GBA (S4) 01
Exam Code : FFM

Fundamentals of Financial Management

SEMESTER 4

BUSINESS ADMINISTRATION

BLOCK - 2

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SEMESTER 4
BACHELOR IN BUSINESS ADMINISTRATION
FUNDAMENTALS OF FINANCIAL MANAGEMENT
BLOCK 2

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BLOCK 2: INTRODUCTION

This is the second block of the course “Fundamentals of Financial Management”. After completing this block, which consists of seven units , you will be able to get a fair idea on the different essential concept in Financial Management

The block comprises the following seven units:

The ninth unit introduces us to the Meaning of Concept of Working Capital, Need for Working Capital, Types of Working Capital Determinants of Working Capital, Working Capital Management and Principles of Working Capital Policy

The tenth unit gives us a broad overview of the Meaning of Dividend ,Dividend Policy,Factors Influencing Dividend Policy, Forms of Dividend, Bonus Shares, Objectives, Advantages and Disadvantages of Issue of Bonus Shares and Provisions of Indian Companies Act, 2013 relating to dividend

The eleventh unit gives us an idea on the Financial Statement; Profit And Loss Account; Statement of Cash Flow; Funds flow Statement; Uses Of Statement Of Changes in Financial Position

The twelfth unit gives us an idea on the concept of Ratio Analysis; Significance Of Ratio Analysis; Types of Ratios; Limitations of Ratio Analysis; Time series analysis

The thirteenth unit will help us in understanding the concept of Concept of Receivables; Factors influencing the Size of Receivables; Goals of Receivables Management; Dimensions of Receivables Management; Credit Policy; Credit Terms; Collection Policies; Control of Accounts Receivables

The fourteenth unit gives us a broad overview of Concept of Meaning of Inventory and its components; Need to Hold Inventory; Risks and Costs of Holding Inventory; Inventory Management; Inventory Management Techniques; Selective Inventory Control

The fifteenth is about types of Meaning of Lease; Types of Lease; Advantages of Leasing; Lease Rental Calculation; Meaning of Hire Purchase; Difference Between Lease Financing and Hire PurchaseDegrees of Operating Leverage, Combined effect of Financial and Operating Leverage

The structure of Block 2 is as follows :

UNIT 9 : Working capital Management

UNIT 10 : Dividend Decision

UNIT 11 : Financial Statements and Cash Flow and Funds Flow Analysis

UNIT 12 : Ratio Analysis

UNIT 13 : Receivable Management

UNIT 14 : Inventory Management

UNIT 15 : Lease and Hire Purchase Finance

UNIT- 9: WORKING CAPITAL MANAGEMENT

UNIT STRUCTURE

9.1 Learning Objectives

9.2 Introduction

9.3 Concept of Working Capital

9.4 Need for Working Capital

9.5 Types of Working Capital

9.6 Determinants of Working Capital

9.7 Working Capital Management

9.8 Principles of Working Capital Policy

9.9 Let Us Sum Up

9.10 Further Reading

9.11 Answers To Check Your Progress

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9.1 LEARNING OBJECTIVES

After going through this unit, you will be able to :

- define concepts of working capital
- explain need for working capital
- describe permanent and variable working capital
- explain determinants of working capital
- explain working capital Management

9.2 INTRODUCTION

This unit will present some basic concepts and an overview of working capital management and its policy. It introduces working capital management or short-term financial management that is concerned with decisions relating to current assets and current liabilities.

The capital requirements of a business enterprise can be broadly classified under two categories:

(i) Fixed Capital Requirements

(ii) Working Capital Requirements

Fixed capital refers to the capital that meets the permanent or long-term needs of the business. **Working capital, on the other hand, refers to the capital required for day-to-day operations of a business enterprise**. Thus, working capital invested in current assets keeps revolving fast and are constantly converted into cash and this cash flows out again in exchange for some other current assets. Hence, it is also known as revolving or circulating capital or short-term capital.

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

9.3 CONCEPTS OF WORKING CAPITAL

There are two concepts of working capital:

(i) **Gross Working Capital:** It refers to the capital invested in the total current or circulating 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. Examples of current assets include: cash in hand, bills receivable, prepaid expenses, sundry debtors(less provision for bad debts), and inventories (raw materials, work-in-process and finished goods), accrued incomes etc.

(ii) Net Working Capital: The term 'Net working capital' has been defined in two different ways:

(a) It is the excess of current assets over current liabilities i.e,

Net Working Capital= Current Assets – Current Liabilities

This is the most commonly accepted definition.

This net working capital can be both positive (when current assets> current liabilities) or negative (when current liabilities> current assets). Current liabilities are those liabilities that are 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. Examples of current liabilities include sundry creditors, bills payable, bank overdraft, outstanding expenses, short-term loans, etc.

(b) It is that portion of a firm's current assets which is financed by long-term funds. For example: A business requires investment in current assets such as cash, bills receivable, short-term investment etc. to an extent of Rs.20,000. A part of this requirement can be financed by the firm by purchasing on credit or postponing certain payments or, in other words, by creation of current liabilities such as outstanding expenses, accounts payable. If the amount of current liabilities comes to Rs.15, 000, the business will still need Rs.5, 000 for its working purposes. This amount may then have to be financed from long-term sources of funds.

9.4 NEED FOR WORKING CAPITAL

The basic objective of financial management is to maximise shareholders' wealth which is possible only when the company earns sufficient profits. However, the amount of such profit largely depends on the magnitude of sales. But sales does not always imply instantaneous cash since there is always a time gap between the sale of goods and receipt of cash or in other words, there is always *an operating cycle* involved in the conversion of sales into cash. Therefore, working capital is required for this period in order to sustain the sales activity. In case adequate working capital is not available for this period, the business enterprise might not be able to purchase raw materials, make payment of wages and other expenses required for manufacturing the goods to be sold.

Operating Cycle

In case of a manufacturing concern, the operating cycle is the length of time necessary to complete the following cycle of events:

(i) Conversion of cash into raw materials;

(ii) Conversion of raw materials into work-in-progress;

(iii) Conversion of work-in-progress into finished goods;

(iv) Conversion of finished goods into accounts receivable; and

(v) Conversion of debtors and receivables into cash.

The speed and span of one operating cycle determines the requirements of working capital- longer the period of the cycle, the larger is the requirement of working capital.

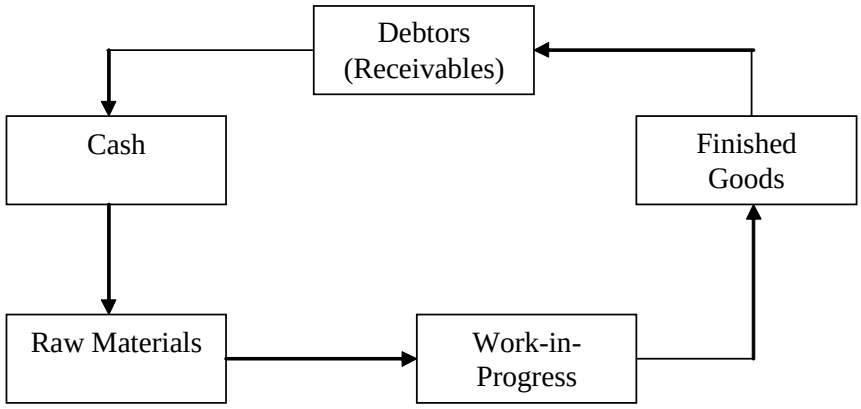


Fig 9.1: Working Capital/Operating Cycle of a manufacturing concern

In case of a trading firm, the operating cycle will include the length of time required to convert (a) Cash into inventories, (b) inventories into account receivables, and (c) accounts receivables into cash.

In case of a financing firm, the operating cycle includes the length of time required for (a) conversion of cash into debtors, and (ii) conversion of debtors into cash.

9.5 TYPES OF WORKING CAPITAL

On the basis of time, working capital can be divided into two categories viz:

(i) **Permanent or Fixed Working capital:** This is the minimum level of current assets required on a continuous basis over the entire year. So, fixed working capital is the minimum amount of investment in all current assets which is required at all times to carry out the minimum level of business activities. For example: every firm has to maintain a minimum level of raw materials, work-in-progress,

finished goods and cash balance. Tandon Committee has referred to this type of working capital as "core current assets".

The main features of permanent working capital are:

(a) Permanent working capital remains in the business in one form or other.

(b) There is a positive correlation between the amount of permanent working capital and the size of the business.

(c) Permanent working capital is permanently needed; therefore, it should be financed through long-term funds.

ii. **Temporary Working Capital**: This capital refers to the additional current assets required at different times during the operating year, for example to meet seasonal demands and some special **exigencies**. The amount of such working capital fluctuates from time to time, on the basis of business activities. Temporary working capital is generally financed from short-term sources of finance such as bank credit. Suppliers of temporary working capital can expect its return during the off-season when it is not required by the firm.

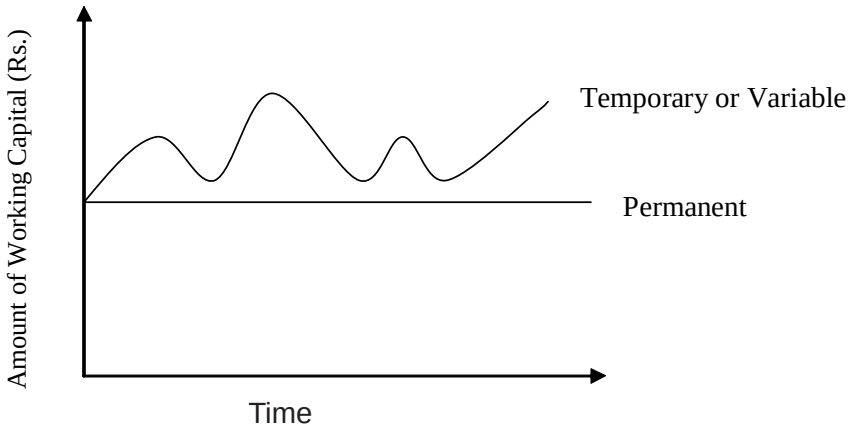


Fig 9.2

In Fig (9.2), permanent working capital is stable or fixed over time while temporary working capital fluctuates.

Exigencies —

A pressing or urgent situation

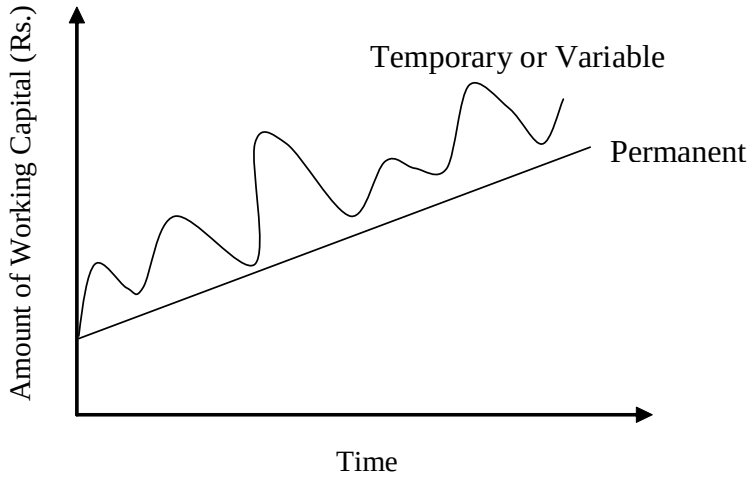


Fig 9.3

In Fig (9.3), permanent working capital is also increasing with the passage of time due to expansion of business. This happens in case of a growing company and therefore, the permanent working capital line is not horizontal with the base line as in Fig.(9.2).



LET US KNOW

PERMANENT WORKING CAPITAL

vs.

TEMPORARY WORKING CAPITAL

- Permanent working capital is stable over time whereas variable working capital fluctuates according to seasonal demands.
- Investment in permanent portion can be predicted to some extent whereas investment in variable cannot be predicted easily.
- The permanent component reflects the need for a certain irreducible level of current assets on a continuous and uninterrupted basis; the temporary portion is needed to meet seasonal & other temporary requirements.
- Permanent capital requirements should be financed from long-term sources, short-term funds should be used to finance temporary working capital needs of a firm.

9.6 DETERMINANTS OF WORKING CAPITAL

A firm must have adequate working capital; it should be neither excessive nor inadequate. Schall and Haley have rightly said, “Managing

current assets require more attention than managing plant and equipment expenditure. Mismanagement of current assets can be costly."

It is therefore, essential that proper estimates of working capital requirements be made to run the business efficiently and profitably. There are several factors that determine the requirements of working capital. These determinants are briefly explained below:

(i) ***Nature of Business:*** The working capital requirements essentially depend on the nature of business undertaken. Public utility concerns like railways, electricity have limited need for working capital since most of their transactions are on cash basis and they do not require large inventories. On the other hand, trading and financial concerns have a very less investment in fixed assets but have a considerable need for working capital since they have to make substantial investment in current assets like inventories and debtors/ receivables. Some manufacturing businesses like construction firms also have to invest substantially in working capital and a nominal amount in the fixed assets. In fact, the working capital needs of most of the manufacturing concerns fall between the two extreme requirements of trading concerns and public utilities. Such concerns are required to make appropriate investment in current assets depending upon the total assets structure and other relevant variables.

(ii) ***Scale of Operations:*** Generally, greater the size of the business unit, larger will be the working capital requirements. However, in certain cases, even a smaller concern may need for working capital due to high overhead charges, inefficient use of available resources etc.

(iii) ***Length of Production cycle:*** The manufacturing cycle begins with the purchase and use of raw materials and completes with the production of finished goods. Longer the manufacturing process, the higher will be the working capital requirements and vice-versa. An extended manufacturing time span means a greater deal of funds being tied-up in inventories.

(iv) ***Rapidity of turnover**:* There is a high degree of correlation between the amount of working capital and the speed with which sales are effected. A company with a high rate of stock turnover will need lower amount of working capital as compared to a firm having a low rate of turnover. For instance, in case of jewellers, the turnover is quite slow. They have to maintain a high inventory of jewellery of different types, and keeping in mind that the movement of inventory too is slow, their working capital needs will definitely be high.

(v) ***Credit Policy:*** The credit policies maintained by the concern with its debtors and creditors have a significant influence on the working capital requirements. A company allowing liberal credits to its customers may have higher sales but will require more working capital when compared to a company which has an efficient debt collection policy with strict credit terms. This is so since in case of the former, a substantial amount of its funds will get tied up in its sundry debtors. Similarly, a company enjoying liberal credit terms from its suppliers will need lower amount of working capital when compared with a company with no access to such liberal credit facilities.

(vi) ***Business fluctuations:*** Most firms experience seasonal and cyclical fluctuations in the demand for their products and services. These business fluctuations affect the working capital requirements, especially the temporary working capital component. For instance, a boom in the economy will boost sales which in turn will necessitate an increase of the firm's investment in inventories and book debts. Under boom, additional investment in fixed assets may be made by some firms to increase their productive capacity; this will definitely require additions of working capital.

(vii) ***Production Policy:*** A steady production policy will cause inventories to accumulate during the slack seasons, exposing the firm to increased inventory costs and risks. Such a policy will require higher working capital. The production schedule may also be

adjusted by curtailing the production in the slack seasons and increasing it in the peak seasons.

(viii) ***Growth and expansion activities*****:** It is difficult to precisely state the relationship between the growth in the volume of business and the growth in the working capital of the business. Generally, the working capital needs of the firm increase as it grows in terms of sales or fixed assets. In fact, for normal expansion in the volume of business, profit retention may suffice; however for fast growing concerns, larger amounts of working capital will be needed.

(ix) ***Earning capacity and Dividend policy:*** A firm with higher earning capacity may generate cash profits from operations and contribute to their working capital. Again, the firm's policy to retain or distribute profits also has a bearing on working capital. Payment of dividend consumes cash resources and thus reduces the firm's working capital to that extent.

(x) ***Price level changes:*** Generally, rising price levels require a firm to maintain a higher amount of working capital since the same level of current assets will now require increased investment. Of course, immediate revision in product prices can help companies to counter the rising price levels. However, the effects of rising prices will be different for different companies; some will face no working capital problem while the working capital problem of some may aggravate.

(xi) ***Operating Efficiency:*** The operating efficiency of the firm relates to the optimum utilisation of resources at minimum costs. The use of working capital is improved and pace of the cash cycle is accelerated with operating efficiency. Better utilisation of resources improves profitability and thus, helps release pressure on the working capital.

(xii) ***Other factors*****:** There are several other factors that impact the working capital requirements of a firm. They include factors like, management ability, asset structure, credit availability etc.

9.7 WORKING CAPITAL MANAGEMENT

Working capital management basically refers to the management of current assets and current liabilities .The basic goal of working capital management is to manage the current assets and current liabilities of a firm in such a way that a satisfactory level of working capital is maintained.

A business concern should have neither redundant working capital nor inadequate working capital. Both excess as well as shortage of working capital situations are bad for any business. Excessive working capital means idle funds which earns no profits for the firm. Paucity of working capital impairs the firm's profitability and results in production interruptions and inefficiencies.

Disadvantages of Excess Working Capital:

a) Excess working capital implies idle funds which is non-profitable for the business and will bring about a low return on its investments.

b) Unnecessary purchasing & accumulation of inventories over required level.

c) Excessive debtors and defective credit policy leading to higher incidence of bad debts.

d) Overall inefficiency in the organization.

e) Due to low rate of return on investments, the market value of shares may fall.

Disadvantages of Inadequate Working Capital:

a) Inability to meet short-term liabilities in time, resulting in loss of credit worthiness.

b) The advantages of economies of scale(e.g.: bulk quantity discounts) are not possible.

c) Difficult for the firm to implement operating plans and achieve the firm's profit targets.

d) The firm's liquidity worsens, leading to increased operating inefficiencies and hence, low profits.

e) Improper utilization of the fixed assets and therefore, ROA/ROI falls sharply.

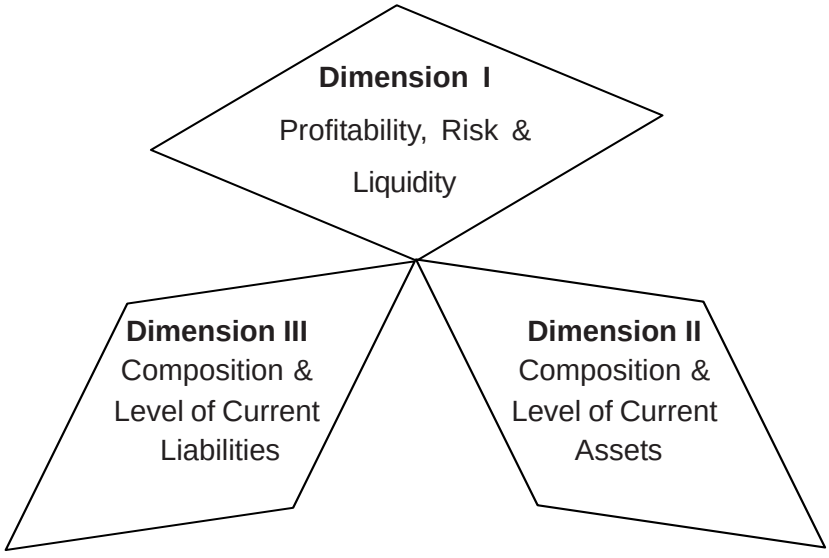
Working capital management therefore, means the administration of all aspects of current assets (cash, marketable securities, debtors and stock) and current liabilities. **The financial manager must determine the levels and composition of current assets and ensure that the right sources are tapped to finance these current assets and that the current liabilities are paid in time.**

Working capital management policies of a firm infact, have a significant impact on the profitability, liquidity and structural health of an organization. Thus, working capital management is three-dimensional in nature:

(i) Dimension I: Formulation of policies regarding profitability, risk and liquidity

(ii) Dimension II: Decisions regarding composition and level of current assets

(iii) Dimension III: Decisions regarding composition and level of current liabilities



The finance manager should chalk out appropriate policies in respect of each of the components of working capital to ensure higher profitability, proper liquidity, and sound structural strength. To ensure solvency, the firm should be very liquid, which implies larger current

assets holdings. If the firm maintains a relatively large investment in current assets, it will have no difficulty in paying the claims of the creditors when they become due and will be able to fill all sales orders and ensure smooth production. Thus, a liquid firm faces less risk of insolvency and should generally not experience cash shortages or stock-outs. However, there is cost associated with maintaining a sound liquidity position since a significant amount of the firm's funds will be tied up in current assets, and to the extent this investment is idle, the firm's profitability will suffer.

On the other hand, in order to have higher profitability, a firm may choose to sacrifice solvency and maintain a relatively low level of current assets. In this case, the firm's profitability will improve as less funds are tied up in idle current assets, but its solvency would be threatened and thereby, the firm would be exposed to greater risk of cash shortages and stock-outs.

9.8 PRINCIPLES OF WORKING CAPITAL POLICY

The principles of a sound working capital policy are outlined below:

(i) Principle of Risk variation: There exists a definite relation between the degree of risk the management assumes and the rate of return: the higher risk that firm assumes, the greater is the opportunity for gain or loss. Risk here implies the inability of a firm to meet its obligations as and when they become due for payment. Generally, if the level of working capital is decreased, the amount of risk is increased and the opportunity for gain or loss is also increased. On the other hand, if the level of working capital is increased, the amount of risk is decreased and the opportunity for gain or loss is also decreased

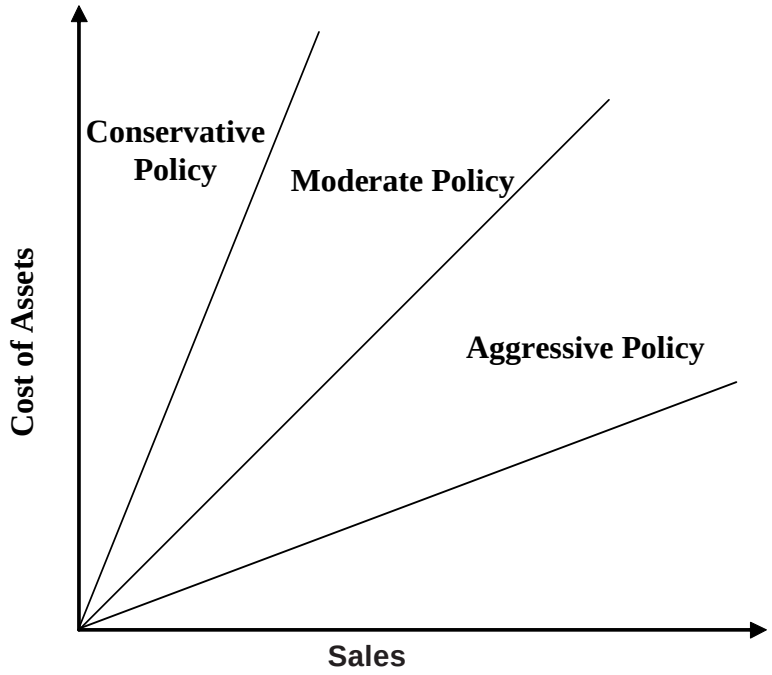


Fig 9.4: Alternative Current Assets Policies

The effect of working capital policies on the profitability of a firm is illustrated below. The firm has the following data:

Sales	Rs.15,00,000
Earnings before interest & taxes(EBIT)	Rs.1,50,000
Fixed Assets	Rs.5,00,000

The three possible current assets holdings of the firm are: Rs.5,00,000, Rs.4,00,000 and Rs.3,00,000. It is assumed that the fixed assets level is constant and profits do not vary with current assets levels.

	POLICIES		
	Conservative (A)	Moderate (B)	Aggressive (C)
Sales (Rs.)	15,00,000	15,00,000	15,00,000
EBIT (Rs.)	1,50,000	1,50,000	1,50,000
Current Assets (Rs.)(CA)	5,00,000	4,00,000	3,00,000
Fixed Assets (Rs.)(FA)	5,00,000	5,00,000	5,00,000
Total Assets (Rs.)[CA + FA]	10,00,000	9,00,000	8,00,000
Return on Total Assets (EBIT/ Total Assets)	15%	16.67%	18.75%

The different risk-return alternatives in the table above indicates that policy A is the most conservative and provides the greatest liquidity (solvency) to the firm but also has the lowest return on total assets. On the other hand, alternative C which happens to be the most aggressive policy, offers the highest return but provides the firm with the lowest liquidity and therefore, is very risky to the firm. Alternative B is relatively moderate since it provides a return, apparently less than that the return yielded by alternative C but higher than that by alternative A. On the risk side, alternative B is less risky than alternative C but more risky than alternative A. However, it is to be noted that risk and return are affected by different assets differently and therefore, generalizations are not easy to make.

(ii) ***Principle of cost of capital:*** The type of working capital finance used directly affects the cost of capital, the amount of risk that a firm assumes and the opportunity for gain or loss. Current assets can be financed either by debt or equity or by a combination of both debt and equity. Generally, the cost of equity is greater than the cost of debt. Financing through debt involves more risk but at the same time, provides an opportunity to increase rate of return on equity [Refer to the chapter on Leverage]. For instance, a firm that wants to minimize risk will employ more equity but by doing so, the firm will lose the scope for higher returns.

(iii) ***Principle of Equity Position***: This principle concerns with the determination of the 'ideal level 'of working capital. It posits that capital should be invested in each component of working capital as long as the equity position of the firm increases i.e., every rupee invested in the current assets should contribute to the net worth of the firm.

(iv) ***Principle of Maturity of Payment:*** This principle is concerned with planning the sources of finance for working capital. It states that a firm should try to relate maturities of payment to its flow of internally generated funds. The greater the disparity between the maturities of a firm's short-term debt instruments and its flow of internally generated funds, the greater the risk and vice-versa.

Further, it is difficult to accurately predict a firm's cash flow due to a variety of reasons. Sufficient time should therefore be allowed between the time the funds are generated and the date of maturity of a debt.

In the light of the above discussion, the Finance manager is concerned with:

(A) Forecasting the amount of Working Capital

(B) Financing of Working Capital

(C) Analysis & Control of Working Capital

(A) Forecasting the amount of Working Capital: Estimation of working capital requirements is not an easy task and requires consideration of several factors. For instance, in case of a manufacturing concern, the following factors need to be kept in mind while forecasting the working capital requirements:

- Total costs incurred on *materials, wages and overheads*
- The *length of time* for which raw materials remain in stores before they are issued to production.
- The length of the *production cycle*
- The *length of the sales cycle* during which finished goods are to be kept waiting for sales.
- The average period of *credit allowed to customers*
- The amount of cash required to pay *day-to-day business expenses*
- The *amount* of cash required for *advance payments*, if any
- The average period of *credit to be allowed by suppliers*
- Time – lag in the *payment of wages and other overheads*

Once the total amount invested in current assets is determined, the total of the current liabilities will need to be deducted from it to find out the working capital requirements. An extra amount, generally calculated as a fixed percentage of the working capital may be added as a margin of safety , to provide for contingencies.

Similarly, in case of a trading concern, all the above items except those directly pertaining to a production concern will have to be considered.

(B) Financing of Working Capital: An essential ingredient of working capital management is determining the financing mix, or in other words, how current assets will be financed. Broadly speaking, there are two sources from which funds can be raised for current asset financing: (i) *Short-term sources* (current liabilities) and (ii) *long-term sources*(such as share capital, long-term borrowings, retained earnings etc.) There are three basic approaches to determining an appropriate financing mix, which are as follows:

(i) Hedging approach: According to this approach, also referred to as the matching approach, long-term financing will be used to finance fixed assets and permanent current assets while, short-term financing to finance temporary or variable current assets. For eg: a 10-year loan may be taken to purchase a plant with an expected life of 10 years while stock may be financed by taking a short- term loan of one month.

For Permanent Working Capital

- **Shares:** A company can issue various types of shares as equity shares and preference shares.
- **Debentures:** It is an instrument issued by the company acknowledging its debt to its holder.
- **Public Deposits:** They are the fixed deposits accepted by a business enterprise directly from the public
- **Ploughing back of profits:** This is an internal source of finance where the business unit reinvests its surplus earnings in the business.
- **Loans from Financial Institutions:** Financial Institutions like commercial banks, developments banks provide a variety of loans to meet the financial needs of a firm.

For Tempory Working Capital

- **Commercial Banks:** They are the most important source of working capital; they provide a wide variety of working capital finance in the form of loans, cash credits, overdrafts etc. as per the specific needs of the concern.

- **Indigenous bankers:** They include the private money-lenders.
- Trade Credit: It refers to the credit extended by the suppliers of goods in the regular course of business.
- **Instalment Credit:** In this method,the assets are purchased and the possession of goods is taken immediately but the payment is made in instalments over a predetermined period of time.
- **Advances:** This is a cheap source of finance wherein business houses get advances form their customers and agents against orders.
- **Accrued Expenses:** These simply represent liabilities that a firm has to pay for the services already received by it.
- **Commercial Paper:** It can be defined as a short-term money market instrument, issued in the form of unsecured promissory notes for a maturity period of generally 90 to 365 days.

(ii) Conservative Approach: This approach suggests that the estimated requirement of total funds should be met from long-run sources; the use of short-term funds should be restricted to only emergency situations or when there is an unexpected outflow of funds. In effect, this approach is a low-profit, low-risk combination.

(iii) Aggressive Approach: Under such a policy the firm finances a part of its permanent current assets with short-term funds and infact, some extremely aggressive firms may even finance a part of their fixed assets with short-term financing. This is a highly risky financing mix.

(C) Analysis and Control of Working Capital: The direct approach to working capital control is to develop effective policies for the control of each of the components of working capital. Since deviations occur in actual operations, indirect control techniques are needed by management to reduce its working capital requirements. Amongst the different techniques for working capital management, some of them are:

- **Cash Flow Statements** to regulate flow of funds and arrange for fund shortage and invest surplus cash

- **Funds Flow Statements** to find changes in assets over a period of time showing the sources and application of funds
- **Ratio Analyses** such as current ratio, acid test ratio, inventory turnover, receivable turnover etc.
- Appropriate **credit policy** in order to expedite collections and reduce bad debts



CHECK YOUR PROGRESS

Q1: Fill in the blanks:

(i) Working capital is also known as ———— capital.

(ii) Net working capital can be defined as the excess of current assets over ————.

(iii) ———————— working capital is the minimum level of current assets required on a continuous basis over the entire year.

(iv) Working capital management policies of a firm have an impact on the ————, ———————— and ———————— of an organization.

(v) The conservative approach is a ———————— and low-risk combination.

(vi) ABC Analysis is an ———————— control device.

Q2: State 'true' or 'false':

(i) Every business enterprise should have excessive working capital.

(ii) Share capital constitutes a short-term source of working capital.

(iii) The longer the manufacturing process, the lower will be the working capital requirements.

(iv) Temporary working capital is the amount of working capital needed to meet seasonal & other temporary requirements.



9.9 LET US SUM UP

- Working capital refers to the capital required for day-to-day operations of a business enterprise.
- There are two concepts of working capital: Gross Working Capital & Net Working Capital.
- The operating cycle of a firm begins with the acquisition of raw materials and ends with the collection of receivables. Information about the operating cycle is useful in forecasting working capital and control of working capital.
- There are two types of Working Capital: Permanent Working Capital & Temporary Working Capital.
- The working capital needs of a firm are influenced by several factors such as nature of business, production policy, operating cycle, market condition etc.
- Working capital management refers to all aspects of administration of both current assets and current liabilities.
- A business concern should have neither redundant working capital nor inadequate working capital
- The Finance manager is concerned with estimating the amount of working capital, sources from which these funds have to be raised and analysis & control of working capital.
- There are three approaches to determining an appropriate financing mix: the hedging approach, the conservative approach and the aggressive approach.



9.10 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.

3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

9.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: (i) Circulating (ii) current liabilities (iii) permanent (iv) profitability, liquidity, structural health (v) low-profit (vi) inventory

Ans to Q.2: (i) False (ii) False (iii) False (iv) True



9.12 MODEL QUESTIONS

Q1. What is working capital? State the different concepts of working capital.

Q2. What are the determinants of the working capital requirements of a business concern?

Q3. What are the basic functions of a Finance Manager in respect of working capital?

Q4. What are the three basic approaches to determining an appropriate financing mix of working capital?

Q5. Explain the principles of a good working capital policy.

Q6. What are the different kinds of working capital?

Q7. What are the disadvantages of excess working capital and of inadequate working capital?

Q8. Write short notes on: (i) Net Working Capital concept
(ii) Operating Cycle
(iii) Principle of Maturity of Payment
(iv) Techniques for control of working capital.

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UNIT 10: DIVIDEND DECISION

UNIT STRUCTURE

10.1 Learning Objectives

10.2 Introduction

10.3 Meaning of Dividend

- 10.3.1 Dividend Policy
- 10.3.2 Factors Influencing Dividend Policy
- 10.3.3 Forms of Dividend

10.4 Bonus Shares

10.5 Objectives, Advantages and Disadvantages of Issue of Bonus Shares

10.6 Provisions of Indian Companies Act, 2013 relating to dividend

10.7 Let Us Sum Up

10.8 Further Reading

10.9 Answers to Check Your Progress

10.10 Model Questions

10.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- explain meaning of dividend
- describe dividend policy
- explain factors influencing dividend policy
- know the various forms of dividend
- explain bonus shares.

10.2 INTRODUCTION

Getting regular income from investment is the primary objective of shareholders. Shareholders receive this income in the form of dividend. When dividend is not distributed among the shareholders, they are discouraged for savings and investment. In such a case it will be difficult for the companies to raise capital from the market. Thus, dividend decision is

very important for a business organization. This unit aims to provide you more information on dividend decision.

10.3 MEANING AND DIVIDEND

The term dividend derives from the Latin word 'dividendum' which means 'things to be divided'. Dividends refer to that portion of a company's net earnings which are paid out to the shareholders. Dividends are distributed out of the profits. Whenever a company collects funds by issuing shares, it has to give a return to the shareholders for that amount, which is known as dividend. The dividend is paid as per the company's dividend policy. It is the return on investment to shareholders. The alternative to the payment of dividends is the retention of earnings/profits. The retained earnings constitute an easily available source of internal funds. There is a type of inverse relationship between retained earnings and cash dividends, i.e. the larger the retentions, lesser the dividends or smaller the retentions, larger the dividends.

Dividend decisions are very important to a company as it bears upon investor attitudes. For example, shareholders look unfavorably upon the company when dividends are reduced.

Exercise: Jones Ltd. has 20,000 shares of Rs 10 each. On October 2008, a cash dividend of 12 percent was declared to the shareholders. What is the amount of dividend paid?

Solution :

Number of shares	= 20,000
Face value	= Rs 10
Dividend per share	= 12% of Face value of one share
	= 12% of 10
	= 1.20
Total Dividend amount	= Rs 20,000 X 1.2 = Rs 24,000

10.3.1 Dividend Policy

Dividend policy means policy or guideline followed by the management in declaring dividend. A dividend policy decides

proportion of dividend and retained earnings. Retained earnings are an important source of internal finance for long term growth of the company while, dividend reduces the available cash of the company. When a company's earnings increase, management does not automatically raise the dividend. Generally, there is a time lag between increased earnings and the payment of a higher dividend. Only when management is confident that the increased earnings will be sustained then they will increase the dividend. Once dividends are increased, they should continue to be paid at the higher rate. There are basically four types of dividend police which are discussed below:

a. Regular dividend policy: In regular dividend policy investors get dividend at usual rate. Investors such as retired persons, widows and other economically weaker persons who need regular income, generally prefer regular dividend policy. This type of dividend policy can be adopted by companies having stable earnings. Following are the merits of regular dividend policy:

- It creates confidence among the shareholders
- It gives regular income to the shareholders
- It stabilized the market value of shares
- It helps in maintaining goodwill of the company.

b. Stable dividend policy: Many companies use a stable dividend policy since it is prefered by investors. Stability of dividends means regularity in paying certain minimum amount of dividend. A stable dividend policy may be established in any of the following three forms :

- Constant dividend per share
- Constant payout ratio
- Constant dividend per share plus extra dividend

Constant dividend per share: According to this form of stable dividend policy, a company follows a policy of paying certain fixed amount per share as dividend Irrespective of the level of earnings of the company. Such firm creates reserves, which is used to pay the

fixed dividend even in the year where earnings are not sufficient or there are loss. For example, on an equity share of face value of Rs 10, a company may pay a fixed amount of, say Rs 2 as dividend. This amount will be paid year after year, irrespective of the level of earnings.

Constant payout ratio: With constant payout ratio, a company pays a constant percentage of net earnings as dividend to the shareholders. In other words, a stable dividend payout ratio implies that the percentage of earnings paid out each year as dividend is fixed. The amount of dividend in such policy fluctuates in direct proportion to the earnings of the company.

Constant dividend per share plus extra dividend: Under this policy, a company usually pays a fixed dividend to the shareholders and in years of marked prosperity, additional or extra dividend is paid over and above the regular dividend.

Following are the merits of stable dividend per share policy:

- It creates confidence among the shareholders
- It gives regular income to the shareholders
- It stabilized the market value of shares
- It helps in maintaining goodwill of the company

c. Irregular dividend policy: As the name suggests here the company does not pay regular dividend to the shareholders. This policy is followed when there is uncertainty of earnings, unsuccessful business operation, lack of liquid resources, fear of adverse affect of regular dividend on financial position of the company.

d. No dividend: A company may follow the policy of paying no dividends because of its unfavorable working capital position or on account of requirements of funds for future expansion and growth.

10.3.2 Factors Influencing Dividend Policy

The factors affecting dividend are divided into (i) External factors and (ii) Internal factors.

External Factors

i. **General State of Economy:** The company's decision to distribute its profit as dividend or to keep as retain earnings mainly relates to the general state of economy. However, the company may prefer to retain the whole or part of the earnings with a view to building up reserves for uncertain economic conditions and prosperity.

ii. **Legal Restrictions:** A company may be legally restricted from declaring and paying of dividends. The company's act of 1956 contains several restrictions relating to the declaration and payments of dividends. For instance , a company is entitled to pay dividend only out of its : (a) current profits, (b) past accumulated profits or (c) money provided by the central or state government for the dividend payments in pursuance of the guarantee given by the Government . Dividend payment out of capital is illegal.

iii. **Contractual Restrictions:** Restrictions which are imposed by the lenders of the company are called contractual restrictions. Restrictions on the payment of dividend may be accepted by a company when obtaining long term funds by term loan, debenture or preference shares. Such restrictions may cause the company to restrict the payment of cash dividends until certain level of earnings has been achieved or limit the amount of dividends paid.

iv. **Tax Policy:** The tax policy followed by the Central Government also affects the dividend policy of the company. For instance, sometimes the government provides tax incentives to those companies which retain most of their earnings.

Internal Factors

i. **Liquid Assets:** Once the payment of dividend is permissible on legal and contractual grounds, the next step is to ascertain whether the company has sufficient cash funds to pay cash dividends. The company's ability to pay cash dividends is largely restricted by the level of its liquid assets. On the other hand, if excess cash is available, the company can have a more liberal dividend policy.

ii. **Desire of the shareholders**: Shareholders expect returns from their investment in a company in the form of both capital gains and dividends. The shareholders, who are economically weak, prefer regular dividend policy while the rich shareholders may prefer capital gain as compared to dividend. However, it is very difficult for the board to reconcile the conflicting interest of different shareholders yet the dividend policy has to be framed keeping in view the interest of the stake holders.

iii. **Nature of Earnings**: A company whose income is stable can afford to have a higher dividend payout ratio than a company which does not have such stability in its earnings.

iv. **Control:** Dividend policy is strongly influenced by the shareholders' or the management's objectives. The management, in order to retain control of the company, may be reluctant to pay substantial dividends and would prefer a smaller dividend payout ratio. Conversely, if management's control is assured, either through substantial holdings or because the shares are widely held and the company has a good image then it can manage to pay a high dividends payout ratio.



CHECK YOUR PROGRESS

Q 1: What is dividend?

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Q 2: Mention three external factors influencing dividend policy.

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10.3.3 Forms of Dividend

Following are the three main types of dividend:

Cash Dividend: Dividend is usually paid in cash. When dividend is paid in cash, it is known as cash dividend. Company may pay such dividends annually, half yearly or quarterly. A company must have enough amount of cash and retained earnings to pay cash dividend. The payment of dividend in cash involves outflow of funds from the company.

Stock Dividend: When a company issues its own shares to the existing shareholders in lieu of or in addition to cash dividend, it is called stock dividend or scrip dividend. In India, the payment of stock dividend is popularly termed as "issue of bonus shares". The issue of bonus shares has the effect of increasing the number of outstanding shares of the company. The shares are distributed proportionately. Hence, a shareholder retains his proportionate ownership of the company.

Bond Dividend: Bond dividend is also known as script dividend. When a company does not have sufficient fund to pay cash dividend, in such a case the company promises to pay the shareholders at a future specific date by issuing bond or notes.

Interim Dividend: A dividend which is declared before the declaration of the final dividend is called the interim dividend. In other words, interim dividend is a dividend which is declared between two annual general meetings. If the profit of the company appears to be justified for the payment of interim dividend, the Board of Directors may from time to time pay to the members, such dividends.



CHECK YOUR PROGRESS

Q 3: What are the basic forms of dividend?

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10.4 BONUS SHARES

Bonus shares are shares issued by a company to its Share holders. Bonus shares are allotted in proportion to the shareholders' current holding of shares in the company.

Companies which are successful in earning profits from year to year do not distribute the whole amount of profit earned to its shareholders as dividend. This is in order to strike a balance between growth of the company and the satisfaction of its shareholders in terms of their earning per share. Every year a part of the profit is transferred to an account called Reserve or General Reserve Account. This transfer may be made either compulsorily due to statutory requirement or voluntarily.

A company which has large reserves accumulated out of profits , can think of benefiting the shareholders by way of compensation for the loss of dividends which they suffered earlier due to transfer of profit to reserves. The method of compensating the shareholders is in the form of bonus payable out of the accumulated reserves. This bonus is paid in the form of fully paid shares. Such shares are called bonus shares. In simple words bonus shares are the shares issued out of accumulated profit or accumulated reserves.

If bonus is paid in cash the liquid resources of the company is depleted. Hence, the Board of Directors of prudent companies generally prefer to offer such bonus to the shareholders by way of issuing additional shares free of charge. The shares so issued are termed as 'Bonus shares'. In other words, bonus shares are those shares which are issued to the existing shareholders in lieu of profits. Bonus share is a type of share which is issued to the existing shareholders without any consideration i.e. the shareholders are not required to pay any cash for such shares allotted to the members.

Issue of bonus shares is a technique for capitalizing profits. Capitalisation of profits and reserves means the ploughing back or utilisation of profit for internal use of company so that the profits are not distributed as dividends, that is, funds are not drained out of the company. Capitalisation of profits/reserves can be done by a company only if it is permitted by its articles of association. It should be noted that a company cannot issue partly paid up bonus shares. However, it can utilize the bonus declared in making partly paid up shares fully paid up subject to the provisions of the Companies Act.

Conditions to be fulfilled for the Issue of Bonus Shares:

The following conditions must be fulfilled by a company before issuing Bonus Shares:

(i) The Articles of Association must permit such issue of bonus shares;

(ii) The issue must be recommended by the Board of Directors approved by the shareholders in the general meeting;

(iii) There must be sufficient amount of undistributed profits and reserves,

(iv) There must be adequate unissued share capital covered by Authorized Share Capital.

(v) Provisions of the Companies Act regarding the issue of Bonus Shares must be complied with.

(vi) The company must also comply with the SEBI guidelines for issue of bonus shares.

10.5 OBJECTIVES, ADVANTAGES AND DISADVANTAGES OF ISSUE OF BONUS SHARES

The following are the objectives of the issue of bonus shares by a company:

- Bonus shares are issued to expand the capital base of the company.
- Bonus shares are issued to attract more trading in the company's shares.
- The issue of bonus shares helps the company to retain the cash.
- Bonus shares are issued to bring parity between share capital and fixed assets which is an indication of financial soundness.

- Bonus shares are issued to reflect the actual capital employed by the company.

Advantages of Issuing Bonus Shares:

The advantages of issue of bonus shares may be discussed as below:

- Since bonus shares are issued out of retained earnings, the liquidity position of the company is not affected.
- On capitalization of reserves through the issue of bonus shares, the capital structure of the company becomes more realistic.
- On account of bonus issue, the number of shares held by the shareholders increases, without any payment, which helps the shareholders to increase their future earnings.
- The shares of the companies which make bonus issues can be easily sold.
- The shareholders feel happy and contented with the company on account of the issue of bonus shares as it is an indication of progress of the company.
- Issue of bonus shares are not treated as dividend income since there is no distribution of cash. Therefore, a shareholder is not required to pay any income tax on the value of bonus shares received.

Disadvantages of Issuing Bonus Shares:

The following are the disadvantages of issue of bonus shares:

- Issue of Bonus shares may encourage speculation in share market.
- The rate of return per share would decline because dividend would have to be paid on increased number of shares unless the profits increase considerably in future. It would have negative impact on the minds of the prospective investors.
- There is a procedural difficulty relating to issue of bonus shares. The bonus issue is subject to the prior approval of the Securities and Exchange Board of India (SEBI).



CHECK YOUR PROGRESS

Q 4: Mention two objectives of issuing bonus share.

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10.6 PROVISIONS OF INDIAN COMPANIES ACT, 2013 RELATING TO DIVIDEND

The Companies Act, 2013 lays down certain provisions for declaration of dividend, which are:

(i) Section 51 permits companies to pay dividends proportionately, i.e. in proportion to the amount paid-up on each share when all shares are not uniformly paid up, i.e. pro rata. Pro rata means in proportion or proportionately, according to a certain rate. The Board of Directors of a company may decide to pay dividends on pro rata basis if all the equity shares of the company are not equally paid- up. However, in the case of preference shares, dividend is always paid at a fixed rate.

The permission given by this section is, however, conditional upon the company's articles of association expressly authorising the company in this regard.

(ii) Final Dividend is generally declared at an annual general meeting [Section 102(2))] at a rate not more than what is recommended by the directors in accordance with the articles of association of a company.

(iii) An interim dividend is declared by the Board of directors at any time before the closure of financial year, whereas a final dividend is declared by the members of a company at its annual general meeting if and only if the same has been recommended by the Board of directors of the Company.

(iv) In accordance with Section 134(3) (k), Board of directors must state in the Directors' Report the amount of dividend, if any, which it recommends to be paid. The dividend recommended by the Board of directors in the Board's Report must be 'declared' at the annual general meeting of the company. This constitutes an item of ordinary business

to be transacted at every annual general meeting. This does not apply to interim dividend.

(iv) No dividend shall be declared or paid by a company for any financial year except out of the profits of the company for that year arrived at after providing for depreciation in accordance with section 123 (2) of the Act or out of profits of the company for any previous financial year/ years arrived at after providing for depreciation in accordance with the provisions of above sub section and remaining undistributed or out of both or out of moneys provided by the Central Government or a State Government for payment of dividend in pursuance of a guarantee given by the concerned Government [Section 123(1)].

(v) A company may before the declaration of any dividend in any financial year, transfer such percentage of its profits for that financial year as it may consider appropriate to the reserves of the company.

(vi) If owing to inadequacy or absence of profits in any year, a company proposes to declare dividend out of the accumulated profits earned by it in any previous financial years and transferred to reserves, such declaration of dividend shall not be made except in accordance with the Companies (Declaration and Payment of Dividend) Rules, 2014.

(vii) Depreciation, as required under Section 123(1) of the Companies Act has to be provided in accordance with the provisions of Schedule II to the Act.

(viii) A company which fails to comply with Section 73 and 74 of the Companies Act shall not declare any dividend on its equity shares till such default continues.

(ix) The amount of dividend (final as well as interim) shall be deposited in a separate bank account within 5 days from the date of declaration. [Section 123(4)]

(x) Dividend has to be paid within 30 days from the date of declaration.

(xi) In case of listed companies, Section 24 of the Companies Act, 2013 confers on SEBI, the power of administration of the provisions pertaining to non-payment of dividend. In any other case, the powers remain vested in Central Government.

(xii) If dividend has not been paid or claimed within the 30 days from the date of its declaration, the company is required to transfer the total amount of dividend which remains unpaid or unclaimed, to a special account to be opened by the company in a scheduled bank to be called "Unpaid Dividend Account". Such transfer shall be made within 7 days from the date of expiry of the said period of 30 days.

(xiii) In accordance with Section 70, a company cannot buy its own shares if apart from other things provided in the section, it makes default in payment of dividend to any shareholder.

(xiv) Any money transferred to the unpaid dividend account of a company in pursuance of section 124 which remains unpaid or unclaimed for a period of seven years from the date of such transfer shall be transferred by the company to the Investor Education and Protection Fund and the company shall file a statement in "Form DIV-5" to the Authority constituted under the Act to administer the fund and such authority shall issue a receipt to the company as evidence of such transfer. [Section 124(5)]

(xv) Where a dividend has not been paid by the company within 30 days from the date of declaration, every director shall, if he is knowingly a party to the default, be punishable with imprisonment for a term which may extend to 2 years and shall also be liable to a fine of rupees 1000 for every day during which default continues and the company shall be liable to pay simple interest @ 18% per annum during the period for which such default continues. [Section 127]

(xvi) If the company delays the transfer of the unpaid/unclaimed dividend amount to the unpaid dividend account, it shall pay interest @ 12% p.a. till it transfers the same and the interest accruing on such amount shall ensure to the benefit of the members of the company in proportion to the amount remaining unpaid to them. [Section 124(3)]

(xvii) Any dividend payable in cash may be paid by cheque or warrant through post directed to the registered address of the shareholder who is entitled to the payment of the dividend or to his order or in any electronic mode sent to his banker. [Section 123(5)]



10.7 LET US SUM UP

- Dividends refer to that portion of a company's net earnings which are paid out to the shareholders.
- Dividends are distributed out of the profits; the alternative to the payment of dividends is the retention of earnings/profits.
- Many companies use a stable dividend per share policy since it is looked upon favourably by investors.
- Generally, there are three forms of stability:Constant dividend per share; Constant payout ratio; Constant dividend per share plus extra dividend.
- Cash dividend, stock dividend and interim dividend are the three main forms of dividend.
- Issue of bonus shares is a technique for capitalizing profits. Capitalisation of profits and reserves means the ploughing back or utilisation of profit for internal use of company so that the profits are not distributed as dividends, that is, funds are not drained out of the company.



10.8 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

10.9 ANSWERS TO CHECK YOUR PROGRESS

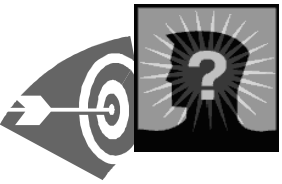
Ans to Q.1: Dividends refer to that portion of a company's net earnings which are paid out to the shareholders.

Ans to Q.2: Three external factors influencing dividend policy are General State of Economy, Legal Restrictions and tax policy.

Ans to Q.3: Basic forms of dividend Cash dividend; Stock dividend and Interim dividend;

Ans to Q.4: Two advantages of issue of bonus shares are

- Since bonus shares are issued out of retained earnings, the liquidity position of the company is not affected.
- On capitalization of reserves through the issue of bonus shares, the capital structure of the company becomes more realistic.



10.10 MODEL QUESTIONS

Q 1: Write the external and internal factors that affect the dividend policy.

Q 2: Explain the nature of stable dividend policy.

Q 3: Discuss the provisions of the Companies Act 2013 related to dividend.

Q 4: What is bonus share? What are the advantages and disadvantages of bonus share?

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UNIT 11: FINANCIAL STATEMENTS & CASH FLOW AND FUNDS FLOW ANALYSIS

UNIT STRUCTURE

11.1 Learning Objectives

11.2 Introduction

11.3 Financial Statements

- 11.3.1 Balance Sheet
- 11.3.2 Components of Balance Sheet

11.4 Profit And Loss Account

11.5 Statement of Cash Flow

- 11.5.1 Sources and Uses of Working Capital

11.6 Funds flow Statement

- 11.6.1 Sources and uses of cash
- 11.6.2 Preparation of Funds Flow Statement
- 11.6.3 Forms of Funds Flow Statement

11.7 Uses Of Statement Of Changes in Financial Position

11.8 Let Us sum Up

11.9 Further Reading

11.10 Answers To Check Your Progress

11.11 Model Questions

11.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- analyse financial statements
- explain balance sheet
- define components of balance sheet
- explain profit and loss account
- explain the concept of profit
- outline statement of cash flow
- outline statement of fund flow

11.2 INTRODUCTION

In this unit we are going to discuss about different financial statements, like- balance sheet, profit and loss account, cash flow and fund flow.

Here we will discuss about the concept of financial statement. Financial statements provide information about a company and its performance over a period of time and balance sheet shows the financial condition of a business at a given point of time.

Another important financial statement is Profit and loss account, which represents the summary of revenues, expenses and net income (or net loss) of a company.

A cash flow helps us to make projections of cash inflows and outflows for the near future to determine the availability of cash during a particular time period.

You will find this unit very interesting because, after going through this unit you will able to analyse the financial position of different companies.

11.3 FINANCIAL STATEMENTS

Financial statements are the sources of information for financial decisions. These statements provide information on how a company has been performing over the years and are useful for financial forecasting and planning. A financial statement is a collection of data organized in accordance with logical and consistent accounting procedures. In the words of John Myer : " The financial statements provide a summary of the accounts of a business organization, the balance sheet reflecting the assets, liabilities and capital as on a certain date and the income statement showing the results of operations during a certain period." Thus financial statements are periodic financial reports of a company.

The commonly used financial statements are the followings- Balance Sheet, Profit and Loss Account, Statement of Cash Flows and Statement of Fund Flow.

11.3.1 Balance sheet

Balance sheet is the most significant financial statement. The balance sheet shows the financial condition of a business at a given point of time. It lists the sources of funds as well as their uses. It is a classified summary of assets and the sources of financing the assets. However, it is a static statement as it shows the position of the business at a certain moment of time. The companies registered under the Companies Act, 1956 have to show their assets and liabilities in the balance sheet in accordance with the form prescribed under this Act. As per the Companies Act, the balance sheet of a company may be in either the account form or the report form, the structure of both forms are given below:

Balance sheet of Assam Warehousing Ltd.'s as on March 31,2009

Table11.1: Account Form

Liabilities	Rs. In million	Assets	Rs. in million
Share capital	250	Fixed assets	330
Resources & surplus Secured loans	112	Investment	115
	143	Current assets, loans & advances	234
Unsecured loans	69	Miscellaneous expenditures and loans	0
Current liabilities and provisions	105		
Total	**679**	**Total**	**679**

Table 11.2: Report Form

I. Sources of funds	**Rs. In million**	
1. Shareholders funds		362
a) Share capital	250	
b) Reserves & surplus	112	
2. Loans funds		212
a) Secured loans	143	
b) Unsecured loans	69	
TOTAL		**574**

II. Application of funds	Rs. In million	
1. Fixed Assets		330
2. Investments		115
3. Current Assets, Loans & Advances	234	
Less: Current Liabilities and Provisions	105	
Net Current Assets		129
4. Miscellaneous expenditures and losses		-
TOTAL		**574**

11.3.2 Components of Balance Sheet

A. Liabilities:

Liabilities defined broadly, means what the company owes others. Liabilities represent debts payable in the future by the company to its lenders and creditors. Liabilities are of two types (i) current liabilities and (ii) long-term liabilities. Current liabilities are debts payable within an accounting period whereas long term liabilities are the obligations or debts payable in a period of time greater than the accounting period. The components of long term and current liabilities are described below:

(i) **Equity Capital**: Equity capital represents ownership capital, as equity shareholders collectively own the company. Their

liability is limited to their capital contribution. Though the paid-up share capital is shown against the share capital, but the balance sheet also provides information on authorised capital, issued capital, subscribed capital. The amount of capital that a company can potentially issue, as per its memorandum, represents the authorised capital. The amount offered by the company to the investors is called the issued capital and the part of issued capital which has been subscribed by the investors is called the subscribed capital.

(ii) **Reserves and Surplus**: This comprises of retained earnings as well as non-earnings items like share premium and capital subsidy.There are two kinds of resources, namely - Capital Reserves and Revenue Reserves.

- Capital Reserves includes items such as share premium account, revaluation reserve, and capital redemption reserve. A capital reserve cannot be distributed as dividend to shareholders.
- Revenue reserves represent accumulated retained earnings from the profits of business. They are held in accounts like investment allowance reserve, dividend reserve, taxation reserve and general reserve.

The reserves and surplus along with paid up capital represent owners' equity which is also called shareholders' funds or net worth.

(iii) **Secured Loans:** These loans are secured by a charge on the assets of the company. The charge may be created in the form of pledge or **hypothecation** of movable assets such as inventories and debtors or in the form of mortgage of immovable assets such as land, buildings and plant and machinery.

(iv) **Unsecured Loans:** These loans are not secured by a charge on the assets of the company. The most common forms of unsecured loans are public deposits, commercial paper, unsecured loans from promoters, commercial banks and financial institutions.



Hypothecation —

To believe specially on uncertain or tentative grounds.

(v) Current Liabilities and Provisions: These include items such as bills payable, sundry creditors, advance payments and invest accrued but not due on loans. Provisions include items such as provision for taxes, provision for dividend, and provision for provident fund, gratuity etc.

B. Assets:

Assets are resources, which are expected to provide a company with future economic benefits. Assets represent (a) stored purchasing power (e.g. cash), (b) money claims (e.g. receivables, stock) and (c) tangible and intangible items which generate earnings. Under the Companies Act, assets can be classified as

(i) Fixed Assets,

(ii) Investments,

(iii) Current Assets, Loans and Advances and

(iv) Miscellaneous expenditure and loans.

(i) Fixed Assets*:* These are assets that are expected to produce benefits for more than one year. Fixed assets are divided into two categories-tangible or intangible. Tangible fixed assets include items such as loans, buildings, plant, machinery and other assets, which can be used more than one year. These assets are reported in the balance sheet at their net book value, which is the gross value less accumulated depreciation whereas intangible fixed assets include items like – patents, copyrights, trademarks and goodwill. Intangible fixed assets are reported at their net book value, which is simply the gross value less accumulated *amortisation*.

(ii) Investments*:* Investments represent financial securities owned by the company. These can be divided into two categories-long term and current investments. Long-term investments comprise of financial securities like equity shares, preference shares and debentures of other companies. Current investment represents short-term holdings of units or shares of mutual fund schemes. These investments are made

primarily to generate income from short-term cash surpluses of the company.

(iii) Current Assets, Loans and Advances: These are called as liquid assets as these assets are either held in the form of cash or are expected to be converted in cash within the accounting period of the business. Current assets include cash, tradable (marketable) securities, debtors (account receivables) and stock of raw materials, work-in-process and finished goods. Further loans and advances comprise of items such as advances and loans to subsidiaries, advances recoverable in cash and deposits with governmental authorities.

(iv) Miscellaneous Expenditure and Loans*:* Miscellaneous expenditure comprises of items such as preliminary expenses, discount allowed on the issue of securities, interest paid out of capital during construction and development expenditure to the extent not written off or adjusted. Whereas “losses” are the debit balance of profit and loss account carried forward after deduction of the uncommitted reserves, if any exist.



CHECK YOUR PROGRESS

Q1: What do mean by financial statement?

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Q2. Write down the different Components of Balance Sheet.

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11.4 PROFIT AND LOSS ACCOUNT

Profit and loss account represents the summary of revenues, expenses and net income (or net loss) of a company. This statement is a performance report recording the changes in income, expenses, profits and losses as a result of business operations. When the revenues are more than expenditures, there will be a profit. If the expenditures are in excess of revenues, there will be loss. This profit and loss or income statement is prepared for a particular period, generally a year for determining the performance of the company.

The Companies Act specifies that the profit and loss accounts must show information as required by Schedule IV. This account may be presented in the account form or the report form. The report form statement may be a single-step statement or a multi-step statement. In a single step statement, all revenue items are recorded first then the expenses items are shown and finally the net profit is given. But a multi-step profit and loss account provides disaggregated information. Table 11.3 represents a single step Profit and Loss account and Table 11.4 represents a multi-step Profit and Loss account.

Table 11.3: Profit and Loss Account of ABC Ltd. for the year ending on March 2017.

Particulars	**Rs. in million**
Income:	
(i) Sales	701
Expenditure:	
(ii) Material & other expenditure	582
(iii) Interest	21
(iv) Depreciation	30
(v) Profit before tax[(i)-(ii)-(iii)-(iv)]	68
(vi) Provision for tax	34
(vii) Profit after tax [(v) – (vi)]	34

Table 11.4: Profit and Loss Account of ABC Ltd. for the year ending on March 2017.

Particulars	**Rs. In million**	
A. Net Sale		701
B. Cost of goods sold		552
Stocks	421	
Wages & salaries	68	
Other manufacturing expenses	63	
C. Operating expenses		60
Depreciation	30	
General administration	12	
Selling	18	
D. Operating profit / Profit before interest & Tax (A-B-C)		89
E. Interest		21
F. Profit before tax (D-E)		68
G. Provision for tax (@50%)		34
Profit after tax (F-G)		34

11.5 STATEMENT OF CASH FLOW

Cash flow signifies the movements of cash in and out of a business concern. A company generates cash and spends cash and as such cash flow analysis is very useful for a company. It is mainly needed for short-run planning. A cash flow helps to make projections of cash inflows and outflows for the near future to determine the availability of cash during a particular time period. A cash flow statement summarises the changes in cash position between dates of two balance sheets. To understand how a company obtains cash and how it spends cash during a given period, one needs to look at the changes in each of the items of the balance sheet over that period. It indicates the sources and uses of cash. Moreover, this statement analyses changes in non-current assets as well as current assets (other than cash) to determine the flow of cash.

A fund flow statement on cash basis is prepared by the following steps:

- Classifying net balance sheet changes that seen between two points in time into changes that increase and decrease cash.
- Classifying from the profit and loss (income statement) the factors that increase and decrease cash.
- Consolidating this information into a source and use of funds format.

11.5.1 Sources and Uses of cash

The following are the sources of cash-

a. the profitable operations of the firm,

b. decrease in assets (expect cash),

c. increase in liabilities (including debentures or bonds), and

d. Sale proceeds from an ordinary or preference share issue.

The following are the uses of cash-

a. the loss from operations,

b. increase in assets (except cash),

c. decrease in liabilities (including redemption of debentures or bonds),

d. redemption of redeemable preference shares, and

e. cash dividends

The easiest and direct method of preparing a statement of changes in cash position is to only record inflows and outflows of cash, and find out the net change during a given period. If the net change in the cash position has to be found out from the income or profit and loss statement and comparative balance sheets, adjustments for the non-cash items are also to be made. Like cash from operations can be found out by adding depreciation to net profit as depreciation is a non-cash expense. Gain on sale of a non-current asset should be deducted while loss should be added to net profit.

11.6 FUND FLOW STATEMENT

A fund flow statement is a statement which explains the various sources from which funds were raised and the uses to which these funds

were put. A fund flow shows the sources from which the funds are received and the uses (or applications) to which these have been put. In other words, a fund flow statement is used to explain the movement of working capital.

Working capital is defined as the difference between current assets and current liabilities. Working capital determines the liquidity position of the company. As a historical analysis, the statement of changes in working capital reveals to management the way in which working capital has been obtained and used. With this insight, management can prepare the estimates of the working capital flows. A statement reporting the changes in working capital is useful in addition to the financial statement.

11.6.1 Sources and Uses of Working Capital

Sources of Working capital:

The typical sources of working capital are summarised below:

(i) Funds from operations (adjusted net income)

(ii) Sale of non-current assets:

- **a.** Sale of long-term investments (shares, bonds/ debentures etc)
- **b.** Sale of tangible fixed assets like land, building, plant, or equipments.
- **c.** Sale of intangible fixed goodwill, patens, or copyrights.

(iii) Long-term financing:

- **a.** Long-term borrowings (institutional loans, debentures, bonds etc.)
- **b.** Issuance of equity and preference shares

(iv) Short-term financing such as bank borrowings.

Uses of working capital

The uses of working capital are as follows:

(i) Adjusted net loss operations,

(ii) Purchase of non-current assets:

- a. Purchase of long-term investments like shares, bonds / debentures etc.

b. Purchase of tangible fixed assets, like land, building, plant, machinery, equipment etc.

c. Purchase of intangible fixed assets, like goodwill, patents, copyrights etc.

(iii) Repayment of long-term debt (debentures or bonds) and short-term debt (bank borrowing),

(iv) Redemption of redeemable preference shares

(v) Payment of cash dividend.



CHECK YOUR PROGRESS

Q3: What do mean by profit and loss account?

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Q4. Write down the uses of cash.

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11.6.2 Preparation of Funds Flow Statement

The simplest funds flow statement for a period may merely be the difference between the corresponding balance sheet items at the beginning and the end of the period, such that all increases in liabilities and decreases in assets are shown as sources of funds and all decreases in liabilities and increases in assets are shown as applications of funds.

For preparing this statement one needs the opening and closing balance sheets of the period for which the statement is to be prepared. A funds flow statement may be prepared as to explain only the change in the working capital (current assets – current liabilities) from the beginning of a period to the end of the period.

For calculating the Funds Flow Statement, it is important to understand the following two concepts:

a. Funds from operations:

The major source of working capital is the company's net profit operations. The ultimate success of a company depends upon its ability to earn profits. However, the profit and loss accounts contain certain items that do not affect working capital. Therefore, in determining the amount of working capital from operations, the figure of net profit, as shown in the profit and loss account, should be adjusted. The expense items that do not involve working capital should be adjusted to net profit. For example:

ii. To obtain net profit depreciation is deducted. As depreciation does not reduce working capital, it should be added back to net profit.

iii. The gain on sale of plant is deducted from net profit because the total amount received will be shown as a separate source of working capital. If the amount of gain is not deducted from net profit, it would amount to double counting.

b. Adjusted Net Loss:

The loss from operations consumes the company's working capital. Loss arises when expenses, that involve application of working capital, exceed the revenues received. To get net profit, the expense and revenue items involving no working capital should be adjusted to net loss. The non-cash expenses items like depreciation when added to net loss (shown with negative sign) will reduce its magnitude of loss. The gain or loss on the sale of non-current assets should also be adjusted to net loss.

Illustration 1: To prepare funds flow statement on cash basis**,** the following Balance Sheet and Profit and Loss Statement of Assam Asbestos Ltd. has been used.

Table 11.5 : Assam Asbestos Ltd.'s Balance Sheet as on 31st March 2017.

(In rupees)

Assets	2007	2008
Fixed assets	15,38,495	15,96,886
Less : Accumulate Depreciation	7,91,205	8,56,829
Net fixed assets (A)	**7,47,290**	**7,40,057**
Long term investments	——	65,376
Other assets	2,05,624	2,05,157
Current assets		
Inventories	12,34,725	13,28,963
Accounts receivable	7,40,705	6,78,279
Prepaid expenses	17,197	20,756
Other current assets	29,165	35,203
Cash & Marketable securities (Note 1)	**1,75,042**	**1,77,689**
Total of current assets (B)	21,96,834	22,40,890
Total assets (A+B)	31,49,748	32,51,480
Liabilities & Net worth		
Share Capital	7,81,883	7,81,986
Reserves & Surplus	9,56,361	10,14,635
Total Owner's Equity (C)	17,38,244	17,96,621
Long term loans (D)	6,26,460	6,30,783
Current Liabilities		
Bills Payable	3,56,511	4,48,508
Accounts Payable	1,36,793	1,48,427
Accrued taxes	1,27,455	36,203
Outstanding liabilities	1,64,285	1,90,983
Total Current Liabilities (E)	7,85,044	8,24,076
Total Liabilities (C+ D +E)	31,49,748	32,51,480

Table 11.6: **Assam Asbestos Ltd.'s Profit and Loss Statement for the year ended 31st March 2017**

	2007	2008
Net Sales(A)	37,21,241	39,92,758
Cost of Goods Sold (B)	24,99,965	26,80,298
Selling. General or administrative expenses (C)	7,26,959	8,01,395
Depreciation (D)	1,13,989	1,11,508
Interest (E)	69,764	85,274
Profit Before Tax (A-B-C-D-E)	3,10,564	3,14,282
Less :Income Tax	1,72,446	1,63,708
Profit After Tax	1,38,118	1,50,574
Less : Cash Dividends	88,634	92,300
Retained Earnings	49,484	58,274

Table 11.7: Funds Flow Statement of Assam Asbestos Ltd.'s March 31,2007 to March 31, 2017

(In rupees)

Sources of Cash		
Funds from operations (See working note)		2,62,083
Net Decrease in assets (Other than fixed assets and cash)		
Other assets	467	
Accounts receivable	62,426	62,893
Increase in Liabilities:		
Share Capital	103	
Long-term loans	4,323	
Bills payable	91,997	
Accounts payable	11,634	
Outstandings liabilities	26,653	1,34,710
Uses of Cash		4,59,686

Additions to fixed assets		1,04,276
Dividends		92,300
Net Increase in assets		
(Other than fixed assets and cash)		
Inventories	94,238	
Pre-paid expenses	3,559	
Other current assets	6,038	1,03,835
Increase in investments		65,376
Decrease in liabilities		
Accrued taxes	91,252	91,252
		4,57,039
Increase in Cash		2,647

Working Note: Funds from operations has been calculated as the following:

Net income after taxes (Rs)	1, 50,574
Add: Depreciation and other non-cash expenses	1, 11,509
Funds from operations	2, 62,083

Note 1:

We find that when we subtract the total sources of cash from the total uses of cash , the difference is Rs 2647 which is equal to the actual change in cash position between the balance sheet dates as shown in Table 11.5

11.6.3 Forms of Funds Flow Statement

The statement of changes in working capital or funds flow is the summary of the sources and uses of working capital. This statement is presented in two parts in Table 11.8. This has reference to the Illustration 1.

The first part explains the cause of the change in the amount of working capital from the end of one period to another. It gives a list of sources which provide working capital and uses to which working capital is applied. The second part of the statement contains an analysis of the changes in the working capital items. This part

of the statement shows items of current assets and current liabilities at the beginning and at the end of the accounting period and the effect of their changes between two periods on the working capital.

Table 11.8: Assam Asbestos Ltd.
Sources and Uses of Working Capital
March 31, 2016 to March 31, 2017

Sources of Working Capital	
Funds from operations	262,083
Decrease in other assets	467
Increase in share capital	103
Increase in long-term loans	4,323
	266,976
Uses of Working Capital	
Dividends	92,300
Additions to fixed assets	104,276
Increase in investments	65,376
	261,952
Net Increase in Working Capital	5,024

It is now necessary to prepare a schedule of changes in working capital as shown below:

Schedule of Changes in Working Capital

Current Assets	**Increase (+)**	**Decrease (–)**
Inventories	94,238	
Pre-paid expenses	3,559	
Other current assets	6,038	
Cash	2,647	
Accounts receivable		62,426
Current Liabilities		
Bills payable		91,997
Accounts payable		11,634
Outstandings liabilities		26,653
Accrued taxes	91,252	
	197,734	192,710
Increase in working capital		5,034
Total	197,734	197,734

11.7 USES OF THE STATEMENT OF CHANGES IN FINANCIAL POSITION

The balance sheet and the profit and loss statement do not explain the changes in assets, liabilities and equity capital .The statement of changes in financial position is prepared to show these changes .These changes are shown by the cash flow and fund flow statements. This statement of changes in financial position gives clear picture of the causes of changes in the firm's working capital or cash flow position. The statement shows the non-current assets acquired by the company, and the way these have been financed from internal and external sources. Further, a projected statement of changes in financial position is an important planning tool as it helps management to plan the repayment of long-term debt and interest, acquisition of fixed assets and payment of dividends to equity shareholders. Realising the importance of cash and fund flow statement, the stock exchange requires listed companies in India to include these statements in their annual reports.



CHECK YOUR PROGRESS

Q5: Classify each of the following transactions as a source of cash or a use of cash.

a) A plant was sold for Rs. 650,000

b) A profit of Rs 95,000 was reported

c) Long–term debentures were redeemed

d) Cash dividends of Rs 720,000 were paid

e) A loss for the year was reported.



11.8 LET US SUM UP

In this unit we have discussed the following:

- Financial statements are the sources of information for financial decisions

- The balance sheet shows the financial position of a firm at a given point of time.
- The profit and loss account reflects the performance of a firm over a period of time.
- The cash flow and fund flow statements show the change in financial position during a given time period.
- The cash flow statement is prepared to analyse changes in the firm's cash position.
- The funds flow statement provides an analysis of changes in the firm's working capital position.
- Funds flow and cash flow statement are important managerial tools for financial analysis.
- They help the firm to know its liquidity position, capital expenditures incurred, dividend paid and the need for external financing.



11.9 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

11.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Financial statements are the sources of information for financial decisions. These statements provide information on how a company has been performing over the years and are useful for financial forecasting and planning.

Ans to Q.2: Financial statements are the sources of information for financial decisions. These statements provide information on how a company has been performing over the years and are useful for financial forecasting and planning.

Ans to Q.3: Profit and loss account represents the summary of revenues, expenses and net income (or net loss) of a company.

Ans to Q.4: a. the loss from operations,
b. increase in assets (except cash),
c. decrease in liabilities (including redemption of debentures or bonds),
d. redemption of redeemable preference shares, and
e. cash dividends

Ans to Q.5: (i) Source of cash,
(ii) source of cash,
(iii) use of cash,
(iv) use of cash, (v) use of cash]



11.11 MODEL QUESTIONS

Q1. Distinguish between Balance Sheet and Profit and Loss Statement.

Q2. Distinguish between Cash Flow and Funds Flow Statement.

Q3. How Capital Reserve is different from Revenue Reserve?

Q4. What comes under fixed assets and current assets?

Q5. Write the different steps for preparation of funds flow statement on cash basis.

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UNIT 12: RATIO ANALYSIS

UNIT STRUCTURE

12.1 Learning Objectives

12.2 Introduction

12.3 Ratio Analysis

- 12.3.1 Significance Of Ratio Analysis
- 12.3.2 Types of Ratios
- 12.3.3 Limitations of Ratio Analysis

12.4 Time series analysis

12.5 Let Us sum Up

12.6 Further Reading

12.7 Answers To Check Your Progress

12.8 Model Questions

12.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- define nature of ratio analysis
- explain different types of ratio analysis
- explain liquidity ratios, leverage ratios. turnover ratios and profitability ratios
- evaluate limitations of ratio analysis
- define time series analysis

12.2 INTRODUCTION

In this unit we are going to discuss about financial statement analysis. Financial statement analysis is the process of identifying the financial strengths and weaknesses of a company by properly establishing relationships between the items of the balance sheet and profit and loss account. This analysis is mainly carried out by ratio and time series analysis. The basic objective of ratio analysis is to present to the potential user brief statements which describes the status of the company. Ratios

involve establishing a financial relationship between components of financial statement. We will explain about different types of ratios in this unit.

Financial ratios over different time periods need to be calculated for comparison, because of this we require time series analysis which gives an indication of the direction of change and reflects whether the company's financial performance has improved, deteriorated or remained constant over time. After going through this unit you will be able to analyse financial conditions of different companies.

12.3 RATIO ANALYSIS

Sometimes information or figures given in the balance sheet and profit and loss account are not enough for proper interpretation regarding the financial performance of the company. These information or figures need to be worked out to establish proper relationship between the items of balance sheet and the profit and loss account. Ratio analysis is a powerful tool of financial analysis. A ratio is defined as "the indicated quotient of two mathematical expressions" and as "the relationship between two or more things".

In financial analysis, a ratio is used as a benchmark for evaluating the financial position and performance of a firm. An accounting figure conveys meaning only when it is related to some other relevant information. For example, Rs.10 crore net profit may be considered impressive but it has to be related to the investment to find whether it is good or bad performance. Ratios help to summarize large quantities of financial data and to make qualitative judgment about the company's financial performance.

As ratio is used as a benchmark, a single ratio in itself does not indicate favourable or unfavourable condition. It needs to be compared with some standard. Standard of comparison may consist of the followings:

a. Past ratio i.e. ratios calculated from the past financial statements of the same company.

b. Competitors' ratios i.e. ratios of some selected firms, especially the most progressive and successful competitor at the same point of time.

c. Industry ratios, i.e. ratios of the industry to which the company belongs and

d. Projected ratios i.e. ratios developed using the projected financial statements of the same company.

12.3.1 Significance of Ratio Analysis

The significance of ratio analysis as a technique of financial management arises because of the following facts:

a) **Simplifying Financial Information**: Ratio analysis helps to simplify and summarise various complex data contained in the financial statements.

b) **Helps in Control**: Ratio analysis helps in bringing about effective control of the concern. Industry ratios are used for comparing the ratios of individual company.

c) **Helps in Decision Making**: Ratio analysis helps in making decision from the information given in the financial statements. For example, an would like to know the liquidity, profitability and long-term solvency of a company before investing in it.

d) **Help in Inter-Company Comparison**: Ratio analysis helps to make an inter-company comparison either between the different departments of a company or between two companies having identical business.

12.3.2 Types of Ratios

Normally, ratios are grouped into five categories. These ratios serve the different purpose for different parties; like the trade creditors are interested in the liquidity ratios as these represent the company's liquidity position, whereas investors are interested to know the company's long term solvency, earnings growth and future profitability and these are represented by the leverage and profitability ratios.

The four types of ratios are given below:

a. Liquidity ratios
b. Leverage ratios
c. Turnover ratios
d. Profitability ratios

A. Liquidity ratios: Liquidity refers to the ability of a company to meet its obligations in the short run, usually one year. Liquidity is essential to conducting business activity, particularly during shut down or strike or recession. If liquidity is insufficient to cushion such losses, serious financial difficulty may arise. A company should ensure that it does not suffer from lack of liquidity at any time, and also that it does not have excess liquidity as it will affect profitability. If the company fails to meet its short term obligations due to lack of sufficient liquidity, then it will result in poor credit worthiness and loss of creditors' confidence. The important liquidity ratios are (a) Current Ratio, (b) Quick or acid-test ratio (c) Cash ratio, (d) Net Working Capital ratio.

(a) Current ratio: It is calculated by dividing current assets by current liabilities. Current assets include cash, current investments, debtors, inventories (Stocks), loans, advances and pre-paid expenses. Current liabilities represent liabilities that are expected to mature in the next twelve months and comprise of (i) Loans, secured or unsecured and (ii) Current liabilities and provisions.

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

The current ratio indicates the availability of current assets in rupees for every one rupee of current liability. A ratio of greater than one means that the company has more current assets than current obligations or claims. As a conventional rule, a current ratio of 2:1

is considered satisfactory. A current ratio of 2.0, means that the company can cover its current liabilities even if its current assets reduce by 50 %.

(b) Quick ratio*:* In interpreting current ratio, the components of current assets are not taken into consideration. For example- inventory may be slow moving and a portion of loans and advances may not be recovered quickly. These two components will add up the current assets and make it huge. Correspondingly, the current ratio may be high but it may not represent the true capacity of the company to meet its short-term obligations.

In order to remove this inherent problem in the current ratio, the quick or acid-test ratio has been formulated. The quick or acid-test ratio establishes relationship between quick or liquid assets and current liabilities. An asset is liquid if it can be converted into cash immediately without a loss of value. The components of liquid assets are cash, debtors and bills receivables and marketable securities. As mentioned earlier, to compute quick ratio, inventories and pre-paid expense (if exist) are to be deducted from current assets.

The quick ratio is found out by dividing quick assets by current liabilities.

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

Normally, a quick ratio of 1:1 is considered to represent a satisfactory current financial condition. However, a quick ratio of 1:1 does not necessarily mean sound liquidity position. This ratio needs to be compared with debtors' turnover ratio and inventory turnover ratio for better interpretation of the liquidity position.

(c) Cash Ratio: It gives the amount of cash available in terms of liquidity. The ratio is calculated by dividing cash and marketable securities by current liabilities. This ratio measures

the amount of cash and near cash items the company has in terms of its current liabilities.

$$\text{Net Working Capital Ratio} = \frac{\text{Net Working Capital}}{\text{Total Assets}}$$

(d) **Net Working Capital Ratio**: The difference between current assets and current liabilities excluding short term bank borrowing is called net working capital. Net working capital to total assets measures the company's potential reservoir of funds.

B. **Leverage Ratio:** A company has long-term creditors like debenture holders, financial institutions, who are interested to know the company's long-term financial strength. In general, everybody is concerned with long-term debts, because these commit the company to paying interest, and eventually the principal, over the long run. Moreover as creditors' claims must be satisfied before earnings can be distributed to shareholders, present and prospective shareholders pay close attention to the degree of indebtedness and ability to repay debts.

This long-term financial strength can be judged by using leverage ratios. There are mainly two types of leverage ratios: one measures the degree of indebtedness and the other measures the ability to service debts. The degree of indebtedness measures the amount of debt relative to other significant balance sheet amounts. This is commonly measured by the **Debt-Equity ratio** and **Debt ratio**.

The second type of debt measure, the ability to service debts, assesses a company's ability to make the contractual payments required on a scheduled basis over the life of a debt. The company's ability to pay certain fixed charges is measured using coverage ratios. The most common coverage ratio is the **Interest Coverage ratio**.

(a) Debt-Equity Ratio: This ratio can be calculated by dividing total debt by net worth.

$$\text{Debit-Equity Ratio} = \frac{\text{Total Debt (TD)}}{\text{Net Worth (NW)}}$$

Total debt includes short-term as well as long-term debt. Net worth includes equity capital and reserves and surplus. A simple variant of the debt-equity ratio is calculated by the following formula:

$$\text{Debt-Equity Ratio (D/E)} = \frac{\text{Long Term debt}}{\text{Equity Capital}}$$

(b) Debt Ratio: This ratio is calculated by dividing total debt (TD) by capital employed (CE). Total debt includes short and long-term borrowings from financial institutions, debentures/bonds, bank borrowings, public deposits and any other interest-bearing loan. Capital employed includes Net fixed assets (NFA) and net current assets (NCA). Net current assets are current assets (CA) less current liabilities (CL) excluding interest-bearing short-term debt for working capital.

$$\text{Debt Ratio} = \frac{\text{Total Debt (TD)}}{\text{Capital employed (CE)}}$$

The debt-equity and debt ratio show how excellently debt financing has been used in the business. A high ratio for both the case means that claims of creditors are greater than those of owners. A high level of debt introduces inflexibility in the firm's operations due to the interferences from creditors. But a low debt-equity ratio implies a greater claim of owners than creditors. From the point of view of creditors, it represents a satisfactory situation since a high proportion of equity provides a larger margin of safety for them. Together with the level of indebtedness, the company's capacity to bear interest needs to be measured.

(c) Interest Coverage Ratio: The interest coverage ratio, measures the company's ability to make contractual interest payments. The higher the value of this ratio, the better is the ability of the company to fulfil its interest obligations. It is calculated by dividing Profit before Interest and Taxes by Interest amount.

$$\text{Interest Coverage Ratio} = \frac{\text{Profit before Interest and Taxes}}{\text{Interest}}$$

C. Activity ratios/ turnover ratios: Activity or turnover ratios measure the speed with which accounts are converted into sales or cash. These ratios are employed to evaluate the efficiency with which a company manages and utilises its assets. These ratios involve a relationship between sales and assets. The common Activity or Turnover ratios are discussed below:

(a) Inventory Turnover Ratio: This ratio shows how rapidly the inventory is turning into cash or receivables through sales. It measures the activity, or liquidity, of a company's inventory. It is calculated by dividing the cost of goods sold by sales. If the cost of goods sold figure is not available to outside analyst then it is computed by taking sales figure instead of cost of goods sold.

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Inventory}}$$

or

$$\text{Inventory turnover} = \frac{\text{Sales}}{\text{Inventory}}$$

Generally, a high inventory turnover is indicative of good inventory management i.e. products being manufactured are sold at a fast rate. A low inventory turnover implies excessive inventory levels than warranted by production and sales activities. This ratio needs

to be compared with the current ratio to judge a company's liquidity position.

(b) Debtors (Accounts Receivable) Turnover: A company sells goods for cash and credit. When the company extends credits to its customers, debtors (accounts receivables) are created in the company's accounts. Debtors are convertible into cash over a short period, hence are included in current assets. This ratio has to be compared together with the other liquidity ratios to assess the liquidity position of the company. It is calculated by dividing credit sales by accounts receivables or debtors amount.

$$\text{Debtor turnover} = \frac{\text{Credit Sales}}{\text{Debtors}}$$

This turnover ratio indicates the number of times receivables are turnover each year. The higher the value of this ratio, the more efficient is the management of credit.

(c) Total Assets Turnover Ratio: This ratio indicates the efficiency with which the company uses its assets to generate sales. Generally, the higher a company's total assets turnover, the more efficiently its assets have been used. It is calculated by dividing sales by total assets. This measure is probably of greater interest to management as it indicates whether the company's operations have been financially efficient.

$$\text{Total assets turnover} = \frac{\text{Sales}}{\text{Total assets}}$$

Some analyst exclude intangible assets like goodwill, patents etc, while computing total assets turnover. Similarly, fictitious assets, accumulated losses or deferred expenditures may also be excluded for calculating total asset turnover ratio.

(d) Fixed Asset Turnover Ratio: Sometimes, analyst wants to measure the efficiency only with respect to fixed assets. This ratio measures sales per rupee of investment in fixed assets. A high ratio indicates a high degree of efficiency in asset utilisation and a low ratio reflects inefficient use of assets. However, while interpreting this ratio, one has to examine the quality of the asset, as old and substantially depreciated fixed assets would tend to show a high turnover ratio.

$$\text{Fixed assets turnover} = \frac{\text{Sales}}{\text{Fixed assets}}$$

D. Profitability Ratios: Profitability ratios measure the capability of a company to survive and grow over a long period of time. As a group, these measures evaluate the company's earnings with respect to a given level of sales, a certain level of assets, the owners' investment, or share value. Management of the company, creditors, owners are all interested in the profitability of the company. Creditors are interested in getting back their interest and repayment of principal in time. Owners want to know the required rate of return on their investment. These can be evaluated by the profitability ratios.

Usually two types of profitability ratios are calculated: (a) profitability in relation to sales and (b) profitability in relation to investment.

The popular ratios of the first group are the **Gross profit margin**, **Net profit margin** and **Operating ratio**.

The common ratios for the second group are **Return on Investment**, **Return on Equity**, **Earnings per share** and **Price-Earnings Ratio**.

(a) Gross Profit Margin: The gross profit margin measures the percentage of each sales remaining after the company has paid for its goods. Gross profit is defined as the difference between sales and cost of goods sold. It is calculated by dividing gross profit by sales.

$$\text{Gross Profit Margin} = \frac{\text{Gross Profit}}{\text{Sales}}$$

This ratio indicates the average spread between the cost of goods sold and the sales revenue. The higher the gross profit margin, the better the profitability of the company. Whereas a low gross profit margin may reflect poor profitability, which may be due to higher, cost of goods sold or inefficient use of plant and machinery resulting in higher cost of production.

(b) Net Profit Margin: Net profit is obtained when operating expenses, interest and taxes are subtracted from the gross profit. This ratio establishes a relationship between net profit and sales and indicates management's efficiency in manufacturing, administering and selling the products. This ratio is measured by dividing profit after tax by sales.

$$\text{Net Profit Margin} = \frac{\text{Profit after tax}}{\text{Sales}}$$

A company with a high net profit can survive in the face of falling selling prices, rising costs of production or declining demand for the product but it would not be possible for a low net profit margin company to withstand these adversities.

(c) Operating Expense Ratio: The operating expense ratio explains the changes in the profit margin ratio. This ratio is computed by dividing operating expenses i.e. cost of goods sold plus selling expenses and general and administrative expenses (excluding interest) by sales.

$$\text{Operating expense ratio} = \frac{\text{Operating expense}}{\text{Sales}}$$

A high operating expenses ratio is unfavourable to a company as it means high cost of goods sold or high general and selling expenses. A high operating ratio will leave a small amount of gross profit to pay interest, dividends etc. A company desires a low operating ratio as it is a yardstick of operating efficiency.

(d) **Return on Investment**: The Return on Investment also called as Return on Asset, measures the company's overall effectiveness in generating profits with its available assets. The higher the company's return on total investment, the better is the profitability. It is calculated by dividing profit after tax by total asset.

$$\text{Return on Investment} = \frac{\text{Profit after tax (PAT)}}{\text{Total assets}}$$

(e) **Return on Equity:** The return on equity examines the profitability of owners' investment. This ratio measures the return earned on the owners' investment. Every company has the objective of getting high return on the shareholders equity or fund. This reflects the extent to which this objective has been accomplished. It is calculated by dividing profit after taxes by net worth or equity capital. Net worth consists of paid-up share capital, share premium and reserves and surplus less accumulated losses.

$$\text{Return on Equity} = \frac{\text{Profit after tax (PAT)}}{\text{Net Worth}}$$

or

$$\text{Return on Equity} = \frac{\text{Profit after tax (PAT)}}{\text{Equity capital}}$$

(f) **Earnings per Share**: The earnings per share represent the number of rupees earned on behalf of each outstanding equity share. It is computed by dividing the profit after taxes by the total number of equity shares.

$$\text{EPS} = \frac{\text{Profit after tax (PAT)}}{\text{Number of share outstanding}}$$

The EPS shows the profitability of the firm on a per-share basis and as a profitability index it is a valuable and widely used ratio.

(g) Price/Earnings (P/E) ratio: The P/E ratio measures the amount investors are wiling to pay for each rupee of the company's earnings. This ratio indicates the degree of confidence that investors have in the company's future performance. The higher the P/E ratio, the greater is the investors' confidence. It is calculated by dividing market price by EPS.

$$P/E = \frac{\text{Market Price}}{\text{EPS}}$$

12.3.3 Limitations of Ratio Analysis

Although ratio analysis is useful, it has its limitations, some of which are listed below:

a. Operating and accounting practices differ from company to company, which can distort the ratios and make comparisons meaningless. For example, the use of different inventory valuation methods (LIFO versus FIFO) and different depreciation methods would affect inventory and asset turnover ratios.

b. Financial statements are based on historical costs and do not take inflation into account.

c. A ratio does not describe the quality of its components. For example, the current ratio may be high but inventory may consist of obsolete goods.

d. Ratios are static and do not consider future trends.

e. Ratio analysis is only a beginning as it gives only a little information for the purpose of decision making.



CHECK YOUR PROGRESS

Q1: Fill in the blanks with appropriate words:

i. A ratio is defined as "the indicated quotient of two _____ expressions".

ii. Current ratio is calculated by dividing _____ by current liabilities.

iii. The _____ between current assets and current liabilities excluding short term bank borrowing is called net working capital.

iv. The _____ measures the percentage of each sales remaining after the company has paid for its goods.

Q2: Write the components of Quick Assets.

.....

.....

Q3: Write the formula of P/E ratio.

.....

.....

Q4: Name the different profitability ratios.

.....

.....

.....

12.4 TIME SERIES ANALYSIS

A single ratio by itself does not indicate favourable or unfavourable condition. Financial ratios over different time periods need to be calculated for comparison. This is known as time series analysis which gives an indication of the direction of change and reflects whether the company's financial performance has improved, deteriorated or remained constant over time. Time series analysis is done by using two methods: (i) Horizontal analysis and (ii) Vertical analysis.

(i) Horizontal analysis: Horizontal analysis is used to evaluate the trend in the accounts over the years. Horizontal analysis examines the trends of the various accounts and it reveals the areas of wide

divergence that require further attention. When an analysis covers a span of many years, comparative financial statements may become cumbersome. To avoid this, the results of horizontal analysis may be presented by showing trends relative to a base year. In this method, a year representative of the company's balance sheet and profitability statement is chosen as the base. Each account of the base year is assigned an index of 100.The index for each respective account in succeeding years is found by dividing the account's amount by the base year and multiplying by 100.

(ii) **Vertical analysis**: In vertical analysis, a significant item on a financial statement is used as a base value, and all other items on the financial statement are compared to it. In performing vertical analysis for the balance sheet, total asset is assigned 100 percent. Each asset account is expressed as a percentage of total assets. Total liabilities and equity capital is assigned 100 percent. Each liability and equity account is then expressed as a percentage of total liabilities and equity capital. In the income statement, net sale is given the value of 100 percent and all other accounts are evaluated in comparison to net sales. The resulting figures are then given in a common size statement.

Further, to determine the financial performance of a company, its ratios need to be compared with average ratios of the industry. These industry ratios provide benchmark for comparing a company's performance with that of the industry. This analysis is known as Industry analysis .These industry ratios are calculated by averaging the important ratios of a few selected companies within the industry. Industry ratios are important standards as each industry has distinct characteristics.

Another way of comparison is to compare ratios of one company with selected companies in the same industry at the same point in time. This inter-company analysis indicates the relative financial position and performance of the company. In most cases, it is more useful to compare the company's ratios with ratios of a few selected companies belonging

to the same industry for analysing the performance of the particular company in relation to the others.



Exercise: 12.1

MM Ltd. provides the following comparative income statement:

Metford Ltd.

Comparative Income Statement, for the year ended March 31,2018 and 2017

Particulars	**2018 Rs**	**2017 Rs**
Sales	4,70,000	5,80,000
Less: Cost of goods sold	2,00,000	1,70,000
Gross Profit	2,70,000	4,10,000
Less :Operating expenses	1,00,000	2,10,000
Profit Before Interest and Tax (PBIT)	1,70,000	2,00,000

(a) Calculate the percentage change using horizontal analysis.

(b) Evaluate the results.

Solution: (a) MM Ltd. Comparative Income Statement**,** for the years ended March31, 2018 and 2017.

Particulars	**2018 (Rs)**	**2017 (Rs)**	**% Increase or (Decrease)**
Sales	4,70,000	5,80,000	(18.9)
Cost of goods sold	2,00,000	1,70,000	17.6
Goss Profit	2,70,000	4,10,000	(34.1)
Operating expenses	1,00,000	2,10,000	(52.4)
Profit Before Interest and Taxes	1,70,000	2,00,000	(15.0)

(b) Gross profit declined 34.1 percent due to the combined effects of lower sales and higher cost of goods. However, operating expenses were reduced. This kept the decline in net income to only 15 percent.

Exercise: 12.2



The following is the Balance Sheet and Statement of Profit for the year ended March 31, 2017 of North East Chemicals Ltd.

Balance Sheet as on March 31, 2017

Liabilities	**(Rs)**	**Assets**	**(Rs)**
Equity Share Capital	10,00,000	Plant and Equipment	6,40,000
(Rs 100 each)		Land & Building	80,000
Reserves & Surplus	3,68,000	Cash	1,60,000
Creditors	1,04,000	Debtors	3,20,000
Bills payable	2,20,000	Inventory	4,92,000
Total	16,92,000	Total	16,92,000

Statement of profit for the year ended March 31, 2017

Particulars	**(Rs)**
Net Sales	40,00,000
Less: Cost of goods sold	30,80,000
Gross Profit on Sales	9,20,000
Less: Operating expenses	6,80,000
Net Profit	2,40,000
Less: taxes @ 50%	1,20,000
Net profit after taxes	1,20,000

Determine the following ratios for North East Chemicals: Current ratio, Quick ratio, Inventory Turnover ratio, Receivables Turnover ratio, Gross Profit ratio, Net Profit ratio, Operating ratio, Earnings per share, Return on Equity Capital and P/E ratio.

Current Ratio $= \dfrac{\text{Current assets}}{\text{Current liabilities}}$

$= \dfrac{\text{Cash + Debtors + Inventory}}{\text{Creditors + Bills payable}}$

$= \dfrac{\text{Rs 1,60,000 + Rs 3,20,000 + Rs 4,92,000}}{\text{Rs 1,04,000 + Rs 2,20,000}}$

$= \dfrac{\text{Rs 9,72,000}}{\text{Rs 3,24,000}} = 3 : 1$

Quick Ratio $= \dfrac{\text{Liquid assets}}{\text{Current liabilities}}$

$= \dfrac{\text{Current assets} - \text{Inventory}}{\text{Current liabilities}}$

$= \dfrac{\text{Rs } 9,72,000 - \text{Rs } 4,92,000}{\text{Rs } 3,24,000}$

$= \dfrac{\text{Rs } 4,80,000}{\text{Rs } 3,24,000}$

$= 1.48 : 1$

Inventory turn over Ratio $= \dfrac{\text{Cost of goods sold}}{\text{Inventory}}$

$= \dfrac{\text{Rs } 30,80,000}{\text{Rs } 4,92,000}$

$= 6.3 : 1$ times

Gross Profit Ratio $= \dfrac{\text{Gross Profit}}{\text{Sales}} \times 100\%$

$= \dfrac{\text{Rs } 9,20,000}{\text{Rs } 40,00,000} \times 100\%$

$= 23\%$

Net Profit Ratio $= \dfrac{\text{Net Profit}}{\text{Sales}} \times 100\%$

$= \dfrac{\text{Rs } 1,20,000}{\text{Rs } 40,00,000} \times 100\%$

$= 3\%$

Operating Ratio $= \frac{\text{Cost of goods sold + Operating expenses}}{\text{Sales}} \times 100\%$

$= \frac{\text{Rs } 30,80,000 + \text{Rs } 6,80,000}{\text{Rs } 40,00,000} \times 100\%$

$= 94\%$

Earnings per share (EPS) $= \frac{\text{Net Profit}}{\text{Number of equity shares}}$

Number of equity shares $= \frac{\text{Equity Capital}}{\text{Par value}} = \frac{\text{Rs } 10,00,000}{\text{Rs } 100} = 100$

Earnings per share (EPS) $= \frac{\text{Rs } 1,20,000}{10,000}$

$= \text{Rs } 12$

Rate of return on equity capital $= \frac{\text{Net Profit}}{\text{Equity capital}} \times 100\%$

$= \frac{\text{Rs } 1,20,000}{\text{Rs } 13,68,000} \times 100\%$

Earnings per share (EPS) $= 8.8\%$



Exercise: 12.3

The following is the Balance Sheet of ABC Ltd. for the year ending 31st December 2017.

Liabilities	Rs.	Assets	Rs.
10% Preference share capital	300000	Good will	1,00,000
Equity share capital	12,00,000	Land & Building	5,00,000
8% Debentures	1,50,000	Plant & Machinery	9,50,000
Long-term Loans	1,50,000	Furniture & Fixtures	1,50,000
Sundry Creditors	50,000	Bills receivable	90,000
Bills Payable	80,000	Sundry debtors	80,000
Bank Overdraft	50,000	Bank Balance	55,000
Outstanding Expenses	5,000	Short-term Investment	25,000
		Pre-paid Expenses	10,000
		Stocks	25,000
	19,85,000		19,85,000

Calculate:

a. Write the components of Current Assets.

b. Write the components of Current Liabilities.

c. Find (i) Current Ratio , (ii) Quick Ratio

Solution:

a. **Components of Current Assets**: Bills Receivable, Sundry debtors, Bank Balance, Short-term Investment, Pre-paid Expenses.

b. **Components of Current Liabilities**: Sundry Creditors, Bills Payable, Bank Overdraft, Outstanding Expenses

c.

$$\text{(i) Current Ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Current Assets = 90,000 + 80,000 + 55000 + 25000 + 10000 + 25000

= Rs 2,85,000

Current Liabilities = 50000 + 80000 + 50000 + 5000

= 1,85,000

$$\text{Current Ratio} = \frac{285000}{185000}$$

= 1.54

$$\text{(ii) Acid test Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquid Assets = Current Assets – Inventory – Prepaid expenses

= Rs 2,85,000 — Rs 25,000 — Rs 10,000

= Rs 250000

(Stock and Pre-paid expenses have been excluded from current assets with a view to arriving at liquid assets.)

Current Liabilities = Rs. 185000

$$\text{Acid-Test Ratio} = \frac{250000}{185000} = 1.35$$

Exercise: 12.4

The capital of XY Ltd. is as follows:

1,00,000 Equity Shares of Rs. 10 each	Rs.	10,00,000
10% 50,000 Preference Shares of Rs. 10 each	Rs.	5,00,000

The following information is obtained from the books of the company:

Profit after tax at 50%	Rs.	3,00,000
Depreciation	Rs.	70,000
Equity Dividend paid	Rs.	20%
Market Price of Equity Share	Rs.	50

Calculate:

(i). Dividend yield on equity share.

(ii). Earnings per share

(iii). The price-earning ratio

Solution:

(i).

$$\text{Dividend yield on Equity Share} = \frac{\text{Dividend per Share}}{\text{Market Price per Share}} \times 100$$

$$= \frac{2}{50}$$

$$= 0.04 \text{ or say } 4\%$$

[Dividend per share = 0.20 X Rs 10 = Rs 2]

(ii).

$$\text{Earnings per Share} = \frac{\text{Profit after Tax and Preference divident}}{\text{Number of Equity Shares}}$$

$$= \frac{2,50,000 \text{ (i.e. } 3,00,000\text{-}50,000)}{1,00,000}$$

$$= \text{Rs. } 2.5$$

(iii)

$$\text{Price-Earning Ratio} = \frac{\text{Market Price per Share}}{\text{Earning per Share}}$$

$$= \frac{50}{25} = 20 : 1$$



CHECK YOUR PROGRESS

Q5: From the following information of Watson Ltd., determine (i) gross profit margin and (ii) net profit margin.

Sales = Rs 2, 00,000

Cost of goods sold = Rs 1, 00,000

Other operating expenses= Rs 50,000

Q6: The credit sales of HHL in a year amount to Rs 12, 00,000 .The outstanding amounts of debtors at the beginning and end of the year were Rs1, 40,000 and Rs 1, 60,000 respectively. Determine the debtor turnover ratio and the average collection period.

Q7: A company's sales are Rs 4, 50,000, cost of goods sold is Rs 2, 40,000 and inventory is Rs 90,000. What is its turnover? Also calculate the gross margin



12.5 LET US SUM UP

In this unit we have discussed the following:

- Ratio analysis is a widely used tool of financial analysis.
- It is defined as the systematic use of ratio to interpret the financial statements so that the strengths and weaknesses of a company, as well as its historical performance and current financial condition, can be determined.
- Ratios make the related information comparable as these are relative figures reflecting the relationship between related variables.
- Ratios can be compared by using trend analysis, inter- company comparison and comparison with standards or industry average.
- Ratios are broadly categorised into four groups: liquidity ratios, leverage ratios, turnover ratios and profitability ratios.
- Liquidity ratios measure the company's ability to meet current obligations, whereas the leverage ratios measure the proportion of outsiders' capital in financing the company's assets.

- Activity ratios reflect the company's efficiency in utilising its assets in generating sales, whereas the profitability ratios measure the overall performance of the company by determining the effectiveness of the company in generating profit.



12.6 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition



12.7 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: i) mathematical, ii) current assets, iii) difference, iv) gross profit margin.

Ans to Q.2: The components of quick assets are cash, debtors and bills receivables and marketable securities.

Ans to Q.3: $\frac{\text{Market price}}{\text{Earning per share}}$

Ans to Q.4: The Gross profit margin, Net profit margin, Operating ratio, Return on Investment, Return on Equity, Earnings per share and Price-Earnings Ratio

Ans to Q.5: i) Gross profit margin = 50% (ii) Net profit margin = 25%

Ans to Q.6: Debtors turnover ratio = 8 times, Average collection period = 1.5 months.

Ans to Q.7: Inventory turnover ratio = 2.67 times, Gross profit margin = 46.7%.



12.8 MODEL QUESTIONS

Q1. What do you mean by ratio analysis? Explain with example.

Q2. What is the importance of ratio analysis?

Q3. Briefly discuss the importance of the following ratios: (a) Liquidity ratios and (b) Leverage ratios.

Q4. Why are the activity ratios calculated? What activity ratios help in understanding of the liquidity position of a company?

Q5. What do you mean by Time series? What are the two methods of time series analysis?

Q6. Write the limitations of ratio analysis.

Q7. The total sales of a company are Rs 500,000. It has a gross profit margin of 20 percent. If the company has an inventory of Rs 60,000, determine the inventory turnover.

Q8. A company has cost of Rs 3,00,000 , sales of Rs 3,50,000 and asset turnover of 5. What is the rate of return on asset?

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UNIT 13: RECEIVABLE MANAGEMENT

UNIT STRUCTURE

13.1 Learning Objectives

13.2 Introduction

13.3 Concept of Receivables

13.4 Factors influencing the Size of Receivables

13.5 Goals of Receivables Management

13.6 Dimensions of Receivables Management

13.6.1 Credit Policy

13.6.2 Credit Terms

13.6.3 Collection Policies

13.7 Control of Accounts Receivables

13.8 Let Us Sum Up

13.9 Further Reading

13.10 Answers To Check Your Progress

13.11 Model Questions

13.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- explain meaning of accounts receivable
- explain objectives of receivables management
- describe dimensions of receivables management
- analyse credit policy and credit policy variables
- explain techniques for control of accounts receivables

13.2 INTRODUCTION

In this unit we are going to discuss the concept of receivables management, factors influencing the size of receivables etc. We will also discuss the goals of receivable management and the dimensions of receivables management i.e. credit policy, credit terms and collection policies. At the end of this unit we will come to know the control of Accounts receivables.

13.3 CONCEPT OF RECEIVABLES

When a firm sells its products or services and does not receive cash for it immediately, the firm is said to have granted trade credit to its customers. Trade credit thus creates receivables or book debt which the firm is expected to collect in the near future. So, receivables also referred to as accounts receivables, trade receivables, customer receivables or book debts, are claims of the firm against its customers and form part of the firm's current assets.

Receivables which are amounts owed to the firm as a result of sales of goods and services in the ordinary course of business, allow the customers a reasonable period of time in which to pay for the goods which they have received. The credit period extended by business firms usually ranges from 15 to 60 days. So, when goods are sold on credit, finished goods get converted into accounts receivables (trade debtors) in the books of the seller.

A firm's investment in accounts receivables depends on how much it sells on credit and how long it takes to collect receivables. For example, if a firm sells Rs.1 lakh worth of goods on credit a day and its average collection period is 40 days, its accounts receivables will be Rs.40 lakhs. Accounts receivable (or *sundry debtors* as referred to in India) constitutes one of the most important asset categories for firms.

One significant characteristic of these receivables is that they involve an element of risk. Cash sales are totally risk less, but this is not the case with credit sales as the cash payment has yet to be received.

13.4 FACTORS INFLUENCING THE SIZE OF RECEIVABLES

Apart from the level of sales, there are several factors that affect the size of receivables.

The different factors that affect the size of receivables are:

(i) **Volume of credit sales:** If the proportion of credit sales is relatively higher, then the amount of receivables will also be higher.

(ii) **Credit policies:** How liberal or conservative the credit policy is, will also affect the amount of receivables. A tight credit policy will imply a low size of receivables. If collections are prompt, then even if the firm has a liberal credit policy, the size of receivables will remain under control.

(iii) **Trade terms:** The most important credit terms affecting the level of receivables are the credit period and the cash discount. For instance, cash discount reduces the investment in receivables because it encourages early payment.

(iv) **Credit Collection policies:** An efficient collection policy will considerably reduce the amount of investment in receivables.

(v) **Business Expansion Plans:** In the early stages of expansion of business, more credit facilities may be necessary to attract customers in new markets. Of course, the period of credit can be gradually reduced when the firm is able to get permanent customers.

(vi) **Cost-benefit trade-off:** Investment in receivables involves both benefits and costs. Extending liberal credit pushes sales and thus results in higher profitability but the increasing investment in debtors also involves costs. The quantum of credit sales or the size of receivables can be allowed to increase as long as the benefits of additional receivables are more than the costs thereof.

(vii) **Competitors' polices:** The credit policies of the competitors also influence the credit policy of the firm. Sometimes, the trade policies of the competitors have to be kept in mind otherwise, it may be difficult to expand sales.

(viii) **Customer habits:** The payment habits of customers also affect the level of receivables maintained by the firm. Depending on the customer profile and habits, the collection policies need to be accordingly geared.

(ix) Other factors: Several other factors such as level of business activity, seasonal factors, industry norms etc. affect the level of investment in receivables.

13.5 GOALS OF RECEIVABLES MANAGEMENT

The objective of receivables management is to make sound decisions regarding investment in receivables and debtors. In the words of Bolton, S E., the objective of receivables management is: to promote sales and profits until that point is reached where the return on investment in further funding of receivables is less than the cost of funds raised to finance that additional credit.

The purpose of credit management is neither to only maximize sales nor to minimize the risk of bad debts. If the maximization of sales were the sole objective, then the firm would have sold on credit to all. On the other hand, if minimization of bad debts were the only objective, then the firm would not sell on credit to anyone. In fact, the firm should manage its credit in such a way that sales are expanded to an extent to which risk remains within an acceptable limit.

The benefits of a liberal credit policy are undoubtedly the **increased sales**, **market share and profits**. However, extension of credit involves risk and cost. The major categories of costs associated with extension of credit and accounts receivables are :(i) Collection cost (ii) Capital cost (iii) Delinquency cost and (iv) Default cost.

(i) Collection cost: These refer to the administrative costs incurred in collecting the receivables from the customers to whom credit sales have been made. Such costs include: (a) expenses associated with the creation and maintenance of a credit department, stationery, postage, accounting records etc.(b)expenses involved in obtaining credit information either by itself or by some external specialist agencies.

(ii) Capital cost: Extending liberal credit pushes sales and thus results in higher profitability, but the increasing investment in debtors results in increased costs. The cost on the use of additional capital to

support credit sales which alternatively could be profitably employed elsewhere is therefore, a part of the cost of extending credit or receivables.

(iii) Delinquency cost: This cost arises out of the failure of the customers to meet their obligations when payment on credit sales becomes due after the expiry of the credit period. The costs included herein are: (a) blocking-up of funds for an extended period. (b) costs involved in the collection of overdues, such as reminders, collection efforts, legal charges etc.

(iv) Default cost: When the firm is not able to recover certain overdues due to the inability of the customers, such debts are treated as bad debts and have to be written off as they cannot be realized. These kinds of costs are called default costs.

Thus, the management should weigh the benefits as well as costs to determine the goals of receivables management. To achieve the goal of maximizing the value of the firm, the firm should manage its trade credit:

- To obtain optimum (not maximum) volume of sales
- To control the cost of credit and keep it at minimum
- To maintain investment in debtors at optimum level

13.6 DIMENSIONS OF RECEIVABLES MANAGEMENT

The general economic conditions and industry practices have a significant impact on the level of receivables but at the same time, a firm's investments in this type of current assets is also influenced by its internal policies. A firm has minimal or in fact, no control over external variables like the economic factors or industry practices. However, it can improve its profitability through a properly framed trade credit policy or receivables management. Thus, the three crucial dimensions of credit management include:

(i) **Credit policy**

- credit standards
- credit analysis

(ii) **Credit terms**

- cash discount
- cash discount period
- credit period

(iii) **Collection policies**(the type and degree of effort made to collect receivables from customers)



CHECK YOUR PROGRESS

Q1. What are the factors that influencing the size of receivables?

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.....

Q2. What are the three dimensions of receivables management?

.....

.....

.....

13.6.1 Credit Policy

The term *credit policy* refers to those decision variables that influence the amount of trade credit i.e., the investment in receivables. This credit policy provides the framework to determine (i) whether to extend credit to a customer or not and (ii) how much credit to extend. Thus, the credit policy may be analysed under two broad dimensions:

(a) ***Credit standards:*** They refer to the basic criteria for the extension of credit to customers. The credit policy of any firm may broadly be classified as lenient or non-restrictive and tight or restrictive. The sales and receivables levels are likely to be high if the credit standards are relatively lenient.

In contrast, the sales and receivables levels are most probably going to be low if these standards are relatively stringent. The extent to which credit standards can be liberalised should depend on the match between the profits arising due to increased sales and the costs to be incurred on the increased sales. The different costs that are likely to be incurred in granting credit are bad debt losses, administrative expenses, cash discounts and opportunity costs of funds tied up in receivables.

Thus the determination of the optimum credit policy will involve a trade-off between the costs and profitability. The major issues in costs are liquidity and opportunity costs. As a firm's policy becomes liberal, the chances of bad debts increase and collection period gets extended. This poses a problem of liquidity. Further, a non-restrictive credit policy will result in large investment in receivables and therefore, higher opportunity costs. On the other hand, profitability is expected to increase with a relaxed credit policy, through increased sales. Therefore, the optimum credit policy will be determined by the trade-off between liquidity and profitability as shown in the figure below:

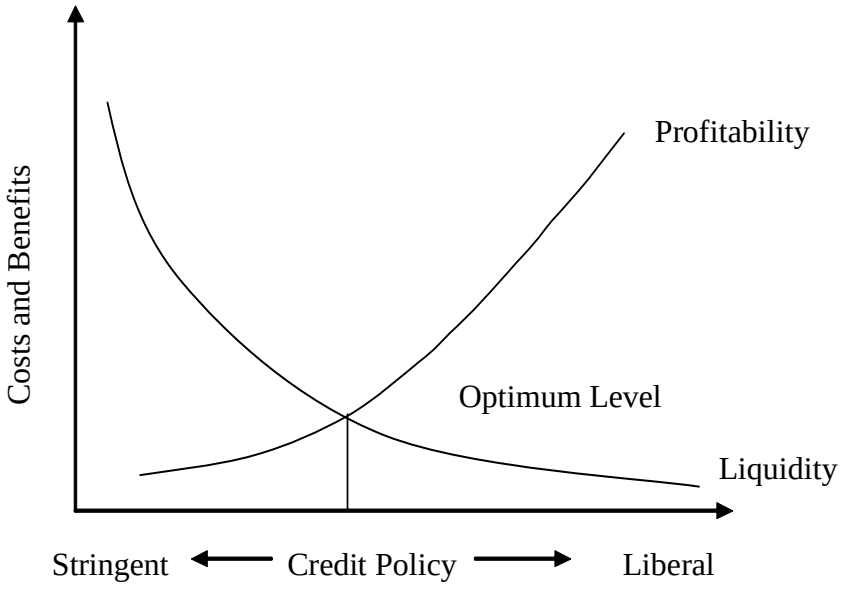


Figure13.1: Optimum Credit Policy

Figure 12.1 shows while the credit policy becomes more liberal, the firm becomes less liquid but profitability increases. The optimum credit policy is at that point where there is a balance between both liquidity and profitability.

(b) Credit analysis: It is on the basis of credit analysis that decisions to grant credit to a customer as well as the amount of credit to be extended, would be taken. The steps involved in this process are: obtaining credit information and evaluating the credit information. The first step in credit analysis is obtaining credit information to assess the customer. The internal sources of information include the forms and references the prospective customer furnishes to the firm and also the past records of business dealings of the firm with the customer. On the other hand, the external sources of information comprise the published financial statements of the customer, bank references, trade references and specialist credit bureau/ credit ratings and reports. In India, there are three main credit rating agencies: CRISIL, CARE and ICRA.

The credit information collected from different sources needs to be analysed to determine the credit worthiness of the customer. The analysis covers both the quantitative and qualitative aspects. Assessment of the quantitative aspects is based on the factual information available from the financial statements, past records of the firm etc. while qualitative analysis basically focuses on the quality of management and the nature of the applicant's business. The traditional approach to credit analysis assesses a prospective customer in terms of the 5 Cs of credit.

(a) Character : The willingness of the customer to honour his obligations.

(b) Capacity : The ability of the customer to meet his credit obligations.

(c) Capital : The financial reserves of the customer.

(d) Collateral : The security offered by the customer in the form of pledged assets.

(e) Conditions : The general economic conditions that affect the customer.

13.6.2 Credit Terms

After the credit standards have been established and the credit worthiness of the customers have been assessed, the management of the firm must decide upon the terms and conditions based on which trade credit will be available. The stipulations under which a firm extends credit (i.e., sells on credit) to its customers are called credit terms. These terms specify the repayment terms of receivables.

The important components of credit terms include:

(a) Credit Period: The time duration for which credit is extended to the customer is referred to as credit period. Usually, the credit terms are governed by the industry norms; however, the firm can extend credit for longer duration to stimulate sales. Lengthening of the credit period pushes sales up by inducing existing customers to purchase more and by attracting additional customers. This is however, accompanied by a larger investment in debtors and a higher probability of bad debt loss. On the other hand, shortening the credit period tends to lower sales, decrease the amount tied up in debtors, and reduce the incidence of bad debts loss.

(b) Cash Discount: Many firms offer cash discounts to their customers in order to induce them to pay their debts early. The cash discount significantly affects factors such as the sales volume, average collection period, bad debt expenses and profit. While deciding on the grant of cash discount, the management considers the effect on these factors if it initiates increases or decreases the discount rate.

(c) ***Cash discount period*****:** It refers to the duration during which the discount can be availed of. Extension of this cash discount period may prompt more customers to avail discount but such extension is also going to result in late collection of funds and increase the collection period of the firm.

In fact, the complete credit terms indicate: the rate of cash discount, the discount period and the credit period. For example, the credit terms may be expressed as "2/10, net 30". Here,

(i) 2 indicates the rate of cash discount(2%) which will be available if the customer pays the overdue within the stipulated time;

(ii) 10 signifies the time duration (10 days) within which a customer must pay if he would like to avail of the discount.

(iii) 30 means the maximum period for which credit is available and the amount due must be paid before the expiry of 30 days.

In other words, a 2% cash discount will be allowed if payment is made within the 10^{th} day; if the offer is not availed, payment has to be made by the 30^{th} day. If the payment is not made within the maximum period of 30 days, he will be deemed to have defaulted.

13.6.3 Collection Policies

This aspect of receivables management refer to the procedures followed to collect account receivables when they become due, after the expiry of the credit period. Such a policy is needed because all customers do not pay in time. Some of the firm's debtors are slow payers while some of them are non-payers. In case of slow payer, the collection policy should aim at accelerating the process of collection while in case of the non-payers it can look to reducing the bad debt losses. These policies encompass two aspects viz:

(a) Degree of effort to collect the overdues: As discussed above, the credit policy of a firm may be categorised into a strict policy or a lenient policy. Depending on the degree of stringency of the credit policy, the collection policy would be accordingly geared. Each type of collection policy will have its own benefits and costs and the management has to consider the trade-off between both.

For instance, in case of a tight collection policy the benefits would be: bad debts will decrease and the average collection period will reduce. Consequently, the firm will benefit and its profits will increase. However it will also involve increased collection costs, a possible decline in the volume of sales(due to the customers' non-preference for the intense collection efforts initiated by the firm) etc. A lax collection programme on the other hand, would push sales up, lengthen the collection period, increase the percentage of bad debts and maybe, reduce the collection expenses.

(b) Type of collection efforts: A properly framed collection policy will have clear-cut guidelines regarding the sequence of collection efforts. Once the credit period is over and the payment still remains due, the firm needs to take up measures to collect the dues. While the efforts in the initial stage are polite and moderate, the same need to become stricter with the passage of time. The collection programme of the firm, aimed at timely collection of receivables, may comprise the following:

(i) Monitoring the state of receivables

(ii) Despatch of reminders and letters to debtors whose due date is approaching

(iii) Telegraphic and telephonic advice to customers around the due date.

(iv) Personal visits or use of services of collection agencies

(v) Threat of legal action to overdue accounts

(vi) Legal action against overdue accounts: Recourse to legal courses of action should be taken only when all other measures have been fully exhausted. This is because taking legal action has cost implications besides straining the relationship with the customers.

Further, appropriate consideration should be made for customers with genuine difficulties.

13.7 CONTROL OF ACCOUNTS RECEIVABLES

The collection of book debts can be monitored with the use of certain techniques, some of which are discussed below:

(a) ***Receivables Turnover***: It provides a relationship between credit sales and the debtors (receivables) of a firm. It indicates how quickly receivables or debtors are converted into cash. The liquidity of the receivables is therefore, measured through the receivables (debtors) turnover rate.

Receivables Turnover Rate =Credit Sales / Average Debtors or receivables

Debtors' turnover rate is expressed in terms of times. Analyst may not be able to access the credit sales information, average debtors and bills receivables. To overcome this problem of non-availability of information, there is another method available for analyst.

Receivables Turnover Rate = Total Net Sales / Average Debtors (including receivables)

(b) ***Average collection period****:* The actual average collection period may be compared with the stated collection period to assess the efficiency of the collection policies. Average collection period is a measure of how long it takes from the time sales is made to the time cash is collected form the customers.

Average collection period (ACP) = 365/ Debtors or Receivables turnover



Exercise: 13.1

A company's credit sales are Rs.40 lakhs a year. The opening debts are Rs.5 lakhs and closing debtors are Rs.3 lakhs. Determine Debtors turnover and ACP.

Solution:

Debtors Turnover ratio = Rs.40, 00,000/[(Rs.5, 00,000+Rs.3, 00,000)/ 2]= 10 times

ACP = 365/ 10 =36.5 days.

(c) ***Days Sales Outstanding (DSO):*** It may be defined as the ratio of receivables outstanding at the time (t) to sales per day. DSO is sometimes referred to as average collection period.

DSO = Receivables at 't' / Sales per day

It measures the average length of time taken by customers to pay off the credit purchases. The computed DSO may be compared with the industry average or with the firm's own credit standard.

(d) ***Ageing Schedule***: It classifies outstanding accounts receivable at a given point of time into different age groups, and thus determines whether the accounts receivables are in control. Thus, it is a statement that shows age-wise grouping of debtors. It is helpful for identifying slow paying debtors, with whom the firm may have to implement a stringent collection policy. The following table illustrates an ageing schedule:

Outstanding period(in days)	**Outstanding amount of debtors(Rs.)**	**% of debtors**
0-30	5,00,000	50
31-40	1,00,000	10
41-60	3,00,000	30
More the 60 days	1,00,000	10
Total	**10,00,000**	**100**

(e) ***Collection Matrix****:* In order to study correctly the changes in the payment behaviour of the customers, it is necessary to look at the pattern of collections associated with the credit sales. From this collection pattern, one can judge whether the collection is improving, stable, or deteriorating. Further, such a matrix helps to make a historical record of collection percentages that can be useful in projecting monthly receipts for each budgeting period. An illustration is given below:

% of receivables collected during the	**January Sales**	**February Sales**	**March Sales**	**April Sales**	**May Sales**	**June Sales**
Month of Sales	16	18	15	11	12	8
First following month	48	32	45	50	48	42
Second following month	32	29	25	22	26	28
Third following month	4	15	10	12	10	12
Fourth following month	-	6	5	5	4	10

In the above example, the credit sales during the month of January are collected as follows: 16% in January (the month of sales), 48% in February (the first following month), 32% in March (the second following month) and 4% in April(the third following month).



CHECK YOUR PROGRESS

Q3. Fill in the blanks with appropriate words:

(i) In India, accounts receivables are called _____

(ii) Debt owed to the firm arising from the sale of goods and services in the ordinary course of business is known as _____.

(iii) Credit terms have three components————————————————, ———————————— and ————————————————.

(iv) ————————————————represents a percentage of reduction in the sales or purchase price allowed for early payment of invoices.

(iv) ———————————————————— involvement is one of the characteristic features of receivables.



LET US KNOW

GUIDELINES FOR EFFECTIVE RECEIVABLES MANAGEMENT

- Have the right attitude to the control of credit and make sure that it gets the priority it deserves.
- Establish clear credit practices as a matter of company policy.
- Make sure that these practices are clearly understood by staff, suppliers and customers.
- Be professional when accepting new accounts, and especially larger ones.
- Check out each customer thoroughly before you offer credit. Use credit agencies, bank references, industry sources etc.
- Establish credit limits for each customer and stick to them.
- Continuously review these limits when you suspect tough times are coming or if operating in a volatile sector.
- Pay close attention to your customers with larger accounts
- Invoice promptly and clearly.
- Consider charging penalties on overdue accounts.
- Consider accepting credit /debit cards as a payment option.
- Monitor your debtor balances and ageing schedules, and don't let any debts get too large or too old.

Exercise: 13.2



ABC Ltd. decides to liberalise the credit policy to boost its sales. The liberalised credit policy will result in additional sales of Rs.5 lakhs. The variable costs will be 40% of sales and there will be 10% risk for bad debts and 5% as collection costs. Should the company opt for the new policy?

Solution:

Additional Sales revenue	Rs.5,00,000
(-) Variable costs	Rs.2,00,000
Incremental Revenue	Rs.3,00,000
(-) 10% for bad debts losses	Rs. 50,000
	Rs.2,50,000
(-) 5% collection costs	Rs.25,000
Net additional revenue	Rs.2,25,000
(due to liberalised credit policy)	

The firm will benefit from the new credit policy since the incremental revenue is greater than the costs of additional credit, the firm should opt for the new credit policy.



13.8 LET US SUM UP

- Business firms often sell on credit to facilitate sales. When good are sold on credit, finished goods get converted into accounts receivables(trade debtors)
- The objectives of accounts receivables management are to maximise the value of the firm by boosting sales to an optimal level, deciding on an optimum investment in sundry debtors and control and managing of the cost of trade credit.
- Costs associated with accounts receivables are collection costs, opportunity/capital costs, delinquency costs and default costs/ bad debts.
- The important dimensions of a firm's credit management functions include credit policy (credit standards and credit analysis), credit

terms (cash discount, cash discount period and credit period) and collection policies (the type and degree of effort made to collect receivables from customers. Liberal credit standards may enhance sales levels but they also bring in a higher possibility of bad debt loss, a larger amount of funds getting tied up in receivables and greater collection costs. Restrictive credit policies have the opposite effect.

- Lengthening the credit period will bring about increased sales but will also higher occurrence of bad debts and a larger investment in receivables.
- Liberalising the cash discount policy will tend to enhance sales and reduce average collection period but the cost of discount will be there.
- A strict collection programme may decrease sales, shorten the average collection period, reduce the occurrence of bad debts and increase collection expenses.
- The qualitative approach to credit assessment involves looking at the 5 Cs of the customer-character, capacity, capital, collateral and conditions.
- The success of the collection efforts depends on monitoring and controlling receivables. The different techniques used are Receivables Turnover, Average collection period, Ageing Schedule and Collection Matrix.



13.9 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 editio

13.10 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: Volume of credit sales, Credit Policies, Trade terms, Credit Collection policies, Business Expansion Plans, Cost-benefit trade-off, Competitors' policies, Customer habits, Other factors.

Ans to Q.2: Credit policy, Credit terms, Collection policies.

Ans to Q.3: (i) Sundry Debtors (ii) Accounts Receivables (iii) Credit period, Cash Discount, Cash Discount Period (iv) Cash Discount (v) Risk



13.11 MODEL QUESTIONS

Q1. Define receivables. State the various factors influencing the size of receivables.

Q2. What is receivables management? Discuss the various dimensions of receivables management.

Q3. What is an optimum credit policy? State the different costs and risks associated with a liberal credit policy.

Q4. Write short notes on:

- Collection Matrix
- Credit standards
- Control of Accounts receivables
- 5 Cs of credit
- Ageing Schedule

Q5. Discuss the role of collection polices in credit management.

Q6. ABC Ltd. produces electronic appliances and it has credit sales of Rs.20 lakhs, the average accounts receivables amount being Rs.4 lakhs. Compute ACP, assuming a 365-day year[Answer: 73 days]

Q7. Hello Ltd.'s credit sales for a particular year are Rs.2,50,000. The company's opening and closing balance of receivables are Rs.30,000 and Rs.20,000. Calculate receivables turnover and ACP.[Receivables turnover ratio=10, ACP =36.5 days]

*** ***** ***

UNIT 14: INVENTORY MANAGEMENT

UNIT STRUCTURE

14.1 Learning Objectives

14.2 Introduction

14.3 Meaning of Inventory and its components

14.4 Need to Hold Inventory

14.5 Risks and Costs of Holding Inventory

14.6 Inventory Management

14.7 Inventory Management Techniques

14.8 Selective Inventory Control

14.9 Let Us Sum Up

14.10 Further Readings

14.11 Answers To Check Your Progress

14.12 Model Questions

14.1 LEARNING OBJECTIVES

After going through this unit, you will be able to

- know the meaning and components of inventory
- explain the Need for inventories
- analyse Risks and Costs of holding inventory
- describe Objectives of Inventory Management
- explain Inventory Management Techniques
- describe Selective Inventory Control

14.2 INTRODUCTION

In this unit we are going to discuss the concept of inventory management. We will discuss the meaning of inventory and components of inventory. We will be able to know the need to hold inventory. The objective of inventory management will also be discussed. At the end of this unit are will be able to know the inventory management techniques and selective inventory control.

14.3 MEANING OF INVENTORY AND ITS COMPONENTS

Investment in inventories constitutes the most significant part of current assets/ working capital in most of the undertakings. Inventories are the stocks of a product a company is manufacturing for sale and the components that make up the product. In other words, inventories are composed of assets that will be sold in future in the normal course of business operations. The various forms in which inventories exist are: raw materials, work-in progress (semi-finished goods) and finished goods. Raw materials are the basic input materials that are converted into finished product through the manufacturing process. So, raw material inventories refer to those units of input which have been purchased and stored for future production. Work-in-process inventories are semi-manufactured products while finished goods inventories are the completely manufactured products ready for sale.

Stocks of raw materials and work in progress facilitate production while stock of finished goods give way to smooth marketing operations. The level of each of these three kinds of inventories to be maintained by a business concern is determined by the nature of business. For instance, a manufacturing concern would require significantly high levels of all the three kinds of inventories. On the other hand, a wholesaler or a retailer would have a very high level of finished good inventories and no raw material and work-in-process inventories.

Another kind of inventory maintained by the firms is inventories of supplies or consumables (e.g. fuel oil etc.). These materials though are not directly required for production, are necessary for the production process. Apart from consumables, spares also form a part of inventory; the consumption pattern of the spares differs from that of raw materials, consumables and finished goods. The stocking policies of spares are different from industry to industry and all decisions about spares are based on the financial cost of inventory of such spares and the costs that may arise due to their non-availability.

14.4 NEED TO HOLD INVENTORY

Maintaining inventories involves tying up of the company's funds and storage and handling costs. Yet, every business has to maintain a certain level of inventories to facilitate the smooth running of business. The optimum level of inventory is that level where the total costs of inventory (ordering and carrying costs explained later) is less. Proper management of inventory will, mainly, ensure an adequate supply of materials and stores minimize stock-outs (shortfall in inventories) and thus help avoid disruptions in the production processes.

There are three general motives for holding inventories. They are:

(a) *The transactions motive* which lays importance on the need to maintain inventories for continuous production and for timely execution of sales orders.

(b) *The precautionary motive* that requires holding of inventories to meet unpredictable changes in demand and supplies of materials.

(c) *The speculative motive* that influences the decision to stock inventories to take advantage of price fluctuations, saving in re-ordering costs, bulk discounts etc.

14.5 RISKS AND COSTS OF HOLDING INVENTORY

Apart from the cost of the merchandise, the costs associated with inventory can be classified into two broad categories:

(a) Ordering costs: These are the costs associated with the ordering or purchasing of materials and are therefore, also called buying costs. Included in the ordering costs are:

i. Requisitioning

ii. Order Placing

iii. Transportation

iv. Receiving, Inspecting & Storing

When materials are manufactured in the concern, these costs will be known as set-up costs. The set-up costs include the costs

incurred on the following activities: preparing and processing stock orders, machine set-up, handling machines, tools etc.

In case of WIP, ordering costs are likely to involve nothing more than record keeping.

The total ordering cost for a period is simply the number of orders for that period times the cost per order.

The ordering cost increase with the increase in the number of orders i.e., the more frequently the orders are placed, the higher will be the firm's ordering costs. On the other hand, if the firm maintains large inventory levels there will be few orders placed and consequently, the ordering costs will be relatively small. **So, the ordering costs decrease with the increasing size of inventory.**

(b) Carrying Costs: These refer to the costs incurred for maintaining or carrying a certain level of inventory and include the following costs:

i. Those costs that arise due to storing the inventory viz.:

- Storage cost i.e., depreciation, maintenance of godown etc.
- Insurance of inventory against fire and theft
- Deterioration of inventory due to pilferage, fire, technical or style obsolescence, price decline etc.
- Other costs such as labour for handling inventory, clerical and accounting costs

ii. Opportunity cost of funds*:* Maintaining of inventories results in blocking of the firm's financial resources. If funds were not locked up in the inventory, they would have earned a return. This is the opportunity cost of funds or the financial cost component of the total cost.

The total carrying costs for the period is the average number of units of inventory for the period times the carrying cost per unit. **The carrying costs are directly proportionate to the inventory size.** To keep the carrying cost low, inventories need to be frequently purchased in small lot sizes.

The sum of the ordering and carrying costs represents the total cost of inventory. This is to be compared with the benefits arising out of inventory in order to determine the optimum size of inventory,

14.6 INVENTORY MANAGEMENT

A firm generally has to tackle two conflicting needs viz.:

(a) To maintain a sufficiently large size of inventory to ensure efficient and smooth production and sales operations.

(b) To maintain a minimum investment in inventories as far as possible in order to maximise profitability.

Both excessive and inadequate inventories are not desirable. The objective of inventory management should be to determine and maintain an optimum level of inventory. Efforts should be made to place an order at the right time with the right source so that the right quantity can be procured at the right price and quality. The objectives of inventory management are as follows:

(i) Ensure a continuous supply of materials for a smooth production process.

(ii) Maintain adequate stocks of raw material in periods of short supply and anticipate price changes.

(iii) Maintain adequate stock of finished goods to meet customer demands.

(iv) Minimise carrying costs and reduce duplication in ordering or replenishing stocks.

(v) Minimise losses through deterioration, pilferage, wastages of the stocks.

(vi) Design proper accountability at various levels of the organisation hierarchy.

(vii) Exercise proper inventory control through physical verification of the inventory in godown against the record in the stores ledger.

(viii) Ensure right quality goods at reasonable prices.



LET US KNOW

FOR BETTER STOCK/INVENTORY CONTROL, TRY THE FOLLOWING:

- Review the effectiveness of existing purchasing and inventory systems.
- Know the stock turnover for all major items of inventory.
- Apply tight controls to the *significant few* items and simplify controls for the *trivial many*.
- Sell off outdated or slow moving merchandise - it gets more difficult to sell, the longer you keep it.
- Consider having part of your product outsourced to another manufacturer rather than make it yourself, if cost-effective.
- Review your security procedures to ensure that no stock "is going out the back door!"

14.7 INVENTORY MANAGEMENT TECHNIQUES

Effective inventory management needs to determine the optimum level of inventory that will ensure availability of materials in sufficient quantity as and when required and also will minimise the investment in inventories. To manage inventories efficiently and effectively, the following two questions need to be addressed:

- How much should be ordered?
- When should it be ordered?

The first question 'how much to order' relates to ECONOMIC ORDER QUANTITY (EOQ) while the second question 'when to order' relates to determining the RE-ORDER POINT.

HOW MUCH TO ORDER?

The ordering quantity problems are solved by the firm by determining the EOQ (or the Economic Lot Size). The quantity to be purchased should be economically viable because the cost of buying and carrying materials can be very high. Economic Order Quantity is the quantity at which the inventory cost is minimum.

In determining EOQ, it is assumed that the cost of managing inventory comprises two major parts: ordering cost and carrying costs. It has been seen in the discussion above that the ordering costs and the carrying costs have a reverse relationship. Thus, to determine the optimum inventory size or the EOQ, a trade-off between carrying costs and ordering costs should be reached. The EOQ is that level of inventory at which the total annual total costs of ordering and holding are the minimum.

EOQ can be obtained by adopting three approaches: the trial and error approach, the formula approach and the graphic approach.

In the simple formula approach, the EOQ formula is:

EOQ = $\sqrt{2AO \div C}$

Where, A = annual usage

O =Ordering cost per order

C = Carrying cost per unit



Exercise: 14.1

A firm's inventory planning period is one year. Its inventory requirement for this period is 1600 units. Its acquisition units are Rs.50 per order and the carrying costs are Re.1 per unit per year for an item. Compute EOQ.

Solution 1:

Here, Annual usage(A) = 1600 units

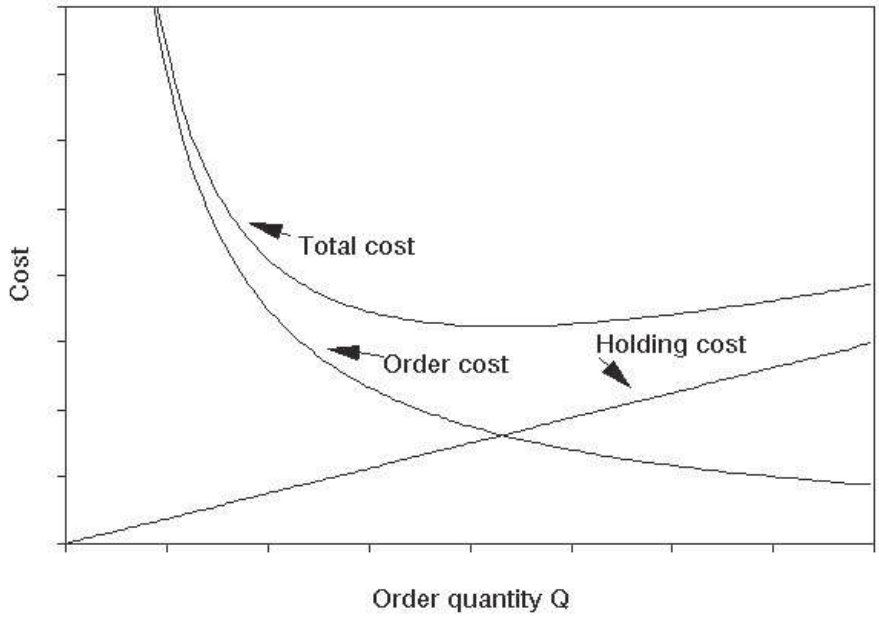
Ordering cost per order(O) = Rs.50

Carrying Cost per unit(C) = Re.1

So, $EQQ = \sqrt{(2AO \div C)} = \sqrt{(2 \times 1600 \times 50) \div 1} = 400$ units

The diagram below illustrates how these two components (holding/carrying cost and order cost) change as the quantity ordered(Q), changes. The carrying cost varies directly with the order size whereas the ordering cost varies inversely with the order quantity.

Hence the total annual cost curve is as shown below: the optimum inventory level will correspond to that point on the total cost curve which represents the minimum total cost.



Exercise: 14.2

M Ltd. uses quarterly 50,000 units of raw materials. Cost of raw materials is Rs.100 per unit. Cost of placing an order is Rs. 100 and carrying cost is 9 % per year. Calculate EOQ.

Solution 2:

Annual usage(A) = 50,000 units × 4 = 2,00,000 units

Ordering cost(O) = Rs. 100 per order

Carrying cost per unit(C) = 9% of Rs.100 = Rs.9

$\sqrt{(2AO) \div C} = \sqrt{(2 \times 200000 \times 100) \div 9} = 2108$ units

Exercise: 14.3

Daylight Ltd. gives the following information:

Annual demand = 480 units

Price per unit = Rs.4

Carrying cost = 40 paise per unit
Cost per order = Rs. 5
Calculate the EOQ, the number of orders per year and frequency of purchases.

Solution 3:

$\sqrt{(2\times480\times5)}\div0.40=109.54$ units

Unit = 100

Number of orders per year = Annual demand ÷ EOQ size

= 480 ÷ 110

= 4.36 orders

Frequency of purchases = Number of months in a year ÷ Number of orders per year

= 12 ÷ 4.36 = 2.75 months

= 3 months(approx.)

WHEN TO ORDER?

Another important question pertaining to effective inventory management is: when should the order to procure inventory be placed? This aspect of inventory management is covered under **the order point problem.**

- **Reorder point**: It is that inventory level at which an order should be placed to replenish the inventory. In other words, reorder point is that level of inventory when fresh orders should be placed with the suppliers for procuring additional inventory equal to the economic order quantity.

Under conditions of **certainty**,

Re-order point = Maximum usage × Maximum lead time

Lead time is the time normally taken in receiving the delivery of inventory after the order has been placed. By certainty, we mean that the usage and the lead time do not fluctuate.

Example: Suppose, the average consumption (daily usage) of inventory of a firm is 3000 units. The number of days required to receive the delivery of inventory after placing order is 10 days. So, reorder point = 3,000 units × 10 days = 30,000 units. It means that the firm should

place an order for replenishing the stock of inventory as soon as the inventory level reaches 30,000 units. The size of the order would obviously be equal to the EOQ.

However, prediction of average daily usage and lead time cannot always be ascertained with accuracy. For instance, the receipt of inventory from the suppliers may be delayed beyond the expected lead time due to various reasons like, strikes, floods etc. Similarly, there may be a difference between the expected and the actual usage rate of inventory. In case there is any such unexpected increased usage or slower delivery of goods from the supplier, the firm may face shortage of inventory, or in other words, a stock-out situation. Such discrepancies may disrupt the production schedule or the trading process of the firm. To avoid such stock-out situations, the firm may be required to maintain a **safety stock.** This safety stock is the minimum additional inventory that serves as a buffer or cushion against unexpected increased usage and/or delay in delivery time. Thus, the formula to determine the re-order point when safety stock provided will be:

Re-order point= Normal usage × Normal Lead time + Safety stock

Some of the various stock levels are also discussed below:

- **Minimum Level**: The minimum level is that level of stock below which stock should not be allowed to fall. In case of any item falling below this level, there is danger of stopping of production and, therefore, the management should give top priority to the acquisition of new supplies.

Minimum level = Re-order level–(Normal usage × Normal Lead time)

- **Maximum Level:** It is that quantity of material above which the stock of any item should not normally be allowed to go. This level is fixed after taking into account such factors as: capital, rate of consumption of materials, storage space available, insurance cost, risk of deterioration and obsolescence and economic order quantity.

Maximum level = Re-order level + Reorder quantity – (Minimum usage × Minimum Lead time)

- **Danger stock level:** Some enterprises also calculate danger level. When this level of stock is reached, then emergency steps are taken by the management to acquire material supplies. When danger level is reached, efforts are made to purchase materials from the nearest possible source or place so that the workers and plant and machinery may not remain idle due to shortage of materials supplies.

Danger level = Average usage × Maximum Lead time for emergency purpose

- **Average Stock level:** It is calculated as:

Minimum Stock Level + ½ of Reorder Quantity

Or

½ (Minimum Stock Level + Maximum Stock Level)



Exercise: 14.4

Determine reorder level, minimum level, maximum level and average stock level.

Normal usage: 100 units per week; Lead time: 4-6 weeks

Minimum usage: 50 units per week; Maximum usage: 150 units per week

Reorder quantity: 600 units

Solution 4:

Reorder Level = Maximum usage × Maximum Lead time
= 150 units × 6 weeks
= 900 units

Minimum level = Re-order level–(Normal usage X Normal Lead time)
= 900 units – (100 units × 5 weeks)
= 400 units

[Normal Lead time = Average Lead time = ½ (4 +6) weeks = 5 weeks

Maximum level = Re-order level+Reorder quantity–(Minimum usage × Minimum Lead time)
= 900 units + 600 units — (50 units × 4 weeks)

= 1,300 units

Average stock level = Minimum Stock Level + ½ of Reorder Quantity

= 400 units + ½ of 600 units

= 700 units

14.8 SELECTIVE INVENTORY CONTROL

Normally, a firm maintains several types of inventories. It is not desirable that the firm exercises the same degree of control on all the items. It should pay more attention to those items whose value is the highest. In other words, it should be selective in its approach to control investment in various types of inventories. Some of the different selective techniques of inventory control are:

(a) **ABC Analysis:** According to this technique, an essential task of inventory management includes proper classification of all inventory items into three categories viz: A, B and C. The high-value items are classified as 'A items' and would be under the tightest control. 'C items' represent relatively the least value and would be under simple control while 'B items' fall in between these two categories and require reasonable attention of the management. The ABC Plan concentrates on important items and is therefore, also known as control by importance and exception (CIE). Further, as the items are classified in the importance of their relative value, this approach is also known as proportional value analysis (PVA).

(b) **VED Analysis:** This kind of classification, normally used for spares parts, groups inventories into: *Vital*, *Essential* and *Desirable* Inventories. If a part is vital to production, then it is classified as 'V', if it is essential, then it is categorised as 'E' and if it is not so essential but desirable, it would be classified as 'D'. The 'V' category items are stocked at high levels while category 'D' items are maintained at minimum levels.

(c) **HML Classification:** It classifies materials into *high* value (H), *medium* value (M) and *low* value (L) depending on the unit value of the material.

(d) **SDE Classification:** This classification, based on the availability of inventory, is useful in situations of scarcity of supply of inventories. 'S' refers to *scarce* inventory items, 'D' refers to *difficult* items that are available indigenously but difficult to procure and 'E' refers to items that are *easy* to procure and are available in the local markets.

(e) **FSN Classification:** This technique groups inventories into three groups, based on the movement of inventory from stores. FSN stands for *fast moving* (F), *slow moving*(S) and *non-moving* (N). Fast-moving items need to be reviewed regularly while non-moving items may be examined further and their disposal can be considered.

Table 14.1 SELECTIVE CONTROL OF INVENTORY

Different classification methods

CLASSIFICATION	BASIS
ABC [Always Better Control]	**Value of items consumed**
VED [Vital, Essential, Desirable]	**Importance or criticality**
FSN [Fast-moving, Slow-moving, Non-moving]	**Pace at which the material moves**
HML [High, Medium, Low]	**Unit price of materials**
SDE [Scarce, Difficult, Easy]	**Procurement Difficulties**



CHECK YOUR PROGRESS

Q1. Fill in the blanks with appropriate words:

i. ——————————motive necessitates the holding of inventory for unexpected changes in demand and supply factors.

ii. Minimum stock level plus half of the reorder quantity is equal to ————————.

iii. ————— costs are the costs associated with the acquisition of raw materials.

iv. The time required to process and execute an order is called ————————— time.

v. ————————is that level of inventory at which an order should be placed for replenishing the current stock of inventory.

vi. VED classification is generally applied in case of ————————



14.9 LET US SUM UP

- Inventory means the assets which will be sold in the future in the normal course of business operations.
- Inventory includes raw materials, work-in-progress, finished goods, consumables and spares.
- The three general motives for holding inventory are: transaction motive, precautionary motive and speculative motive
- Maintaining an optimum level of inventory is the prime objective of inventory management. It seeks to minimise investments in inventory and to meet the demand for products by efficient production and sales operations.
- Excessive investment in inventory results in: unnecessary tie-up of funds, excessive carrying costs, physical deterioration of inventory, scope for waste, theft and mishandling of inventories etc.
- Inadequate investment in inventory on the other hand, may lead to disruption n the production process and consequent loss of customers.
- The main costs involved in inventory management are: ordering costs and carrying costs. The major benefits of holding inventory are in the area of purchasing, production and sales.
- Two important questions related to inventory management are: what should be the size of the order? At what level should the order be placed?

To determine the size of order, the Economic Order Quantity (EOQ) model may be applied. EOQ = $\sqrt{2AO \div C}$

Where, A = annual usage

O =Ordering cost per order

C= Carrying cost per unit

For determining the reorder point, we can use the formula for reorder point.

- The different techniques for selective inventory control include: ABC analysis, HML classification, SDE classification, VED analysis, FSN classification etc..



14.10 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition

14.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: i. Precautionary, ii. Average stock level, iii. Ordering iv. Lead, v. Reorder Level, vi. spares



14.12 MODEL QUESTIONS

Q1: What does 'inventory' mean? Why is it necessary to hold inventory?

Q2: Discuss the objectives of inventory management.

Q3: How are monitoring and control of inventories possible?

Q4: What are the different risks and costs of holding inventory?

Q5: What is meant by Economic Order Quantity?

Q6: Write short notes on:

(a) VED analysis

(b) Reorder point

(c) Ordering and carrying costs

(d) Motives for holding inventory

Q7: Calculate EOQ: Annual usage: 10,000 units, Cost of placing and receiving an order: Rs.50, Annual carrying cost: 10% of inventory value, Cost of materials per unit: Rs.25

[EOQ = 632 units]

*** ***** ***

UNIT 15: LEASE AND HIRE PURCHASE FINANCE

UNIT STRUCTURE

15.1 Learning Objectives

15.2 Introduction

15.3 Meaning of Lease

15.4 Types of Lease

15.5 Advantages of Leasing

15.6 Lease Rental Calculation

15.7 Meaning of Hire Purchase

15.8 Difference Between Lease Financing and Hire Purchase

15.9 Let Us Sum Up

15.10 Further Reading

15.11 Answers To Check Your Progress

15.12 Model Questions

15.1 LEARNING OBJECTIVES

After going through this unit you will be able to :

- explain meaning of leasing
- outline role and importance of lease financing in economic development
- distinguish between the various types of leases
- explain calculation of lease rentals
- explain meaning of hire purchase
- explain calculation of hire-purchase installment
- distinguish between leasing and hire purchase

15.2 INTRODUCTION

This unit is about lease and hire purchase finance. After going through this unit, you will get a fair idea on the meaning, types and advantages of lease financing.

Lease financing denotes procurement of assets through lease.

Leasing has grown as a big industry in the USA and UK and spread to other countries during the present century. In India, leasing was started in 1973 when the First Leasing Company was set up by Farouk Irani and A.C. Muthia in Chennai. The second leasing company –Twentieth Century Leasing Limited commenced operations only in 1979. The demand for lease financing grew in early eighties as there was a credit squeeze and manufacturing organizations found lease finance an easy alternative to bank finance. 339 leasing companies started operating in India by 1986. Banks also started offering leasing services through subsidiaries by 1994.

At the end of this unit we will come to know about lease rental calculation and after that we will discuss the meaning of hire purchase and differences between lease financing and hire purchase.

15.3 MEANING OF LEASE

Leasing as financial service is a contractual arrangement where the owner (lessor) of equipment transfers the right to use the equipment to the user (lessee) for an agreed period of time in return for a rental. At the end of the lease period, the asset reverts back to the lessor. A financing arrangement that provides a firm with the advantage of using an asset without owning it, may be termed as 'leasing'.

The following are the features of a lease:

- **The Parties:** Generally there are two parties to a lease agreement. They are: the lessor and the lessee. Lessor is a person who conveys to another person (lessee) the right to use an asset in consideration of a periodical rental payment, under a lease agreement. Lessee is a person who obtains the right to use the asset from the lessor for a periodical rental payment for an agreed period of time.
- **The Asset:** Leasing is used for financing the use of fixed assets of high value. In India equipment leasing is very popular. Most common assets that are leased consist of aircraft, plant and

machinery, building, oil drilling machine, normally requiring investments of below Rs100 lakh. During the period of the lease, the ownership of the asset rests with the lessor, while the use is transferred to the lessee.

- **The Term:** The term of the lease is called the lease period. It is the period for which the lease agreement is in operation. On expiry of the lease period, the asset reverts to the lessor as mentioned in the clause of the contract.
- **The Lease Rentals:** Lease rentals constitute the consideration payable by the lessee as specified in the lease transaction. Rentals are determined to cover such costs as interest on the lessor's investment, cost of any repairs and maintenance that are part of the lease package, depreciation on the leased asset and any other service charges in connection with the lease.

15.4 TYPES OF LEASE

Basically there are two main types of leases- financial and operating. We can categorize more lease contracts on different bases as given below:

I. On the Base of Risk Transferability:

A. FINANCIAL LEASE: A financial lease is a long-term non-cancelable lease. Financial lease is also known as 'capital lease'. In India, financial leases are very popular with high-cost and high technology equipment. The salient features of a finance lease are as follows:

- The lease is non-cancelable for a specified period usually referred to as the primary period. The primary lease period usually lies between 5 and 8 years.
- The lease term is for a major part of the useful life of the asset. The useful life refers to the minimum of its physical life in terms of the period for which it can perform its function, technological life in the sense of the period in which it does not become obsolete and product market life defined as the period during which it enjoys satisfactory market. A lease is

termed as finance lease if the lease term exceeds 75 percent of the useful life of the equipment.

- The leases are fully amortized over the primary period. This enables a lessor to recover his investment in the lease and derive a profit.
- The lessee is responsible for the maintenance of the asset and for insuring it against accidental damage or loss.
- The risk of obsolescence shifts from the lessor to the lessee.

B. OPERATING LEASE: An operating lease is a cancelable short-term lease. Mines, Computers hardware, trucks and automobiles are found suitable for operating lease. The salient features of operating lease are as follows:

- An operating lease is generally for a period significantly shorter than the economic life of the leased asset.
- The lease is cancelable by either party during the lease period.
- Since the lease periods are shorter than the expected life of the asset, the lease rentals are not sufficient to totally amortize the cost of the assets.
- Maintenance cost is borne by the lessor.
- The lessor bears the risk of economic and functional obsolescence since the lessee is free to cancel the lease at any time.

II. On the Basis of Approachability :

A. SALE AND LEASE BACK: It is a sub-part of finance lease. Under this arrangement, the owner of equipment sells it to a leasing company which in turn leases it back to the owner (the lessee). The lease back arrangement in this transaction can be in the form of a “finance lease” or an “operating lease”.

A classic example of this type of transaction is the sale and leaseback of safe deposits vaults resorted to by commercial banks. Under this arrangement, the bank sells the safe deposit vaults in its custody to a leasing company at a market price which is substantially higher than the book value.

In general, the 'sale and leaseback' arrangement is readily available source of funds for financing the expansion and diversification programs of a firm.

B. DIRECT LEASE: In a direct lease, the lessee and the owner are two different entities. A direct lease can be of two types: Bipartite lease and Tripartite lease.

Bipartite Lease: In this type of lease, there are two parties to the transaction- the equipment supplier-cum –lessor and the lessee. The bipartite lease is usually structured as an operating lease with in-built facilities like up gradation of the equipment or additions to the original equipment configuration. The lessor undertakes to maintain the equipment and even replaces the equipment that is in need of major repair with a similar equipment in working condition.

Tripartite Lease: Under this arrangement, three different parties are involved; they are the equipment supplier, the lessor, and the lessee. An innovative variant of tripartite lease is the sales-aid lease under which the equipment supplier arranges for lease finance in various forms by:

- Providing reference about the customer to the leasing company.
- Negotiating the terms of the lease with the customer and completing all the formalities on behalf of the leasing company.
- It is always recourse to the supplier in the event of default by the lessee either in form of offer from the supplier to buy back the equipment from the lessor or guarantee on behalf of the lessee.

III. On the Basis of Funds Raised:

A. LEVERAGED LEASE: There are three parties to the transaction: (i) lessor (equity investor), (ii) lender and (iii) lessee. In such type of lease, the leasing company (equity investor) buys the asset through substantial borrowing with full recourse to the lessee and without any recourse to it. The lender (loan participant) obtains an assignment of the lease and the rentals to be paid by the lessee

and a first mortgaged asset on the leased asset. The transaction is routed through a trustee who looks after the interest of the lender and lessor. On receipt of the rentals from the lessee, the trustee remits the debt-service component of the rental to the loan participant and the balance to the lessor.

B. SINGLE INVESTOR LEASE: In a single investor lease transaction, the leasing company (lessor) funds the entire investment by raising an appropriate mix of debt and equity. The important point to be noted is that the debt funds raised by the leasing company are without recourse to the lessee. That is , the lender cannot demand payment from the lessee in the event of the leasing company defaulting on its debt-servicing obligations.

15.5 ADVANTAGES OF LEASING

To the Lessee: Lease financing has following advantages to the lessee:

i. Flexibility in structuring of rentals: Leasing is a flexible financing arrangement in the sense that the lease rentals can be structured to accommodate the cash flow position of the lessee, making the payment of rentals convenient to him.

ii. Financing of capital goods: Lease financing enables the lessee to have finance for huge investments in land, building, plant, machinery, heavy equipments, and so on upto 100 percent, without requiring any immediate down payment. Thus, this reduces the fixed cost for starting any business venture.

iii. Ownership preserved: Leasing provides finance without diluting the ownership or control of the promoters. Whereas other modes of long term finance like equity capital may dilute the ownership of the promoters.

iv. User oriented variants: There are several variants of a lease transaction which are designed to meet the specific requirements of the lessee. For example, under the upgrade lease, it helps in hedging the risk of obsolescence. There are also lease which provides all services related to the usage and maintenance of the asset.

v. **Quick disbursement:** Compared to the term loan arrangement, a lease arrangement requires less paper work and involves a short lead time between the date of submitting the proposal and the date of disbursement of funds.

vi. **Obsolescence risk:** In a lease arrangement, the lessor being the owner bears the risk of obsolescence and the lessee is always free to replace the asset with latest technology.

vii. **Tax benefits:** A lessee can derive tax benefits by structuring the lease rentals properly. If the lessee is in a tax paying position, the rental may be increased to lower his taxable income.

To the Lessor: A lessor has the following advantages:

i. **Full security:** The lessor's interest is fully secured since he is always the owner of the leased asset and can take repossession of the asset if the asset defaults.

ii. **Tax Benefit:** The greatest advantage for the lessor is the tax relief by way of depreciation. If the lessor is in high tax bracket, he can lease out assets with high depreciation rates and, thus reduce his tax liability substantially.

iii. **High profitability:** The leasing business is highly profitable since the rate of return is more than what the lessor pays on his borrowings. Also the rate of return is more than in case of lending finance directly.

15.6 LEASE RENTAL CALCULATION

The lessor charges the lessee a lease rental that will provide the lessor with a certain required rate of return. In determining these lease rentals , the lessor takes into account its required return, the lease period, and the expected salvage value (if any) of the leased asset at the termination of the lease. Moreover the lease rentals are so tailor-made that the lessee is able to pay the rentals according to its requirement. The lease rentals may be paid in two modes (i) In arrear that is at the end of the year and (ii) In advance that is at the beginning of the year.

Exercise: 15.1



The following data relate to IBFS leasing company.

Cost of the equipment: Rs 100 lakh

Pre-tax required rate of return = 20 percent per annum.

Primary lease period = 5 years.

Salvage value = Nil

It seeks your help in determining the annual lease rentals to be charged under the following rental structures (a) Equated (b) Stepped (Assume an increase of 15 % per annum) assuming that the mode of payment is in (i) arrear and (ii) advance.

Solution: (i) Under the assumption that the mode of payment is in arrear.

(a) Equated Method: Let Y denote the annual rental to be paid at the end of each year. The value of Y can be obtained from the equation:

$$\mathbf{Y * PVIF_{(20,1)} + Y * PVIF_{(20,2)} + Y * PVIF_{(20,3)} + Y * PVIF_{(20,4)} + Y * PVIF_{(20,5)} = 100}$$

$$\mathbf{Or\ Y[PVIF_{(20,1)} + PVIF_{(20,2)} + PVIF_{(20,3)} + PVIF_{(20,4)} + PVIF_{(20,5)}] = 100}$$

[When same amount of rental is paid at the end of the year, the Present Value Interest Factor (PVIF) can be written in terms of Present Value Interest Factor Annuity (PVIFA)]

The equation thus changes to

$$\mathbf{Y * PVIFA_{(20,5)} = 100}$$

[The value of PVIFA (Present value interest factor annuity) can be obtained from the Table 2 for corresponding rate of return and year.]

From the table, $\mathbf{PVIFA_{(20,5)} = 2.991}$

Therefore $\mathbf{Y * 2.991 = 100}$

$\mathbf{= 100/2.991 = 33.43}$

Lease rental = Rs 33.43 lakh.

(b) Stepped (Assume an increase of 15 % per annum)

Let Y denote the annual lease rental to be charged at the end of year 1. The value of Y can be obtained from the equation:

$Y * PVIF_{(20,1)} + (1.15)Y * PVIF_{(20,2)} + (1.15)^2 Y * PVIF_{(20,3)} + (1.15)^3 Y * PVIF_{(20,4)} + (1.15)^4 Y * PVIF_{(20,5)} = 100$

[The value of PVIF (Present value interest factor) can be obtained from the Table1 for corresponding rate of return and year.]

$0.833Y + [(1.15) Y X 0.694] + [(1.15)^2 Y X 0.579] + [(1.15)^3 Y X 0.482] + [(1.15)^4 Y X 0.402] = 100$

or 3.833Y = 100

or Y = 100/3.833

or Y = Rs 26.09 lakhs

The lease rentals to be charged over the lease term will be:

Year	Lease Rental (Rs in lakh)
1	26.09
2	(1.15)X 26.09 =30.00
3	$(1.15)^2$ X 26.09 =34.50
4	$(1.15)^3$ X 26.09 = 39.67
5	$(1.15)^4$ X 26.09 = 45.63

(ii) Under the assumption that the mode of payment is in advance

(a) Equated Method: Let Y denote the annual rental to be paid at the beginning of each year. The value of Y can be obtained from the equation:

$Y * PVIF_{(20,0)} + Y * PVIF_{(20,1)} + Y * PVIF_{(20,2)} + Y * PVIF_{(20,3)} + Y * PVIF_{(20,4)} = 100$

Or $Y * 1 + Y* [PVIF_{(20, 1)} + PVIF_{(20,2)} + PVIF_{(20,3)} + PVIF_{(20,4)}] = 100$

Or $Y * 1 + Y* PVIFA_{(20, 4)} = 100$

Or $Y * [1 + PVIFA_{(20, 4)}] = 100$

[When same amount of rental is paid for the four years, the Present Value Interest Factor (PVIF) can be written in terms of Present Value Interest Factor Annuity (PVIFA) and from table examine that PVIF (20%,0) =1]

Obtaining the value of PVIFA (Present value interest factor annuity) from the Table 2 , the equation thus changes to

Y *(1 + 2.589) = 100

Or Y = 100/3.589

Y = Rs 27.86

(b) Stepped (Assume an increase of 15 % per annum)

Let Y denote the annual lease rental to be charged at the beginning of year 1. The value of Y can be obtained from the equation:

$Y * PVIF_{(20,0)} + (1.15)Y * PVIF_{(20,1)} + (1.15)^2 Y * PVIF_{(20,2)} + (1.15)^3 Y * PVIF_{(20,3)} + (1.15)^4 Y * PVIF_{(20,4)} = 100$

[The value of PVIF (Present value interest factor) can be obtained from the Table1 for corresponding rate of return and year.]

$1*Y + [(1.15) Y * 0.833] + [(1.15)^2 Y * 0.694] +[(1.15)^3 Y * 0.579]$

$+[(1.15)^4 Y * 0.482] = 100$

Or $Y [1 + (1.15)^{1} * 0.833 + (1.15)^2 * 0.694 + (1.15)^3 * 0.579 + (1.15)^4 * 0.482] = 100$

Or Y * 4.599 = 100

Therefore **Y = 100/4.599**

= Rs 21.74 lakh

The lease rentals to be charged over the lease term will be:

Year	Lease Rental (Rs in lakh)
1	21.74
2	(1.15)X 21.74 = 25.00
3	$(1.15)^2$ X 21.74 = 28.75
4	$(1.15)^3$ X 21.74 = 33.06
5	$(1.15)^4$ X 21.74 = 38.02

Note: The Present Value Interest Factor (PVIF) and Present Value Interest Factor Annuity (PVIFA) values for rates 18 to 20 percent for 10 years are given for ready reference.

Table 1: Present Value Interest Factor PVIF (rate, year)

Number of year		Rate	
	18%	19%	20%
0	1.00	1.00	1.00
1	0.847	0.840	0.833
2	0.718	0.706	0.694
3	0.609	0.593	0.579
4	0.516	0.499	0.482
5	0.437	0.419	0.402
6	0.370	0.352	0.335
7	0.314	0.296	0.279
8	0.266	0.249	0.233
9	0.226	0.209	0.194
10	0.191	0.176	0.162

Table 1: Present Value Interest Factor Annuity, PVIFA (rate, year)

Number of year		Rate	
	18%	19%	20%
0	1.00	1.00	1.00
1	0.847	0.840	0.833
2	1.566	1.547	1.528
3	2.174	2.140	2.106
4	2.690	2.639	2.589
5	3.127	3.058	2.991
6	3.498	3.410	3.326
7	3.812	3.706	3.605
8	4.078	3.954	3.837
9	4.303	4.163	4.031
10	4.494	4.339	4.193

15.7 MEANING OF HIRE PURCHASE

Hire – purchase is a type of installment credit under which the hire-purchaser, called the hirer, agrees to take goods on hire at a stated rental, which is inclusive of the repayment of principal as well as interest, with an option to purchase. The Hire-purchase Act 1972, defines a hire-purchase agreement as "an agreement under which goods are let on hire and under which the hirer has an option to purchase them in accordance with the terms of the agreement and includes an agreement under which-

(i) possession of goods is delivered by the owner thereof to a person on condition that such person pays the agreed amount in periodical installments, and

(ii) the property in the goods is to pass to such person on the payment of the last of such installments, and

(iii) such person has a right to terminate the agreement at any time before the property so passes."

FEATURES OF HIRE PURCHASE AGREEMENT:

The salient features of a typical hire purchase agreement are as follows:

(i) The hiree (the counter-part of the lessor) purchases the asset and gives it on hire to the hirer(the counter-part of the lessee).

(ii) The hire is required to pay-hire purchase installments over a specified period of time. The typical repayment period is 3 years and the hire purchase installments are payable monthly in advance.

(iii) The ownership of the asset is transferred after the hirer has paid the last installment and also fulfilled the other terms and conditions. The hirer exercises his right to purchase the asset by paying a nominal purchase consideration.

(iv) In the event of default by the hirer, the hiree has the right to repossess the asset. Likewise the hirer enjoys the right to terminate the agreement and return the asset.

(v) The hiree charges interest on a flat basis .

(vi) The terms and conditions relating to the usage of the asset, its maintenance, insurance etc, and the rights and obligations of the parties to the agreement are described in the hire purchase agreement.

Hire purchase should be distinguished from installment sale wherein property passes to the purchaser with the payment of the first installment. But in case of HP (ownership remains with the seller until the last installment is paid) buyer gets ownership after paying the last installment.



CHECK YOUR PROGRESS

Q1. Fill in blanks with appropriate word(s):

(i) First Leasing Company of India Ltd was set up by _____.

(ii) Primarily there are _____ kinds of lease agreements.

(iii) _____ shall be eligible for claiming depreciation on the asset.

(iv) Operating lease is _____.

(v) Under _____ arrangement, the owner of equipment sells it to a leasing company which in turn leases it back to the owner (the lessee).

- **MATHEMATICS OF HIRE PURCHASE**

Calculation of hire-purchase monthly installment:

The interest included in the hire purchase installments has to be calculated with reference to a 'flat rate' of interest. It means that the rate of interest is charged on the initial investment and not on the diminishing balance.

For example; SMM Finance Company offers hire-purchase facility on the following terms (a) interest at the rate of 14 percent flat, and (b) a hire-purchase period of 36 months. Compute the hire-purchase installments on an initial investment of Rs 10,000.

The total interest burden at a flat rate of 14 percent per annum = Rs10,000 X 0.14X 3 = Rs 14200

Monthly hire purchase installment = Rs 14200/ 36 (12months X 3 years = 36 months) = Rs 390.44

Calculation of Effective rate:

The effective rate of interest is applied to the declining balances of the original loan amount for determining the interest component of each installment. It, therefore, follows that for a given flat rate of interest, the equivalent effective rate of interest has to be higher.

The most commonly used method is the Approximation Approach Formula (APR), which is given below.

$$I = \frac{N}{N+1} \text{ X } 2 \text{ F} \quad \text{(payment at the end of the year or in arrear)}$$

$$I = \frac{N}{N-1} \text{ X } 2 \text{ F} \quad \text{(payment at the beginning of the year or in advance)}$$

Where N = Number of repayments

F = Flat rate of interest per unit time.

Illustration 1:

Under a hire-purchase deal structured by IBFS Ltd. for Sunshine Powers, the flat rate of interest is 16 percent. The repayment of the loan is to be made in 36 equated monthly installments. Compute the effective rate of interest on the assumption that the payment of installments is in (a) advance and (b) arrear.

Solution: (a) Payment in advance

$$I = \frac{N}{N-1} \text{ X } 2 \text{ F}$$

$$= \frac{36}{35} \text{ X } 2 \text{ X } 0.16 = 0.329 \text{ or } 32.9 \text{ percent}$$

(b) Payment in arrear

$$I = \frac{N}{N+1} \times 2 \times F$$

$$= \frac{36}{37} \times 2 \times 0.16 = 0.311 \text{ or } 31.10 \text{ percent}$$

Interpretation: Thus it can be seen that the effective rate of interest is 32.9 percent and 31.10 percent which are very high than the 16 percent rate of interest. This is due to paying the interest on a flat rate basis.

15.8 DIFFERENCE BETWEEN LEASE FINANCING AND HIRE PURCHASE

Point of Difference	Lease	Hire Purchase
Ownership transfer	Never transferred	Transferred after the payment of lase Installment.
Depreciation claim for tax purpose	Lessee cannot claim depreciation for tax purpose.	Hirer entitled to claim depreciation for tax purpose.
Benefit of scrap value	Lessee cannot enjoy the benefit of scrap value, because he is not owner of the asset.	Hirer can enjoy the benefit of scrap value.
Amount of Finance	Huge amount is involved.	Relatively low when compared to leasing.
Maintenance of asset	If the lease is finance lease, lessee pays maintenance cost, otherwise lesser pays maintenance cost.	Hirer has to spent money on maintenance.



CHECK YOUR PROGRESS

Q2. Define lease.

.....

.....

Q3. The following data relate to MFS leasing company.

Cost of the equipment: Rs 600 lakh

Pre-tax required rate of return = 12 percent per annum.

Primary lease period = 5 years.

Salvage value = Nil

It seeks your help in determining the annual lease rentals to be charged under the following rental structures (a) Equated rental in arrear and advance.



15.9 LET US SUM UP

- In India, leasing was started in 1973 when the First Leasing Company was set up by Farouk Irani and A.C. Muthia in Chennai.
- Leasing as financial service is a contractual arrangement where the owner (lessor) of equipment transfers the right to use the equipment to the user (lessee) for an agreed period of time in return for a rental.
- There are two main types of leases- financial and operating.
- Financial lease is non-cancelable and long-term whereas operating lease is cancelable and short- term.
- The lessor charges the lessee a lease rental that will provide the lessor with a certain required rate of return.
- In determining these lease rentals , the lessor takes into account its required return, the lease period, and the expected salvage value (if any) of the leased asset at the termination of the lease.
- Hire – purchase is a type of installment credit under which the hire-purchaser, called the hirer, agrees to take goods on hire at a

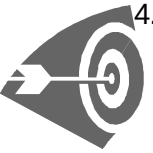
stated rental, which is inclusive of the repayment of principal as well as interest, with an option to purchase.

- The interest included in the hire purchase installments has to be calculated with reference to a 'flat rate' of interest. It means that the rate of interest is charged on the initial investment and not on the diminishing balance.



15.10 FURTHER READING

1. M.Y Khan & P.K Jain(2017); *Financial Management*; McGraw Hill Education; Seventh edition
2. Prasanna Chandra (2017); *Financial Management Theory and Practice* ; McGraw Hill Education; Ninth Edition.
3. I.M Pandey (2016); *Financial Management*; Vikas Publishing House; Eleventh edition.
4. Prasanna Chandra (2016); *Fundamentals of Financial Management*; McGraw Hill Education; 6 edition



15.11 ANSWERS TO CHECK YOUR PROGRESS

Ans to Q.1: (i) Farouk Irani , (ii) two , (iii) Lessor, (iv) Cancelable, (v) Sale and lease back

Ans to Q.2: Leasing as financial service is a contractual arrangement where the owner (lessor) of equipment transfers the right to use the equipment to the user (lessee) for an agreed period of time in return for a rental.

Ans to Q.3: (i) In arrear Rs 166 lakhs, (ii) In advance Rs 148 lakhs]



15.12 MODEL QUESTIONS

Q1: Explain the term Leasing. State the various types of lease agreements.

Q2: What are the advantages of Leasing?

Q3: What is the hire purchase financing? How does it differ from the lease financing?

Q4: Distinguish between sale and lease back lease and leveraged lease. As a lessee, which one will you prefer and why?

Q5: Briefly explain the mechanics of leasing.

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REFERENCES (FOR ALL UNITS)

1. M.Y Khan & P.K Jain (2017); *Financial Management*; McGraw Hill Education; Seventh edition
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6. Bhabatosh Banerjee(2015); *Fundamentals of Financial Management*; PHI Learning; 2nd Revised edition edition
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8. M.Y. Khan (Author), P K Jain (2011); *Financial Management: Text, Problems and Cases* ; McGraw Hill Education; 6 Edition.
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10. Sharan (2011); *Fundamentals of Financial Management*, Pearson Education India; 3 edition.