would increase to 11 percent when the firm substitutes equity capital by issuing debentures of Rs. 6,00,000 and to 12.5 percent when debentures of Rs. 10,00,000 are issued to substitute equity capital.The management expects that it will have to pay interest @ 5% to raise an additional debt of Rs. 6,00,000 and @ 7% to raise an additional debt of Rs. 10,00,000. What would be the overall cost of capital and market value of the firm under the Traditional Approach?

Solution:

Clculation of Value of Firm and Overall Cost of Capital as per Traditional Approach.

	No Debt	5% Rs. 6,00,000 Debt.	7% Rs. 10000 Debt.
		Rs.	Rs	Rs
Net operating income (NOI)		3,00,000	3,00,000	3,00,000
Less interest on debt (I)		—	26,000	70,000
Net Income (NI)		3,00,000	2,74,000	2,30,000
Cost of equity K_e		.10	.11	.125
Market Value of $(S)=\frac{NI}{K_e}$	3,00,000	24,90,909	18,40,000	
No. of shares		3,00,000	24,90,909	18,40,000
Market value of debt (B)		0	6,00,000	10,00,000
Total value of firm (V)		30,00,000	30,90,909	28,40,000
Overall cost of Capital $(K_0)=\frac{NOI}{V}$		.10	0.092 .	106

IV. MM Approaches

Problem 4 Two firms A and B falling in the identical risk class have net operating income of Rs. 2,00,000 each. Firm A is an unlevered concern having all equity but Firm B is levered concern as it has Rs. 10,00,000 of 10% bonds outstanding. The equity capitalization rate of firm A is 12.5% and of firm B is 16.0%.

Solution:

Calculation of Total Value of Firms A and B

	Firm A Rs.	Firm B Rs
Net Operating Income (NOI)	2,00,000	2,00,000
Less interest (I)	—	1,00,000
Earning available to equity holder (NI)	2,00,000	1,00,000
Equity Capitalisation rate K_e	.125	.16
Total market value of equity (S)	16,00,000	6,25,000
Total market value of debt (B)	—	10,00,000
Total value	16,00,000	16,25,000
Implied overall capitalisation rate/cost of capital	12.5%	12.3%

Conclusion

Capital structure decision is believed to play an important role in maximizing the value of a firm. By having the most optimal capital structure, firms might be able to push its cost to the minimum point, which then will help them in dealing with the competitive environment. Throughout this research, the interest-bearing debt to total assets ratio was used to measure the level of leverage of a firm. This ratio was then used to find out the relationship between leverage and several factors that are deemed to have influence on capital structure, which are profitability, size, and dividend payout

Questions:

1. What is capital structure?
2. Define capital structure
3. Define finance structure
4. What is optimum capital structure?
5. What are the objects of capital structure?
6. Explain the theories of capital structure.
7. X ltd expecting an annual EBIT of Rs. 1,00,000. The com., has Rs. 4,00,000 in 10% debenture. The cost of equity capitalization rate is 12.5%. you are require to calculate total value of the firm ad state overall cost of capital .

8. Z ltd., is an EBIT of Rs. 1,00,000. The cost of debt. Is 10% at outstanding debt amount to Rs. 4,00,000. The overall cost of capital is 12.5%. Calculate total value of the firm and equity capitalization rate.
9. The cargo co., ltd has an EBIT of Rs. 2,50,000. It has 6% Rs. 5,00,00 debenture. The equity capitalization rate is 12.5%. you are require to calculate total market value of the firm and overall capitalization rate and debt equity ratio.
10. In considering the most desirable capital structure for a co., the following the cost of debt equity capital (After tax) has been made various levels of debt equity mix.

Debt as % total capital employed	Cost of debt (%)	cost of equity (%)
0	5.0	12.0
10	5.0	12.0
20	5.0	12.5
30	5.5	13.0
40	6.0	14.0
50	6.5	16.0
60	7.0	20.0

You are require to determine the optimal debt equity mix for the com., by calculating composite cost of capital.

Lesson – 10

VALUATION OF SECURITIES

Introduction

The process of determining how much a security is worth. Security valuation is highly subjective, but it is easiest when one is considering the value of tangible assets, level of debt, and other quantifiable data of the company issuing a security. For example, determining a company's earnings for the current year is easier than determining what the value of the company's brand recognition might be in 10 years. Valuation is important in fundamental analysis, the practitioners of which usually consider a company's earnings to be indicative of its value.

Meaning

The process of determining how much a security is worth. Security valuation is highly subjective, but it is easiest when one is considering the value of tangible assets, level of debt, and other quantifiable data of the company issuing a security.

Debenture Valuation:

A bond is an instrument of debt issued by a business house or a government unit. The bonds may be issued at par, premium or discount. The par value is the amount stated on the face of the bond. It states the amount the firm borrows and promises to repay at the time of maturity.

The bonds carry a fixed rate of interest payable at fixed intervals of time. The interest is calculated by multiplying the value of bonds with the rate of interest.

Bond valuation is, generally, called debt valuation because the features that distinguish bonds from other debts are primarily non-financial in nature. Since bonds have a promised payment stream, they are less risky as compared to the shares. But it does not mean that they are totally risk free.

Therefore, the required rate of return on a firm's bond will exceed the risk free interest rate but will be less than the required rate of return on shares. The differences in required rates of return among bonds of different companies are caused by differences in 'default risk'. The value of the bond depends upon the discount rate. It will decrease with every increase in the discount rate.

For the purpose of valuation, bonds may be classified into two categories:

(i) Bonds with a maturity period, and

(ii) Bonds in perpetuity.

(i) Bonds with a Maturing Period:

When the bonds have a definite maturity period, its valuation is determined by considering the annual interest payments plus its maturity value.

The following formula can be used to determine the value of a bond:

$$V_0 = \sum_{t=1}^{10} \frac{1000}{(1.10)^t} = 1000(ADF_{10\%,\,10\text{ years}})$$
$$= 1,000 \times 6.145$$
$$= ₹\,6,145$$

where, V_d = Value of bond or debt

R_1, R_2……. =Annual interest (Rs.) in period 1, 2, …, and so on

K_d = Required rate of return

M = Maturity value of bond

n = Number of years to maturity.

It must be observed from the above equation that as n becomes large, it becomes difficult to calculate $(1 + k_d)^n$.

Symbolically:

$V_d = (R)(ADF_{i,\,n}) + (M)(DF_{i,\,n})$

Problem : 1 An investor considering the purchase of a 8% Rs. 1000 bond redeemable after 5 years at par. The investor required rate of return is 10%. What should he be willingto pay now to purchase the bond

R = 1000 X 8/100 = 80

i=10%, n= 5 yrs, m = 1000

Vd = 80 (3.791) +1000(0.621)

Vd = 303.28 +621

Vd = 924.28

Bonds Redeemable in Installments:

A company may issue a bond or debenture to be redeemed periodically. In such a case, principal amount is repaid partially each period instead of a lump sum at maturity and hence cash outflows each period include interest and principal. The amount of interest goes on decreasing each period as it is calculated on the outstanding amount of bond/debenture.

The value of such a bond can be calculated as below:

$$V_d = \frac{R_1 + P_1}{(1+k_d)^1} + \frac{R_2 + P_2}{(1+k_d)^2} + \ldots \frac{R_n + P_n}{(1+k_d)^n}$$

Or, $$V_d = \sum_{t=1}^{n} \frac{R_t + P_t}{(1+k_d)^t}$$

where, V_d = Value of bond or debt

$R_1, R_2 \ldots$ = Annual interest (₹) in period 1, 2, ..., and so on.

$P_1, P_2 \ldots$ = Periodic payment of principal in period 1, 2, ... and so on.

K_d = Required rate of return

n = Number of years to maturity.

Illustration 2:

A company is proposing to issue a 5 year debenture of? 1,000 redeemable in equal installments at 14 percent rate of interest per annum. If an investor has a minimum required rate of return of 12 per cent, calculate the debenture's present value for him. What should he be willing to pay now to purchase the debenture?

Solution:

CALCULATION OF ANNUAL INTEREST AND CASH FLOWS

Year (1)	Amount Outstanding (2)	Interest (R) (3)	Principal Payment (4)	Cash Flows 5 = (3 + 4)
1	₹ 1,000	$1000 \times \frac{14}{100}$ = Rs. 140	₹ 200	₹ 340
2	(1000—200) = 800	$800 \times \frac{14}{100}$ – Rs. ? ? 2	200	312
3	(800—200) = 600	$600 \times \frac{14}{100}$ = Rs. 84	200	284
4	(600—200) = 400	$400 \times \frac{14}{100}$ = Rs. 56	200	256
5	(400—200) = 200	$200 \times \frac{14}{100}$ = Rs. 28	200	228

Present Value of Debenture,

$$V_d = \frac{R_1 + P_1}{(1+k_d)^1} + \frac{R_2 + P_2}{(1+k_d)^2} + \frac{R_3 + P_3}{(1+k_d)^3} + \frac{R_4 + P_4}{(1+k_d)^4} + \frac{R_5 + P_5}{(1+k_d)^5}$$

$$= \frac{140 + 200}{1.12} + \frac{112 + 200}{(1.12)^2} + \frac{84 + 200}{(1.12)^3} + \frac{56 + 200}{(1.12)^4} + \frac{28 + 200}{(1.12)^5}$$

Using the Present Value Tables, we can calculate the same as below :

Year	Cash Flows ₹	P.V. Factor at 12%	Present Value of Cash Flows ₹
1	340	0.893	303.62
2	312	0.797	248.66
3	284	0.712	202.21
4	256	0.636	162.82
5	228	0.567	129.28
Present Value of Debenture			= ₹ 1,046.59

As the present value of debenture is ₹ 1046.59, the investor should be willing to pay ₹ 1,046.59.

(ii) Bonds in Perpetuity:

Perpetuity bonds are the bonds which never mature or have infinitive maturity period. Value of such bonds is simply the discounted value of infinite streams of interest (cash) flows.

Symbolically $V_d = \frac{R_1}{(1+k_d)^1} + \frac{R_2}{(1+k_d)^2} \ldots \frac{R_\infty}{(1+k_d)^\infty}$

$= \sum_{t=1}^{\infty} \frac{R_t}{(1+k_d)^t}$

Or, $V_d = \frac{R}{k_d}$

where, V_d = Value or bond or debt

Kd = Required rate of return

R_1 = Interest at period 1

R_2 = Interest at period 2

R = Annual Interest (as interest is constant)

Illustration 3:

Mr. A has a perpetual bond of the face value of Rs. 1,000. He receives an interest of Rs. 60 annually. What would be its value if the required rate of return is 10%?

Solution:

$V_d = R/K_d$

= 60/10

= Rs. 600

Relationship between the Required Rate of Return and Coupon Interest Rate:

We have observed earlier that the value of a bond or debenture is influenced by the coupon or fixed rate of interest payable on the bond and the investor's required or desired rate of return.

The relationship between the required rate of return and the coupon interest rate can, thus, be summarized as below:

(i) If the investor's required rate of return and the coupon interest rate are the same, the value of the debt (bond or debenture) shall be equal to its face value or paid-up value, as the case may be.

(ii) If the required rate of return is higher than the interest rate payable on bond or debenture, the value of the bond shall be lower than its face or paid-up value.

(iii) If the required rate of return is lower than the interest rate payable on bond or debenture, the value of the bond shall be higher than its face or paid-up value.

The above relationship can be explained with the help of following illustration.

Illustration 4:

Face value of a Debenture = Rs. 1,000

Annual Interest Rate of Debenture = 12%

Maturity Period = 5 years

What is the value of the debenture, if:

(a) Required rate of return is 12%

(b) Required rate of return is 15%

(c) Required rate of return is 10%

Solution:

$V_d = (R)\ (ADF_{i,n}) + (M)(DF_{i,n})$

$V_d = 120(3.605) + 1000\ (.567)$

Or, $V_d = 432.60 + 567$

= Rs. 999.60 or say Rs. 1,000.

(b) $V_d = 120\ (3.352) + 1,000\ (.497)$

= 402.24 + 497

= Rs. 899.24

(c) $V_d = 120\ (3.791) + 1,000\ (.621)$

= 453.92 + 621

= Rs. 1075.92 or say Rs. 1076

Bond Values with Semi-Annual Interest Rates:

We have so far determined the valuation of debentures considering the annual interest payments for the sake of simplicity. However, in most of the cases, interest is payable on semi-annual or half yearly basis.

To determine the value of such bonds/debentures, the bond valuation equation has to be modified on the following lines:

(1) The annual interest amount, R, should be divided by 2 to find out the amount of half-yearly interest.

(2) The maturity period, n, should be multiplied with 2 to get the number of half yearly periods.

(3) The required rate of return, K_d, should be divided 2 to get an appropriate discount rate applicable to half-yearly periods.

Thus, the basic bond valuation equation as modified would be:

$$V_d = \sum_{t=1}^{2n} \frac{R_{1/2}}{(1+k_{d/2})} + \frac{M_{2n}}{(1+k_{d/2})^{2n}}$$

Or, $$V_d = \left(\frac{R}{2}\right)(ADF_{i/2,2n}) + M(DF_{i/2,2n})$$

Illustration 5:

An investor holds a debenture of Rs. 100 carrying a coupon rate of 12% p.a. The interest is payable half-yearly on 30th June and 31st December every year. The maturity period of the debenture is 6 years and it is to be redeemed at a premium of 10%. The investor's required rate of return is 14% p.a. Compute the value of the debenture.

Solution:

$V_d = (R/2)(ADF_{i/2,2n}) + M\ (DF_{i/2,2n})$

12/2(7.943) + 110(.444)

47.658 + 48.840

Rs. 96.498 or say Rs. 96.50

Yield to Maturity or Bond's Internal/Rate of Return:

We have so far assumed that the investor's required rate of return, also called the discount rate, is given for calculating the value of the bond/debenture. However, in many cases, we may be required to calculate the required rate of return when the cash inflows and the current value/price of the bond are given.

This rate also known as 'yield to maturity' or 'the internal rate of return' for the bond can be calculated by solving the following basic equation:

$V_d = R_1/(1 + k_d)^1 + R_2/(1 + k_d)^2 + - - - R_n/(1 + k_d)^n$

For example, suppose that the current value of a 8% debenture, of Rs. 1,000 redeemable after 5 years at par, is Rs. 924.28.

The yield to maturity or the internal rate of return can be calculated as below:

$924.28 = 80/(1 + k_d)^1 + 80/(1 + k_d)^2 + 80/(1 + k_d)^3 + 80/(1 + k_d)^4 + 80/(1 + k_d)^5 + 1000/(1 + kd)^5$

We can find the value of k_d equal to 10 percent from the above equation by trying several values of K_d by hit and trial method. At 10% the equation becomes:

= 80(3.791) + 1000(0.621)

= 303.28 + 621

= 924.28

However, the approximate value of yield to maturity can also be found by using the following simple formula:

$Y_{dm} = I + (F-V)/n/0.4F + 0.6V$

where, I = Annual interest payment

F = Face value of bond/debenture

V = Current value/price of bond

n = Number of years to maturity

Thus, in the above example, the yield to maturity can be calculated as:

$Y_{dm} = 80 + (1000-924.28)/5)/(4/10 \times 1000) + (6/10 \times 924.28)$

= 95.14/954.57

= 10% (appx.)

In case of perpetual or irredeemable bonds/debentures, the yield to maturity can be calculated by using the following simple equation:

$V_d = R/k_d$ or $k_d = R/V_d$

whereV_d = Value of debenture

R = Annual interest payment

k_d = Required rate of return or yield to maturity.

Illustration 6:

Mr. A has a perpetual bond of the face value of Rs. 1000. He receives an interest of Rs. 60 annually. Its current value is Rs. 600. What is the yield to maturity?

Solution:

$V_d = R/k_d$

or$k_d = R/V_d$

or$k_d = 60/600 = .10$

Thus, the yield to maturity is 10%.

Valuation of Zero Coupon/Deep Discount Bonds (DDBs/ZCBs):

The deep discount bond does not carry any interest but it is sold by the issuer company at deep discount from its eventual maturity (nominal) value. The Industrial Development Bank of India (IDBI) issued such DDBs for the first time in the Indian capital market at a price of Rs. 2700 against the nominal value of Rs. 1,00,000 payable after 25 years.

Since there is no intermediate payment of interest between the date of issue and the maturity date, these DDBs may also be called zero coupon bonds (ZBBs).

The valuation of a deep discount bond can also be made in the same manner as that of the ordinary bond or debenture. The only point to remember is that there shall be only one cashflow at the time of maturity in case of a deep discount bond.

Thus, the value of a DDB may be taken as equal to the present value of this future cashflow discounted at the required rate of return of the investor for number of years equal to the life of the bond.

The following formula can be used to determine the value of a DDB:

$V_{ddb} = FV/(1+r^n)$

whereV_{ddb} = Value of a deep discount bond

FV = Face value of DDB payable at maturity

r = Required rate of return

n = Number of years to maturity/Life of DDB.

We can also make use of the present value tables to simplify our calculations.

Symbolically:

$V_{ddb} = (FV) \times (DF_{i,n})$

Illustration 7:

A deep discount bond (DDB) is issued for a maturity period of 20 years and having a face value of Rs. 1,00,000. Find out the value of the DDB if the required rate of return is 10%.

Solution:

$V_{ddb} = FV/(1+r)^n = (FV) \times (DF_{i,n})$

$= 1,00,000/(1 + .10)^{20}$

$= (1,00,000) \times (.14864)$

= Rs. 14,864.

Share Valuation:

Preference share is a hybrid security having features of both equity and debt. A fixed rate of dividend is paid on preference shares. Dividend on preference share is payable out of profits after paying interest on debt but before paying dividend on equity shares.

A preference share is also preferred in repayment as compared to equity share. Thus, preferred share is more risky than the bond but less risky than the equity share. The required rate of return on preferred stock is, therefore, greater than that of bonds.

Preferred stock or share can be with a maturity period or redeemable after a certain period or with perpetuity having no maturity period. The valuation of a preference share is very much similar to the valuation of a bond. The following formulas can be applied to find the value of the an preference share.

Value of a Redeemable Preference Share:

$V_d = d/(1 + kp)^1 + d/(1 + kp)^2 + \ldots\ldots\ldots d/(1 + kp)^n\ P_n/(1 + kp)^n$

where, V_p = Value of preference share

d = Annual dividend per preference share

P_n = Maturity or redemption price of preference share

K_p = Required rate of discount on preference share.

Illustration 8:

Mr. A is considering the purchase of a 7% preference share of Rs. 1,000 redeemable after 5 years at par. What should he willing to pay now to purchase the share assuming that the required rate of return is 8%?

Solution:

$$V_p = \frac{d}{(1+k_p)^1} + \frac{d}{(1+k_p)^2} + \ldots\ldots\ldots \frac{d}{(1+k_p)^n} + \frac{P_n}{(1+k_p)^n}$$

$$= \frac{70}{1.08} + \frac{70}{(1.08)^2} + \frac{70}{(1.08)^3} + \frac{70}{(1.08)^4} + \frac{70}{(1.08)^5} + \frac{1,000}{(1.08)^5}$$

Using the Present value tables, we can calculate the same as below :

Year	*Cash Flow* ₹	*P.V Factor at 8%*	*Present value of cash flows* ₹
1	70	0.926	64.82
2	70	.857	59.99
3	70	.794	55.58
4	70	.735	51.45
5	70	.681	47.67
5	1,000	.681	681.00

Total Present value of Cash Flows or Value of Preference Share 960.51

Value of a Perpetual Preference Share:

If the preference share has no maturity date or is irredeemable and the future dividends are expected to be constant, the value can be calculated as below:

$V_p = d/k_p$

where, V_p = Value of preference share

d = Constant annual dividend

k_p = Required rate of discount or return on preference share.

Illustration 9:

Mr. A has a irredeemable preference share of Rs. 1,000. He receives an annual dividend of Rs. 80 annually. What will be its value if the required rate of return is 10%?

Solution:

$V_p = d/k_p$

= 80/0.10

= Rs. 800

Equity Share Valuation:

The valuation of common stock or equity shares is relatively difficult as compared to the bonds or preferred stock. The cash flows of the latter are certain because the rate of interest on bonds and the rate of dividend on preference shares are known. The cash flows expected by investors on common stock are uncertain. The earnings and dividends on equity shares are expected to grow.

However, we can determine the value of equity shares:

(i) By developing certain models based on capitalisation of dividend, and

(ii) Capitalisation of earnings. Dividend capitalisation models are the basic valuation models.

Conclusion

When you consider the option that a firm has to delay making investment decisions, you can value a patent or an undeveloped natural resource reserve as an option. The option to expand may make young firms with potentially large markets trade at a premium on their discounted cashflow values. Finally, equity investors may derive value from the option to liquidate troubled firms with substantial debt.

Questions

1. What do you mean by valuation of securities?
2. What is debenture valuation?

3. Classify the two categories of valuation if bonds?
4. An investor considering the purchase of a 6% Rs. 6000 bond redeemable after 8 years at par. The investor required rate of return is 10%. What should he be willingto pay now to purchase the bond
5. A company is proposing to issue a 7 year debenture of? 4,000 redeemable in equal installments at 12 percent rate of interest per annum. If an investor has a minimum required rate of return of 10 per cent, calculate the debenture's present value for him. What should he be willing to pay now to purchase the debenture?
6. Mr. A has a perpetual bond of the face value of Rs. 5,000. He receives an interest of Rs. 300 annually. What would be its value if the required rate of return is 10%?
7. Face value of a Debenture = Rs. 5,000

   Annual Interest Rate of Debenture = 8%

   Maturity Period = 5 years

   What is the value of the debenture, if:

   (a) Required rate of return is 12%

   (b) Required rate of return is 15%

   (c) Required rate of return is 10%
8. An investor holds a debenture of Rs. 200 carrying a coupon rate of 10% p.a. The interest is payable half-yearly on 30th June and 31st December every year. The maturity period of the debenture is 5 years and it is to be redeemed at a premium of 10%. The investor's required rate of return is 12% p.a. Compute the value of the debenture
9. A deep discount bond (DDB) is issued for a maturity period of 25 years and having a face value of Rs. 1,50,000. Find out the value of the DDB if the required rate of return is 10%.
10. Mr. A is considering the purchase of a 6% preference share of Rs. 2,000 redeemable after 5 years at par. What should he willing to pay now to purchase the share assuming that the required rate of return is 8%?
11. Mr. A has irredeemable preference share of Rs. 8,000. He receives an annual dividend of Rs. 640 annually. What will be its value if the required rate of return is 10%?

Lesson - 11

RATES AND RETURN

Introduction

In finance, return is a profit on an investment. It comprises any change in value and interest or dividends or other such cash flows which the investor receives from the investment. It may be measured either in absolute terms (e.g., dollars) or as a percentage of the amount invested. The latter is also called the holding period return.

A loss instead of a profit is described as a *negative return*.

Meaning

A rate of return is the gain or loss on an investment over a specified time period, expressed as a percentage of the investment's cost. Gains on investments are defined as income received plus any capital gains realized on the sale of the investment. Rate of return can also be defined as the net amount of discounted cash flows received on an investment.

Problem 1

What is the expected return for the following stock? (State your answer in percent with one decimal place.) Outcomes Possible returns Probability better 32% 0.50 same 17% 0.20 worse -10% 0.30

Solution : Expected return = (32%)(0.50) + (17%)(0.20) + (-10%)(0.30) = 16.4%

Problem2

What is the expected return for the following portfolio? (State your answer in percent with two decimal places.)

Stock Expected returns Investment

AAA 31.2% Rs.190,000

BBB 24.0% Rs.350,000

CCC 18.6% Rs.200,000

DDD 11.9% Rs.500,000

Solution : First, covert the RS. investments into proportions of total investment by adding the investments in all stocks and then dividing each stock investment by the total.

Stock Expected returns Investment

AAA 31.2% Rs.190,000/1,240,000 = 0.1532

BBB 24.0% Rs.350,000/1,240,000 = 0.2823

CCC 18.6% Rs.200,000/1,240,000 = 0.1613

DDD 11.9% Rs.500,000/1,240,000 = 0.4032

TOTAL Rs.1,240,000

Now multiply the expected return for each asset times the proportion of investment allocated to that asset and sum the resulting amounts.

Exp ret = (31.2%)(0.1532) + (24%)(0.2823) + (18.6%)(0.1613) + (11.9%)(0.4032) Exp ret = 19.35%

Problem 3

If the risk-free rate is 4.3%, the expected return on the market is 15.7%, and the expected return onSecurity J is 21.5%, what is the beta for Security J? (Calculate your answer to two decimal places.)

Solution

ki = return on asset i

kRF = risk-free rate

kM = market return

bi = beta for asset i

kM - kRF = market risk premium

ki = kRF +(kM - kRF)bi

21.5% = 4.3% + (15.7% - 4.3%) bi

17.2% = (11.4%) bi

bi = 1.51

Problem 4

You are considering buying a stock with a beta of 0.73. If the risk-free rate of return is 6.9 percent, andthe expected return for the market is 12.2 percent, what should the expected rate of return be for this stock?(State your answer as a percentage.)

Solutionki = kRF+(kM - kRF)bi

ki = 6.9% + (12.2% - 6.9%)(0.73)

ki = 10.77%

Problem 5

If the risk-free rate is 6.9%, the market risk premium is 7.0%, and the expected return on Security J is29.4%, what is the beta for Security J? (Calculate your answer to two decimal places.)

Solutionki = kRF+(kM - kRF)bi

29.4% = 6.9% + (7%)(bi)

(7%)bi = 22.5%

bi = 3.21

Conclusion

Today, the financial market is increasingly complex and managing one‘s own portfolio will take up a lot of time and effort. There are situations when we don‘t have time or knowledge to explore the best investment alternatives in the market. This is a common problem faced by many wannabe investors. At this juncture, portfolio management services can help investor get out of this dilemma. So investor can simply assign his investments to portfolio management services who will report to him regularly on his portfolio performance. Thus, investor will not feel lost in this complex world of investments and the experts will do their job.

Questions

1. What do you mean by rates and return?
2. You are considering buying a stock with a beta of 2.05. If the risk-free rate of return is 6.9 percent, and the market risk premium is 10.8 percent, what should the expected rate of return be for this stock? (State your answer as a percentage.)
3. You are holding a stock that has a beta of 2.4 and is currently in equilibrium. The required return on the stock is 20.4% and the return on a risk-free asset is 8%. What would be the return on the stock if the stock's beta increased to 3.3 while the risk-free rate and market return remained unchanged? (Calculate your answer to two decimal places and state it as a percentage.)
4. The risk-free return is 4.1% and the market return is 14.0%. What is the expected return for the following portfolio? (State your answer in percent with two decimal places.)

Stock	Beta	Investment
AAA	3.4	Rs.125,000
BBB	2.9	Rs.330,000
CCC	1.3	Rs.230,000
DDD	0.9	Rs.500,000

Lesson – 12

CAPITAL BUDGETING

Introduction

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

DEFINITION

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

"Capital budgeting consists in planning development of available capital for the purpose of maximizing the long term profitability of the concern"– Lynch

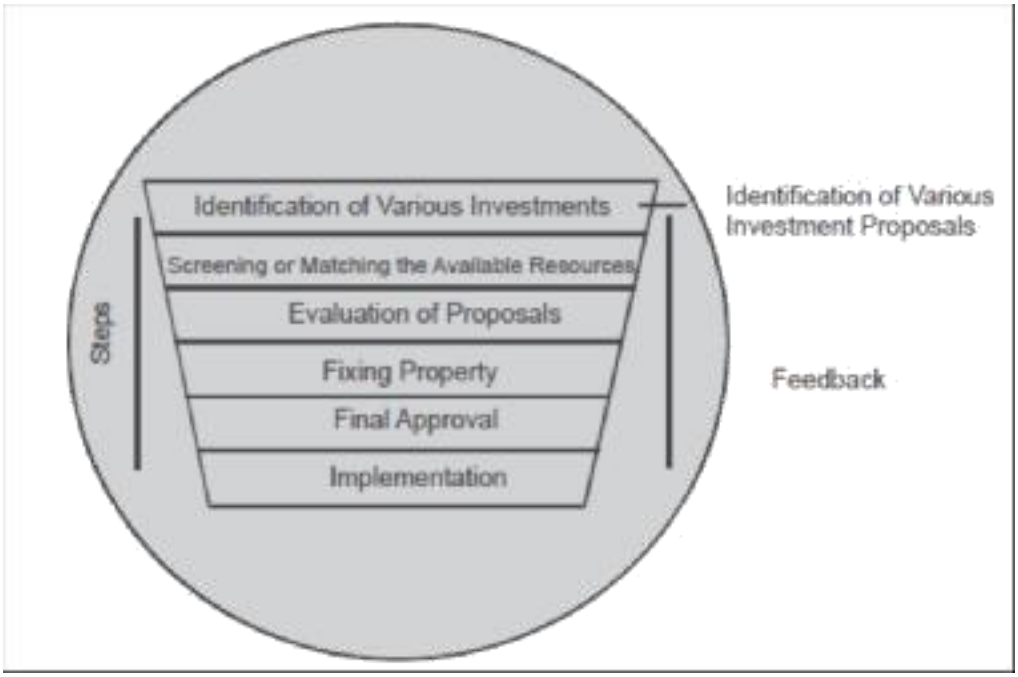
"Capital budgeting is concerned with the allocation of the firm source financial resources among the available opportunities. The consideration of investment opportunities involves the comparison of the expected future streams of earnings from a project with the immediate and subsequent streams of earning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

NEED AND IMPORTANCE OF CAPITAL BUDGETING

- **Huge investments:** Capital budgeting requires huge investments of funds, but theavailable funds are limited, therefore the firm before investing projects, plan are control its capital expenditure.
- **Long-term:** Capital expenditure is long-term in nature or permanent in nature.Therefore financial risks involved in the investment decision are more. If higher risks are involved, it needs careful planning of capital budgeting.
- **Irreversible:** The capital investment decisions are irreversible, are not changed back.Once the decision is taken for purchasing a permanent asset, it is very difficult to dispose of those assets without involving huge losses.
- **Long-term effect:** Capital budgeting not only reduces the cost but also increases therevenue in long-term and will bring significant changes in the profit of the company by avoiding over or more investment or under investment. Over investments leads to be unable to utilize assets or over utilization of fixed assets. Therefore before making the investment, it is required carefully planning and analysis of the project thoroughly.

CAPITAL BUDGETING PROCESS

Capital budgeting is a complex process as it involves decisions relating to the investment of current funds for the benefit to the achieved in future and the future is always uncertain. However the following procedure may be adopted in the process of capital budgeting:



Step 1 and 2 = Project generation

Step 3 = Project evaluation

Step 4 & 5 = Project Selection

Step 6 = Project execution

PROJECT GENERATION

Identification of Investment Proposals:

The capital budgeting process begins with the identification of investment proposals. The proposal or the idea about potential investment opportunities may originate from the top management or may come from the rank and file worker of any department or from any officer of the organization. The departmental head analyses the various proposals in the light of the corporate strategies and submits the suitable proposals to the capital expenditure planning committee in case of large organizations or to the officers concerned with the process of long-term decisions.

Screening the Proposals:

The expenditure planning committee screens the various proposals received from different departments. The committee views these proposals from various angels to ensure that these are in accordance with the corporate strategies or a selection criterion's of the firm and also do not lead to departmental imbalances.

PROJECT EVALUATION

Evaluation of Various Proposals:

The next step in the capital budgeting process is to evaluate the profitability of various proposals. There are many methods which may be used for this purpose such as payback period method, rate of return method, net present value method, internal rate of return method etc. All these methods of evaluating profitability of capital investment proposals have been discussed in detail separately in the following pages of this chapter.

It should, however, be noted that the various proposals to the evaluated may be classified as:

- Independent proposals
- Contingent or dependent proposals and
- Mutually exclusive proposals.

Independent proposals are those which do not compete with one another and the same may be either accepted or rejected on the basis of a minimum return on investment required. The contingent proposals are those whose acceptance depends upon the acceptance of one or more other proposals, e.g., further investment in building or machineries may have to be undertaken as a result of expansion programmed. Mutually exclusive proposals are those which compete with each other and one of those may have to be selected at the cost of the other.

PROJECT SELECTION

Fixing Priorities:

After evaluating various proposals, the unprofitable or uneconomic proposals may be rejected straight ways. But it may not be possible for the firm to invest immediately in all the acceptable proposals due to limitation of funds. Hence, it is very essential to rank the various proposals and to establish priorities after considering urgency, risk and profitability involved therein.

Final Approval and Preparation of Capital Expenditure Budget:

Proposals meeting the evaluation and other criteria are finally approved to be included in the Capital expenditure budget. However, proposals involving smaller investment may be decided at the lower levels for expeditious action. The capital expenditure budget lays down the amount of estimated expenditure to be incurred on fixed assets during the budget period.

PROJECT EXECUTION

Implementing Proposal:

Preparation of a capital expenditure budgeting and incorporation of a particular proposal in the budget does not itself authorize to go ahead with the implementation of the project. A request for authority to spend the amount should further be made to the Capital Expenditure Committee which may like to review the profitability of the project in the changed circumstances.

Further, while implementing the project, it is better to assign responsibilities for completing the project within the given time frame and cost limit so as to avoid unnecessary delays and cost over runs. Network techniques used in the project management such as PERT and CPM can also be applied to control and monitor the implementation of the projects.

Performance Review:

The last stage in the process of capital budgeting is the evaluation of the performance of the project. The evaluation is made through post completion audit by way of comparison of actual expenditure of the project with the budgeted one, and also by comparing the actual return from the investment with the anticipated return. Theunfavorable variances, if any should be looked into and the causes of the same are identified so that corrective action may be taken in future.

DEVOLOPING CAH FLOW DATA (cash inflow and cash outflow)

Before we can compute a project's value, we must estimate the cash flows both current and future associated with it. We therefore begin by discussing cash flow estimation, which is the most important and perhaps the most difficult, step in the analysis of a capital project. The process of cash flow estimation is problematic because it is difficult to accurately forecast the costs and

revenues associated with large, complex projects that are expected to affect operations for long periods of time.

Calculation of cash inflow		
Sales	xxxx	
Less: Cash expenses	xxxx	
PBDT	xxxx	
Less: Depreciation	xxxx	
PBT	xxxx	
less: Tax	xxxx	
PAT	xxxx	
Add: Depreciation	xxxx	
Cash inflow p.a		**xxxx**
Calculation of cash outflow		
Cost of project/asset	xxxx	
Transportation/installation charges	xxxx	
Working capital	xxxx	
Cash outflow		**xxxx**

CAPITAL BUDGETING TECHNIQUES

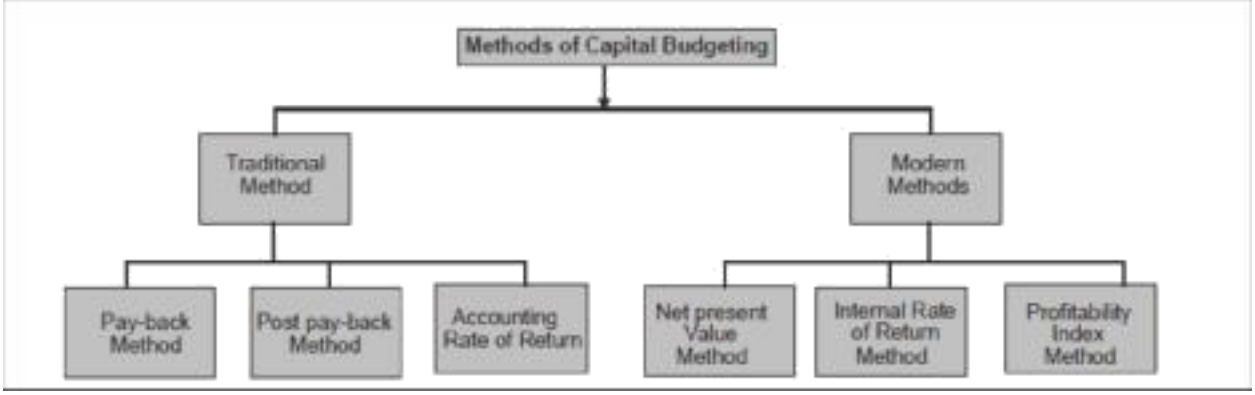
At each point of time a business firm has a number of proposals regarding various projects in which it can invest funds. But the funds available with the firm are always limited and it is not possible to invest funds in all the proposals at a time. Hence, it is very essential to select from amongst the various competing proposals, those which give the highest benefits. The crux of the capital budgeting is the allocation of available resources to various proposals.There are many methods of evaluating profitability of capital investment proposals. The various commonly used methods are as follows:

Traditional methods:

- Pay-back Period Method or Pay out or Pay off Method.
- Improvement of Traditional Approach to pay back Period Method. (post payback method)
- Accounting or Average Rate of Return Method.

Time-adjusted method or discounted methods:

- Net Present Value Method.
- Internal Rate of Return Method.
- Profitability Index Method.



TRADITIONAL METHODS:

PAY-BACK PERIOD METHOD

The 'pay back' sometimes called as pay out or pay off period method represents the period in which the total investment in permanent assets pays back itself. This method is based on the principle that every capital expenditure pays itself back within a certain period out of the additional earnings generated from the capital assets Under this method, various investments are ranked according to the length of their payback period in such a manner that the investment within a shorter payback period is preferred to the one which has longer pay back period. (It is one of the non-discounted cash flow methods of capital budgeting).

EQUAL INFLOW

$$\text{Pay-back period} = \frac{\text{Initial investment}}{\text{Annual cash inflows}}$$

UNEQUAL INFLOW=Cumulative value + Need amount x12
Next year cash inflow

MERITS

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

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

DEMERITS

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

POST PAY-BACK PROFITABILITY METHOD:

One of the serious limitations of Pay-back period method is that it does not take into account the cash inflows earned after pay-back period and hence the true profitability of the project cannot be assessed. Hence, an, improvement over this method can be made by taking into account the return receivable beyond the pay-back period.

Post pay-back profitability =Cash inflow (Estimated life – Pay-back period) Post pay-back profitability index= Post pay-back profitability/original investment

AVERAGE RATE OF RETURN:

This method takes into account the earnings expected from the investment over their whole life. It is known as accounting rate of return method for the reason that under this method, the Accounting concept of profit (net profit after tax and depreciation) 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 lower rate of return. This method can also be usedto make decision as to accepting or rejecting a proposal. Average rate of return means the average rate of return or profit taken for considering**.**

a) Average Rate of Return Method (ARR):

Under this method average profit after tax and depreciation is calculated and then it is divided by the total capital outlay or total investment in the project. This method is one of the traditional methods for evaluating

The project proposals

ARR = (Total profits (after dept. & taxes))/ (Net Investment in the project X No. of years of profits) x 100

OR

ARR = (Average Annual profits)/ (Net investment in the project) x 100

(b) Average Return on Average Investment Method:

This is the most appropriate method of rate of return on investment Under this method, average profit after depreciation and taxes is divided by the average amount of investment; thus:

Average Return on Average Investment = (Average Annual Profit after depreciation and taxes)/ (Average Investment) x 100

Merits

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

Demerits

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

TIME – ADJUSTED OR DISCOUNTED CASH FLOW METHODS:
MODERN METHOD

The traditional methods of capital budgeting i.e. pay-back method as well as accounting rate of return method, suffer from the serious limitations that give equal weight to present and future flow of incomes. These methods do not take into consideration the time value of money, the fact that a rupee earned today has more value than a rupee earned after five years.

NET PRESENT VALUE

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

NPV = Total Present value of cash inflows – Net Investment

If offered an investment that costs Rs.5,000 today and promises to pay you Rs.7,000 two years from today and if your opportunity cost for projects of similar risk is 10%, would you make this investment? You

Need to compare your Rs.5,000 investment with the Rs.7,000 cash flow you expect in two years. Because you feel that a discount rate of 10% reflects the degree of uncertainty associated with the Rs.7,000 expected in two years, today it is worth:

$$\text{Present value of \$7,000 to be received in two years} = \frac{\$7,000}{(1+0.10)^2} = \$5,785.12$$

By investing Rs.5,000 today, you are getting in return a promise of a cash flow in the future that is worth Rs.5,785.12 today. You increase your wealth by Rs.785.12 when you make this investment.

Merits

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

Demerits

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

PROFITABILITY INDEX METHOD

The profitability index (PI) is the ratio of the present value of change in operating cash inflows to the present value of investment cash outflows:

$$PI = \frac{\text{Present value of the change in operating cash inflows}}{\text{Present value of the investment cash outflows}}$$

Instead of the difference between the two present values, as in equation PI is the ratio of the two present values. Hence, PI is a variation of NPV. By construction, if the NPV is zero, PI is one.

INTERNAL RATE OF RETURN METHOD

This method is popularly known as time adjusted rate of return method/discounted rate of return method also. The internal rate of return is defined as the interest rate that equates the present value of expected future receipts to the cost of the investment outlay. This internal rate of return is found by trial and error. First we compute the present value of the cash-flows from an investment, using an arbitrarily elected interest rate. Then we compare the present value so obtained with the investment cost. If the present value is higher than the cost figure, we try a higher rate of interest and go through the procedure again. Conversely, if the present value is lower than the cost, lower the interest rate and repeat the process. The interest rate that brings about this equality is defined as the internal rate of return. This rate of return is compared to the cost of capital and the project having higher difference, if they are mutually exclusive, is adopted and other one is rejected. As the determination of internal rate of return involves a number of attempts to make the present value of earnings equal to the investment, this approach is also called the Trial and Error Method. Internal rate of return is time adjusted technique and covers the disadvantages of the Traditional techniques. In other words it is a rate at which discount cash flows to zero. It is expected by the following ratio

Base factor = Positive discount rate

DP = Difference in percentage

Merits

- It considers the time value of money.
- It takes into account the total cash inflow and outflow.
- It does not use the concept of the required rate of return.

- It gives the approximate/nearest rate of return.

Demerits

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

NPV is calculated in terms of currency while **IRR** is expressed in terms of the **percentage** return a firm expects the capital project to return;

- Academic evidence suggests that the **NPV Method is preferred** over other methods since it calculates additional wealth and the IRR Method does not
- The IRR Method cannot be used to evaluate projects where there are **changing cashflows** (e.g., an initial outflow followed by in-flows and a later out-flow, such as may berequired in the case of land reclamation by a mining firm)
- However, the **IRR Method does have one significant advantage** -- managers tend to better understand the concept of returns stated in percentages and find it easy to compare to the required cost of capital; and, finally,
- While both the NPV Method and the IRR Method are both DCF models and can even reach similar conclusions about a single project, the use of the IRR Method can lead to the belief that a smaller project with a shorter life and earlier cash inflows is preferable to a larger project that will generate more cash.
- Applying NPV using **different discount rates** will result in different recommendations. The IRR method always gives the same recommendation.
- The Adjusted Present Value (APV)Method is a flexible DCF method that takes into account interest related tax shields; it is designed for firms with active debt and a consistent market value leverage ratio.
- The Profitability Index (PI) Method, which is modeled after the NPV Method, is measured as the total present value of future net cash inflows divided by the initial investment; this method tends to favor smaller projects and is best used by firms with limited resources and high costs of capital.

The Bailout Payback Method, which is a variation of the Payback Method, includes the salvage value of any equipment purchased in its calculations

The Real Options Approach allows for flexibility, encourages constant reassessment based on the riskiness of the project's cash flows and is based on the concept of creating a list of value-maximizing options to choose projects from; management can, and is encouraged, to react to changes that might affect the assumptions that were made about each project being considered prior to its commencement, including postponing the project if necessary; it is noteworthy that there is not a lot of support for this method among financial managers at this time.

PAYBACK PERIOD

S. No	Advantages	S. No	Disadvantages
1.	Simple to compute	1.	No concrete decision criteria to tell us whether an investment increases the firm's value
2.	Provides some information on the risk of the investment	2.	Ignores cash flows beyond the payback period
3.	Provides a crude measure of liquidity	3.	Ignores the time value of money
4.		4.	Ignores the riskiness of future cash flows

DISCOUNT PAY BACK PERIOD

S.No	Advantages	S.No	Disadvantages
1.	Considers the time value of money	1.	No concrete decision criteria that tell us whether the investment increases the firm's value
2.	Considers the riskiness of the cash flows involved in the payback	2.	Calls for a cost of capital
		3.	Ignores cash flow beyond the payback period.

Payback period method

1. If the annual cash inflows are uniform. The payback period can be computed by dividing cash outlay by annual cash inflows. A project costs Rs. 200000 and yields annual cash inflow of Rs. 40000 for 7 years.

Solution

Payback Period = Initial investment / Annual cash inflow
= 200000 / 40000

= 5 year.

2. Calculate payback period for a project which requires a cash outlay Rs. 50000 and generates cash inflows of 20000 Rs. 10000, Rs. 30000 and 10000.

Year	**Cash inflows**	**Cumulative cash inflow**
1	20000	20000
2	10000	30000
3	30000	60000
4	10000	70000

Payback period = 2 years 8 months
Time required = 20000 x 12 / 30000
= 8 month
Payback period = 2 years 8 months.

3. A project cost Rs. 100000 and yields annually a profit Rs. 20000 after depreciation at 10% p.a but before tax of 50. Calculate payback period.

Pay back period = Initial investment / Annual cash inflow
Initial investment = 100000
Annual cash inflow = Profit after tax plus depreciation

Profit before tax	=	20000
Less: Tax 50%	=	10000
Profit after tax	=	10000
Add: Depreciation (100000 x 10 /100)	=	10000
		20000

Payback period = 100000 / 20000 = 5 years.

II Net present value method

1. Project X initially costs Rs.25,000. It generates the following cash inflows

Year	Cash in flows	Present value of Rs.1/- @ 10%
1	9000	0.909
2	8000	0.826
3	7000	0.751
4	6000	0.683
5	5000	0.621

Solution:

Year	Cash in flows	Present value of Rs.1/- @ 10%	Present value of Cash in flow
1	9,000	0.909	8181
2	8,000	0.826	6608
3	7,000	0.751	5257
4	6,000	0.683	4098
5	5,000	0.621	3105
Total present value of cash inflow			27,249
(-) Total present value or cash outflow			25,000
Net Present Value (NPV)			2,249
This project is accepted			

2. The following are the cash inflows and outflows of a certain project

Year	Out flows	Inflows
0	1,50,000	-
1	30,000	30,000
2	-	30,000
3	-	50,000
4	-	60,000
5	-	40,000

The step value at the end of 5 years is Rs.40,000. Taking the cut off rate as 10%. Calculate Net Present Value

Year	1	2	3	4	5
P.r of @ rate 10%	0.909	0.826	0.751	0.683	0.621

Solution:

Year	Inflows	P.Vl.F @ 10%	Present value of cash inflows
0	-	0.909	27,270
1	30,000	0.826	24,780
2	30,000	0.751	37,550
3	50,000	03683	40,980
4	60,000	0.621	24,840
5	40,000	0.621	24,840
Total Present Value of Cash inflows			1,80,260
(-) Total Present Value of cash outflow (1,50,000+(30,000 X 0.909) (1,50,000+27,270)			1,77,270
Net Present Value			2,990

This project is recommended

3. A limited company is considering investing in a project requiring a capital outlay of Rs. 2,00,000.. forecast of annual income after depreciation but befor tax is as follows:

Year	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. Calculate:

a. Pay – back method
b. Rate of return on original investment
c. Rate of return on average investment
d. Discounted cash flow method taking cost of capital at 10%
e. Excess present value index

Solution

a. Pay back method

Statement of cash inflow (Rs. In '000)

Year	**Profit**	**Tax at 50%**	**Profit after tax**	**Depreciation**	**Cash inflows**	**Cumulative cash inflows**
1	100	50	50	40	90	90
2	100	50	50	40	90	180
3	80	40	40	40	80	260
4	80	40	40	40	80	340
5	40	20	20	40	60	400

Pay backperiod Rs. 1,80,000 is recovered in 2 years. The balance of Rs. 20,000 will be recovered in 20,000/80,000 X 1 = 0.25 year. Hence, pay back period is 2.25 years or 2 years and 3 months.

b. Rate of return on Original investment method

Year	Net profit after tax and depreciation
1	50,000
2	50,000
3	40,000
4	40,000
5	20,000
Total profits	2,00,000

Average Annual profits = 2,00,000 /5 = 40,000

Rate of return = 40,000/2,00,000 X 100 = 20%

c. Rate of return on average investment method

= 40,000/1,00,000 X 100 = 40%

d. Discounted cash flow method

Year	Cash inflows	Discount factor @ 10%	Present value Rs.
1	Rs. 90,000	0.909	81,810

2	90,000	0.826	74,340
3	80,000	0.751	60,080
4	80,000	0.683	54,640
5	60,000	0.621	37,260
	Present value of cash inflows		3,08,130
	Less: Initial investment		2,00,000
	Net present value		1,08,130

e. Excess present value index
= Total present value of cash inflows / Total present value of cash outflows X 100
= 3,08,130 /2,00,000 X 100 = 154%

4. Internal rate of return

1. Initial outlay Rs. 50,000

Life of the asset 5 Years

Estimated cash flow Rs. 12,500

Calculate Internal Rate of Return

Solution

Present value factor = Initial investment / Annual cash inflow = 50,000/12,500 = 4

The present value factor is to be located in the present value annuity table in the column of 5 years (life of the asset). The figure 3.9927 (nearest to 4) is found in the row of 8%. Hence Internal Rate of return is 8%.

Conclusion

All businesses need to maintain a safe level of cash to enable them to carry on business activities. The managers of a business need to determine that safe level. The cash budget is then prepared by taking into consideration, that safe level of cash. Thus, if a cash shortage is expected during a period, a plan is made to borrow cash.

Questions:

1. Define capital budgeting
2. State the need and importance if capital budgeting.
3. What are the process of capital budgeting
4. Explain the techniques of capital budgeting
5. What is NPV?
6. What is payback period? State the advantages and limitations
7. Explain profitability index method?
8. What is IRR?

9. Does the following project have a positive or negative rate of return? Show how this is known to be true. Investment Cost Rs.2,500 Net Benefits Rs 300 in Year 1, increasing by Rs 200 per year Salvage Rs. 50 Useful Life 4 year

10. ABC and Co. is considering a proposal to replace one of its plants costing Rs. 60,000 and having a written down value of Rs. 24,000. The remaining economic life of the plant is 4 years after which it will have no salvage value. However, if sold today, it has a salvage value of Rs. 20,000. The new machine costing Rs. 1,30,000 is also expected to have a life of 4 years with a scrap value of Rs. 18,000. The new machine, due to its technological superiority, is expected to contribute additional annual benefit (before depreciation and tax) of Rs. 60,000. Find out the cash flows associated with this decision given that the tax rate applicable to the firm is 40%. (The capital gain or loss may be taken as not subject to tax).

11. A firm whose cost of capital is 10% is considering two mutually exclusive projects X and Y, the details of which are:

	Year	**Project X**	**Project Y**
Cost	0	Rs. 70,000	Rs. 70,000
Cash inflows	1	10,000	50,000
	2	20,000	40,000
	3	30,000	20,000
	4	45,000	10,000
	5	60,000	10,000

Compute the Net Present Value at 10%, Profitability Index, and Internal Rate of Return of the twoprojects.

UNIT – IV

Lesson – 13

WORKING CAPITAL MANAGEMENT

Introduction

The present research seeks to study in depth the Working Capital Management of selected paper companies in India, with special emphasis on an examination of the management performance in regard to financial management. It hardly needs mentioning that inventory, accounts receivables and cash and its alert administration can go a long way in solving the problem of the efficient working capital management. In fact, the present research of working capital management needs special attention for the efficient working and the business. It has been often observed that the shortage of working capital leads to the failure of a business. The proper management of working capital may bring about the success of a business firm. The management of working capital includes the management of current assets and current liabilities. The present research undertakes to deal with the net concept of working capital: excess of current assets over current liabilities.

MEANING OF WORKING CAPITAL

Capital required for a business can be classified under two main categories

- Fixed Capital
- Working Capital

Every business needs funds for two purposes for its establishment and to carry out its day-to-day operations. Long-term funds are required to create production faculties through purchase of fixed assets such as plant and machinery, land, building, furniture etc. Investments in these assets represent that part of firm's capital which is blocked on a permanent or fixed basis and is called fixed capital. Funds are also needed for short-term purposes for the purchase of raw materials, payment of wages and other day-to-day expenses, etc. These funds are known as working capital.

Definition

In the words of **Shubin**, "Working capital is the amount of funds necessary to cover the cost of operating the enterprise".

According to **Genestenberg**, "Circulating capital means current assets of a company that are changed in the ordinary course of business from one form to another, as for example, from cash to inventories, inventories to receivables, receivables into cash".

TYPES OF WORKING CAPITAL

1. **Gross working capital** –Refers to firms investments in current assetswhich 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 andcurrent liabilities or excess of total current assets over total current liabilities.
3. **Operating cycle concept** –Refers to capital/ amount required in differentforms at successive stages of manufacturing operation/ process. It represents 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 amountwhich 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 andabove permanent working capital i e difference between total working capital less permanent working capital.
6. **Seasonal working capital -** Refers to capital required to meet seasonaldemand e.g. extra capital required for manufacturing coolers in summer, woolen garments in winter. It can be arranged through short term loans.
7. **Specific working capital** –Refers to part of capital required for meetingunforeseen contingencies such as strike, flood, war, slump etc.

CONCEPTS OF WORKING CAPITAL

There are two concepts of working capital:

Balance Sheet Concept

Operating Cycle or Circular Flow Concept

Balance Sheet Concept: There are two interpretations of working capital under thebalance sheet concept:

(i) Gross Working Capital

(ii) Net Working capital

In the broad sense, the term working capital refers to the gross working capital and represents the amount of funds invested in current assets. Thus, the gross working capital is the capital invested in total current assets of the enterprise; current assets are those assets which in the ordinary course of business can be converted into cash within a short period of normally one accounting year.

CONSTITUENTS OF CURRENT ASSETS	
1.	Cash in hand and bank balances.
2.	Bills Receivables.
3.	Sundry Debtors (less provision for bad debts.)
4.	Short-term loans and advances.
5.	Inventories of stocks, as:
	(a) Raw Materials,
	(b) Work-in-Process,
	(c) Stores and spares,
	(d) Finished Goods.
6.	Temporary Investments of surplus funds.
7.	Prepaid Expenses.
8.	Accrued Incomes.

In a narrow sense, the term working capital refers to the new working capital.

Net working capital is the excess of current assets over current liabilities or say:

Net Working Capital = Current Assets – Current Liabilities.

Net Working Capital may be positive or negative. When the current assets exceed the current liabilities the working capital is positive and the negative working capital results when the current

liabilities are more than the current assets. Current liabilities are those liabilities which are intended to be paid in the ordinary course of business within a short period of normally one accounting year out of the current assets or the income of the business.

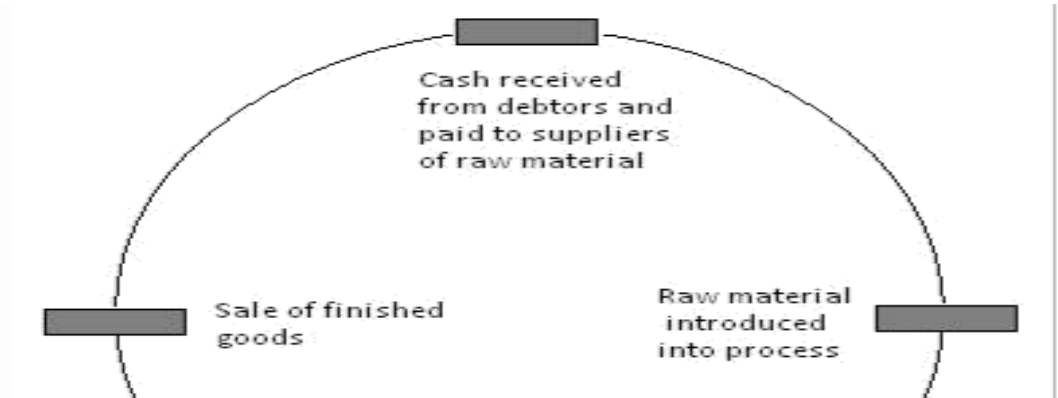
CONSTITUENTS OF CURRENT LIABILITIES

1. Bills Payable.
2. Sundry creditors or accounts payable.
3. Accrued or outstanding expenses.
4. Short-term loans, advances and deposits.
5. Dividends payable.
6. Bank overdraft.
7. Provision for taxation, if it does not amount to appropriation of profits.

The gross working capital concept is financial or going concern concept whereas net working capital is an accounting concept of working capital. These two concepts of working capital are not exclusive; rather both have their own merits.

(B)Operating Cycle or Circular Flow Concept

As discussed earlier, working capital refers to that part of firm's capital which is required for financing short-term or current assets such as cash, marketable securities, debtors and inventories. Funds, thus, invested in current assets such as cash, marketable securities, debtors and inventories. Funds, thus, invested again in exchange for other current assets.



The gross operating cycle of a firm is equal to the length of the inventories and receivables conversion periods. Thus,

Gross Operating Cycle = RMCP + WIPCP + RCP

Where, RMCP = Raw Material Conversion Period

WIPCP = Work-in-Process Conversion Period

FGCP = Finished Goods Conversion Period

RCP = Receivables Conversion Period

However, a firm may acquire some resources on credit and thus defer payments for certain period. In that case, net operating cycle period can be calculated as below:

Net Operating Cycle Period = Gross Operating Cycle Period – Payable Deferral Period

Further, following formula can be used to determine the conversion periods.

1. Raw Material Conversion Period =
2. Work-in-Process Conversion Period =
3. Finished Goods Conversion Period =
4. Receivables Conversion Period =
5. Payables Deferral Period =

CHARACTERISTICS OF WORKING CAPITAL

1. **Short –term Requirements:** Working capital is utilized to purchase current assetswhich can be easily converted into cash in short period of time. The length of production process decides the duration of working capital; it is the time period between sale and cash receipts.
2. **Circular Movement:** Working capital is continuously transformed into cash but itagain turns into working capital. This process is on continuous basis. When cash is utilized to purchase current assets and with the help of current assets goods are produced and sold then therefore working capital is also termed as circulating capital.
3. **Permanence:** Working capital is a short-term capital but in order to continue theproduction process it is always required by the firm. Hence working capital is also termed as permanence or regular working capital**.**
4. **Instability:** Though working capital is required permanently in a firm but theamount of working capital required frequently changes with the changes in production level, changes in purchase, sale policy, price level and demand level. The amount of working capital that changes due to changes in other factors is called variable working capital.
5. **Liquidity:** Working capital can be easily converted into cash, hence it is moreliquid. Firms which maintain adequate amount or working capital finds easy to convert it into cash in time when cash is required.
6. **Less Risky:** Working capital is the investment in current assets which is for a shortperiod of time. Hence it involves less risk. Working capital does not involve any risk related to technological changes. It involves a very less amount of physical risk only.
7. **Special Accounting System not Required:** As working capital is for short-termusually for one year. Hence, there is no need to adopt special accounting system for it.

FACTORS DETERMINING THE WORKING CAPITAL REQUIREMENTS

The Working capital requirements of a concern depend upon a large number of factors such as nature and size of business, the character of their operations, the length of production cycles, the rate of stock turnover and the state of economic situation. It is not possible to rank them because all such factors are of different importance and the influence of individual factors changes for a

firm over time. However the following are important factors generally influencing the working capital requirements.

- **Nature or Character of Business**: The Working capital requirements of a firmbasically depend upon the nature of its business. Public utility undertakings like Electricity. Water supply and Railways need very limited working capital because they offer cash sales only and supply services, not products, and as such no funds are tied up in inventories and receivables. On the other hand trading and financial firms require less investment in fixed assets but have to invest large amount in current assets like inventories, receivables and cash; as such they need large amount of working capital. The manufacturing undertakings also require sizable working capital along with fixed investments. Generally speaking it may be said that public utility undertaking require small amount of working capital, trading and financial firms require relatively very large amount, whereas manufacturing undertakings require sizable working capital between these two extremes.
- **Size Business/Scale of Operations:** The working capital requirements of aconcern are directly influenced by the size of its business which may be measured in terms of scale of operations. Greater the size of business unit, generally larger will be the requirements of working capital. However, in some cases even a smaller concern may need more working capital due to high overhead charges, inefficient use of available resources and other economic disadvantages of small size.
- **Production Policy:** In certain industries the demand is subject to widefluctuations due to seasonal variations. The requirements of working capital in such cases depend upon the production policy. The production could be kept either steady by accumulating inventories during slack periods with a view to meet high demand during the peak season or the production could be curtailed during the slack season and increased during the peak season. If the policy is to keep production steady by accumulating inventories it will require higher working capital.
- **Manufacturing Process/Length of Production Cycle:** In manufacturingbusiness, the requirements of working capital increase in direct proportion to length of manufacturing process. Longer the process period of manufacture, larger is the amount of working capital required. The longer the manufacturing time, the raw material and other supplies have to be carried for a longer period in the process with progressive increment of labor and service

costs before the finished product is finally obtained. Therefore, if there are alternative processes of production, the process with the shortest production period should be chosen.

- **Seasonal Variations:** In certain industries raw material is not availablethroughout the year. They have to buy raw materials in bulk during the season to ensure an uninterrupted flow and process them during which gives rise to more working capital requirements. Generally, during the busy season, a firm requires larger working capital than in the slack season.
- **Working Capital Cycle:** In a manufacturing concern, the working capital cyclestarts with the purchase of raw material and ends with the realization of cash from the sale of finished products. This cycle involves purchase of raw materials and stores, its conversion into stocks of finished goods through work-in-progress with progressive increment of labor and service costs, conversion of finished stock into sales, debtors and receivables and ultimately realization of cash and this cycle continues again from cash to purchase of raw material and so on.

Rate of Stock Turnover: There is a high degree of inverse co-relationshipbetween the quantum of working capital and the velocity or speed with which the sales are affected. A firm having a high rate of stock turnover will need lower amount of working capital as compared to a firm having a low rate of turnover

- **Credit Policy:** The credit policy of a concern in its dealing with debtors andcreditors influence considerably the requirements of working capital. A concern that purchases its requirements on credit and sells its products/services on cash requires lesser amount of working capital. On the other hand a concern buying its requirements for cash and allowing credit to its customers, shall need larger amount of working capital as very huge amount of funds are bound to be tied up in debtors or bills receivables.
- **Business Cycles:** Business cycle refers to alternate expansion and contraction ingeneral business activity. In a period of boom i.e., when the business is prosperous, there is a need for larger amount of working capital due to increase in sales, rise in prices, optimistic expansion of business, etc.
- **Rate of Growth of Business:** The working capital requirements of a concernincrease with the growth and expansion of its business activities. Although, it is difficult to determine the relationship between the growth in the volume of business and the growth in the working capital of a business, yet it may be concluded that for normal rate of expansion in

the volume of business, we may have retained profits to provide for more working capital but in fast growing concerns, we shall require larger amount of working capital.

- **Earning Capacity and Dividend Policy:** Some firms have more earningcapacity than others due to quality of their products, monopoly conditions, etc. Such firms with high earning capacity may generate cash profits from operations and contribute to their working capital. The dividend policy of a concern also influences the requirements of its working capital. A firm that maintains a steady high rate of cash dividend irrespective of its generation of profits needs more working capital than the firm that retains larger part of its profits and does not pay so high rate of cash dividend.
- **Price Level Changes:** Changes in the price level also affect the working capitalrequirements. Generally, the rising prices will require the firm to maintain larger amount of working capital as more funds will be required to maintain the same current assets. The affect of rising prices may be different for different firms. Some firms may be affected much while some others may not be affected at all by the rise in prices.
- **Other Factors:** Certain other factors such as operating efficiency, managementability, irregularities of supply, import policy, asset structure, importance of labor, banking facilities, etc., also influence the requirements of working capital

FORECASTING WORKING CAPITAL REQUIREMENTS

"Working capital is the life-blood and controlling nerve centre of a business". No business can be successfully run without an adequate amount of working capital. To avoid the shortage of working capital at once, an estimate of working capital requirements should be made in advance so that arrangements can be made to procure adequate working capital.

Methods of Estimating Working Capital Requirements

The following method are usually followed in forecasting working capital requirements of a firm

1. Percentage of Sales Method
2. Regression Analysis Method
3. Cash Forecasting Method
4. Operating Cycle Method
5. Projected Balance Sheet Method

1.Percentage of Sales Method: This method of estimating working capitalrequirements is based in the assumption that the level of working capital for any firm is directly related to it sales value. If past experience indicates a stable relationship between the amount of sales and working capital, then this basis may be used to determine the requirements of working capital for future period. Thus, if sales for the year 2007 amounted to Rs.30,00,000 and working capital required was Rs.60,00,000; the requirement of working capital for the year 2008 on an estimated sales liabilities can also be estimated on the basis of the past experience as a percentage of sales. This method is simple to understand and easy to operate but it cannot be applied in all cases because the direct relationship between sales and working capital may not be established.

2. Regression Analysis Method (Average Relationship between Sales and Working Capital): This method of forecasting working capital requirements is based upon thestatistical technique of estimating or predicting the unknown value of a dependent variable from the known value of an independent variable. It is the measure of the average relationship between two or more variables, i.e., sales and working capital, in terms of the original units of the data.

The relationships between sales and working capital are represented by the equation:

$$Y = a + bx$$

Where, y = Working Capital (dependent variable)

a = Intercept of the least square

b = Slope of the regression line

x = Sales (independent variable)

For determining the values 'a' and 'b' two normal equations are used which can be solved simultaneously:

$$\Sigma = \Sigma + \Sigma \qquad \Sigma = + \Sigma$$

3. Cash Forecasting Method: This method of estimating working capital requirementsinvolves forecasting of cash receipts and disbursements during a future period of time. Cash forecast will include all possible sources from which cash will be received and the channels in which payments are to be made so that a consolidated cash position is determined. This method is similar to the preparation of a cash budget. The excess of receipts over payments represents surplus of cash and the excess of payments over receipts causes deficit of cash or the amount of working capital required. The following illustration explains the cash forecasting method of estimating working capital requirements.

4. **Operating Cycle Method:** This method of estimating working capital requirementsis based upon the operating cycle concept of working capital. We have discussed earlier, in this chapter, the concept and determination of duration or operating cycle. The cycle starts with the purchase of raw material and other resources and ends with the realization of cash from the sale of finished goods. It involves purchase of raw materials and stores, its conversion into stock of finished goods through work-in-process with progressive increment of labor and service costs, conversion of finished stock into sales, debtors and receivables, realization of cash and this cycle continues again from cash to purchase of raw material and so on. The speed/time duration required to complete one cycle determines the requirement of working capital – longer the period of cycle, larger is the requirement of working capital and vice-versa.

5. Projected Balance Sheet Method: Under this method, projected balance sheet forfuture date is prepared by forecasting of assets and liabilities by following any of the methods sated above. The excess of estimated total current assets over estimated current liabilities, as shown in the projected balance sheet, is computed to indicate the estimated amount of working capital required.

WORKING CAPITAL POLICY

Working capital policy can also be known as working capital management. Working capital management refers to a strategy which mainly focuses on maintaining adequate level of current assets and current liabilities in a firm, so that appropriate level of working capital can be maintained.

The ratio helps to examine the following alternative working capital policies:

- **Conservative Policies:** Assuming a constant level of fixed assets, a higher currentassets to fixed assets ratio, refers to conservative policies. It indicates the firm's sound liquidity position and lower risk to meet its current obligations and investments. This policy is also termed as flexible policy. It also indicates that the current assets are efficiently utilized at every levels or output.

  Conservative Policy Indicates

  (i) Sound liquidity
  (ii) Lower risk
  (iii) Current assets are efficiently utilized in production
  (iv) No bottlenecks in production, because of the maintenance of huge stock
  (v) Prompt payment of accounts payable, because of huge liquid cash in hand

- **Moderate Policies:** Moderate policy is otherwise termed as average current assetspolicy. This ratio occurs between higher and lower ratio of current assets to fixed assets ratio. In other words, the current assets policy of most firms may fall between the conservative policies and aggressive policies. This indicates moderate risk and average liquidity position of a firm.

  Moderate Policy Indicates:

  (i) Moderate risk
  (ii) Average liquidity position
  (iii) Current assets are used in production
  (iv) Maintenance of stock of raw materials, work-in-progress and finished goods are at an average level.

- **Aggressive Policies:** Lower level of current assets to fixed assets ratio representsaggressive policy. This aggressive policy indicates higher risk and poor liquidity position of a firm. It also indicates that the current assets are inefficiently utilized at all levels of output. This policy is also termed as restrictive policy.

  Aggressive Policy Indicates

  (i) Poor liquidity position
  (ii) Higher risk
  (iii) Current assets are utilized at lowest in all levels of output
  (iv) Maintenance of small stock levels

(v) Declining size of sales because of rare credit sales facilities

(vi) Stoppage and bottlenecks in production, due to lack of stock

(vii) Slower accounts payable payments, because of low cash balance in hand

Problems

Problem 1. From the following information, prepare a statement in column form showing · the working capital requirements. (i) In total and (ii) As regards each constituent part of working capital.

Budgeted sales (Rs. 10 per unit) Rs. 2,60,000 p.a.

Analysis of Costs	Rs.
Raw Materials	3.00
Direct Labour	4.00
Overheads	2.00
Total Cost	9.00
Profit	1.00
Sales	10.00

It is estimated that

(i) Raw materials are carried in stock for three weeks and finished goods for two weeks.

(ii) Factory processing will take three weeks.

(iii) Suppliers will give full five weeks credit.

(iv) Customers will require eight weeks credit.

It may be assumed that production and overheads accrue evenly throughout the year.

Solution : Statement of Working Capital Requirement

Current Assets		Rs.
Raw Materials 78,000 x 3/52	=	4,500
Work in Progress (Note)	=	9,000
Finished Goods 2,34,000 x 2/52	=	9,000
Debtors 2,60,000 x 8/52	=	40,000
Less : Current Liabilities	=	62,000

Trade Creditors (5 weeks) 5/52 x 78,000 =	7,500
Working Capital Required	55,000

Working Notes:

(i) Number of Units	= 26,000
(ii) Finished Goods	
Raw Materials 26,000 x 3	= 78,000
Direct Labour 26,000 x 4	= 1,04,000
Overheads 26,000 x 2	= 52,000
Finished Goods	2,34,000

(iii) Work in Progress	
Raw Material 78,000 x 3/52	= 4,500
Labour 1,04,000 x 3/52 x 112	= 3,000
Overhead 52,000 x 3/52 x 112	= 1,500
Work in Progress	9,000

NOTE : (i) Normally finished goods and work in progress are taken as same value. Suppose wages and overheads accrue evenly throughout the year given in the problem, we have to find out the work in progress value separately. At that time of computing work in progress labour, overhead value is reduced to half.

(ii) At the time of calculating working capital, debtor value will be taken as either including profit element or excluding profit element.

Problem 2. Prepare a working capital forecast from the following information :

Issued share capital	4,00,000
12% Debentures	1,50,000

The fixed assets are valued at Rs. 3. 00 lakhs. Production during the previous year is 1.00 lakh units. The same level of activity is intended to be maintained during the current year.

The expected ratios of cost to selling price are

Raw materials	50%

Direct Wages	10%
Overheads	25%

The raw materials ordinarily remain in stores for 2 months before production. Every unit of production remains in process for 2 months. Finished goods remain in the warehouse for 4 months. Credit allowed by creditors is 3 months from the date of delivery of raw materials and credit given to debtors is 3 months from the date of dispatch.

Selling price is Rs. 6 per unit. Both the production and sales are in a regular cycle.

Solution: **Working Capital Statement**

	Rs.
Raw Materials	50,000
Work in Progress	67,500
Finished Goods	1,70,000
Debtors	1,27,500
	4,15,000
Less : Creditors	75,000
Working capital required	3,40,000

Working Notes :

Number of units	=	1,00,000
Sales Value = 1,00,00	=	6,00,000
Material = 6,00,000 x 50/100	=	3,00,000
Labour= 6,00,000 x 10 /100	=	60,000
Overheads = 6,00,000 x 25 /100	=	1,50,000
(i) Finished Goods		
Raw Materials	=	
Direct Labour	=	3,00,000
Overheads	=	60,000
i.e., 5,10,000 x 4/12	=	1,50,000
		5,10,000
(ii) Work in Progress		1,70,000

Raw Materials	= 3,00,000 x 2/12 =	50,000
Direct Labour	= 60,000 x2/12 x 1/2 =	5,000
Overheads	= 1,50,000 x 2 / 12x 1/2 =	12,500
		67,500
(iii)	Debtors = 5,10,000 x 3/12 =	1,27,500
(iv)	Creditors = 3,00,000 x 3/12 =	75,000

Problem 3. The management of G Ltd has called for a statement showing the working capital needed to finance a level of 3,00,000 units of output for the year. The cost structure for the company's product, for the above mentioned activity level is detailed below.

Cost Element	Cost per unit (Rs.)
Raw Materials	20
Direct Labour	5
Overheads	15
Total Cost	40
Profit	10
Selling Price	50

- Past trends indicate that raw materials are held in stock on an average for two months.
- Work in progress will approximate to half a month's production.
- Finished goods remain in warehouse on an average for a month.
- Suppliers of materials extend a month's credit.
- Two months' credit is normally allowed to debtors.
- A minimum. cash balance of Rs. 25,000 is expected to be maintained.

The production pattern is assumed to be even during the year. Prepare the statement of working capital determination.

Solution : Working Capital Statement (or)

Statement of Working Capital Requirement

Current Assets

Raw Materials	60,00,000 x 2/12	=	10,00,000
Work in Progress		=	3,75,000
Finished goods	1,20,00,000 x 1/12	=	10,00,000
Debtors	1,50,00,000 x 2/12	=	25,00,000
			48,75,000
Less : Current Liabilities			
Sundry Creditors	60,00,000 x 1/ 2		5,00,000
			43,75,000
Add : Minimum Cash Balance			25,000
Working Capital			44,00,000

Workings :

(i) Finished Goods

Raw Materials	3,00,000 x 20	60,00,000
Direct Labour	3,00,000 x 5	15,00,000
Overheads	3,00,000 x 15	45,00,000
Finished Goods		1,20,00,000

Problem 4

From the following estimates of Sethal Ltd you are required to prepare a forecast of working capital requirements.

(i) Expected level of production for the year 15,600 units

(ii) Cost per unit : Raw Materials Rs. 90, Direct labourRs. 40, overheads Rs. 75.

(iii) Selling Price per unit Rs. 265

(iv) Raw Materials in stock on an average for 1 month

(v) Materials are in process on an average for 2 weeks.

(vi) Finished goods in stock on an average for 1 month.

(vii) Credit allowed by suppliers is one month.

(viii) Time lag in payment from debtors is 2 months.

(ix) Lag in payment of wages 11/2 weeks.

(x) Lag in payment of overheads is one month. All sales are on credit.

(xi) Cash in hand and at Bank is expected to be Rs. 60,000.

It is assumed that production is carried on evenly throughout the year. Wages and overheads accrued evenly and a period of 4 weeks is equivalent to a month.

Solution : Statement of working capital Requirement

Current Assets	
Raw materials 1,08,000 x 1 =	1,08,000
Finished goods 2,46,000 x 1	2,46,000
Debtors 2 months 2,46,000 X 2	4,92,000
Work in progress	88,500
Cash in hand and at Bank	60,000
	9,94,500
Less : Current Liabilities	
Creditors 1,08,000 x 1	1,08,000
Lag in payment of wages 1112 weeks	
48 000 X 3/2 x 1/4	
Lag in payment of overheads (90,000 x 1)	18,000
	90,000
Working capital required	2,16,000
[9,94,500 – 2,16,000]	7,78,500

Working notes :

Estimated sales = 15,600 units

A period of 4 weeks is taken as equivalent to one month.

Therefore, sales per month = 15,600 x 52	1200 units
Estimated sales per month = 265 x 1,200	= 3,18,000
Raw Materials p.m. 1,200 x 90	= 1,08,000

Direct Labour p.m. 1,200 x 40	= 48,000
Overheads p.m. 1,200 x 75	= 90,000
Cost of Sales/Finished Goods	= 2,46,000
Work in progress	
Raw materials (2 weeks) 1,08,000 x 1/2	= 54,000
Labour (2 weeks) 48,000 x 1/2	= 12,000
Overhead (2 weeks) 90,000 x1/2 x 1/2	= 22,500
	88,500

NOTE : Labour and overheads are reduced to one half as they accrue evenly during the year.

Problem 5

Prepare an estimate of working capital and projected Balance Sheet for the year ended on 31.12.2002 from the following information.

(i) Share capital Rs. 5,00,000, 15% Debentures of Rs. 2,00,000, Fixed assets at cost of Rs. 3,00,000.

(ii) The expected ratios of cost to selling price are Raw materials 60%, Labour 10%,Overheads 20%.

(iii) Raw materials are in stores for an average of 2 months.

(iv) Finished goods are kept in warehouse for 3 months.

(v) Expected level of production 1,20,000 units per year.

(vi) Each unit of production is expected to be in process for 1 month.

(vii) Credit given by suppliers is 2 months.

(viii) 20% of the output is sold against cash. Time lag in payment from debtors is 3 months.

(ix) Selling price is Rs. 5 per unit

(x) Labour and overheads will accrue evenly during the year.

Solution : Statement of Working Capital requirement

Current Assets

Raw Materials (2 months)	60,000
Work in progress	37,500
Stock of finished goods (3 months)	1,35,000
Debtors 3 months	1,08,000
Total Current Assets	3,40,500
Less : Current Liability	
Creditors 2 months	60,000
Working Capital required [3,40,500 – 60,000]	2,80,500

Working Notes:

Estimated production units 1,20,000 / 12	= 10,000 units
Sales p.m. 10,000 units x Rs. 5	= 50,000
(i) Finished goods :	
Raw Materials 60% = 50,000 x 60/100	= 30,000
Direct Labour 10% = 50,000 x 10/100	= 5,000
Overheads 20% = 50,000 x 20/100	= 10,000
Finished goods/Cost of sales	= 45,000
(ii) Work in progress (1 month)	
Raw materials	=30,000
Labour 5000 x 1/2	= 2,500
Overheads 10,000 x 1/2	= 5,000
W.I.P	= 37,500
(iii) Debtors (3months) at cost equivalent	
Cost of sales pm	= 45,000
Less : Cash sales 20%	= 9,000
Cost of sales (credit) pm	= 36,000
Debtors (3 months) at cost equivalent	

= 36,000 x 3 = 1,08,000

Projected Balance Sheet as on 31.12.2002

Liabilities		Rs.	Assets	Rs.
Share Capital	2,00,000	5,00,000	Fixed Assets at cost	3,00,000
15% Debentures	30,000	2,30,000	Current Assets :	
Creditors		60,000	Raw Materials	60,000
			Work in progress	37,500
			Stock of Finished Goods	1,35,000
			Debtors	1,20,000
			Profit & Loss A/c	30,000
			Cash (BF)	1,07,500
		7,90,000		7,90,000

Conclusion

The relative liquidity of the firm's assets structure is measured by the current assets to fixed assets ratio. The greater this ratio, the less risky as well as less profitable will be the firm and vice versa. Similarly, the relative liquidity of the firm's financial structure can be measured by the short-term financing to total financing ratio. The lower this ratio, the less risky as well as less profitable will be the firm and vice versa. In shaping its working capital policy, the firm should keep in mind these two dimensions – relative asset liquidity and relative financing liquidity of the working capital management. A firm will be following a very conservative working policy if it combines a high level of current assets with a high level of long-term financing. Such a policy will not be risky at all and would be less profitable. An aggressive firm, on the other hand, would combine low level of current assets with ahigh level of long-term financing. .This will have high profitability and high risk. Infact, the firm may follow a conservative financing policy to counter its relativelyilliquid assets structure in practice. The conclusion of all this it that the considerationsof assets and financing mixes are crucial to the working capital management.

Questions:

1. What do you mean by working capital management?
2. Define working capital management
3. What are the types of working capital management?
4. Explain the concepts of working capital management
5. State the constituents of current liability
6. What id operating cycle?
7. State the characteristics of working capital management
8. What are the factors determining the working capital requirements?
9. How do you forecast the working capital requirements?
10. What id working capital policy
11. Ram Ltd decided to purchase a business and has consulted you and one point on which you are asked to advice them is the average amount of working capital which will be required in the first year workings.

    You are given the following estimates and are instructed to add 10% to your computed figure to allow for contingencies.

(i) Average amount locked up for the stocks	Rs.
Stock of finished products	5,000
Stock of stores materials etc.	8,000
(ii) Average credit given	
Inland sales-6 weeks credit	
Export sales-$1^{1/2}$ h weeks credit	3,12,000
(iii) Lag in payment of wages and other outgoing	78,000
Wages-$1_{1/2}$ h weeks	
Stores, Materials etc. $1_{1/2}$h months	2,60,000
Rent Royalties etc. 6 months	48,000
Clerical Staff-l $_{1/2}$ month	10,000
Manager-$_{1/2}$ month	62,400

Miscellaneous Expenses-1h month	4,800
(iv) Payment in advance	48,000
Sundry Expenses (Paid Quarterly in advance)	8,000
(v) Undrawn profits on the average throughout the year	11,000

Set up your calculations for the average amount of working capital required.

12. A proforma cost sheet of a company provides the following particulars:

Elements of Cost	
Material	40%
Direct Labour	20%
Overheads	20%

The following further particulars are available:

(a) It is proposed to maintain a level of activity of 2,00,000 units.

(b) Selling price is Rs.12/- per unit.

(c) Raw materials are expected to remain in stores for an average period of one month.

(d) Materials will be in process, on averages half a month.

(e) Finished goods are required to be in stock for an average period of one month.

(f) Credit allowed to debtors is two months.

(g) Creditor allowed by suppliers is one month.

You may assume that sales and production follow a consistent pattern.

You are required to prepare a statement of working capital requirements, a forecast Profit and Loss Account and Balance Sheet of the company assuming that:

	Rs.
Share Capital	15,00,000
8% Debentures	2,00,000
Fixed Assets	13,00,000

13. From the following information you are required to estimate the net working capital:

	Cost per unit
	Rs.
Raw Materials	400
Direct labour	150

Overheads (excluding depreciation)	300
Total Cost	850
Additional Information:	30
Selling-Price	Rs.1,000 per unit
Output	52,000 units per annum
Raw Material in stock	average 4 weeks
Work-in-process:	
(assume 50% completion stage with	
full material consumption)	average 2 weeks
Finished goods in stock	average 4 weeks
Credit allowed by suppliers	average 4 weeks
Credit allowed to debtors	average 8 weeks
Cash at bank is expected to be	Rs.50,000

Assume that production is sustained at an even pace during the 52 weeks of the year. All sales are on credit basis. State any other assumption that you might have made while computing.

Lesson – 14

CASH MANAGEMENT

Introduction

"Cash, like the blood stream in the human body, gives vitality and strength to a business enterprises. Though cash hold the smallest portion of total current assets. However, "Cash is both the beginning and end of working capital cycle - cash, inventories, receivables and cash. it is the cash, which keeps the business going. Hence, every enterprises has to hold necessary cash for its existence.‖ Moreover, "Steady and healthy circulation of cash throughout the entire business operations is the basis of business solvency." A Now-a-days non-availability and high cost of money have created a serious problem for industry. Nevertheless, cash like any other asset of a company is treated as a tool of profit." Further, "today the emphasis is on the right amount of cash, at the right time, at the right place and at the right cost." In the words of R.R. Bari, "Maintenance of surplus cash by a company unless there are special reasons for doing so, is regarded as a bad

sigh of cash management." As, "holding of cash balance has an implicit cost in the form of its opportunity cost."

Meaning of cash management

The term cash management refers to the management of cash resource in such a way that generally accepted business objectives could be achieved. In this context, the objectives of a firm can be unified as bringing about consistency between maximum possible profitability and liquidity of a firm. Cash management may be defined as the ability of a management in recognizing the problems related with cash which may come across in future course of action, finding appropriate solution to curb such problems if they arise, and finally delegating these solutions to the competent authority for carrying them out The choice between liquidity and it profitability creates a state of confusion. It is cash management that can provide solution to this dilemma.Cash management may be regarded as an art that assists in establishing equilibrium between liquidity and profitability to ensure undisturbed functioning of a firm towards attaining its business objectives. Cash management has assumed importance because it is the most significant of all the current assets. It is required to meet business obligations and it is productive when not used.

Cash management deals with the following:

(i) Cash inflows and outflows

(ii) Cash balances held by the firm at a point of time

(iii) Cash balances held y the fire at a point of time

Cash management need strategies to deal with various facets of cash. Following are some of its facets:

(a)Cash Planning: Cash Planning is technique to plan and control the use of cash. Aprojected cash flow statement may be prepared, based on the present business operations and anticipated future activities. The cash inflows from various sources may be anticipated and cash outflows will determine the possible uses of cash;

(b)Cash Forecasts and Budgeting: A cash budget is the most important device for thecontrol of receipts and payments of cash. A cash budget is an estimate of cash receipts and disbursements during a future period of time. It is an analysis of flow of cash in a business over a future, short or long period of time. It is a forecast of expected cash intake and outlay.

Both Short-term and long-term cash forecasts may be made with the help of following methods:

(i) Receipts and disbursements method

(ii) Adjusted net income method

(i)Receipts and Disbursements Method: In this method the receipts and payments ofcash are estimated. The receipts and disbursements are to be equaled over a short as well as long periods. Any shortfall in receipts will have to be met from banks or other sources. Similarly, surplus cash may be invested in risk free marketable securities. It may be easy to make estimates for payments but cash receipts may not be accurately made. The payments are to be made by outsiders, so there may be some problem in finding out the exact receipts at a particular period. Because of uncertainty, the reliability of this method may be reduced.

(ii)Adjusted Net Income Method: This method may also be known as sources anduses approach. It generally has three sections: sources of cash, uses of cash and adjusted cash balance. The adjusted net income method helps in projecting the company's need for cash at some future date and to see whether the shares, etc. In preparing its statement the items like net income, depreciation, dividends, taxes, etc.

GENERAL PRINCIPLES OF CASH MANAGEMENT:

Harry Gross has suggested certain general principles of cash management that,essentially add efficiency to cash management. These principles reflecting cause and effectrelationship having universal applications give a scientific outlook to the subject of cashmanagement. While, the application of these principles in accordance with the changingconditions and business environment requiring high degree of skill and tact which places cashmanagement in the category of art. Thus, we can say that cash management like any othersubject of management is both science and art for it has well-established principles capable ofbeing skillfully modified as per the requirements. The principles of management are followsas –

1. Determinable Variations of Cash Needs

A reasonable portion of funds, in the form of cash is required to be kept aside toovercome the period anticipated as the period of cash deficit. This period may either be shortand temporary or last for a longer duration of time. Normal and regular payment of cash leadsto small reductions in the cash balance at periodic intervals. Making this payment to differentemployees on different

days of a week can equalize these reductions. Another technique forbalancing the level of cash is to schedule i cash disbursements to creditors during thatperiod when accounts receivables collected amounts to a large sum but without putting thegoodwill at stake.

2. Contingency Cash Requirement

There may arise certain instances, which fall beyond the forecast of the management.These constitute unforeseen calamities, which are too difficult to be provided for in thenormal course of the business. Such contingencies always demand for special cashrequirements that was not estimated and provided for in the cash budget. Rejections ofwholesale product, large amount of bad debts, strikes, lockouts etc. are a few among thesecontingencies. Only a prior experience and investigation of other similar companies provehelpful as a customary practice. A practical procedure is to protect the business from suchcalamities like bad-debt losses, fire etc. by way of insurance coverage.

3. Availability of External Cash

Another factor that is of great importance to the cash management is the availabilityof funds from outside sources. There resources aid in providing credit facility to the firm,which materialized the firm's objectives of holding minimum cash balance. As such if a firmsucceeds in acquiring sufficient funds from external sources like banks or private financers,shareholders, government agencies etc., the need for maintaining cash reserves diminishes.

4. Maximizing Cash Receipts

Every financial manager aims at making the best possible use of cash receipts. Again,cash receipts if tackled prudently results in minimizing cash requirements of a concern. Forthis purpose, the comparative cost of granting cash discount to customer and the policy ofcharging interest expense for borrowing must be evaluated on continuous basis to determinethe futility of either of the alternative or both of them during that particular period formaximizing cash receipts. Yet, the under mentioned techniques proved helpful in thiscontext: -

(A)Concentration Banking: Under this system, a company establishes banking centers forcollection of cash in different areas. Thereby, the company instructs its customers ofadjoining areas to send their payments to those centers. The collection amount is thendeposited with the local bank by these centers as early as possible. Whereby, the collectedfunds are transferred to the company's central bank accounts operated by the head office.

(B)Local Box System: Under this system, a company rents out the local post offices boxes ofdifferent cities and the customers are asked to \ forward their remittances to it. Theseremittances are picked by the authorized lock bank from these boxes to be transferred to thecompany's central bank operated by the head office.

(C)Reviewing Credit Procedures: It aids in determining the impact of slow payers and baddebtorson cash. The accounts of slow paying customers should be reviewed to determine thevolume of cash tied up. Besides this, evaluation of credit policy must also be conducted forintroducing essential amendments. As a matter of fact, too strict a credit policy involvesrejections of sales. Thus, curtailing the cash in flow. On the other hand, too lenient, a creditpolicy would increase the number of slow payments and bad debts again decreasing the cashinflows.

(D)Minimizing Credit Period: Shortening the terms allowed to the customers wouldddefinitely accelerate the cash inflow side-by-side revising the discount offered would preventthe customers from using the credit for financing their own operations profitably.

(E)Others: Introducing various procedures for special handling of large to very largeremittances or foreign remittances such as, persona! pick up of large sum of cash usingairmail, special delivery and similar techniques to accelerate such collections.

5. Minimizing Cash Disbursements

The motive of minimizing cash payments is the ultimate benefit derived frommaximizing cash receipts. Cash disbursement can be brought under control by preventingfraudulent practices, serving time draft to creditors of large sum, making staggered paymentsto creditors and for payrolls etc.

6. Maximizing Cash Utilization

Although a surplus of cash is a luxury, yet money is costly. Moreover, proper andoptimum utilization of cash always makes way for achievement of the motive of maximizingcash receipts and minimizing cash payments. At times, a concern finds itself with funds inexcess of its requirement, which lay idle without bringing any return to it. At the same time,the concern finds it unwise to dispose it, as the concern shall soon need it. In such conditions,efforts should be made in investing these funds in some interest bearing securities.There are certain basic strategies suggested by Gitman, which prove evidently helpful in managing cashif employed by the cash management. They are:

"Pay accounts payables as late as possible without damaging the firm's credit rating,but take advantage of the favourable cash discount, if any.

Turnover, the inventories as quickly as possible, avoiding stock outs that might resultin shutting down the productions line or loss of sales.

Collect accounts receivables as early as possible without losing future loss salesbecause of high-pressure collections techniques. Cash discounts, if they are economicallyjustifiable, may be used to accomplish this objective."

FUNCTION OF CASH MANAGEMENT:

"Cash management is concerned with minimizing unproductive cash balances,investing temporarily excess cash advantageously and to make the best possible arrangementsfor meeting planned and unexpected demands on the firm's cash." Cash Management mustaim to reduce the required level of cash but minimize the risk of being unable to dischargeclaims against the company as they arise. All these aims and motives of cash managementlargely depend upon the efficient and effective functioning of cash management. Cashmanagement functions can be studied under five heads, namely, cash planning, managingcash flow, controlling cash flow, optimizing the cash level and investing idle cash. All thesefunctions are discussed below in details:

1. Cash Planning

Good planning is the very foundation of attaining success. For any managementdecision, planning is the foremost requirement. "Planning is basically an intellectual process,a mental pre-disposition to do things in an orderly way, to think before acting and to act inthe light of facts rather than of a guess." 16 Cash planning is a technique, which comprises ofplanning for and controlling of cash. It is a management process of forecasting the futureneed of cash, its available resources and various uses for a specified period. Cash planning,thus, deals at length with formulation of necessary cash policies and procedures in order tocarry on business continuously and on sound lines. A good cash planning aims at providingcash, not only for regular but also for irregular and abnormal requirements.

2.Managing Cash Flows

The heading simply suggests an idea of managing properly the flow of cash cominginside the business i.e. cash inflow and cash moving out of the business i.e. cash outflow.These two are said to be properly managed only, if a firm succeeds in accelerating the rate ofcash inflow together with minimizing the cash outflow. As observed expediting collections,avoiding unnecessary

inventories, improving control over payments etc. contribute to bettermanagement of cash. Whereby, a business can conserve cash and thereof would require lessercash balance for its operations.

3. Controlling the Cash Flows

As forecasting is not an exact science because it is based on certain assumptions.Therefore, cash planning will inevitably be at variance with the results actually obtained. Forthis reason, control becomes an unavoidable function of cash management. Moreover, cashcontrolling becomes essential as it increases the availability of usable cash from within theenterprise. As it is obvious that greater the speed of cash flow cycle, I greater would be thenumber of times a firm can convert its goods and ' services into cash and so lesser will be thecash requirement to finance the desired volume of business during that period. Furthermore,every enterprise is in possession of some hidden cash, which if traced out substantiallydecreases the cash requirement of the enterprise.

4. Optimizing the Cash Level

A financial manager should concentrate on maintaining sound liquidity position i.e.cash level. All his efforts relating to planning, managing and controlling cash should bediverted towards maintaining an optimum level of cash. The foremost need of maintainingoptimum level of cash is to meet the necessary requirements and to settle the obligations wellin time. Optimization of cash level may be related to establishing equilibrium between riskand the related profit expected to be earned by the company.

5.Investing Idle Cash

Idle cash or surplus cash refers to the excess of cash inflows over cash outflows,which do not have any specific operations or any other purpose to solve currently. Generally,a firm is required to hold cash for meeting working needs facing contingencies and tomaintain as well as develop goodwill of bankers.The problem of investing this excess amount of cash arise simply because it contributes nothing towards profitability of the firm as idle cash precisely earns no returns.Further permanent disposal of such cash is not possible, as the concern may again need thiscash after a short while. But, if such cash is deposited with the bank, it definitely would earna nominal rate of interest paid by the bank. A much better returns than the bank interest canbe expected if a company deploys idle cash in marketable securities. There are yet anothergroup of enterprise that neither invest in marketable securities nor willing to get interestinstead they prefer to deposit excess cash

for improving relations with banks by helping themin meeting bank requirements for compensating balances for services and loans

Problems

Illustration 1

United Industries Ltd. projects that cash outlays of Rs.37,50,000 will occur uniformly throughout the coming year. Unitedplans to meet its cash requirements by periodically sellingmarketable securities from its portfolio. The firm's marketablesecurities are invested to earn 12% and the cost per transaction ofconverting securities to cash is Rs. 40.

a. Use the Baumol Model to determine the optimal transaction sizeof marketable securities to cash.

b. What will be the company's average cash balance?

c. How many transfers per year will be required?

d. What will be the total annual cost of maintaining cash balances?

Solution:

a) Optimal size = "2TA/ I = "(2 X 40 X 37,50,000)/0.12 = 50000

b) average cash balance = Rs 25000

c) No of transactions per year = 3750000/50000 = 75

d) Total annual cost

Transaction cost 75×40	= 3000
Opportunity cost 50000×1/2×12%	= 3000
	6000

Illustration 2

A Ltd. has just established a small manufacturing unit tomanufacture a new product which is expected to have a highmargin. The company has made the following estimates ofproduction, sales and costs:

Production and Sales (both in units)

Year 2010	Production	Sales
April	2,000	--
May	3,000	--
June	4,000	1,000
July	5,000	2,000

August	5,000	4,000
September	5,000	5,000

Note : Both production and sales will stabilize at 5,000 units fromSeptember, 2010 onwards.

Selling price and cost

Selling price per unit		50
Less: Variable Cost:		
Materials	12	
Labour	5	
Overheads	5	22
Contribution per unit		**28**

Note: Fixed costs are expected to be Rs. 10,000 per month.

The following additional information is also given:

- An initial stock of materials to meet three months requirements will be purchased during April, 2010. Further purchases will be made at the beginning of each month to have sufficient stock of materials for three months.
- Suppliers of materials have agreed to give one month's credit.
- Labour is to be paid half a month in arrears.
- Variable overheard will be paid during the month following the month in which it is incurred.
- Fixed overheads will be incurred in advance at the beginning of every quarter.
- Sales will be 50% cash and the balance will be on two months credit.
- There will be an opening cash balance of Rs. 3, 00,000 (in hand and bank).

Prepare a cash budget of A Ltd. for the six months ending30th September, 2010. Figures should be given monthly and themonths, if any, during which additional funds are required, should be clearly indicated.

Solution:

Purchases Budget (Units)

Particulars	April	May	June	July	August	September
Opening Balance	--	7,000	9,000	10,000	10,000	10,000
Add:						

Purchases	9,000	5,000	5,000	5,000	5,000	5,000
	9,000	12,000	14,000	15,000	15,000	15,000
Less:						
Consumption	2,000	3,000	4,000	5,000	5,000	5,000
Closing						
Balance	**7,000**	**9,000**	**10,000**	**10,000**	**10,000**	**10,000**

Payment for Creditors

(Rs.)

Particulars	April	May	June	July	August	September
Purchases (Units)	9,000	5,000	5,000	5,000	5,000	5,000
Purchases (@Rs. 12 p.u.)	1,08,000	60,000	60,000	60,000	60,000	60,000
Payment Made(1 Month Credit)	--	1,08,000	60,000	60,000	60,000	60,000

Collection from debtors

(Rs.)

Particulars	April	May	June	July	August	September
Sales Unit	--	--	1,000	2,000	4,000	5,000
Sales (@50 p.u.)	--	--	50,000	1,00,000	2,00,000	2,50,000
Cash Sales (50%)	--	--	25,000	50,000	1,00,000	1,25,000
Credit Sales (50%) (2 Months Credit)	--	--	--	--	25,000	50,000
Receipts from Sales	--	--	25,000	50,000	1,25,000	1,75,000

Labour and Overheads

(Rs.)

Particulars	April	May	June	July	August	September

Wages	10,000	15,000	20,000	25,000	25,000	25,000
Wages Paid (1/2 Month Arrears)	5,000	12,500	17,500	22,500	25,000	25,000
Variable Overheads	10,000	15,000	20,000	25,000	25,000	25,000
Variable Overheads paid (1 Month Lag)	--	10,000	15,000	20,000	25,000	25,000

Cash Budget

For the year ending 30th September, 2010 (Rs.)

Particulars	April	May	June	July	August	September
Opening Balance	3,00,000	2,65,000	1,34,000	67,000	(15,500)	(500)
Budgeted						
Receipts:						
Cash Sales	--	--	25,000	50,000	1,00,000	1,25,000
Collection From Debtors	--	--	--	--	25,000	50,000
(i)	3,00,000	2,65,000	1,59,500	1,17,000	1,09,500	1,74,500
Budgeted Payments:						
Payment to Creditors	--	1,08,000	60,000	60,000	60,000	60,000
Wages	5,000	12,500	17,500	22,500	25,000	25,000
Variable Overheads	--	10,000	15,000	20,000	25,000	25,000
Fixed Overheads	30,000	--	--	30,000	--	--
(ii)	35,000	1,30,500	92,500	1,32,500	1,10,000	1,10,000

Closing Balance						
(i)– (ii)	2,65,000	1,34,500	67,000	(15,500)	(500)	64,500

Conclusion

The cash management is very faulty as a result of which cash ratio to total current assets and to sales are very high for the cement industry. With the above general observations one can draw number of conclusion about the economic health of the industry and various aspects of working capital. The industry at present is passing through buyers phase of the market. This state of cement industry is expected to continue in near future too because new capacity is being created faster than growth in demand. This has increased competition and working capital management has become more difficult. On the one side customers have to be accommodated to compete in the market but at the same time all possible economies must be achieved in management of cash, receivables and inventory to maintain and improve profitability.

Questions:

1. What do you mean by Cash management?
2. What are the general principles of cash management?
3. Explain the functions of cash management.

Lesson – 15

RECEIVABLE MANAGEMENT

Introduction

A sound managerial control requires proper management of liquid assets and inventory. These assets are a part of working capital of the business. An efficient use of financial resources is necessary to avoid financial distress. Receivables result from credit sales. A concern is required to allow credit sales in order to expand its sales volume. It is not always possible to sell goods on cash basis only. Sometimes, other concerns in that line might have established a practice of selling goods on credit basis. Under these circumstances, it is not possible to avoid credit sales without adversely affecting sales. The increase in sales is also essential to increase profitability. After a certain level of sales the increase in sales will not proportionately increase production costs. The increase in sales will bring in more profits.

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

Meaning

The term receivable is defined as debt owed to the concern by customers arising from sale of goods or services in the ordinary course of business. Receivables are also one of the major parts of the current assets of the business concerns. It arises only due to credit sales to customers, hence, it is also known as Account Receivables or Bills Receivables. Management of account receivable is defined as the process of making decision resulting to the investment of funds in these assets which will result in maximizing the overall return on the investment of the firm.

The objective of receivable management is to promote sales and profit until that point is reached where the return on investment in further funding receivables is less than the cost of funds raised to finance that additional credit. The costs associated with the extension of credit and accounts receivables are identified as follows:

A. Collection Cost

B. Capital Cost

C. Administrative Cost

D. Default Cost.

- **Collection Cost**

  These costs incurred in collecting the receivables from the customers, to who credit sales have been made.

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

- **Administrative Cost**

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

- **Default Cost**

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

FACTORS CONSIDERING THE RECEIVABLE SIZE

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

- **Sales Level**

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

- **Credit Policy**

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

- **Credit Terms**

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

- **Credit Period**

It is the time for which trade credit is extended to customer in the case of credit sales. Normally it is expressed in terms of 'Net days'.

- **Cash Discount**

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

- **Management of Receivable**

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

Problems

Illustration 1

The following are the details regarding the operations of a firmduring a period of 12 months.

Sales Rs.12,00,000

Selling price per unit Rs.10

Variable cost price per unit Rs. 7

Total cost per unit Rs. 9

Credit period allowed to customers one month. The firm isconsidering a proposal for a more liberal extension of credit whichwill result in in-creasing the average collection period from one month to two months. This relaxation is expected to increase thesales by 25% from its existing level.

You are required to advise the firm regarding adoptionof the new credit policy, presuming that the firm's requiredreturn on investment is 25%.

Solution:

Appraisal of Credit policy

	Present	Proposed	Incremental
Credit period (ACP)	1 month	2 months	
Sales (units)	120000	150000	
(-) Sales @ 10 (in Rs)	1200000	1500000	300000
Total Cost	1080000	1290000	210000
Profit	120000	210000	90000

Investment in receivables 1080000 / 12 = 90000

1290000 / 6 = 215000 125000

Required return on Incremental Investment (125000@ 25%) = 31250

Actual return on Investment = 90000

(or)(90000 / 125000) x 100 = 72%

Since the Incremental return is greater than required return onIncremental investment advised to adopt new credit policy

Illustration 2

Trinadh Traders Ltd. currently sells on terms of net 30 days.All the sales are on credit basis and average collection period is 35days. Currently, it sells 500,000 units at an average price of Rs. 50per unit. The variable cost to sales ratio is 75% and a bad debt tosales ratio is 3%. In order to expand sales, the management of the company is considering changing the credit terms from net 30 to2/10, net 30. Due to the change in policy, sales are expected to goup by 10%, bad debt loss on additional sales will be 5% and baddebt loss on existing sales will remain unchanged at 3%. 40% ofthe customers are expected to avail the discount and pay on thetenth day. The average collection period for the new policy isexpected to be 34 day's: The Company required a return of'20% onits investment in receivables.

You are required to find out the impact of the change in creditpolicy on the profit of the company. Ignore taxes.

Solution:

Trinadh TradersAppraisal of Credit policy:

	Present	Proposed	Gain/(loss)
Credit terms Net	30 (2 / 10)	Net 30	
ACP	35 days	34 days	
Discount sales	-	40%	
Bad debts	3%	3 % + 5%	
Sales	500000	550000	
Incremental Profit	[50000 x 50 x 25%]	625000	
Incremental bad debts	[50000 x 50 x 5%]	(125000)	
Discount	[550000 x 40% x 50x 2%]	(220000)	
Investment	[500000 x 50 x (35/360)] = 2430555		
	[500000 x 50 x (37/365)] + [50000 x 50 x 75% x 34/360] = 2538194		
		107629	
Finance cost	(107629 x 20%)	(21528)	258472

By implementing new credit policy, the profit is increased byRs258472. So the new credit policy is advised to implement.

Illustration 3

Star Limited manufacturers of Colour TV Sets, are considering theliberalization of existing credit terms to three of their largecustomers A, B and C. the credit period and likely quantity of TVsets that will be lifted by the customers are as follows:

Credit period (Days)	**A**	**B**	**C**
0	1,000	1,000	--
30	1,000	1,500	--
60	1,000	2,000	1,000
90	1,000	2,500	1,500

The selling price per TV set is Rs. 9,000. The expectedcontribution is 20% of the selling price. The cost of carting debtorsaverages 20% per annum.

You are required:

(a) Determine the credit period to be allowed to each customer.(Assume 360 days in a year for calculation purposes).

(b) What other problems the company might face in allowing thecredit period as determined in (a) above?

Solution:

(a) Determination of Credit period to be allowed to customers A,B and C.

In case of Customer A there will be constant salesirrespective of the credit period allowed. Hence, it is suggested notto extend any credit period to Customer A. The only analysis to bemade about the profitability of extending different credit period withdifferent sales levels.

Credit Period (Days)	Customers B					Customers C		
Sales (Units)	0	30	60	90	0	30	60	90
	1,000	1,500	2,000	2,500	----	1,000	1,500	
Sales	90	135	180	225			90	135
Contribution (20% of Sales)	18	27	36	45			18	27
Incremental Contribution (A)		9	9	9	-	-	18	9
Debtors (Credit Period X sales / 360)		11.25	30	56.25	--	--	15	33.75
Incremental Debtors		11.25	18.75	26.25	--	--	15	18.75
Cost of Incremental Debtors at 80%		9	15	21	--	--	12	15
Cost of Carrying Incremental Debtors at 20% (B)		1.8	3	4.2	--	--	2.4	3

Net Margin (A) –

(B) 7.2 6 4.8 -- -- 15.6 6

Conciliation:

(a) It is observed from the above table that incremental contributionon sales exceeds incremental cost carrying additional debtors ateach successive credit period. Hence it is suggested to allowcredit period upto 90 days to both customers B and C.

(b) By giving credit period of 90 days to Customer B and C and nocredit allowed to Customer A may cause to stop purchase T.V.sets from the company by Customer A.

Conclusion

Taking into consideration the current economic situation as well as the fact that banksgranting loans is increasingly difficult and the capital market moves with difficulty, in thiscontext, on the national and international transactions market, and financing, factoring becomes the most available tool,representing the only financing source through which the financing increases at the same timewith the sales, being also the cheapest form of short-term financing.Given the fact that factoring is a financial product of financing without guarantees butalso a highly complex commercial management product, this type of contract can represent the saving solution for the companies that cannot support themselves from the financial pointof view, but that have a well-developed business plan.

Questions:

1. What is receivable management?
2. What are the factors considering receivable management?

Lesson – 16

INVENTORY MANAGEMENT

Introduction

Inventories constitute the most significant part of current assets of the business concern. It is also essential for smooth running of the business activities. A proper planning of purchasing of raw material, handling, storing and recording is to be considered as a part of inventory management. Inventory management means, management of raw materials and related items. Inventory management considers what to purchase, how to purchase, how much to purchase, from where to purchase, where to store and When to use for production etc.

MEANING

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

KINDS OF INVENTORIES

Inventories can be classified into five major categories.

- **Raw Material:** It is basic and important part of inventories. These are goods whichhave not yet been committed to production in a manufacturing business concern.
- **Work in Progress:** These include those materials which have been committed toproduction process but have not yet been completed.
- **Consumables:** These are the materials which are needed to smooth running of themanufacturing process.
- **Finished Goods:** These are the final output of the production process of the businessconcern. It is ready for consumers.
- **Spares:** It is also a part of inventories, which includes small spares and parts.

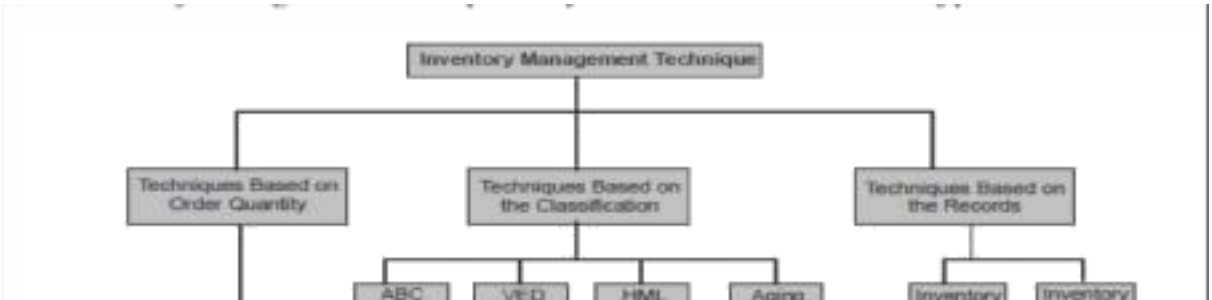
OBJECTIVES OF INVENTORY MANAGEMENT

Inventory occupies 30–80% of the total current assets of the business concern. It is also very essential part not only in the field of Financial Management but also it is closely associated with production management. Hence, in any working capital decision regarding the inventories, it will affect both financial and production function of the concern. Hence, efficient management of inventories is an essential part of any kind of manufacturing process concern. The major objectives of the inventory management are as follows:

- To efficient and smooth production process.
- To maintain optimum inventory to maximize the profitability.
- To meet the seasonal demand of the products.
- To ensure the level and site of inventories required.
- To plan when to purchase and where to purchase
- To avoid both over stock and under stock of inventory.
- To avoid price increase in future.

TECHNIQUES OF INVENTORY MANAGEMENT

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



Techniques based on the order quantity of Inventories

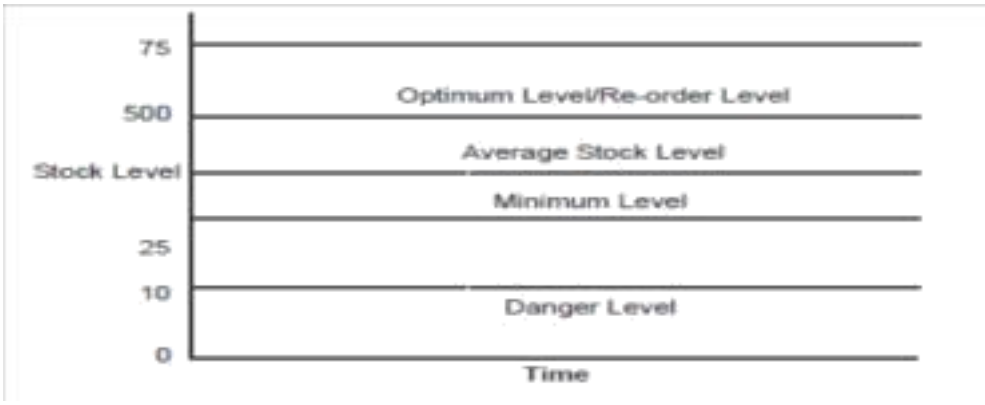
Order quantity of inventories can be determined with the help of the following techniques:

STOCK LEVEL

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

Minimum Level

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



Re-order Level

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

Maximum Level

It is the maximum limit of the quantity of inventories, the business concern must maintain. If the quantity exceeds maximum level limit then it will be overstocking. Maximum level = Re-order level + Re-order quantity – (Minimum consumption × Minimum delivery period

Danger Level

It is the level below the minimum level. It leads to stoppage of the production process. Danger level=Average consumption × Maximum re-order period for emergency purchase

Average Stock Level

It is calculated such as, Average stock level= Minimum stock level + ½ of re-order quantity.

Lead Time

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

Safety Stock

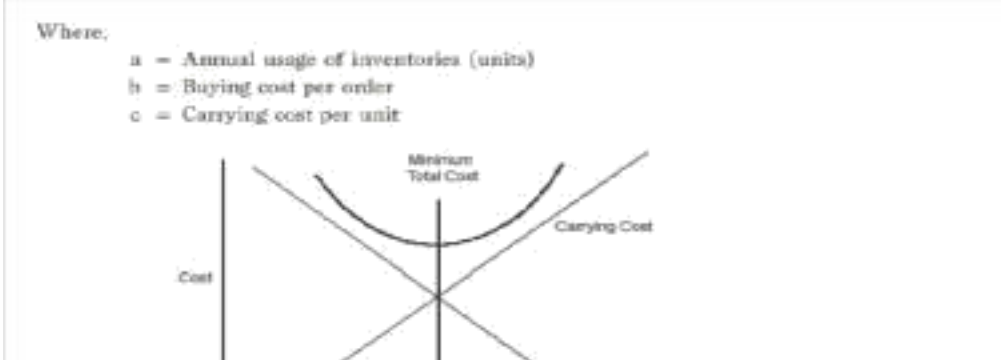
Safety stock implies extra inventories that can be drawn down when actual lead time and/ or usage rates are greater than expected. Safety stocks are determined by opportunity cost and carrying cost of inventories. If the business concerns maintain low level of safety stock, it will lead to larger opportunity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

ECONOMIC ORDER QUANTITY (EOQ)

EOQ refers to the level of inventory at which the total cost of inventory comprising ordering cost and carrying cost. Determining an optimum level involves two types of cost such as ordering cost and carrying cost. The EOQ is that inventory level that minimizes the total of ordering of carrying cost. EOQ can be calculated with the help of the mathematical formula: **EOQ = 2ab/c**

Where,

a = Annual usage of inventories (units)
b = Buying cost per order
c = Carrying cost per unit



TECHNIQUES BASED ON THE CLASSIFICATION OF INVENTORIES

A-B-C analysis

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

Aging Schedule of Inventories

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

FNSD analysis—

Where,

F = Fast moving inventories

N = Normal moving inventories

S = Slow moving inventories

D = Dead moving inventories

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

VED Analysis

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

V = Vital item of inventories

E = Essential item of inventories

D = Desirable item of inventories

HML Analysis

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

H = High value of inventories

M = Medium value of inventories

L = Low value of inventories

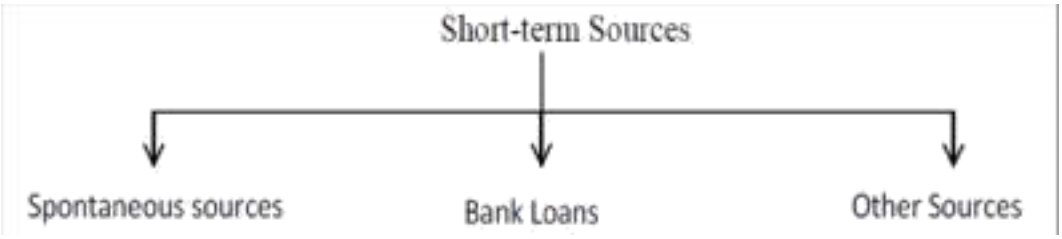
Valuation of Inventories

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

- First in First out Method (FIFO)
- Last in First out Method (LIFO)
- Highest in First out Method (HIFO)
- Nearest in First out Method (NIFO)
- Average Price Method

FINANCING WORKING CAPITAL THROUGH SHORT-TERM SOURCES

Funds available for a period of one year or less are called short-term sources of finance. They are raised from sources, which can provide funds only for short period quickly, and its cost is less than the funds raised from long-term sources. These funds are usually met by taking short-term loans or getting the bills discounting from the commercial banks. Spontaneous sources and bank loans are important sources of short-term funds. They are explained in detail below.



Spontaneous Sources Some sources of funds, which are created during the course ofnormal business activity have zero cost and are termed as spontaneous sources. For example suppliers supply goods; employees provide services where the payment is made at a later stage.

Trade Credit The credit extended in connection with the goods purchased for resale bya retailer or a wholesaler for materials used by manufacturers in producing its products is called the trade credit. Trade credit is a form of short-term financing common is almost all types of business firm. As a matter of fact, it is the largest source of short-term funds. The amount of such financing depends on the volume of purchase and the payment timings. Small and new firms are usually more dependent on the trade credit, as they find it difficult to obtain funds from other sources.

(a) An opening account credit and (b) Acceptance credit management / bills payable.

Bank Loans

The bank loans, in general, are a short-term financing say for a year or so. This short-term financing to business firm is regarded as self-liquidating. It means, banks routinely provide finance to meet the seasonal demand e.g., to cover the seasonal increase in inventories or receivables. Sometimes, the banks may approve separate limits for peak season and non-peak season. The main sources of short-term funds are cash credit, overdraft and bill discounting.

Types of Bank Loans In India banks provide financial assistance for working capital indifferent shapes and forms. The usual forms of bank loans are as follows:

- Cash credit:.
- Overdraft.
- Bills discount and bills purchased

OTHER SOURCES

Factoring

In case of credit sales, it attracts more customers, resulting in increased sales and higher profit, but it has a cost also. This cost may be of two types, namely investment cost and administrative cost. Moreover, the sellers have to raise funds from various sources in order to finance the receivables. While maintaining receivables, a firm may have to face two types of problems. First, the problem of rising funds to finance the receivables, and second the problem relating to collection, delay and defaults of the receivables. If the firm concentrates on managing funds and receivables, it cannot concentrate on other functions like finance, production, marketing, personal etc. Under this

situation a firm can avail the services of a specialist organization engaged in receivables management. These specialist firms are known as **factoring firms.**

COMMERCIAL PAPERS

Commercial Papers are debt instruments issued by corporate for raising short-term resources from the money market. These are unsecured debts of corporate. They are issued in the form of promissory notes, redeemable at par to the holder at maturity. Only corporate who get an investment grade rating can issue CPs as per RBI rules. Though CPs is issued by corporate, they could be good investments if proper caution is exercised.

Inter Corporate Deposits (ICD)

Sometimes, the companies borrow funds for a short-term period; say up to six months, from other companies, which have surplus liquidity for the time being. The ICD are generally unsecured and are arranged by a financier. The ICD are very common and popular in practice, as these are not influenced by the legal hassles. The convenience is the basic virtue of this method of financing. There is no regulation at present in India to regulate these ICD. Moreover, these are not covered by the section 58A of the companies Act, 1956, as the ICD are not for long term

Cash Budget

Cash budget is an estimation of the cash inflows and outflows for a business or individual for a specific period of time. Cash budgets are often used to assess whether the entity has sufficient cash to fulfill regular operations and/or whether too much cash is being left in unproductive capacities. For individuals, creating a cash budget is a good method for determining where their cash is regularly being spent. This awareness can be beneficial because knowing the value of certain expenditures can yield opportunities for additional savings by cutting unnecessary costs.

For example, without setting a cash budget, spending a dollar a day on a cup of coffee seems fairly unimpressive. However, upon setting a cash budget to account for regular annual cash expenditures, this seemingly small daily expenditure comes out to an annual total of Rs.365, which may be better spent on other things. If you frequently visit specialty coffee shops, your annual expenditure will be substantially more.

Credit terms or terms of credit is the agreement between a seller and buyer that lists the timing and amount of payments the buyer will make in the future. In other words, this is the contract that describes the specific details of the seller’s payment requirements that the buyer must meet into order to purchase goods on account.

Most companies have credit policies set up with vendors or customers, so purchases can be made on account. These credit purchases help speed up commerce and increase sales because it allows customers to purchase items before they actually have the funds to buy them.

Before a credit sale can be made, credit terms must be established. Most terms are dictated by industry practices and the specific goods sold in those industries. A standard term rate that applies across most industries is 2/10 N/30—often called 2/10 net/30

Problems

Illustration 1

From the following particulars, find out average value per item if astores has 50,000 items of consumption and a yearly consumptionis Rs. 60,00,000.

Class	Percentage of Total No. of Items	Percentage of Total Value
A	5	80
B	20	15
C	75	5

Solution:

Category	No. of Items2	% of Total No. of Items3	Value Rs.4	% of the Total Value5	Average Value Per Item Rs.6
A	2,500	5	48,00,000	80	1,920
B	10,000	20	9,00,000	15	90
C	37,500	75	3,00,000	5	8
Total	50,000	100	60,00,000	100	

Problem - 2

M/s Air Cool Services Ltd., Jalgaon manufacturers of Air Coolersgive the following information in respect of two components namely

A and B used in the manufacturing process:

Normal Usage 200 units per week each.

Maximum usage 300 units per week each

Minimum Usage 100 units per week each.

Reorder quantity:

A 1,600 units

B 2,400 units

Reorder Period for:

A 2 to 4 weeks.

B 1 to 2 weeks.

Calculate for each component:

1. Reorder Level
2. Minimum Level
3. Maximum Level
4. Average stock Level

Solution:

	Component A	Component B
1. ReorderLevel = (Maximum Consumption X Maximum Reorder period)	= 300 units x 4 weeks = 1,200 Units.	= 300 units x 2 weeks = 600 Units.
2. MinimumLevel = [Reorder Level – (Normal Consumption X Average Period of Delivery)]	= 1,200 – (200 X 2+4/2) = 600 Units	= 600 – (200 X 1+2/2) = 300 Units
3. MaximumLevel = {Reorder Level + Reorder Quantity – (Minimum Consumption X minimum Time for Reordering)}	= 1,200 + 1,600 – (100 X 2) = 2,600 Units	= 600 + 2,400 – (100 X 1) = 2,900 Units
4. Averagestock Level = (Maximum Level + Minimum Level / 2)	= 2,600 +600 / 2 = 1,600 Units.	= 2,900 +300 / 2 = 1,600 Units.

Illustration 3

POR Ltd. manufactures a special product, which requires 'ZED'.

The following particulars were collected for the year 2009 – 10:

1. Monthly demand of Zed 7,500 Units
2. Cost of placing an order Rs. 500
3. Reorder Period 5 to 8 weeks
4. Cost per unit Rs. 60
5. Carrying Cost % p.a. 10%
6. Normal Usage 500 Units per week
7. Minimum Usage 250 Units per week
8. Maximum Usage 750 Units per week

Required:

1. Reorder Level
2. Minimum Stock Level
3. Maximum Stock Level
4. Average Stock Level

Solution

1. Reorder Level

= Maximum reorder period x Maximum usage

= 8 weeks x 750 unit per week

= 6,000 Units.

2. Minimum Stock Level

= Reorder Level + (Normal Usage x Normal reorder Period)

= 6,000 units – (500 x 6.5 weeks)

= 2,750 Units

3. Maximum stock Level

= (Reorder level + Reorder quantity) – (Minimum Usage x Minimum reorder period)

= (6,000 units + 3,873 units) – (250 units x 5 weeks)

= 9,873 units - 1,250 Units

= 8,623 units

4. Average Stock Level

= (minimum Level + ½ reorder quantity) / 2

= (2,750 units + 8,623 units)/ 2

= 5,687

5. Minimum Level + ½ reorder quantity

= 2,750 units + ½ X 3,873 Units

= 4,686

Conclusion

A good inventory management is important to the successfuloperations of most organizations, unfortunately the importance of inventory is not always appreciated by top management. This maybe due to a failure to recognize the link between inventories andachievement of organizational goals or due to ignorance of theimpact that inventories can have on costs and profits.

Inventory management refers to an optimum investment ininventories. It should neither be too low to effect the productionadversely nor too high to block the funds unnecessarily. Excessinvestment in inventories is unprofitable for the business. Bothexcess and inadequate investments in inventories are not desirable.The firm should operate within the two danger points. The purposeof inventory management is to determine and maintain the optimumlevel of inventory investment.

Questions

1. What is inventory management?
2. What are the kinds of investment?
3. State the objectives of inventory management
4. Explain the techniques of inventory management
5. What is EOQ?
6. What is ABC analysis?
7. What is FIFO
8. Explain LIFO
9. State the difference between HIFO and NIFO.

Lesson – 17

WORKING CAPITAL FINANCING AND SOURCES

Introduction

Working capital financing is done by various modes such as trade credit, cash credit / bank overdraft, working capital loan, purchase of bills / discount of bills, bank guarantee, letter of credit, factoring, commercial paper, inter-corporate deposits etc.

Most small businesses at some point or another will need more working capital than the company itself can supply. Fortunately there are several resources available to small business owners that can provide the cash needed for daily and monthly operations.

TYPES OF WORKING CAPITAL FINANCING / LOANS

- **TRADE CREDIT**

This is simply the credit period which is extended by the creditor of the business. Trade credit is extended based on the creditworthiness of the firm which is reflected by its earning records, liquidity position and records of payment. Just like other sources of working capital financing, trade credit also comes with a cost after the free credit period. Normally, it is a costly source as a means of financing business working capital.

- **CASH CREDIT / BANK OVERDRAFT**

Cash credit or bank overdraft is the most useful and appropriate type of working capital financing extensively used by all small and big businesses. It is a facility offered by commercial banks whereby the borrower is sanctioned a particular amount which can be utilized for making his business payments. The borrower has to make sure that he does not cross the sanctioned limit. The

best part is that the interest is charged to the extent the money is used and not on the sanctioned amount which motivates him to keep depositing the amount as soon as possible to save on interest cost. Without a doubt, this is a cost effective working capital financing.

- **WORKING CAPITAL LOANS**

Working capital loans are as good as term loan for a short period. These loans may be repaid in installments or a lump sum at the end. The borrower should take such loans for financing permanent working capital needs. The cost of interest would not allow using such loans for temporary working capital.

- **PURCHASE / DISCOUNT OF BILLS**

For a business, it is another good service provided by commercial banks for working capital financing. Every firm generates bills in the normal course of business while selling goods to debtors. Ultimately, that bill acts as a document to receive payment from the debtor. The seller who requires money will approach the bank with that bill and bank will apply discount on the total amount of the bill based on the prevailing interest rates and pay the remaining amount to the seller. On the date of maturity of that bill, the bank will approach the debtor and collect the money from him.

- **BANK GUARANTEE**

It is primarily known as non-fund based working capital financing. Bank guarantee is acquired by a buyer or seller to reduce the risk of loss to the opposite party due to non-performance of agreed task which may be repaying of money or providing of some services etc. A buyer ‘B1’ is buying some products from seller ‘S1’. In this case, ‘B1’ may acquire bank guarantee from the bank and give it to ‘S1’ to save him from the risk of nonpayment. Similarly, if ‘S1’ may acquire bank guarantee and hand it over to ‘B1’ to save him from the risk of getting lower quality goods or late delivery of goods etc. In essence, a bank guarantee is revoked by the holder only in case of non-performance by the other party. Bank charges some commission for same and may also ask for security.

- **LETTER OF CREDIT**

It is also known as non-fund based working capital financing. Letter of credit and bank guarantee has a very thin line of difference. Bank guarantee is revoked and the bank makes payment to the holder in case of non-performance of the opposite party whereas, in the case of a letter of credit, the bank will pay the opposite party as soon as the party performs as per agreed terms. So, a buyer

would buy a letter of credit and send it to the seller. Once the seller sends the goods as per the agreement, the bank would pay the seller and collects that money from the buyer.

- **FACTORING**

Factoring is an arrangement whereby a business sells all or selected accounts payables to a third party at a price lower than the realizable value of those accounts. The third party here is known as the 'factor' who provides factoring services to business. The factor would not only provide financing by purchasing the accounts but also collects the amount from the debtors. Factoring is of two types – with recourse and without recourse. The credit risk of nonpayment by the debtor is borne by the business in case of with recourse and it is borne by the factor in the case of without recourse.

SOURCES OF WORKING CAPITAL

1. **Bank Loans**

Working capital, or the money a company needs to run its normal operating cycle, can be obtained from small business loans. Borrowers can turn to commercial lenders, credit unions, local banks and even the government's Small Business Administration for these type of loans. The repayment terms can a short as one-year and as long as seven years. Working capital loans are generally secured by some of the company's assets.

2. **Lines of Credit**

Another type of small business financing available from banks and other lenders is a line of credit. This allows business owners to take out funds on an as-needed basis, similar in some ways to a credit card. These often have shorter repayment terms and are best for short-term working capital needs. Lines of credit are also typically secured by the firm's assets but are often slightly more expensive than standard bank loans.

3. **Trade Credit**

Businesses can also make trade credit agreements with their long-time suppliers. The suppliers agree to provide the service or good with delayed payment terms. Trade credit terms are wholly determined between supplier and small business owner, but most credit extended is typically due no more than 90 days after service or supply date.

4. **Factoring**

Factoring companies will buy your accounts receivable at a discount and then collect the balances for themselves. This is a pricier way to finance working capital, but it can be a short-term solution for businesses truly strapped for cash.

With the help of one or more of these sources, small businesses can keep their daily operations running smoothly until their profits become self-sustaining.

COMMITTEE REPORT

The following points highlight the six committees involved in financing working capital by banks, i.e, 1. Dehejia Committee 2. Tandon Committee 3. Chore Committee 4.Marathe Committee 5. Chakravarty Committee 6. Kannan Committee Report.

1. Dehejia Committee Report:

National Credit Council constituted a committee under the chairmanship of Shri V.T. Dehejia in 1968 to 'determine the extent to which credit needs of industry and trade are likely to be inflated and how such trends could be checked' and to go into establishing some norms for lending operations by commercial banks.

The committee was of the opinion that there was also a tendency to divert short-term credit for long-term assets. Although committee was of the opinion that it was difficult to evolve norms for lending to industrial concerns, the committee recommended that the banks should finance industry on the basis of a study of borrower's total operations rather than security basis alone.

The Committee further recommended that the total credit requirements of the borrower should be segregated into 'Hard Core' and 'Short-term' component.

The 'Hard Core' component which should represent the minimum level of inventories which the industry was required to hold for maintaining a given level of production should be put on a formal term loan basis and subject to repayment schedule. The committee was also of the opinion that generally a customer should be required to confine his dealings to one bank only.

2. Tandon Committee Report:

Reserve Bank of India set up a committee under the chairmanship of Shri P.L. Tandon in July 1974. The terms of reference of the Committee were:

(1) To suggest guidelines for commercial banks to follow up and supervise credit from the point of view of ensuring proper end use of funds and keeping a watch on the safety of advances;

(2) To suggest the type of operational data and other information that may be obtained by banks periodically from the borrowers and by the Reserve Bank of India from the leading banks;

(3) To make suggestions for prescribing inventory norms for the different industries, both in the private and public sectors and indicate the broad criteria for deviating from these norms ;

(4) To make recommendations regarding resources for financing the minimum working capital requirements;

(5) (5) To suggest criteria regarding satisfactory capital structure and sound financial basis in relation to borrowings;

(6) (6) To make recommendations as to whether the existing pattern of financing working capital requirements by cash credit/overdraft system etc., requires to be modified, if so, to suggest suitable modifications.

The committee was of the opinion that:

(i) Bank credit is extended on the amount of security available and not according to the level of operations of the customer,

(ii) Bank credit instead of being taken as a supplementary to other sources of finance is treated as the first source of finance.

Although the Committee recommended the continuation of the existing cash credit system, it suggested certain modifications so as to control the bank finance. The banks should get the information regarding the operational plans of the customer in advance so as to carry a realistic appraisal of such plans and the banks should also know the end-use of bank credit so that the finances are used only for purposes for which they are lent.

The recommendations of the committee regarding lending norms have been suggested under three alternatives. According to the first method, the borrower will have to contribute a minimum of 25% of the working capital gap from long-term funds, i.e., owned funds and term borrowing; this will give a minimum current ratio of 1.17: 1.

3. Chore Committee Report:

The Reserve Bank of India in March, 1979 appointed another committee under the chairmanship of Shri K.B. Chore to review the working of cash credit system in recent years with particular

reference to the gap between sanctioned limits and the extent of their utilization and also to suggest alternative type of credit facilities which should ensure greater credit discipline.

The important recommendations of the Committee are as follows:

(i) The banks should obtain quarterly statements in the prescribed format from all borrowers having working capital credit limits of Rs 50 lacs and above.

(ii) The banks should undertake a periodical review of limits of Rs 10 lacs and above.

(iii) The banks should not bifurcate cash credit accounts into demand loan and cash credit components.

(iv) If a borrower does not submit the quarterly returns in time the banks may charge penal interest of one per cent on the total amount outstanding for the period of default.

(v) Banks should discourage sanction of temporary limits by charging additional one per cent interest over the normal rate on these limits.

(vi) The banks should fix separate credit limits for peak level and non-peak level, wherever possible.

(vii) Banks should take steps to convert cash credit limits into bill limits for financing sales.

4. Marathe Committee Report:

The Reserve Bank of India, in 1982, appointed a committee under the chairmanship of Marathe to review the working of Credit Authorisation Scheme (CAS) and suggest measures for giving meaningful directions to the credit management function of the Reserve Bank. The recommendations of the committee have been accepted by the Reserve Bank of India with minor modifications.

The principal recommendations of the Marathe Committee include:

(i) The committee has declared the Third Method of Lending as suggested by the Tanden Committee to be dropped. Hence, in future, the banks would provide credit for working capital according to the Second Method of Lending.

(ii) The committee has suggested the introduction of the 'Fast Track Scheme' to improve the quality of credit appraisal in banks. It recommended that commercial banks can release without prior approval of the Reserve Bank 50% of the additional credit required by the borrowers (75% in case of export oriented manufacturing units) where the following requirements are fulfilled:

(a) The estimates/projections in regard to production, sales, chargeable current assets, other current assets, current liabilities other than bank borrowings, and net working capital are

reasonable in terms of the past trends and assumptions regarding most likely trends during the future projected period.

(b) The classification of assets and liabilities as 'current' and 'non-current' is in conformity with the guidelines issued by the Reserve Bank of India.

(c) The projected current ratio is not below 1.33 : 1.

(d) The borrower has been submitting quarterly information and operating statements (Form I, II and III) for the past six months within the prescribed time and undertakes to do the same in future also.

(e) The borrower undertakes to submit to the bank his annual account regularly and promptly, further, the bank is required to review the borrower's facilities at least once in a year even if the borrower does not need enhancement in credit facilities.

5. Chakravarty Committee Report:

The Reserve Bank of India appointed another committee under the chairmanship of SukhamoyChakravarty to review the working of the monetary system of India. The committee submitted its report in April, 1985.

The committee made two major recommendations in regard to the working capital finance:

(i) Penal Interest for Delayed Payments:

The committee has suggested that the government must insist that all public sector units, large private sector units and government departments must include penal interest payment clause in their contracts for payments delayed beyond a specified period. The penal interest may be fixed at 2 per cent higher than the minimum lending rate of the supplier's bank.

(ii) Classification of Credit Limit Under Three Different Heads:

The committee further suggested that the total credit limit to be sanctioned to a borrower should be considered under three different heads:

(1) Cash Credit I to include supplies to government,

(2) Cash Credit II to cover special circumstances, and

(3) Normal Working Capital Limit to cover the balance credit facilities.

The interest rates proposed for the three heads are also different. Basic lending rate of the bank should be charged to Cash Credit II, and the Normal Working Capital Limit be charged as below:

(a) For Cash Credit Portion: Maximum prevailing lending rate of the bank.

(b) For Bill Finance Portion: 2% below the basic lending rate of the bank.

(c) For Loan Portion: The rate may vary between the minimum and maximum lending rate of the bank.

6. Kannan Committee Report:

In view of the ongoing liberalization in the financial sector, the Indian Banks Association (IBA) constituted a committee headed by Shri K. Kannan, Chairman and Managing Director of Bank of Baroda to examine all the aspects of working capital finance including assessment of maximum permissible bank finance (MPBF). The Committee submitted its report on 25th February, 1997. It recommended that the arithmetical rigidities imposed by Tandon Committee (and reinforced by Chore Committee) in the form of MPBF computation so far been in practice, should be scrapped. The Committee further recommended that freedom to each bank be given in regard to evolving its own system of working capital finance for a faster credit delivery so as to serve various borrowers more effectively.

It also suggested that line of credit system (LCS), as prevalent in many advanced countries, should replace the existing system of assessment/fixation of sub-limits within total working capital requirements.

The Committee proposed to shift emphasis from the Liquidity Level Lending (Security Based Lending) to the Cash Deficit Lending called Desirable Bank Finance (DBF). Some of the recommendations of the committee have already been accepted by the Reserve Bank of India with suitable modifications.

The important measures adopted by RBI in this respect are given below:

(i) Assessment of working capital finance based on the concept of MPBF, as recommended by Tandon Committee, has been withdrawn. The banks have been given full freedom to evolve an appropriate system for assessing working capital needs of the borrowers within the guidelines and norms already prescribed by Reserve Bank of India.

(ii) The turnover method may continue to be used as a tool to assess the requirements of small borrowers. For small scale and tiny industries, this method of assessment has been extended upto total credit limits of Rs 2 crore as against existing limit of 1 crore.

(iii) Banks may now adopt Cash Budgeting System for assessing the working capital finance in respect of large borrowers.

(iv) The banks have also been allowed to retain the present method of MPBF with necessary modification or any other system as they deem fit.

(v) Banks should lay down transparent policy and guidelines for credit dispensation in respect of each broad category of economic activity.

(vi) The RBI's instructions relating to directed credit, quantitative limits on lending and prohibitions of credit shall continue to be in force. The present reporting system to RBI under the Credit Monitoring Arrangement (CMA) shall also continue in force.

Conclusion

There are many types of working capital financing available, and choosing the right product depends on your sector and circumstances, as well as what you're trying to achieve. To find out more about working capital financing, browse the related articles below or get in touch.

Questions

1. What are the types of working capital financing?
2. Explain the sources of working capital.
3. Explain the 6 committee report of working capital.

UNIT – V

Lesson – 18

INTERNAL FINANCING

Introduction

In order to grow your small business into a larger one, it is important to invest in it. And to invest in your business, you need access to finance. Unfortunately, external sources of finance — lenders and investors — are often skeptical of small businesses. This can leave you to rely on internal sources of finance for investing in your business.

Meaning

In the theory of capital structure, internal financing is the name for a firm using its profits as a source of capital for new investment, rather than a) distributing them to firm's owners or other investors and b) obtaining capital elsewhere. It is to be contrasted with external financing which consists of new money from outside of the firm brought in for investment. Internal financing is generally thought to be less expensive for the firm than external financing because the firm does not have to incur transaction costs to obtain it, nor does it have to pay the taxes associated with paying dividends. Many economists debate whether the availability of internal financing is an important determinant of firm investment or not. A related controversy is whether the fact that internal financing is empirically correlated with investment implies firms are credit constrained and therefore depend on internal financing for investment.

ADVANTAGES AND DISADVANTAGES OF INTERNAL SOURCING

Advantages

- Capital is immediately available

- No interest payments
- No control procedures regarding creditworthiness
- Spares credit line
- No influence of third parties
- More flexible
- More freedom given to the owners

Disadvantages

- Expensive because internal financing is not tax-deductible
- No increase of capital
- Losses (shrinking of capital) are not tax-deductible
- Limited in volume (volume of external financing as well is limited but there is more capital available outside - in the markets - than inside of a company)

INTERNAL SOURCES OF FINANCE

1. **Retained Earnings**

Retained earnings are an easy source of internal financing to use because they are liquid assets. Retained earnings are the portion of net income that you have retained in your company and not paid out. In a small business, retained earnings are usually paid out to the owners, who often do not draw a budgeted salary. Instead of paying out retained earnings, you can reinvest them into the company.

2. **Current Assets**

Current assets consist of cash or anything that can easily be converted into cash. For example, if your business has stock holdings in other companies, you can divest yourself of those stocks and use the proceeds as a source of financing. You should be careful, however, not to decrease your current assets to levels less than your current liabilities, as this may prevent you from paying off your debts.

3. **Fixed Assets**

Fixed assets are those that are not easily converted to cash. Typically, these assets include equipment, property and factories. Because these assets take time to convert to cash, they cannot be relied on for short-term access to finance. If you have the time, however, you could — for

example — sell off some equipment or even property to invest in your business. This is particularly useful if your needs have outgrown some of your fixed assets — for example, if you need to purchase newer equipment.

4. **Personal Savings**

Personal savings are the backbone of many small businesses. If your business doesn't have the assets to finance your project, you may still have personal finances that you can contribute to the business. This provides an alternative to seeking external investors or loans and allows you to retain control over your business.

Conclusion

The term 'Internal Source of Finance / Capital' itself suggests the very nature of finance / capital. This is the finance or capital which is generated internally by the business unlike finances such as loan which is externally arranged from banks or financial institutions. The internal source of finance is retained profits, the sale of assets and reduction / controlling of working capital.

Questions:

1. What is internal source of finance? Explain the advantages and disadvantages.
2. What are internal sources of finance?

Lesson – 19

DIVIDENDS

Introduction

A dividend is a payment made by a corporation to its shareholders, usually as a distribution of profits. When a corporation earns a profit or surplus, the corporation is able to re-invest the profit in the business (called retained earnings) and pay a proportion of the profit as a dividend to shareholders. Distribution to shareholders may be in cash (usually a deposit into a bank account) or, if the corporation has a dividend reinvestment plan, the amount can be paid by the issue of further shares or share repurchase.

MEANING OF DIVIDEND

Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders. According to the **Institute of CharteredAccountant of India**, dividend is defined as "a distribution to shareholders out of profits or reserves available for this purpose".

FORM OF DIVIDEND

(A) Cash dividend: A cash dividend is a usual method of paying dividends. Payment ofdividend is cash results in the reduction out flow of funds and reduces the net worth of the company. The shareholders get an opportunity to invest the cash in any manner, they desire. Hence, the ordinary shareholders prefer to receive dividends in cash. In case of companies having cash dividends, the firm must have adequate liquid resources, so that its liquidity position is not adversely affected on account of cash dividend.

(B) Scrip (or) Bond dividend: A scrip dividend promises to pay the shareholders at afuture specific date. In case a company does not have sufficient funds to pay dividends in cash, it may issue notes or bonds for amounts due to the shareholders. The objective of scrip dividends is to postpone the immediate payment of cash. A scrip dividend bears interest and is accepted as collateral security.

(c) Property Dividend: Property dividends are paid in the form of some assets otherthan cash. They are distributed under exceptional circumstances and are not popular in India.

(d) Stock Dividend: Stocks dividend means the issue and the bonus shares to theexisting shareholders. If a company does not have liquid resources, it is better to declare stock dividends. Stock dividend amounts to capitalization of earnings and distribution of profits among the existing shareholders without affecting the cash position of the firm.

BONUS SHARE: A company can pay bonus to its shareholders either in cash or in theform of shares. Many a times a company need 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 ofAssociation provide any conditions, then it can pay bonus to its shareholders in the form of cash. The dictionary meaning of bonus shares is a premium or gift, usually a stock, by a corporation to shareholders. A Bonus share is neither dividend nor a Gift.

FACTORS DETERMINING DIVIDEND POLICY

- **Profitable Position of the Firm:**Dividend decision depends on the profitable position of the business concern. When the firm earns more profit, they can distribute more dividends to the shareholders.
- **Uncertainty of Future Income:**Future income is a very important factor, which affects the dividend policy. When the shareholder needs regular income, the firm should maintain regular dividend policy.
- **Contractual constraints:**Often, the firm's ability to pay cash dividends is constrained by restrictive provisions in a loan agreement. Generally, these constraints prohibit the payment of cash dividends until a certain level of earnings have been achieved, or they may limit dividends to a certain amount or a percentage of earnings. Constraints on dividends help to protect creditors from losses due to the firm's insolvency. The violation of a contractual constraint is generally grounds for a demand of immediate payment by the funds supplier.

- **Internal constraints:**The firm's ability to pay cash dividends is generally constrained by the amount of excess cash available rather than the level of retained earnings against which to charge them. Although it is possible for a firm to borrow funds to pay dividends, lenders are generally reluctant to make such loans because they produce no tangible or operating benefits that will help the firm repay the loan. Although the firm may have high earnings, its ability to pay dividends may be constrained by a low level of liquid assets. (Cash and marketable securities) We will take the previous example to explain this point. In our example, the firm can pay Rs.1, 40,000 in dividends. Suppose that the firm has total liquid assets of Rs.50, 000 (Rs.20, 000 cash +marketable securities worth Rs.30, 000) and Rs.35, 000 of this is needed for operations, the maximum cash dividend the firm can pay is 15,000 (Rs.50, 000 – Rs.35, 000)
- **Growth prospects:**The firm's financial requirements are directly related to the anticipated degree of asset expansion. If the firm is in a growth stage, it may need all its funds to finance capital expenditures. Firms exhibiting little or no growth may never need replace or renew assets. A growth firm is likely to have to depend heavily on internal financing through retained earnings instead of distributing current income as dividends
- **Owner considerations:**In establishing a dividend policy, the firm's primary concern normally would be to maximize shareholder's wealth. One such consideration is then tax status of a firm's owners. Suppose that if a firm has a large percentage of wealthy shareholders who are in a high tax bracket, it may decide to pay out a lower percentage of its earnings to allow the owners to delay the payments of taxes until they sell the stock. Of course, when the equity share is sold, the proceeds are in excess of the original purchase price, the capital gain will be taxed, possible at a more favorable rate than the one applied to ordinary income. Lower-income shareholders, however who need dividend income will prefer a higher payout of earnings. As of now, the dividend income is not taxed in the hands of the shareholders in India. Instead, for paying out such dividends to its shareholders, the company bears the dividend distribution tax.
- **Market Considerations:**The risk-return concept also applies to the firm's dividend policy. A firm where the dividends fluctuate from period to period will be viewed as risky, and investors will require a high rate of return, which will increase the firm's cost of capital. So, the firm's dividend policy also depends on the market's probable response to

certain types of policies. Shareholders are believed to value a fixed or increasing level of dividends as opposed to a fluctuating pattern of dividends.

- **Legal Constrains:**The Companies Act 1956 has put several restrictions regarding payments and declaration of dividends. Similarly, Income Tax Act, 1961 also lays down certain restrictions on payment of dividends.
- **Liquidity Position:**Liquidity position of the firms leads to easy payments of dividend. If the firms have high liquidity, the firms can provide cash dividend otherwise, they have to pay stock dividend.
- **Sources of Finance:**If the firm has finance sources, it will be easy to mobilize large finance. The firm shall not go for retained earnings.
- **Growth Rate of the Firm:**High growth rate implies that the firm can distribute more dividends to its shareholders.
- **Tax Policy:**Tax policy of the government also affects the dividend policy of the firm. When the government gives tax incentives, the company pays more dividends
- **Capital Market Conditions:**Due to the capital market conditions, dividend policy may be affected. If the capital market is prefect, it leads to improve the higher dividend.

TYPES OF DIVIDEND POLICY

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

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

- **Regular Dividend Policy** Dividend payable at the usual rate is called as regulardividend policy. This type of policy is suitable to the small investors, retired persons and others.
- **Stable dividend policy** means payment of certain minimum amount of dividendregularly. This dividend policy consists of the following three important forms: Constant dividend per share Constant payout ratio Stable rupee dividend plus extra dividend.
- **Irregular Dividend Policy** When the companies are facing constraints of earnings andunsuccessful business operation, they may follow irregular dividend policy. It is one of

the temporary arrangements to meet the financial problems. These types are having adequate profit. For others no dividend is distributed.

- **No Dividend Policy** Sometimes the company may follow no dividend policy becauseof its unfavorable working capital position of the amount required for future growth of the concerns. Dividend is divisible profit distributed amongst members/shareholders of a company in proportion to shares in the manner as prescribed under law. A dividend cannot be declared unless:
    1. Sufficient profit is there in a company.
    2. It has been recommended by Board of Directors.
    3. Its acceptance has been given by the shareholders in Annual General Meeting (AGM)

KIND OF DIVIDEND

- Type of Security – Preference Dividend, - Equity Dividend
- Timings of Dividends – Interim Dividend – Regular Dividend
- Mode of Payment–Cash–Stock dividend (Bonus)–Script or Bond.

Dividend Policy - Policy followed by Board of Directors concerningquantum of profit to be distributed as dividend. It also includes principal rules and procedure for planning and distributing dividend after deciding rate of dividend.

- Stable: Long term policy without frequent changes i.e. long term policy which is not affected by changes or quantum of profit.

- Lenient: Most of the profit is distributed amongst shareholders and a very small part is kept as retained earnings. Even 90% to 95% profit is distributed as dividend. This is generally done in initial years to gain confidence of shareholders.

Factors affecting dividend policy or determinants of dividend policy

- Legal requirements: As per companies Act, dividend only out of earned profit.
- Liquidity position: In tight liquidity position, instead cash dividend, bonus shares or scripts/bonds are issued.
- Trade Cycle: In boom conditions, higher profits are there and hence high dividend.
- Expectations of share holders

- ❖ Future needs : If future needs are high, low dividend and high retained earnings
- ❖ Debt repayment: If heavy debt liability, low dividend.
- ❖ Stability of Income: If income is stable, high dividend.
- ❖ Public Opinion: High dividend to gain public confidence.
- ❖ Composition of Owners: If preference shareholders are large, less dividend to ordinary shareholders.

Models of Dividend (Theories)

Walter's Model –As per this model, dividend policy of a firm is basedon the relationship between internal rate of return (r) earned by it and the cost of capital or required rate of return (k). The optimumdividend policy will have to be determined by relationship of r & k under following assumptions.

- Internal rate of return ® and cost of capital (k) are constant.
- All new investment opportunities are to be financed through retained earnings and no external finance is available to the firm.
- A firm has perpetual or an infinite life

Hence, as per this Model, a firm should retain its earnings if the return on investment exceeds cost of capital.

Gordon's Model–This model is like Walters Model but a few extraassumptions are

- The firm operates its investment activity only through equity.
- The retention ratio once decided is constant forever.

As per this Model, Market value of share is equal to present value of its expected future dividend.

Modigliani& Miller (M M Model)–This model says that dividenddecision and retained earnings decision do not influence market value of shares. As per this model, "Under conditions of Perfect Capital.

Market, rational investors, absence of tax, discrimination between dividend income and capital appreciation given the firm's investment policy. Its dividend policy may have no influence on the Market price of shares.

Problems

Category #1: Walter Model

Problem #1

From the following information, ascertain whether the firm is following an optimal divided policy as per Walter's Model:

Total earnings (Rs): 600,000: Number of equity shares of Rs100 each: 40,000: Dividend paid (Rs): 160,000: Prices-earnings (P/E) ratio: 10

The firm is expected to maintain its rate of return on fresh investment. What should be theP/E ratio at which dividend policy will have no effect on the value of the share? Will youdecision change if the P/E ratio is five instead of ten?

Solution

Total Earnings = 600,000

No of Shares = 40,000

Dividend Paid =160,000

P/E = 10

K =1/(P/E)

=1/10 = 10%

r =Net Income

Equity Value =600,000

$40{,}000 * 100 = 15\%$

According to Walter model if r>K

i.e. when return on investment is greater than its cost of capital equity then the companyshould put back all the earnings back into company & not distribute any dividends i.e. thedividend payout ratio should be zero

In such a scenario optimal dividend payout ratio = 0%

However here since the company is paying out the dividends the dividend policy cannot beconsidered as optimal.

If the P/E ratio is 5 instead of 10 then the required return or cost of equity will be 20%which is greater than actual return on investment. Hence the optimal dividend payoutpolicy in such a scenario is to payout all earnings as dividends.

For dividend policy to have no effect on value of share, according to Walter model thiscondition is met when r= k

i.e when k = 15%

This Implies P/E ratio should be 1/15% = 6.67

Illustration2: ABC Ltd. belongs to a risk class for which the appropriate capitalization rate is 10%. It currently has outstanding 5,000 shares selling at Rs.100 each. The firm is contemplating the declaration of dividend of Rs.6 per share at the end of the current financial year. The company expects to have net income of Rs.50,000 and has a proposal for making new investments of Rs.1,00,000. Show that under the MM hypothesis, the payment of dividend does not affect the value of the firm.

Solution:

A. Value of the firm when dividends are paid:

(i) Price of the share at the end of the current financial year.

$P_1 = P_0 (1 + Ke) – D_1$

$= 100 (1 + 10) – 6$

$= 100 \times 1.10 – 6$

$= 110 – 6 = Rs.104$

B. Value of the firm when dividends are not paid:

(i) Price per share at the end of the current financial year

$P_1 = P_0 (1 + ke) – D_1$

$= 100 (1+.10)-0$

$= 100´1.10$

$= Rs. 110$

Hence, whether dividends are paid or not, the value of the firm remains the same Rs. 5,00,000.

Illustration 3: Expandent Ltd. had 50,000 equity shares of Rs. 10 each outstanding on January 1. The shares are currently being quoted at par the market. In the wake of the removal of dividend restraint, the company now intends to pay a dividend of Rs. 2 per share for the current calendar year. It belongs to a risk-class whose appropriate capitalization rate is 15%. Using MM model and assuming no taxes, ascertain the price of the company's share as it is likely to prevail at the end of the year (i) when dividend is declared, and (ii) when no dividend is declared. Also find out the number of new equity shares that the company must issue to meet its investment needs of Rs. 2 lakhs, assuming a net income of Rs. 1.1 lakhs and also assuming that the dividend is paid

Solution:

(i) Price as per share when dividends are paid

$P_1 = P_0 (1+ke) – D_1$

$= 10 (1+.15)-2$

$= 11.5-2$

$= Rs. 9.5.$

(ii) Price per share when dividends are not paid:

$P_1 = P_0 (1+ke)-D_1$

$= 10 (1+. 15)-0$

$= Rs. 11.5$

Illustration-4

Acompanyhasthefollowingfacts:

Costofcapital(ke)=0.10

Earningspershare(E)=$10

Rate of return on investments (r) = 8%

Dividend payout ratio: Case A: 50% Case B: 25%

Show the effect of the dividend policy on the market price of the shares.

Solution:

Case A:
D/Pratio= 50%

When EPS = $10 and D/P ratio is 50%, D = 10 x 50% = $5

$$P = \frac{5 + [0.08 / 0.10] [10 - 5]}{0.10} \Rightarrow \$90$$

Case B:
D/Pratio=25%
When EPS = $10 and D/P ratio is 25%, D = 10 x 25% = $2.5

$$P = \frac{2.5 + [0.08 / 0.10] [10 - 2.5]}{0.10} \Rightarrow \$85$$

Illustration – 5

Cost of Capital (k) = 10%

Earnings per share (E) = Rs. 10.

Assume Internal Rate of Return (r):

(i) 15%; (ii) 10%; and (iii) 8% respectively

Assuming that the D/P ratios are: 0; 40%; 76% and 100% i.e., dividend share is (a) Rs. 0, (b) Rs. 4, (c) Rs. 7.5 and (d) Rs. 10, the effect of different dividend policies for three alternatives of r may be shown as under:

(a) Rs. 0, (b) Rs. 4, (c) Rs. 7.5 and (d) Rs. 10, the effect of different dividend policies for three alternatives of r may be shown as under :

When $r>k$	When $r=k$	When $r<k$
$r = .15$	$r = .10$	$r = .08$
$k = .10$	$k = .10$	$k = .10$
E = Rs.10	E = Rs. 10	E = Rs. 10

Dividend Policy and the Value of Shares (under Walter's model)

When $r>k$	When $r=k$	When $r<k$
(At different levels of 'D' the value of 'P' will be as under :)	(At different levels of 'D' the value of 'P' will be as under :)	(At different levels of 'D' the values of 'P' will be as under :)
(a) D = Rs. 0 $P = \frac{0 + \frac{.15}{.10}(10 - 0)}{.10}$ = Rs. 150	(a) D = Rs. 0 $P = \frac{0 + \frac{.10}{.10}(10 - 0)}{.10}$ = Rs. 100	(a) D = Rs. 0. $P = \frac{0 + \frac{.08}{.10}(10 - 0)}{.10}$ = Rs. 80
(b) D = Rs. 4 $P = \frac{4 + \frac{.15}{.10}(10 - 4)}{.10}$ = Rs. 130	(b) D = Rs.4 $P = \frac{4 + \frac{.10}{.10}(10 - 4)}{.10}$ = Rs. 100	(b) D = Rs. 4. $P = \frac{4 + \frac{.08}{.10}(10 - 4)}{.10}$ = Rs. 88
(c) D = Rs. 7.5 $P = \frac{7.5 + \frac{.15}{.10}(10 - 7.5)}{.10}$ = Rs. 112.50	(c) D = Rs. 7.5 $P = \frac{7.5 + \frac{.10}{.10}(10 - 7.5)}{.10}$ = Rs. 100	(c) D= Rs. 7.5 $P = \frac{7.5 + \frac{.08}{.10}(10 - 7.5)}{.10}$ = Rs. 95
(d) D = Rs. 10 $P = \frac{10 + \frac{.15}{.10}(10 - 10)}{.10}$ = Rs. 100	(d) D = Rs. 10 $P = \frac{10 + \frac{.15}{.10}(10 - 10)}{.10}$ = Rs. 100	(d) D = Rs. 10 $P = \frac{10 + \frac{.08}{.10}(10 - 10)}{.10}$ = Rs. 100

Thus, according to the Walter's model, the optimum dividend policy depends on the relationship between the internal rate of return r and the cost of capital, k. The conclusion, which can be drawn up is that the firm should retain all earnings if r > k and it should distribute entire earnings if r < k and it will remain indifferent when r = k.

Illustration:6

The following information is available in respect of the rate of return on investments (r), cost of capital (k) and earning per share (E) of X Ltd.

Rate of return of Investment — (r) :

(i) 15% ; (ii) 10% and (iii) 8%.

Cost of Capital (k) = 10%.

Earning per Share (E) = Rs. 10.

Determine the value of its shares assuming the following :

	$\frac{D}{P}$ ratio i.e., $(1 - b)$	Retention Ratio i.e., $b = \frac{R}{E}$
(a)	100	0
(b)	80	20
(c)	70	30
(d)	50	50
(e)	35	65

Solution:

According to the formula developed by Gordon, the value of share is given by the following —

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

Therefore, the value of shares of X Ltd. for different $\frac{D}{P}$ and retention ratios for the three alternatives of r, i. e., (i) $r>k$, (ii) $r=k$, and (iii) $r<k$, is presented in the table that follows.

When $r>k$	When $r=k$	When $r<k$
r = .15	r = .10	r = .08
k = .10	k = .10	k = .10
E = Rs. 10	E = Rs. 10	E = Rs. 10.

Dividend policy and the Value of Shares (Under Gordon's Model)

When $r>k$	When $r=k$	When $r<k$
At different levels of 'b', the value of 'P' will be as under) :	(At different levels of 'b', the value of 'P' will be as under) :	(At different levels of 'b', the value of 'P' will be as under) :
(a) b = 0 ∴ br = 0 $P = \frac{\text{Rs. } 10(1-0)}{.10-0}$ = Rs. 100	b = 0 ∴ br = 0 $P = \frac{\text{Rs. } 10(1-0)}{.10-0}$ = Rs. 100	b = 0 ∴ br = 0 $P = \frac{\text{Rs. } 10(1-0)}{.10-0}$ = Rs. 100
(b) b=.20 ∴ br =.20×.15=.030 $P = \frac{\text{Rs. } 10(1-.20)}{.10-.03}$ $= \frac{\text{Rs. } 8}{.070}$ = Rs. 114	b=.20 ∴ br=.20 ×.10=.02 $P = \frac{\text{Rs. } 10(1-.20)}{.10-.02}$ $= \frac{\text{Rs. } 8}{.08}$ = Rs. 100	b=.20 br=.20×.08=.016 $P = \frac{\text{Rs. } 10(1-.20)}{.10-.016}$ $= \frac{\text{Rs. } 8}{.084}$ = Rs. 95
(c) b=.30 ∴ br=.03×.15=.045 $P = \frac{\text{Rs. } 10(1-.30)}{.10-.045}$ $= \frac{\text{Rs. } 7}{.055}$ = Rs. 127	b=.30 ∴ br=.30×.10=.03 $P = \frac{\text{Rs. } 10(1-.30)}{.10-.03}$ $= \frac{\text{Rs. } 7}{.07}$ = Rs. 100	b=.30 ∴ br=.30×.08=.024 $P = \frac{\text{Rs. } 10(1-.30)}{.10-.024}$ $= \frac{\text{Rs. } 7}{.076}$ = Rs. 92
(d) b=.50 ∴ br=0.5×.15=0.75 $P = \frac{\text{Rs. } 10(1-.50)}{.10-.075}$ $= \frac{\text{Rs. } 5}{.025}$ = Rs. 200	b=.50 ∴ br=.50×.10=.05 $P = \frac{\text{Rs. } 10(1-.50)}{.10-.05}$ $= \frac{\text{Rs. } 5}{.05}$ = Rs. 100	b=.50 ∴ br=.50 ×.08=.04 $P = \frac{\text{Rs. } 10(1-.50)}{.10-.04}$ $= \frac{\text{Rs. } 5}{.06}$ = Rs. 83
(e) b=.65 ∴ br=.65×.15=.098 $P = \frac{\text{Rs. } 10(1-.65)}{.10-.098}$ $= \frac{\text{Rs. } 3.5}{.002}$ = Rs. 1,750	b=.65 ∴ br=.65×.10=.065 $P = \frac{\text{Rs. } 10(1-.65)}{.10-.065}$ $= \frac{\text{Rs. } 3.5}{.035}$ = Rs. 100	b=.65 ∴br=.65 =.08=.052 $P = \frac{\text{Rs. } 10(1-.65)}{.10-.052}$ $= \frac{\text{Rs. } 3.5}{.048}$ = Rs. 73

The above table clearly shows that —

(i) When $r>k$, the market value of shares, P, increases with the retention ratio b for growth firms;

(ii) when $r = k$, the market value of the share is not affected at all by dividend policy; and

(iii) when $r<k$, the market value of share, P, increases with the payout ratio for declining firms.

Conclusion

Many investors seek dividend-paying stocks as a means of generating income and growing wealth. As with any investment, it is important to do your homework and find investments that are suitable to your investing style, time horizon, financial situation and financial objectives. A variety of resources and tools are available in print and online to help you make investment decisions. You can consult with qualified financial planners and tax specialists to determine the best course of action for your investment strategy.

Questions:

1. What is meant by dividends?
2. What are the form of dividends?
3. State the factors determining the dividends.
4. What are the types of dividends?
5. Explain the kinds of dividends.
6. What are the factor affecting dividends policy?
7. State the models of dividends.

Lesson – 20

CAPM

Introduction

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.

BIRTH OF A MODEL

The capital asset pricing model was the work of financial economist (and later, Nobel laureate in economics) William Sharpe, set out in his 1970 book "Portfolio Theory and Capital Markets." His model starts with the idea that individual investment contains two types of risk:

1. **Systematic Risk –** These are market risks that cannot be diversified away. Interest rates, recessions and wars are examples of systematic risks.
2. **Unsystematic Risk –** Also known as "specific risk," this risk is specific to individual stocks and can be diversified away as the investor increases the number of stocks in his or her portfolio. In more technical terms, it represents the component of a stock's return that is not correlatedwith general market moves.

Modern portfolio theory shows that specific risk can be removed through diversification. The trouble is that diversification still doesn't solve the problem of systematic risk; even a portfolio of all the shares in the stock market can't eliminate that risk. Therefore, when calculating a deserved return, systematic risk is what plagues investors most. CAPM, therefore, evolved as a way to measure this systematic risk.

The Formula

Sharpe found that the return on an individual stock, or a portfolio of stocks, should equal its cost of capital. The standard formula remains the CAPM, which describes the relationship between risk and expected return.

Here is the formula:

$$\bar{r}_a = r_f + \beta_a (\bar{r}_m - r_f)$$

Where:

r_f = Risk free rate

β_a = Beta of the security

$\bar{r}_m$ = Expected market return

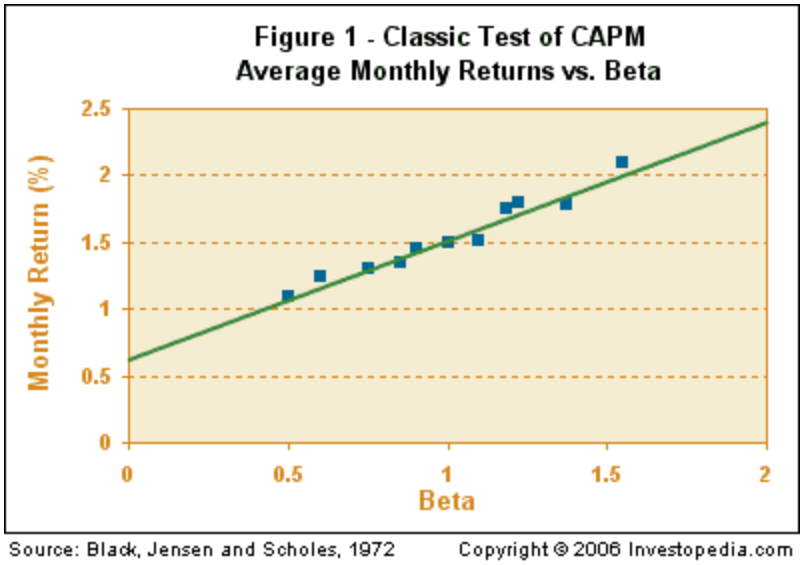
$(\bar{r}_m - r_f)$ = Equity market premium

CAPM's starting point is the risk-free rate – typically a 10-year government bond yield. To this is added a premium that equity investors demand to compensate them for the extra risk they accept. This equity market premium consists of the expected return from the market as a whole less the risk-free rate of return. The equity risk premium is multiplied by a coefficient that Sharpe called "beta."

Beta

According to CAPM, beta is the only relevant measure of a stock's risk. It measures a stock's relative volatility – that is, it shows how much the price of a particular stock jumps up and down compared with how much the stock market as a whole jumps up and down. If a share price moves exactly in line with the market, then the stock's beta is 1. A stock with a beta of 1.5 would rise by 15% if the market rose by 10% and fall by 15% if the market fell by 10%.

Beta is found by statistical analysis of individual, daily share price returns, in comparison with the market's daily returns over precisely the same period. In their classic 1972 study "The Capital Asset Pricing Model: Some Empirical Tests," financial economists Fischer Black, Michael C. Jensen and Myron Scholes confirmed a linear relationship between the financial returns of stock portfolios and their betas. They studied the price movements of the stocks on the New York Stock Exchangebetween 1931 and 1965.



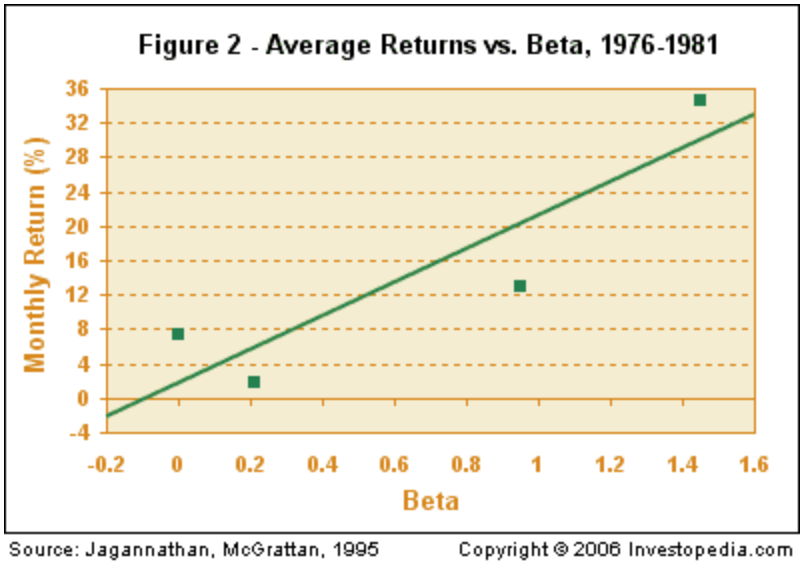
Beta, compared with the equity risk premium, shows the amount of compensation equity investors need for taking on additional risk. If the stock's beta is 2.0, the risk-free rate is 3%, and the market rate of return is 7%, the market's excess return is 4% (7% - 3%). Accordingly, the stock's excess return is 8% (2 X 4%, multiplying market return by the beta), and the stock's total required return is 11% (8% + 3%, the stock's excess return plus the risk-free rate).

What this shows is that a riskier investment should earn a premium over the risk-free rate – the amount over the risk-free rate is calculated by the equity market premium multiplied by its beta. In other words, it's possible, by knowing the individual parts of the CAPM, to gauge whether or not the current price of a stock is consistent with its likely return – that is, whether or not the investment is a bargain or too expensive.

What CAPM Means for You

This model presents a very simple theory that delivers a simple result. The theory says that the only reason an investor should earn more, on average, by investing in one stock rather than another is that one stock is riskier. Not surprisingly, the model has come to dominate modern financial theory. But does it really work?

It's not entirely clear. The big sticking point is beta. When professors Eugene Fama and Kenneth French looked at share returns on the New York Stock Exchange, the American Stock Exchange and Nasdaq between 1963 and 1990, they found that differences in betas over that lengthy period did not explain the performance of different stocks. The linear relationship between beta and individual stock returns also breaks down over shorter periods of time. These findings seem to suggest that CAPM may be wrong.



While some studies raise doubts about CAPM's validity, the model is still widely used in the investment community. Although it is difficult to predict from beta how individual stocks might react to particular movements, investors can probably safely deduce that a portfolio of high-beta stocks will move more than the market in either direction, or a portfolio of low-beta stocks will move less than the market.

This is important for investors – especially fund managers – because they may be unwilling to or prevented from holding cash if they feel that the market is likely to fall. If so, they can hold low-beta stocks instead. Investors can tailor a portfolio to their specific risk-return requirements, aiming to hold securities with betas in excess of 1 while the market is rising, and securities with betas of less than 1 when the market is falling.

Not surprisingly, CAPM contributed to the rise in use of indexing – assembling a portfolio of shares to mimic a particular market – by risk-averse investors. This is largely due to CAPM's message that it is only possible to earn higher returns than those of the market as a whole by taking on higher risk (beta).

Conclusion

The capital asset pricing model is by no means a perfect theory. But the spirit of CAPM is correct. It provides a usable measure of risk that helps investors determine what return they deserve for putting their money at risk.

Questions:

1. What is CAPM?
2. Expand CAPM.

3. When the CAPM was birth?
4. What are the formulae for CAPM?

Lesson – 21

FINANCIAL MODELING

Introduction

A financial model has become a critical tool used by organizations to understand business risks and make important strategic decisions. An effective model is robust and flexible, yet user-friendly, so that it can be used to analyze the impact of operational parameters on the value and viability of a business.

What is a financial model used for?

The output of a financial model is used for decision making and performing financial analysis, whether inside or outside of the company. Inside a company, executives will use financial models to make decisions about:

- Raising capital (debt and/or equity)
- Making acquisitions (businesses and/or assets)
- Growing the business (i.e. opening new stores, entering new markets, etc.)
- Selling or divesting assets and business units
- Budgeting and forecasting (planning for the years ahead)
- Capital allocation (priority of which projects to invest in)
- Valuing a business

Who builds financial models? (Jobs and career)

There are many different types of professionals that build financial models. The most common types of career tracks are investment banking, equity research, corporate development, FP&A, and accounting (due diligence, transaction advisory, valuations, etc).

To learn more about jobs and careers that require building financial models, explore our interactive career map.

Conclusion

In this chapter is very important that you gain the ability to understand the tools used so that you can make your own judgments to value businesses and investments. The best next step is to lay out a summary page consisting of estimates resulting from each of the three valuation methods. As each method depends on a wide range of variables, many of which change with market swings, we expand each output across a range as opposed to centering on one specific number. Even a range can hopefully suggest proper direction of a particular investment. The

summary page should consist of a range of equity value, enterprise value, implied stock price, and an implied multiple. Let's assess each valuation method, come up with a relative range, and then create the summary tab, which we will analyze to approximate value.

Questions

1. What is financial modeling?
2. What is a financial model used for?
3. Who builds financial models?

Key Terms

- **APT Arbitrage Pricing Theory** (APT) is one of the tools used by the investors and portfolio managers which explain return of the severities on the basis of their respective betas. This theory was developed by Stephen Ross.
- **Acquisition –** Refers to effective working control by one company overanother. This acquisition may be through either a friendly takeover or through forced or unwilling take over. Generally acquisition is done through mutual argument.
- **ABC Analysis –** It stands for "Always Better Control" it is a technique ofinventory control where all etenis of inventory are classified in two „A", „B" & „C" category where „A" represents items of high rahu but quantity is very less, B represents items of medium native and quantity is also and „e" represent items. Which are very high quantity items but their value is much less.
- Refers to situation where two or more existing companies are combined in to a new company formed for the purpose old companies cease to exist and their shareholders and paid by the new company in each or through starts or debentures.
- **Bita Estimation –** Beta is a measure of volatility of stock priers in relationto movement in the stock index of the market. If data of a sarthenlar share is high, it means its price tomorrow more, if market price inevenes.
- **Bridge Loan –** It is a financer provider for inLevin period to meet urgentneeds of borrower till he gets regular book sanctioned by development financial institutions.
- **Bamaul Model –** Is a model of assessing optimum cash balance. It is likeEOQ model of inventory. According to this model, optimum is one at which carrying cost of cash or cost of receiving cash is minimum.
- **Evedin Terms –** Refers to terms on which eveth is lieing provided to aloanee. These terms include period of Baymend, purpose of credit and allowing cash/trade discount.
- **Credit Standards –** Are guiding principles set by the credit controldepartment to sever credit applicants for this credit worthiness? They are basic criteria for extension of credit to customers.
- **Commercial Paper –** Commercial **Credit Assessment –** Refers to assessment of credit worthiness of a loanee. Generally, this is done by using 5 c"s i.e. character, capital, capacity collateral and conditions of the borrower.

- **Collection Policy –** Refers to the policy of an organization to receivemoney from debtors. This policy may be benientashure organization does not stick to time schedule of getting payment and stringent when one is strictly adhore the tire of schedule of getting payment and stringent when one is strictly adhorei.s. the tire of payment.
- **Capital Budgeting –** Refers to total process of generally, eradiating, selecting and follow up of capital expenditure alternatives. Such expenditure has a long term effect and is based on risk and return.
- **Corporate restructuring –** Refers to reorganizing a company or itsbusiness so as to approval it more effectively, efficiently and profitability. This restructuring may be financial, technological, organizational or marketing restructuring.
- **Corporate Governance –** Refers to governance of a corporate on theprinciples of transparency, alternate of legal provision and rules framed there under, internal rules and directors and ethical values.
- Paper is an unsecured promissory notissued by a listed company haring sufficient credit rating from an approved credit rating.
- **Cash Budget –** Refers to statement showing estimate of cash receipts, casedisbursement and net cash has been for a future period of time. It helps in finding and when cash would be in differ and when cash would by in surplus.
- **Cost of Capital –** Is reward for use of capital. It is price paid to theinration for the use of capital provided lump hire. It is investors required rate of return.
- **Cash Management –** Refers to optimizing amount of cash available to thecompany and maximizing interest on surplus funds to ensure that adequate cash is available for payments due, minimize idle cash and maximizing interest on surplus cash.
- **Incantation Banking –** Refers to establishing multiple centers in variousparts of city for fast collection of charges. The bank in the head office of farm is known as cancastrations bank.
- **CAPM –** Capital Asset Pricing Model (CAPM) is a useful technique ofmeasuring risk factor as well as required rate of return. It is a useful model in dealing with risk.
- **Dividend Policy –** Policy followed by an organization coursing grantorof profit to by distribute as dividend. Quantum of dividend in Annual General meeting of shareholders.

- **E.O.Q. –** It stands for economic order quantity and refers to optimum sizeof an order for replenishment of an item of inventory. At this point, ordering cost is minimum.
- **Excess working capital –** Refers to a situation where an organization hasworking capital much more than required. It leads to loss of interest on express capital, in efficiency and adversely affects the profitability.
- **Finance –** Refers to procuring or raising of money (funds) and allocating(using) these resources (funds) on the basis of monetary requirements of the business. It also includes distribution of funds (profit).
- **Financial Management –** Refers to planning, organizing, coordinatingand controlling of raising, investment & distribution of funds for achieving goals of an organization.
- **Financing working capital –** Refers to arranging working capital in anorganization i.e. different sources from which capital is to be arranged sources for raising temporary/short term/variable capital and permanent/ long term capital are different.
- **Float –** Float arises due to time gap between cheque loosed and time whenamount is actually debited in account. This float may be postal float, deposit float or band float.
- **Financial Engineering –** Refers to new techniques of financial analysisand finding solutions of financial problems through complex mathematical models and high speed computer solutions.
- **FSN Analysis of Stock –** FSN Stands for fast moving, slow moving andnot moving items of stock. It is maintained for fast moving items and comparatively less for slow moving and not moving items.
- **Gordan Model –** It is one of the models of dividend theories. As per thismodel market nature of share is equal to present value of it vibrated future dividend.
- **Gross working capital –** Refers to forms investments in current assetswhich are converted in to cash during an accounting year such as cash, bank balance, short terms investments debtors, bills receivable, inventory & short term loans/adarners.
- **Hire Purchase –** Involves a system under which an asset is sold oninstallment basis and title remains with the seller on payment of last & final installment the title goes to the purchaser.
- **Hiller Orr Model –** This model is model for working art optimum cashlevel in an organization. It is based on assumption that cash balances changes randomly Orr a period

of time and size. It prescribes two lands of cash i.e. upper limit and lower limit. Optimum cashes his between upon limit and lower limit.

- **Installment Sale –** In this sale, title of goods is immediately transferred infavor of purchaser and seller can't repossess thesold asset and he has to follow normal procedure for recovering pending installment.
- **Inventory –** Refers to stock of goods in the form of raw material, stores orsupplies, work in progress and finished product on a particular date. It involves all functional areas of management i.e. purchase, production, marketing & finance.
- **Inventory Management –** Refers to efficient management control ofcapital invested in inventory to obtain maximum return by keeping inventory cash at minimum tow objectives of inventory control are operating objectives and financial objectives. Operating objectives refers to regular flow of material for production and financial objection refers to maximizing return on investments and minimizing inventory costs.
- **Inventory costs –** Refers to costs associated with inventory such as costson purchasing material, ordering costs, carrying costs and stock and cash. Order inventory control, these costs are to by kept at minimum level.
- **Inventory Control –**Refers to exercising due control on inventory as it isan important part of working capital. Such control is exercised by various modern techniques like EOQ, ROP, Stock levels, ABC analysis, FSN analysis, VED analysis, SDE Analysis etc.
- **Lease (Operating & Financial) –** Is a contractile arrangement whereowner of the asset transfers the right to use the asset to user in return of rentals. Operating lease is for a short term and lease period is less than usual life of the asset and financial lease generally corers usual economic life of asst or a period close to the life of asset.
- **LBO –** Leverage Buy Out (LBO) is acquisition financed throughborrowings by a small group of investors against stocks or assets of the company. Te debt is secured by the assets of acquired firm.
- **Interim dividend –** Refers to payment of dividend for an interim periodsay 3 months, 6 months. It is declared on the basis of quarterly result or simian results/profit of a company to attract more share capital.

- **Lock Box System –** When form takes on rent post office boxes in selectedareas and instructs their customers to mail this payment in these boxes, it is known as lock Box System.
- **Merger –** Refers to continuation of two or more companies in to singlecompany This merger is governed by the companies Act. 1956.
- **MBO –** Management Buy Out (MBO) is a way of aequisitianwheremanagement buy business from it owners. It is known as take over rather than aquisitiai and resorted when owners are unable to run a company successfully and very existence of company is at stake.
- **Mgmt. of Markelahh Securities –** Refers to investment of surplus inreadily marketable securities which are considered or cash equivalents to cash interest is holding period and covert them in cash as & when required Investment is made keeping in view principles of safety, liquidity, yield and maturity.
- **Modigilliane Model –** Is a model of dividend theories. This model saysthat dividend decisions and retained earnings decision do not influence market value of shares.
- **Maximum Permissible Bank Finance –** (As per Tandon committee) MPBSis the optimum Permissible bank finance based on the appraisal of balance sheet. Tandon committee suggested 3 methods of working and MPBS. As per method I, Current assets less current liabilities and 75% of balance is MPBS. As per method II, 75% of current assets less current liabilities. As per method III, 75% of current assets less current liabilities less core current assets.
- **Net Working Capital –** Refers to difference between current assets andcurrent liabilities or excess of current assets over current liabilities.

- **Operating cycle method of working capital –** It represent cycle duringwhich cash is reconverted in to cash. In a manufacturing process cash is required for purchasing raw material, raw material is converted in work in progress and finished product, and finished product is than sold both in cash & credit. Total number of days to complete this cycle is centered and based on that working capital requirements are assessed.
- **Project financing –** Refers to arranging finance for developing andimplementation of a project. It includes determination and mobilization of required funds of different

stages of implementation of project. Two main sources are own funds and look funds. Funds in large granitites for such project are provided by development financial institution (DFI‟s)

- **Profit Maximization –** As per trading thinkers, maximizing profit is thekey objectives of financial management. They argue their proposition as it is national, real list of business maximum social welfare, main source of inspiration and basis for decision making.
- **Perpetual inventory system –** Is a method of recording stares balanceafter each receipt and issue to vacillate regular checking to obviate closing down for stock taking.
- **Reordering Point (ROP) –** Refers to level of inventory of which an ordershould he placed for replenishment of an item of inventory.