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CORPORATE FINANCE

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INTRODUCTION Finance has rightly been termed as the "Master Key" providing access to all resources required for running business activities. Hence, the efficient management of business enterprises is closely linked with the efficient management of their finances. In view of the growing importance of the finance function, the subject 'Corporate Finance' has therefore gained considerable importance for all corporate managers. Keeping the above objective in mind, many universities all over the country have included a paper on Corporate Finance in the curriculum of their Management Programmes. This book
has been primarily written keeping in view the requirements of the students preparing for these programmes. The book has several distinctive features.
These include the following: •
It comprehensively meets the course requirements of the students appearing for the 'Corporate Finance' paper for different Universities. • The subject matter has been divided into convenient units, as
required by the course curriculum. • It is written in a simple and straight style. • The book gives lucid explanations of the basic concepts of accounting and finance, with plenty of illustrative material. • It does not presuppose a basic knowledge of accountancy and finance and hence makes learning of both accounting and finance for managers a painless exercise. • Each unit begins with 'Unit Objectives' to help students get an idea of what they will learn after studying the unit. • At the end of each unit are provided: ƒ Essay-type questions for review, discussion and practice ƒ Practical problems with short answers for practice to develop a sense of confidence amongst the readers • The list of key terms and a summary at the end of each unit helps recapitulation and better understanding of the subject. • This book will also be a refreshing guide for business executives. We are confident that with all these features, the readers will find the book extremely useful and rewarding. Their constructive and helpful suggestions for improvement of the book will be gratefully acknowledged. Self-Instructional Material 1 Introduction NOTES
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INTRODUCTION Finance has widely been termed as
the master key providing access to all resources required for running business activities. Hence, efficient management of business enterprises is closely linked with efficient management of their finances.

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A finance manager has, therefore, an important role to perform in a business firm. He has not only to raise the resources at the lowest cost but also to channelize them properly for their optimum utilization and maximization of shareholders' wealth. This unit focuses on these various aspects of financial management. 1.1 UNIT OBJECTIVES z Meaning and importance of business finance z Meaning and objectives of financial management z Scope of financial management z Dilemma of the finance manager to maintain a balance between liquidity and profitability z Different methods of financial management z Organization of finance function z Importance of financial management z Meaning of certain key terms Financial Management: Basics NOTES Self-Instructional 6 Material 1.2 IMPORTANCE OF FINANCE Finance is regarded as the lifeblood of a business enterprise.

This is because in the modern money-oriented economy finance is one of the basic foundations of all kinds of economic activities. It is the master key which provides access to all the sources for being employed in manufacturing and merchandising activities.

It has rightly been said that business needs money to make more money. However, it is also true that money begets more money only when it is properly managed.

Hence, efficient management of every business enterprise is closely linked with efficient management of its finances. 1.3 MEANING OF

BUSINESS FINANCE In general, finance may be defined as the provision of money at the time

of its requirement.

However, as a management function it has a special meaning. Finance function may be defined as the

efficient

procurement of funds and their effective utilization. Some of the authoritative definitions are as

follows: 'Business

finance

is that business activity which is concerned

with the acquisition and conservation of capital funds in meeting financial needs and overall objectives of

a business enterprise.' 1 '

Business finance can

broadly be

defined as

the activity concerned with planning, raising, controlling

and administering

of

the funds used in the business.' 2 1.4

MEANING OF FINANCIAL MANAGEMENT From the various definitions of the term of business finance given above, it can be concluded that the term business finance mainly involves raising of funds and their effective utilization keeping in view the overall objectives of the firm. This requires great caution and wisdom on the part of management. The management makes use of various financial techniques, devices, etc., for administering the financial affairs of the firm in the most effective and efficient way. Financial management, therefore, means the entire gamut of managerial efforts devoted to the management of finance— both its sources and uses—of the enterprise.

According to Soloman, '

Financial management

is concerned with the efficient use of an important economic resource, namely, Capital

Funds.'

Phillippatus has given a more elaborate definition of the term financial management. According to him 'Financial management is concerned with the

management

decisions that result in the acquisition and financing of long-term and

short-term credits for the firm. As such it deals with the situations that require selection of specific assets (or combination of liabilities) as well as the problem of size and growth of an enterprise. The analysis of these decisions is based on the expected inflows and outflows of funds and their effects upon managerial objectives.'

Thus, financial management

is

mainly concerned with the proper management of funds. The finance manager must see that the funds are procured in a manner that the risk, cost and control considerations are properly balanced in a given situation and there is optimum utilization of funds. 1. Wheeler, Business—An Introductory Analysis, p. 368. 2. Guthman & Sougall, Corporate Financial Policy, p. 1.

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OBJECTIVES OF FINANCIAL MANAGEMENT The objectives of Financial Management can be put into two categories: 1. Basic Objectives 2. Other Objectives Basic Objectives Traditionally the basic objectives of Financial Management have been (i) maintenance of liquid assets and (ii) maximization of profitability of the firm. However, these days there is a greater emphasis on (iii) shareholders' wealth maximization rather than on profit maximization. All these aspects are being discussed below: (i) Maintenance of Liquid Assets Financial management aims at maintenance of adequate liquid assets with the firm to meet its obligations at all times. It may be noted that investment in liquid assets has to be adequate—neither too low nor too excessive. The finance manager, as discussed later, has to maintain a balance between liquidity and profitability. There is an inverse relationship between the two. The more liquid the assets, the less profitable they are and vice versa. (ii) Profit Maximization A business firm is a profit-seeking organization. Hence, profit maximization is an important objective of financial management. However, the concept of profit maximization has come under severe criticism in recent times on account of the following reasons: It Is Vague: It does not clarify which profits does it mean, whether short-term or long-term. Profits in the short-term may be quite different from those in the long run. For example, if a firm continues to run its business without having adequate maintenance of its machinery, the firm's profits in the short run may increase because of savings in expenditure. However, in the long run the firm may suffer since the machine may have to be replaced or machine may require a heavy expenditure on its repairs because of its improper upkeep from year to year. Moreover, it is also not clear whether profit maximization means maximizing absolute profits or simply the rate of return. It Ignores Timing: The concept of profit maximization does not help in making a choice between projects giving different benefits spread over a period of time. The concept ignores the fact
that a rupee recovered today is much more valuable than a rupee received tomorrow.
For example, if there are two projects A and B each requiring equal investment, project A gives a 20 per cent return for three years, while project B gives a return of 17 per cent for five years. In order to decide which project should be preferred, it is not only enough to see the rate of return, but also the present value of the cash flows available from both the projects. In case of project A, the rate of return is higher as compared to project B. However, it will stop giving returns after three years and hence it will be more profitable than project B, only when the firm has adequate investment opportunities. In case the firm does not have such opportunities, project B may be more beneficial. It Overlooks Quality Aspect of Future Activities: Business is not run solely with the objective of earning higher possible profits. Some firms place a high value on the growth of sales. They are willing to accept lower profits to gain stability provided by a large volume of sales. Other firms use a part of their profits to make
Financial Management: Basics NOTES Self-Instructional 8 Material contribution for socially productive purposes. Moreover,
profit maximization at the cost of social or moral obligations is a short-sighted policy
even as a pragmatic approach. (iii) Maximization of Wealth Profit maximization, on account of the reasons given above, is not considered to be an ideal criterion for making investment and financial decisions. Professor Ezra Soloman has suggested the adoption of wealth maximization as the best criterion for financial decision-making. He has described the concept of wealth maximization as follows: '
The gross present worth of a course of action is equal to the capitalized value of the flow of future expected benefits, discounted (or capitalized) at
the
rate which reflects their certainty or uncertainty. Wealth or net present worth is the difference between gross present worth and the amount of capital investment required to achieve the benefits. Any financial action which creates wealth or which has a net present worth above zero is a desirable one and should be undertaken. Any financial action which does not meet this test should be rejected. If two or more desirable courses of action are mutually exclusive (i.e., if only one can be undertaken), then the decision should be to do that which creates most wealth or shows the greatest amount of net present worth.
In short,
the operating objective for financial management is to maximize wealth or net present worth.'
Wealth maximization is, therefore, considered to be the main objective of financial management. This objective is also consistent with the objective of maximizing the economic welfare of the shareholders of a company. The value of a company's shares depends largely on its net worth, which itself depends on the earning per share (E.P.S.). The finance manager should, therefore, follow a policy which increases the earning per share in the long run. Other
Objectives The following are the other objectives of financial management: (i) Ensuring a fair return to shareholders. (ii) Building up reserves for growth and expansion. (iii) Ensuring maximum operational efficiency by efficient and effective utilization of finances. (iv) Ensuring financial discipline in the organization. 1.6
SCOPE OF FINANCIAL MANAGEMENT Financial management is concerned with both acquisition of funds as well as their allocation. The central issue of

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financial policy is the wise use of funds and the central process involved is a rational matching of advantages of potential uses against the cost of alternative potential uses so as to achieve the broad financial goals which an enterprise sets for itself. 3
Financial Management
is an analytical way of looking at the financial problems of a
firm.
The main
contents of
the problem are as follows: 4 (i)
What is the total volume of funds an enterprise should commit ? (ii) What specific assets should an enterprise acquire ? 3. Soloman, op. cit., p. 5. 4. Ibid, p. 8. Check Your Progress 1.
State whether each of the following statements is True or False: (i) The
role of the finance manager involves both acquisition and efficient allocation of funds. (ii)
Efficient management of every business is closely linked with efficient management of its finances. (
iii) The most important objective of financial management is maximization of profits. (iv) A finance manager's concern must be to maintain liquidity rather than profitability. (v) Profit maximization is not considered to be an ideal criterion for making investment and financial decisions.
Financial Management: Basics NOTES Self-Instructional Material 9 (iii)
How should the funds required be financed ? The above questions relate to four broad decision areas
of financial management, viz., funds requirement decision, financing decision, investment decision and dividend decision. These decisions, which can also be termed as functions outlining the scope of financial management, are being discussed below: Funds Requirement Decision This is the most important function performed or decision taken by the finance manager. A careful estimate has to be made about the total funds required by the enterprise taking into account both the fixed and working capital requirements. This is done by forecasting the physical activities of the enterprise. This aspect has been discussed in detail later in the book while explaining the concept of 'Capitalization'.
Financing Decision Provision of funds required at the proper time is one of the primary tasks of the finance manager. Every business activity requires funds and hence every financial manager is confronted with this problem. He has to identify the sources from which the
funds can be raised, the amount that can be raised from each source
and the cost and other consequences involved. A proper balance has to be kept between the fixed and non-fixed cost-bearing securities. This aspect has been discussed in detail while explaining the concept of 'Capital Structure' later in this book. Investment Decision This comprises
decisions relating to investment in both capital and current assets. The finance manager has to evaluate different capital investment proposals and select the best keeping in view the overall objective of the enterprise.
This would involve fixing the criteria for evaluating different investment proposals, fixing priorities, committing funds for them, etc. This aspect is being explained in detail in the unit on 'Capital Budgeting' later in this book. The investment in current assets will depend on the credit and inventory policies pursued by the enterprise. The credit policy is determined keeping in view the need of growth in sales and the availability of finance. Similarly, the inventory policy will be set up taking into account the requirements of production, the market trend of the price of raw materials and the availability of funds. This aspect has been explained in detail later in the unit on 'Working Capital Management'. Dividend Decision The establishment of dividend policy is another important function of the finance manager. The dividend decision involves the determination of the percentage of profits earned by the enterprise which is to be paid to its shareholders.
Theoretically, this decision should depend on whether the company of the shareholders can make a more profitable use of the funds. However, in practice a number of other factors like the market price of shares, the trend of earnings, the tax position of the shareholders, etc., play an important role in the determination of dividend policy of a business enterprise. This aspect also has been discussed in detail later in
the unit on 'Dividend Policy.' Apart from the above main functions, following subsidiary functions are also performed by the finance manager: To Ensure Supply of Funds to All Parts of the Organization: It is also the finance manager's function to ensure that funds are available to every part of the organization as and when it needs them so as to help in smooth operations of the activities of the organization.
Financial Management: Basics NOTES Self-Instructional 10 Material Evaluation of the Financial Performance: The financial performance of the various units of the organization is to be evaluated from time to time to detect any fault in the financial policy and take the remedial action at appropriate time, if necessary. To Negotiate with Bankers, Financial Institutions and other Suppliers of Credit: Bankers, financial institutions and other suppliers of credit are the different sources of funds. It is necessary for the company to

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negotiate with them so as to obtain the funds at the most favourable terms. To Keep Track of Stock Exchange Quotations and Behaviour of Stock Market Prices: Stock exchange quotations are the barometers of the economy as a whole. By keeping an eye on the stock market, the finance manager is in a position to plan the policy of the business enterprise with regard to finance more effectively. Thus, we see that Financial Management has emerged as an area of study that encompasses a variety of analytical tools and vigorous analysis. It has changed from an area which was primarily concerned with procurement of funds to one that includes the management of assets, the allocation of capital and the valuation of firm. With the changing environment the scope of financial management will also change, to accept the challenge of a new environment. 1.7 LIQUIDITY VS. PROFITABILITY The finance manager is always faced with the dilemma of liquidity vs. profitability. He has to strike a balance between the two. Liquidity means that : (a) the firm has adequate cash to pay for its bills, (b) the firm has sufficient cash to make unexpected large purchases and, above all, (c) the firm has cash reserve to meet emergencies, at all times. The profitability goal, on the other hand, requires that the funds of the firm are so used as to yield the highest return. Liquidity and profitability are very closely related. When one increases, the other decreases. Apparently, liquidity and profitability goals conflict in most of the decisions which the finance manager takes. For example, if higher inventories are kept in anticipation of increase in prices of raw materials, the profitability goal is approached but the liquidity of the firm is endangered. Similarly, the firm by following a liberal credit policy may be in a position to push up its sales but its liquidity will decrease. There is also a direct relationship between higher risk and higher return. Higher risk, on the one hand, endangers the liquidity of the firm; higher return, on the other hand, increases its profitability. A company may increase its profitability by having a very high debt-equity ratio. However, when the company raises funds from outside sources, it is committed to make the payment of interest, etc., at a fixed time and in fixed amounts and hence to that extent its liquidity is reduced. Thus, in every area of financial management, the finance manager is to choose between risk and return and generally he chooses in-between the two. He should forecast cash flows and analyse the various sources of funds. Forecasting of cash flows and managing the flow of internal funds are the functions which lead to liquidity. Cost control and forecasting future profits are the functions of the finance manager which lead to profitability. An efficient finance manager fixes that level of operation Financial Management: Basics NOTES Self-Instructional Material 11 where both return and risk are optimized. Such a level is termed as
risk-return trade- off and every financial decision involves this trade-off.
At this level the market value
of the company's shares would be the maximum.
The interrelationship between market value, financial decisions and risk-return trade-off
is depicted in
the following chart. Figure 1.1. Relationship
between Market Value, Financial Decisions and Risk-Return Trade-off 1.7.1
Time Value of
Money Money has a time value because of the following reasons: (
i) Individuals generally prefer current consumption ...
more information regarding this topic has been given in Unit-2. 1.8
IMPORTANCE OF FINANCIAL MANAGEMENT The importance of financial management cannot be overemphasized. In every organization, where
funds are involved, sound financial management is necessary.
As Collins Brooks has remarked, 'Bad production management and bad sales
management
have slain in hundreds, but faulty financial management has slain in thousands.'
The
finance manager must realize that when a firm makes a major decision, the effect of
the action will be felt throughout the enterprise. For example, an increase in plant and equipment expenditure will affect the firm's cash position, its borrowing capability and its dividend distribution. Sound financial management is essential in both profit and non-profit organizations.
Financial management
helps in monitoring the effective deployment of funds in fixed assets and
in working capital.
The finance manager estimates the total requirement of funds, both in the short period and the long period. The finance manager assesses the financial position of the company through working out of the return of capital, debt-equity ratio, cost of the capital from each source, etc., and comparison of the capital structure with that of similar companies.

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Financial Management: Basics NOTES Self-Instructional 12 Material Financial management also helps in ascertaining how the company would perform in the future. It helps in indicating whether the firm will generate enough funds to meet its various obligations like repayment of the various instalments due on loans and redemption of other liabilities. Sound financial management is indispensable for any organization. It helps in profit planning, capital spending, measuring costs, controlling inventories, accounts receivable, etc. Financial management essentially helps in optimizing the output from a given input of funds. 1.9 SUMMARY • The finance function is basically concerned with efficient procurement of funds and their effective utilization. • Maximization of wealth of the shareholders is the basic goal of a finance manager. • The finance manager has to manage a firm's resources in such a manner so that he is in a position to strike a balance between the risk and the return. 1.10 KEY TERMS • Business
Finance:
The activity concerned with planning, raising, controlling and administering the funds used in the business. •
Risk-return trade-off: It refers to that level of operation where both return and risk are optimized. 1.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. (i) True (ii) True (iii) False (iv) False (v) True 1.12 QUESTIONS AND EXERCISES Short-Answer Questions 1. Give the meaning of Business Finance. 2. Enumerate the financial tools used by the finance manager to perform his job. 3. Explain the relationship between 'Risk' and 'Return'. 4. State the importance of financial management. Long-Answer Questions 1. 'Profit maximization is the basic goal of a finance manager.' Do you agree ? Discuss. 2. In what way do you think the role of the finance manager has undergone a change in the recent past ?
Financial Management: Basics NOTES Self-Instructional Material 13 3. How are the concepts of liquidity and profitability different? Which of these two should the finance manager strive for? 1.13 FURTHER READING Maheshwari, S.N. Elements of Financial Management. New Delhi: Sultan Chand & Sons, 2008. Maheshwari, S.N. Financial Management—Principles and Practice. New Delhi: Sultan Chand & Sons, 2007.
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Key Terms 2.9 Answers to 'Check Your Progress' 2.10 Questions and Exercises 2.11 Further Reading 2.0 INTRODUCTION
It has been explained in the preceding unit that
maximization of shareholders' wealth is the basic objective of the finance manager of a firm. This requires him to take appropriate decisions on financing, investment and dividends. These decisions to a great extent shape the organization's risk-return character and finally the value of the firm in the eyes of the public.
In other words, the investors form their opinion about the firm on the basis of information about these three decisions. While taking these decisions, the finance manager must keep the 'time factor' in mind: (
i) What rate of
interest on funds raised will have to be paid. (ii) When
the
interest on funds raised will have to be paid. (iii) What return on investment will be received. (iv) Whether it will be received on a consistent basis or otherwise, etc.
The value of a firm or securities depends on all these factors. This unit explains the reasons for money having a time value and the various valuation concepts/ techniques used for valuation of an asset including a share or debenture. 2.1 UNIT OBJECTIVES z Time value of money z Value of an asset z Different valuation models concerned with different securities z Computation of values of different securities based on different valuation models z Meaning of certain key terms
Valuation Concepts and Securities Valuation NOTES Self-Instructional 16 Material 2.2
TIME VALUE OF
MONEY Money has a time value because of the following reasons: (
i)
Individuals generally prefer current consumption
to future
consumption. (ii)
An investor can profitably employ a rupee received today to give him a higher value to be received tomorrow or after a certain period. (
iii)
In an inflationary economy the money received today has more purchasing power than
the money to be received in
the
future.
Thus, the fundamental principle behind the concept

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of
time value of money is
that a sum of money received today is worth more than
if the same
is received after
some
time. A corollary
to
this concept is also the concept that money received in future is less valuable than what it is today.
For example, if an individual is given an alternative either to receive Rs 10,000 now or after six months he will prefer Rs 10,000 now. This
may be because
he
may invest this money and earn some interest on it or because he may need
money for current consumption or
because he
may be
in
a position to purchase more goods with this money than what he is going to get for the same amount after six months.
Time value of money
or time preference for money is one of the central ideas in finance. Individuals as well as business organizations frequently encounter situations involving cash receipts or disbursements over several periods of time. When this happens time value of money becomes
important and sometimes a
vital consideration in decision- making. This will be clear from following examples. Example 1. A gives a loan of Rs 10,000 to B for a period of one year. The market rate of interest is 10 per cent per annum. Thus, at the end of a year A will get Rs 11,000 for the initial loan of Rs 10,000 given by him to B. In other words, the amount of Rs 10,000
of today at 10 per cent interest is equivalent to Rs 11,000 to be received after a year.
Example 2. A
project needs an initial investment of Rs 10,000. It is expected to give a return of Rs 2,000 per annum
for six years
at the
end of each year. The project thus involves a cash outflow of Rs 10,000 in the 'zero year' (
i.e., initially)
and cash inflows of Rs 2,000
per year for six years. In order to decide whether to accept or reject the project, it is necessary that the present value of cash inflows received annually for six years is ascertained and compared with the initial investment of Rs 10,000. The firm will accept the project only when the present value of
the cash inflows at the desired rate of interest
is at least equal to
the initial investment of Rs 10,000.
Example 3. A firm has to choose between two projects. One involves an outlay of Rs 10 crores with a return of 12 per cent from the year one for
ten years. The other requires an investment of Rs 10 crore with a return of 14 per
cent
per annum for 15 years commencing with the beginning of the sixth year of the project. In order to make a choice between these two projects, it is necessary to compare the cash outflows and the cash inflows resulting from the project. In order to make a meaningful comparison, it is necessary that the two variables are strictly comparable. This is possible only when the time element is incorporated in the relevant calculations.
In other words, the cash flows that accrue from different projects over different time periods should be converted to sums of money at a common point of time. The above examples reflect
the need of comparing the cash flows arising at different points of time in decision-making.
Needless to say this comparison must be
Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 17 based on some sound logic through which cash flows at different points of time can be equated. In the following pages the various techniques which are used for ascertaining the time value of money are explained. 2.3 VALUATION OF ASSET An asset may be defined as 'a tangible object or an intangible right owned by an enterprise and carrying probable future benefits.' 1 Hence, in general

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it can be said that
the value of an asset is equivalent to the present value of
the benefits associated with it. In case the annual cash inflows from an asset are uniform, the 'present value annuity technique,' can be used for ascertaining the value of the asset. Symbolically, V 0 = A × ADF where, V 0 = Current value of an asset A = Annual cash inflow ADF = Annuity discount factor at an appropriate interest rate For example, if an investor expects an annual return of Rs 1,000 for the next ten years from an asset, current value of the asset taking interest or discount rate at 15 per cent can be ascertained as follows : V 0 = A × ADF = 1,000 × 5.019 = Rs. 5,019 2.4 VALUATION OF DEBENTURES A debenture may be defined as 'a formal document constituting acknowledgement of a debt by an enterprise usually given under its common seal.' The document representing debenture also contains details regarding security, payment of interest and repayment of principal. In order to understand the valuation of debentures or bonds, it will be useful to study the meaning of the following terms:
Par Value: This value is stated on the face of the bond. It is the amount which the firm borrows and promises to pay at the time of maturity.
It is also termed as the face value. Usually a debenture/bond has a face value of Rs 100. In exceptional cases it may be Rs 1,000. Interest Rate: The debentures or bonds carry a fixed interest rate. It is also known as the 'coupon rate'. Interest is payable at this rate on the face value of the debenture/bond. However, if the debentureholder has not paid the full face value of the debenture, he will be paid interest only on the paid-up value. 1. Guidance Note on Terms used in Financial Statements, Institute of Chartered Accountants of India, New Delhi. Check Your Progress 1. State one reason because of which money has a time value. 2. What kind of situations do individuals and business organizations encounter? 3. What is the equivalent of the value of an asset?
Valuation Concepts and Securities Valuation NOTES Self-Instructional 18 Material Maturity Period: This refers to the period after which the money raised on account of debentures or bonds will be repaid to the debentureholders. Sometimes besides the par value of the debenture/bond, some premium is also payable. Debenture Valuation Model As stated above, a debentureholder is entitled to receive the following amounts: (i) Interest at a fixed rate till maturity, (ii) The principal amount of the debenture on its maturity
The value of a debenture is, therefore, equivalent to the present value of the annual interest payments plus the present value of principal repayable at
the time of maturity. This can be put in the form of the following
equation:
Vd = I (ADFI) + F (DFF) where, Vd = Current value of the bond/debenture I = Interest payable on the bond DFI = Annuity discount factor applicable to interest (at the required rate of interest) DFF = Appropriate discount factor applicable to face value (at the required rate of interest) F = Face value Illustration 2.1. A debenture of Rs 100 carrying interest at 15 per cent will become due for repayment after five years. The required rate of return of this debenture is 10 per cent. Calculate the current value of the debenture. Solution: In order to calculate the current value of the debenture it will be necessary to find out the following two discount factors: (i) Appropriate discount factor for annual interest (ADFI) payment (i.e., at 10 per cent for five years). The annuity table gives this factor as 3.791. (ii) Appropriate discount factor for face value (DFF) to be received after five years at the required rate of return, i.e., 10 per cent. The present value table gives this factor as 0.621. The value of the debenture can now be ascertained as follows: = I(ADFI) + F (DFF) = 15 (3.791) + 100 (0.621) = 56.865 + 62.10 = 118.965 or say Rs 119 Relationship between the required Rate of Return and Coupon or Interest Rate The value of a debenture is affected by the actual interest payable on the bond and the desired return expected by the debentureholder, as given below: 1. In case the interest or the coupon rate and the required rate of return are the same, the value of the debenture will be equal to its face or paid-up value, as the case may be.
Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 19 2. In case the interest rate payable on the debenture is higher than the required rate of return, the value of the debenture will be higher than its face or paid- up value, as the case may be. 3. In case the interest rate on the debenture is lower than the required rate of return, the value of the debenture will be lower than its face or paid-up value, as the case may be. This can be understood with the help of the following examples. Example 1. Face Value of Debenture Rs 1,000 Annual Interest Rate 15 per cent Expected Interest Rate 15 per cent Maturity Period 5 years The value of the debenture can be ascertained as follows: Vd = I (ADFI) + F (DFF) = 150 (3.352) + 1,000 (0.497) = 502.80 + 497 = Rs 999.80 or say Rs 1,000 Example 2. Face Value of Debenture Rs 1,000 Annual Interest Rate 15 per cent Expected Interest Rate 12 per cent Maturity Period 5 years The value of the debenture can be computed as follows: Vd = 1 (ADFI) + F (DFF) = 150 (3.605) + 1,000 (.567) = 540.75 + 567 = Rs 1,107.75 or say Rs 1,108 Example 3. Face Value of Debenture Rs 1,000 Annual Interest Rate 12 per cent Expected Interest Rate 15 per cent Maturity Period 5 years The value of the debenture can be computed as follows: Vd = I (ADFI) + F (DFF) = 120 (3.352) + 1,000 (0.497) = 402.24 + 497 = Rs 899.24 or say Rs 900

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Valuation Concepts and Securities Valuation NOTES Self-Instructional 20 Material Semi-Annual Interest Rate and Valuation of Debentures In the preceding pages the valuation of debentures is based on the presumption that the interest is payable annually. However, in most cases interest is payable half-yearly or on a semi-annual basis. In order to calculate the value of debentures or bonds in such a case the following steps may be taken: 1. The amount of annual interest on debentures should be divided by two to obtain the amount of half-yearly interest. 2. The maturity period should be multiplied by two to get the number of half- yearly periods. 3. The discount rate should be divided by two to get an appropriate discount rate applicable to the half-yearly period. Valuation of debentures can now be made with the above modification as per the equation given in the preceding pages. Illustration 2.2. Mr A holds a debenture of Rs 1,000 carrying interest rate of 12 per cent per annum. The interest is payable half-yearly on 30 June and 31 December. The debenture is payable at a premium of 10 per cent after eight years.
The required rate of return is 16 per cent per annum. Calculate the value of the
debenture. Solution: Vd = I (ADFI) + F (DFF) = 60 (8.851) + 1,100 (0.292) = 531.06 + 321.20 = Rs 852.26 or say Rs 852 Valuation of Perpetual Debentures Debentures which will never mature are known as perpetual debentures. Such types of bonds /debentures are rarely found in practice. The value of such a debenture (or bond) can simply be found out by dividing the amount of interest with the expected rate of return on the investment. Illustration 2.3. A debentureholder is to receive an annual interest of Rs 100 for perpetuity on his debenture of Rs 1,000. Calculate
the value of the debenture if the required rate of return is (i) 15 per cent (ii) 8 per cent (iii) 10 per cent
Solution: The value of the debenture can be ascertained on the basis of the following equation: = A Vd i where, Vd = Value of a Debenture A = Annual Interest i = Expected Rate of Interest Putting the values in the above equation, we get the value of the debenture as follows:
Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 21 (i) When required rate of return is 15 per cent: Vd = 100/0.15 = Rs 667 (ii) When
the required rate of return is 8 per cent: Vd = 100/0.08 = Rs 1,250 (iii) When the required rate of return is 10 per cent: Vd = 100/0.10 = Rs 1,000 Yield on Debentures In the preceding pages we have assumed the expected return or discount rate on debentures. This discount or capitalization rate is generally the present market yield on debentures with similar risk. This current market yield can be ascertained as follows: Perpetual or Irredeemable Debentures In case of such debentures the yield can be calculated on the basis of the following equation: = Ai Yd MPd where, Yd = Yield of Debentures Ai = Annual Interest MPd = Market Price of Debentures Illustration 2.4. Calculate the yield on a debenture of Rs 1,000, having a current market value of Rs 800 and carrying interest at 10 per cent per annum. Solution: Yd = 100/800 = 0.12 or 12 per cent Redeemable Debentures In case debentures are redeemable after a fixed period, the yield on such debentures, technically termed as 'yield to maturity' can be ascertained on the basis of the following equation: ( )/ ( )/2 + – = + Ai F P n Ydm F P where, Ydm = Yield till maturity Ai = Annual interest payment F = Face value of the debenture P = Present value of the debenture n = Period of debenture to maturity
Valuation Concepts and Securities Valuation NOTES Self-Instructional 22 Material Illustration 2.5. The current market price of a debenture of X Ltd is Rs 800 having a face value of Rs 1,000. The debentures will be redeemed after five years. The debenture carries an interest rate of 12 per cent per annum. You are required to calculate 'Yield to Maturity' on the debenture. Solution: ( )/ ( )/2 + – = + Ai F P n Ydm F P 120 (1,000 800)/5 (1,000 800)/2 + – = + 120 40 900 + = = 0.17 or 17 per cent. 2.5 VALUATION OF PREFERENCE SHARES Preference shares carry a fixed dividend rate and hence their valuation can be done on the same basis as that of debentures or bonds. Preference shares may be redeemable or irredeemable. Redeemable Preference Shares In case of these shares, the value of a preference share would be equivalent to the present value of annual dividend plus the present value of the amount payable on maturity. Example. Face Value of a Preference Share Rs 100 Dividend Rate 10 per cent Current Market Rate 15 per cent Maturity 10 years Two discount factors will have to be computed: (i) Discount factor at 15 per cent for annuity of Re 1 for ten years: 5.019. (ii) Discount factor at 15 per cent for present value of Re 1 payable after ten years: 0.247. Value of a Preference Share = 10 × 5.19 + 100 × 0.247 = 50.19 + 24.70 = Rs 74.89 Irredeemable Preference Shares The value of such preference shares can be found out by simply dividing the annual dividend with the current yield. Symbolically: Vp = Dp/Yp where, Vp = Value of a Preference Share Dp = Dividend on a Preference Share Yp = Yield on a Preference Share

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Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 23 Illustration 2.6. A company issued some years ago irredeemable preference shares of Rs 100 each carrying a dividend rate of 10 per cent. Such type of preference shares now carry a dividend of 15 per cent. You are required to calculate the value of the preference share. Solution: V = Dp/Yp = 10/0.15 = Rs 67 Yield on Preference Shares Yield on preference shares can also be calculated on the same pattern as for debentures, already explained in the preceding pages. 2.6 VALUATION OF EQUITY SHARES Valuation of equity shares is difficult as compared to the valuation of debentures or preference shares. This is because of the following: 1. Equity shares do not carry a fixed dividend or interest rate as is the case with preference shares or debentures. Equity shareholders may or may not get dividends. Hence, there is greater uncertainty regarding the future stream of cash flows in the form of dividends. 2. Earnings or dividends on equity shares are expected to grow unlike interest on debentures and preference dividends. Methods of Valuation There are different methods of valuation of equity shares. They are basically based on the following two approaches: (1) Dividend Capitalization Approach (2) Earning Capitalization Approach (1) Dividend Capitalization Approach This is conceptually a very sound approach.
According to this appraoch
the value of an equity share is equivalent to the present value of future
dividends
plus the present value of the price expected to be realized on its resale. The approach is
based on the following assumptions: (i) Dividends are paid annually. (ii) The dividend is received after the expiry of a year of purchase of equity share.
Two possible valuation models can be used for this purpose: (a) Single Period Valuation Model: In case of this model it is presumed that
the investor expects to hold the equity share for one year only. In
such a case the value of the equity share for him will be equivalent
to the present value of dividend at the end of year one plus the present value of the
price he expects to receive on selling the share. Check Your Progress 4. What is maturity period? 5. What are perpetual debentures? 6. How can the value of irredeemable preference shares be calculated?
Valuation Concepts and Securities Valuation NOTES Self-Instructional 24 Material Symbolically, 1 1 0 (1) (1) D
P P
Ke
Ke where, P 0 = Current price of the
equity share D 1 = Dividend per share
expected
at the end of first year
P 1 = Expected market price of the share at the end of
first year Ke =
The required rate of return or capitalization rate. Illustration 2.7. Mr A holds an equity share giving him an annual dividend of Rs 20. He expects to sell
the share for Rs 180 at the end of a year. Calculate
the value of
the share if the required rate of return is 12
per cent.
Solution: 1 1 0 (1) (1) D P P Ke Ke or 0 20 180 (1 0.12) (1 0.12) P = + + + or P 0 = 17.86 + 160.71 P 0 = Rs 178.57 (b) Multi-period Valuation Model : Equity shares have no maturity period. Hence, it may be reasonable to presume that an equity shareholder in general expects cash inflows in the form of dividends not for a year but an infinite duration. The value of an equity share is therefore equivalent to the present value of its future stream of dividends. In case the dividend per share remains constant, the value of an equity share can also be determined on the same basis on which the value of a perpetual debenture or bond is calculated. In other words,
the value of an equity share can be ascertained by dividing the
expected dividend per share by the capitalization or the expected dividend rate. Symbolically, 0 De P Ke where, P 0 = Current value of an equity share De = Expected annual dividend per equity share Ke = Capitalization rate Illustration 2.8. ABC Ltd is currently paying a dividend of Rs 40 per share. It is expected that the company will not deviate from this rate in the future. The current capitalization rate is 15 per cent. Calculate the present value of an equity share. Solution: 0 De P Ke = 40/0.15 = Rs 267

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Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 25 Growth in Dividends In the above illustration we have presumed that dividend per share remains constant year after year. However, this presumption is unrealistic. Earnings and dividends of most companies grow over time at least because of their retention policies. As a result of this the company would have an increased earning per share every year if the number of shares does not change. Illustration 2.9. A company has a share capital of Rs 5,00,000. The company has the policy of retaining 60 per cent of its earnings. Calculate the growth rate in dividends if the company earns 10 per cent on its capital employed. Solution: 1st Year Total earnings Rs 50,000 (10 per cent of Rs 5,00,000) Less: Retained earnings (60 per cent) Rs 30,000 Dividends distributed Rs 20,000 2nd Year Earnings on capital employed Rs 53,000 (i.e., 50,000 + 3,000) Less: Retained earnings (60 per cent) Rs 31,800 Dividends distributed Rs 21,200 Growth in Dividends Dividends in 2nd year Dividends in 1st year Dividends in 1st year 21,200 20,000 20,000 = 1,200/20,000 = 6 per cent The growth rate in dividends comes to 6 per cent. It is equivalent to the product of retained earnings and rate of return (i.e., 0.6 × 0.1). Growth in dividends may either be constant or variable year after year. (a) Constant Growth in Dividends: While valuing equity shares in most cases it is presumed that the dividend grows at a constant rate. This means that the dividend
at the end of the first year will be : D 1 = D 0 (1 + g) Similarly, dividend at the end of second year
will be: D 2 = D 0 (1 + g) or D 2 = D 1 (1 + g) and so on. The formula for valuation of the equity shares with a constant growth rate in dividends can now be put as follows :
Valuation Concepts and Securities Valuation NOTES Self-Instructional 26 Material 1 2 0 0 0 0 1 2 (1) (1) (1) ... (1) (1) (1) n n D g D g D g P Ke Ke Ke or 0 0 (1) ( ) D g P Ke g or 1 0 ( ) D P Ke g where,
D 1 = Dividend at the end of the year P 0 = Current market price
of an equity share Ke = Capitalization rate g = Growth rate in dividends Illustration 2.10. ABC Ltd
is expected to pay a dividend at Rs 40 per share. Dividends are expected to grow perpetually at 10
per cent. You are required to calculate the market value of the share if capitalization rate is 15 per cent. Solution: 1 0 ( ) D P Ke g 0 40 (0.15 0.10) P = 40/0.05 = Rs 800 (b) Variable Growth in Dividends : Dividends on equity shares of a company may not grow at a constant rate. In some companies dividends grow at a supernormal rate during the period when there is a constant increasing demand for the company's products. The dividend starts to grow at a normal rate after the demand for the company's product reaches the normal level. In order to value equity shares of such companies, the following steps may be taken: 1. Compute the amount of dividend receivable for different years during the initial period of supernormal growth. 2. Find out the present value of dividend computed under (1) above at the capitalization rate by applying discount factors from the Present Value Tables. 3. Apply the normal growth rate to dividend received for the last year of supernormal growth period to compute the expected dividend for the first year of normal growth period. 4. Compute the market price of the share by applying the formula given earlier for constant growth in dividend. 5. Find out the present value of the market price of the share by applying the PV factor to the market price computed under point (4) above. 6. Add the present two values: (a) the present value of dividends computed under point (2) and (b) the present market value of shares computed under point (5) above. 7. The resultant figure is the desired present value of share. Working of these steps can be understood with the help of the following illustration.
Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 27
Illustration 2.11. A
company is expected to pay a dividend of Rs 4 per share
after a
year. Its dividends are then expected to grow at 15 per cent for the next five years and then at the rate of 8 per cent indefinitely. Find out the present value of its share, if the capitalization rate is 12 per cent. Solution: In the above illustration: (1) There is an initial supernormal growth period of five years when
the
dividends are expected to grow at the rate of 15
per cent
per annum. The amount of dividends for each of the six years (including the first year) and their present values at the capitalization rate of 12 per cent are as under: PRESENT VALUE OF DIVIDENDS DURING SUPERNORMAL GROWTH PERIOD Year Dividends RV Factor Present Value (Rs) at 12 per cent (Rs) 1 4.00 0.893 3.57 2 4.00 × 1.15 4.60 0.797 3.67 3 4.60 × 1.15 5.29 0.712 3.77 4 5.29 × 1.15 6.08 0.636 3.87 5 6.08 × 1.15 7.04 0.567 3.97 6 7.00 × 1.15 8.04 0.507 3.08 Total Present Value = 22.93 (2) After the expiry of six years, from the seventh year onwards, the growth in dividends is 8 per cent indefinitely. Hence, the dividend for the seventh year is likely to be 8.05 × 1.08 = Rs 8.694. Now we shall apply the same formula as given for valuation of shares under constant growth in dividends for finding out the present value at the end of year six. 7 6 ( ) D P Ke gn where, P 6 = Present value of share at the end of year six D 7 = Expected dividend for the seventh year gn = Normal growth in dividends Ke = Capitalization rate On putting the value in the above formula, we get: 6 8.694 (0.12 0.08) P = – 8.694 Rs 217.35 0.04 = = (3) We shall now find out the present value of the share calculated under point (2) above by applying the PV Factor of 0.507. Present Value of Share = 217.35 × 0.507 = Rs 110.20

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Valuation Concepts and Securities Valuation NOTES Self-Instructional 28 Material (4) We shall now add to the present value calculated under (3) above, the present value of dividends receivable for six years computed under (1) above: Value of Share = 110.20 + 22.93 = Rs 133.13 (2) Earning Capitalization Approach The dividend capitalization model, as explained in the preceding pages, is the basic share valuation model. However, under the following two cases, the value of an equity share can simply be determined by capitalizing the expected earnings. When the Earnings of the Firm Are Stable In this case the earnings will not grow. This happens when the firm does not employ any external financing nor does it retain earnings. In other words, both the growth rate and the retention rate are 'zero'. In such a case the earning rate and the dividend rate are the same. Hence, the following equation can be used for valuing the equity shares. 1 0 E P Ke where, E 1 = Expected earning per share. This will be the same as D 1 , since the entire earnings are distributed as dividends Ke = Capitalization rate P 0 = Current value of an equity share When There Is No Growth but There Is an Expansion Situation It may be noted that there is real growth of the firm only when the firm has investment opportunities generating an internal rate of return (r) higher than the equity capitalization rate (Ke). In other words, | r | should be greater than | Ke |. In case r = Ke, there is an 'expansion' situation but not a 'growth' situation. The same formula, as given above, can therefore be used for valuing equity share, i.e., 1 0 = E P Ke Illustration 2.12. Calculate the price of an equity share according to dividend capitalization approach and earnings capitalization approach with the following particulars: Earning Per Share (EPS) Rs 10 Capitalization Rate 20 per cent Retained Earnings 'nil' Solution: Dividend Capitalization Approach: 1 0 10/0.20 Rs 50 = = = E P Ke Check Your Progress 7. What are the two approaches which determine the basis of the method of evaluation of equity shares? 8. What is 'Single Period Valuation Model'? 9. When do the dividends grow at a supernormal rate?

Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 29 Earnings Capitalization Approach: 1 0 10/0.20 Rs 50 = = = D P Ke 2.7 SUMMARY Value of a firm or securities depends on the required rate of return and the time period over which this return is expected to be received. While valuing an asset or security the fact that money has a time value should not be ignored.

The fundamental principle behind the concept
of
time value of money is
that a sum of money received today is worth more than
if the same
is received after
some
time. Value of Assets. The value of every asset is also affected by the time value concept. In general
it can be said that
the value of an asset is equivalent to the present value of
the benefits associated with it. Value of Debenture. The value of debenture is equivalent to the present value of the annual interest payments plus the present value of principal repayable at the time of maturity. Value of Preference Share. The value of a preference share would be equivalent to the present value of annual dividend plus the present value of the amount payable on maturity. Value of Equity Share. There are different methods for valuation of equity shares. They are basically based on the following two approaches : (i)
Dividend Capitalization Approach:
According to this approach
the value of an equity share is equivalent to the present value of future
dividends
plus the present value of the price expected to be realized on its resale. (ii) Earning Capitalization Approach: According to this approach the value of an equity share can simply be determined by capitalizing the expected earnings. 2.8 KEY TERMS • Asset: It is a tangible object or an intangible right owned by an enterprise and carrying probable future benefits. • Debenture: It is a formal document constituting acknowledgement of a debt by an enterprise usually given under its common seal and normally containing provisions regarding security, payment of interest and repayment of principal. It is transferable in the appropriate manner. • Equity Shares: These are shares which are not preference shares. • Par Value: This is the value stated on the face of the security, share or debenture, as the case may be. It is also known as nominal value of face value. •
Preference Shares: These are shares which carry the following preferential rights over other classes of shares: (
a) A preferential right in respect of fixed dividend. (b) A preferential right as to repayment of capital in the event of company's winding up. • Time Value Concept: This is a concept which emphasizes
that a
sum of money received today is worth more than if the same is received after
some
time.

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Valuation Concepts and Securities Valuation NOTES Self-Instructional 30 Material 2.9 ANSWERS TO 'CHECK YOUR PROGRESS' 1. One of the reasons because of which money has a time value is that individuals generally prefer current consumption to future consumption. 2. Individuals and business organizations
frequently encounter situations involving cash receipts or disbursements over several periods of time. 3.
The value of an asset is equivalent to the present value of
the benefits associated with it. 4. Maturity period refers to the period after which the money raised on account of debentures or bonds will be repaid to the debenture holders. 5. Debentures which will never mature are known as perpetual debentures. 6. The value of irredeemable preference shares can be calculated by simply dividing the annual dividend with the current yield. 7. The two approaches which determine the basis of the method of evaluation of equity shares are: (i) Dividend Capitalization Approach (ii) Earning Capitalization Approach 8. The 'Single Period Valuation Model' presumes that
the investor expects to hold the equity share for one year only. 9.
Sometimes, dividends grow at a supernormal rate during the period when there is a constant increasing demand for the company's products. 2.10 QUESTIONS AND EXERCISES Short-Answer Questions 1.
State whether each of the following statements is True or False. (i)
The
value of an asset is equivalent to the present value of
the benefits associated with it. (ii) Interest Rate and Coupon Rate are synonymous terms. (iii) The value of debenture will be higher than its face value in case the interest rate on debenture is lower than the required rate of return. (iv) Yield on preference shares can be calculated on the same pattern as for debentures. (v) Equity shares have a maturity period. (vi) Cash flows of two years are comparable. 2. Fill in the blanks: (i) The value stated on the face of the bond is termed as its ..... . (ii)
The value of a debenture is equivalent to the present value of the interest payments plus the present value of
the ..... payable at the time of
maturity. (iii) The value of a debenture will be higher than its face value if the interest rate on debenture is ..... than the required rate of return. (iv)
According to ..... approach
the value of an equity share is equivalent to the present value of future
dividends
plus the present value of the price expected to be realized on its resale.
Valuation Concepts and Securities Valuation NOTES Self-Instructional Material 31 (v) In case of a single period valuation model, it is assumed that the investor expects to hold the equity share for ..... only. Long-Answer Questions 1. Explain the debenture valuation models you would adopt for valuation of : (a) redeemable debentures (b) perpetual debentures 2. Explain the two approaches which are adopted for valuation of equity shares with appropriate examples. 3. What do you understand by 'growth in dividends' ? Explain with an example. 2.11 FURTHER READING Maheshwari, S.N. Elements of Financial Management. New Delhi: Sultan Chand & Sons, 2008. Maheshwari, S.N. Financial Management—Principles and Practice. New Delhi: Sultan Chand & Sons, 2007.
Risk and Return NOTES Self-Instructional Material 33 UNIT 3 RISK AND RETURN Structure 3.0 Introduction 3.1 Unit Objectives 3.2 Risk and Uncertainty 3.3 Measurement of Return 3.4 Relationship between Risk and Return 3.5 Criteria for Evaluating Proposals to Minimize Risk 3.6 Methods of Risk Management 3.7 Major Risk Return Decision Areas 3.8 Capital Market Theory (CPT) 3.9 Summary 3.10 Key Terms 3.11 Answers to 'Check Your Progress' 3.12 Questions and Exercises 3.13 Further Reading 3.0 INTRODUCTION A business firm carries on its operations in an environment which is not within its control. It is exposed to all sorts of dangers both on account of internal as well as external factors. It may not be in a position to withstand its competitors. Its products may deteriorate or become obsolete and thus suffer a fall in their market values. Its property may be stolen or destroyed. Its employees may embezzle the money, while customers may fail to pay their advances on account of bankruptcy, etc. A finance manager has to keep all these dangers in view. He has to maintain the profitability and liquidity of the firm keeping in view the overall objective of the firm. He has to keep himself prepared not only to meet the planned funds requirement of the firm under ideal circumstances, but also those which may occasionally arise due to unforeseen contingencies and under most trying conditions. This unit provides an overall view of the changing, operating environment within which a business firm has to function. It analyses the relationship between risk and return. It also outlines the major areas with respect to risk and return regarding which the finance manager has to take decisions for maximizing the firm's wealth. 3.1 UNIT OBJECTIVES z Changing operating environment within which a business firm has to function z Difference between risk and uncertainty z Different approaches for measurement of returns z Different criteria for evaluating the proposals to minimize risk z Major risk return decision areas z The capital market theory

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Risk and Return NOTES Self-Instructional 34 Material 3.2 RISK AND UNCERTAINTY In common parlance, the terms 'Risk' and 'Uncertainty' have synonymous meaning. However, they differ from each other, as given below: Risk Risk may be defined as 'the chance of future loss that can be foreseen. '1 In other words, in case of risk an estimate can be made about the degree of happening of the loss. This is usually done by assuming probabilities to the risk on the basis of past data and the probable trends. Illustration 3.1. A firm submitted bids in respect of 200 projects during the last 10 years. Its bids were accepted in respect of 40 such projects. It is again submitting its bid for the 201st project. Solution. On the basis of past experience, it can be said that the chances of accepting the firm's bid for the 201st project are 20 per cent. In other words, the chances of the bid being rejected are 80 per cent. Uncertainty Uncertainty may be defined as 'the unforeseen chance for future loss or damages.' 2 In case of uncertainty, since the firm cannot anticipate the future loss and it cannot directly deal with it in its planning process, as is possible in the case of risk. For example, a firm investing money in a foreign country cannot possibly foresee a coup and taking over the government by an unfriendly group. Similarly, a firm cannot foresee the loss which may be due to destruction of its plant on account of earthquake. Of course, in those cases where occurrence of such earthquakes is quite frequent, the firm can possibly estimate the likelihood of the loss and such loss can be taken care of by the firm in its planning process. Such loss will not, therefore, fall in the purview of uncertainty, but will fall in the purview of risk. Thus, there is a very thin line of distinction between the terms 'Uncertainty' and 'Risk'. 3.3 MEASUREMENT OF RETURN One of the important functions of the finance manager is to measure the return which the business earns on account of its operations. The return represents the benefits derived by a business from its operations. Different persons give different meanings to these benefits and hence there are different approaches for the measurement of return. These approaches are as follows: (1) Profit Approach According to this approach, the return from a business is measured on the basis of the profit it earns. However, the term profit does not have a specific meaning. For example, according to the accountants, the term profit is the excess of the revenues over expenses of a business over a period as determined according to the 1. Hampton John J., Financial Decision Making, p. 22. 2. Hampton John J., Ibid.

Risk and Return NOTES Self-Instructional Material 35 accounting principles and procedures. While according to the economists, profit is simply the temporary excess return to innovators or entrepreneurs. Some economists, however, hold a different opinion about the meaning of the term profit. According to them, profit is the reward to the entrepreneur for bearing the risk. However, it will be appropriate for the finance manager to adopt the accountant's approach while defining the term profit. This approach is particularly useful while reporting financial results to the shareholders and tax authorities. (2) Income Approach The term income has a more specific and definite meaning as compared to the term profit. Income always indicates that a precise accounting process has been followed in its computation. Hence, income may be defined as 'accounting measurement of profits.' The terms income and earnings are synonymous. There are three terms that are used for recording income or earnings. Earning before Interest and Tax (EBIT) It represents the excess of the firm's operating revenues over its operating expenses. It is also termed as Operating Profit before Interest and Tax (OPBIT), since it represents the operating income of the business. Earning before Tax (EBT) It represents the excess of the firm's total revenue over its total expenses. The revenues include both operating and non-operating incomes. Similarly, the expenses include both operating and non-operating/financial expenses. Earning after Tax (EAT) This represents excess of all revenues over all expenses and taxes paid by the firm. This approach is particularly useful for the finance manager while computing the profitability of two or more firms from the viewpoint of different persons interested in the firm. (3) Cash Flow Approach According to this approach, the return from a business is measured in terms of the cash flows generated by it due to operations during a particular period. As a matter of fact, some of the business charges (e.g., depreciation, amortization of preliminary expenses, etc.) do not result in any outflow of cash. Hence, they are added back to the accounting profits of the business to compute the cash from operations. In other words, cash flow represents the difference between the cash revenues and the cash payments of a firm. In case revenues are larger than the payments, the firm has net cash inflow. However, if the payments are larger than the revenues, the firm has a net cash outflow. This approach is particularly suitable for the finance manager while taking capital budgeting decisions, as explained later in the book. (4) Ratios Approach The term ratio means the mathematical relationship between two figures. A finance manager uses different accounting ratios for measuring and comparing the performance of the firm over different time periods or of his firm with another.

Risk and Return NOTES Self-Instructional 36 Material In order that ratios serve as a useful yardstick for comparing and measuring performance of a firm, it is necessary that they are based on proper accounting figures and used with caution. A detailed analysis of different accounting ratios has been given in a separate chapter 'Accounting Ratios' later in the book. 3.4 RELATIONSHIP BETWEEN RISK AND RETURN The rate of return required by a firm, to a great extent, depends upon the risk involved. Higher the risk, greater is the return expected by the firm. The rate of return required by the business consists of three components: (i) Return at Zero Risk This refers to
the expected rate of return where a project involves no risk whether business or financial. (ii) Premium for Business Risk The term
business risk refers to the variability in operating profit (EBIT) due to change in sales.

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In case of
a project having more than the normal or average risk, the firm will expect a higher rate of return than the normal rate. Hence, the return expected by the business will go up. Similarly, if the project involves a lower degree of risk than the normal level, the return expected by the firm will come down. (iii) Premium for Financial Risk
The term financial risk refers to the risk on account of
pattern of capital structure (debt-equity mix). A firm having a higher debt content in its capital structure expects a higher rate of return as compared to a firm which has comparatively low debt content. This is because, in the former case, the firm requires higher operating profit to cover periodic interest payments and repayment of principal at the time of maturity
as compared to the latter. The above three components may be - put in the form of following equation: Rate of Return = r 0 + b + f where, r 0 =
Return at Zero Risk b = Premium for Business Risk f = Premium for Financial Risk 3.5
CRITERIA FOR EVALUATING PROPOSALS TO MINIMIZE RISK It has been stated in the preceding pages that a project giving higher rate of return involves a higher degree of risk. While selecting a project, a firm has to keep in mind its capacity to bear the risk. It cannot jeopardise its existence merely for seeking higher profits. It is, therefore, necessary for a firm to select or reject a project on the basis of the risk involved. This criterion may be fixed keeping in view the following points: Check Your Progress 1. What is the 'profit approach'? 2. What is 'Earning before Tax'? 3. What is 'Return at Zero Risk'?
Risk and Return NOTES Self-Instructional Material 37 Select the Least Risky Proposals According to this criterion, a firm will accept only that proposal which has the least risk. For this purpose, all proposals are arranged according to the degree of risk involved in a descending/ascending order. The proposal having the least risk is accepted. In case two or more proposals are to be accepted, those having minimum risk are chosen. Apply Hurdle Rates According to this criterion, the firm determines different hurdle rates for different risk levels. The firm may decide the minimum acceptable return below which it is not going to accept the proposal. This will be clear from the following illustration. Illustration 3.2 A firm has determined the following expected rates of return keeping in view the degree of risk involved in the proposals: Degree of Risk Expected Return Low 24 per cent Medium Low 28 per cent Medium 32 per cent Medium High 40 per cent High 48 per cent The firm has the following proposals with it High Degree Risk Expected Rate of Return X 44 per cent Y 30 per cent Medium Degree Risk P 20 per cent Q 34 per cent State which of the above proposals can be accepted by the firm. Solution: Out of the proposals in High risk category, none of the proposals can be accepted since they are all giving return below the required rate of return, which is 48 per cent. Out of the Medium degree risk proposals, the firm can accept only proposal Q, which is giving 34 per cent return. Proposal P has to be rejected since it is giving only 20 per cent return as compared to 32 per cent return required from such a category of proposals. Avoid Proposals with Fluctuating Risks In order to minimize risk, it is necessary that those proposals which have larger fluctuations in the returns should be avoided. For example, a proposal having fluctuations in the returns from 15 per cent to 20 per cent should be preferred as compared to a project giving returns from 10 per cent to 40 per cent. Adopt Weighted Average Approach It will be more appropriate to adopt a weighted average approach while identifying a project on the basis of risk and return. This involves taking the following steps: (a) Identification of possible future conditions. (b) Determination of the probabilities of each possible future condition.
Risk and Return NOTES Self-Instructional 38 Material (c) Determination of the return under each future condition. (d) Computing the estimated return keeping in view the probabilities as determined under (b). (e) Computation of the weighted expected return. These steps can be understood with the help of the following illustrations. Illustration 3.3. A firm is considering two alternative proposals for the next summer: (i) Purchasing and selling air conditioners. (ii) Purchasing and selling raincoats. The firm has limited space available in its stores. It can accommodate only one item at a time. From the following details, you are required to identify the alternative which would be most profitable for the firm: AIR CONDITIONERS Weather Probability Net Return (per cent) (Rs) Hot Summer 20 60,000 Normal Summer 55 40,000 Cool Summer 25 10,000 100 RAINCOATS Weather Probability Net Return (per cent) (Rs) Wet Summer 20 80,000 Normal Summer 60 30,000 Dry Summer 20 20,000 100 Solution: (i) STATEMENT SHOWING THE EXPECTED RETURN FROM MARKETING AIR CONDITIONERS Weather Probability Net Return Weighted Return (per cent) (Rs) (Rs) Hot Summer 20 60,000 12,000 Normal Summer 55 40,000 22,000 Cool Summer 25 10,000 2,500 100 36,500 (ii) STATEMENT SHOWING THE EXPECTED RETURN FROM MARKETING RAINCOATS Weather Probability Net Return Weighted Return (Per cent) (Rs) (Rs) Wet Summer 20 80,000 16,000 Normal Summer 60 30,000 18,000 Dry Summer 20 20,000 4,000 100 38,000

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Risk and Return NOTES Self-Instructional Material 39 The above calculations show that the raincoats are expected to give a return of Rs 38,000 in the coming season as compared to Rs 36,500 by air conditioners. Hence, it will be advisable for the firm to market raincoats as compared to marketing air conditioners in the following season. Illustration 3.4. Dry Twigs and Fresh Blossoms Ltd is always discarding old lines and introducing new lines of products and is at present considering three alternative promotional plans for ushering in new products. Various combinations of prices, development expenditures and promotional outlays are involved in these plans. High, medium and low forecasts of revenues under each plan have been formulated; and their respective probabilities of occurrence have been estimated. Their budgeted revenues and probabilities along with other relevant data are summarized as under : (Rs in lakh) Plan I Plan II Plan III Budgeted revenue with probability High 30(0.3) 24(0.2) 50(0.2) Medium 20(0.3) 20(0.7) 25(0.5) Low 5(0.4) 15(0.1) (0.3) Variable cost as percentage of revenue 60 75 70 Initial investment 25 20 24 Life in years 8 8 8
The company's cost of capital is 12 per cent; the income tax rate is 40 per cent.
Investment in promotional programmes will be amortized by the straight line method. The company will have net taxable income in each year, regardless of the success or failure
of the new products. The present value of an annuity of Re 1 at 12 per cent
for eight years is 4.9676. (a) Substantiating with figures make a detailed analysis and find out which of the promotional plans is expected to be the most profitable. (b) In the event the worst happened, which of the plans would result in maximizing profit ? Solution: (a) STATEMENT SHOWING PROFITABILITY OF DIFFERENT PLANS Plan I Plan II Plan III (Rs) (Rs) (Rs) (i) Budgeted revenue weighted by profitability High 9,00,000 4,80,000 10,00,000 Medium 6,00,000 14,00,000 12,50,000 Low 2,00,000 1,50,000 — Expected revenue 17,00,000 20,30,000 22,50,000 (ii) Contribution as a percentage of revenue 40 25 30 (iii) Contribution 6,80,000 5,07,500 6,75,000 Less: Depreciation 3,12,500 2,50,000 3,00,000 (iv) Profit before tax 3,17,500 2,57,500 3,75,000 Less: Tax at 40 per cent 1,27,000 1,03,000 1,50,000 (v) Profit after tax 2,20,500 1,54,500 2,25,000 Add: Depreciation 3,12,500 2,50,000 3,00,000
Risk and Return NOTES Self-Instructional 40 Material (vi) Average annual cash inflows 5,33,000 4,04,500 5,25,000 (vii) P.V. factor at 12 per cent for 8 years 4.9676 4.9676 4.9676 (viii) Present value of cash inflows 26,47,731 20,09,394 26,07,990 (ix) Initial investment 25,00,000 20,00,000 24,00,000 (x) Net present value (NPV) 1,47,731 9,394 2,07,990 [(viii) – (ix)] (xi) Profitability index [(viii) ÷ (ix)] 1.059 1.005 1.087 Plan III has the highest Present Value Index and hence, it is the most profitable. (b) COMPUTATION OF MAXIMUM LOSS UNDER DIFFERENT PLANS Plan I Plan II Plan III Rs Rs Rs Revenue for low forecast 5,00,000 15,00,000 Nil Contribution as a percentage of revenue 40 25 30 Contribution 2,00,000 3,75.000 Nil Less: Depreciation 3,12,500 2,50,000 3,00,000 Profit (Loss) (1,12,500) 1,25,000 (3,00,000) Less: Tax (45,000) 50,000 (1,20,000) (67,500) 75,000 (1,80,000) Add: Depreciation 3,12,500 2,50,000 3,00,000 Annual cash inflow 2,45,000 3,25,000 1,20,000 P.V. factor at 12 per cent for 8 years 4.9676 4.9676 4.9676 P.V. of cash inflows 12,17,062 16,14,470 5,96,112 Initial outlay 25,00,000 20,00,000 24,00,000 Net present value (12,82,938) (3,85,530) (18,03,888) The above analysis shows that loss is the least under Plan II in case the worst happens and hence on this basis Plan II is the best. 3.6 METHODS OF RISK MANAGEMENT It has already been stated in the preceding pages that risk is inherent in business and hence there is no escape from the risk for a businessman. However, he may face this problem with greater confidence if he adopts a scientific approach by dealing with risk. Risk management may, therefore, be defined as adoption of a scientific approach to the problem dealing with risk faced by a business firm or an individual. Broadly, there are five methods in general for risk management. (i) Avoidance of Risk A business firm can avoid risk by not accepting any assignment or any transaction which involves any type of risk whatsoever. This will naturally mean a very low volume of business activities and losing too many profitable activities. (ii) Prevention of Risk In case of this method, the business avoids risk by taking appropriate steps for prevention of business risk or avoiding loss. Such steps include adoption of safety programmes, installation of burglar alarm and fire extinguisher, employment of night security guard, arranging for medical care and disposal of waste material, etc. (iii) Retention of Risk In case of this method, the organization voluntarily accepts the risk since either the risk is insignificant or its acceptance will be cheaper as compared to avoiding it.

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Risk and Return NOTES Self-Instructional Material 41 (iv) Transfer of Risk In case of this method, risk is transferred to some other person or organization. In other words, under this method, a person who is subject to risk may induce another person to assume the risk. Some of the techniques used for transfer of risk are hedging, sub-contracting, getting surety bonds, entering into indemnity contracts, etc. (v) Insurance This is done by creating a common fund out of the contribution (known as premium) from several persons who are equally exposed to the same loss. Fund so created is used for compensating the persons who might have suffered financial loss on account of the risks insured against. 3.7 MAJOR RISK RETURN DECISION AREAS It has already been stated in the preceding pages that there is a direct relationship between risk and return. A finance manager has to choose between risk and return in every area of financial management without endangering the liquidity of the firm. The major decision areas linked to risk and return can be identified as follows: Financial Analysis and Control This area is concerned with the financial statements, i.e., Income Statement, Balance Sheet, Funds Flow Statement, Cash Flow Statement, etc., which provide an overall view of the financial position of the business. These statements provide the finance manager with important operating and financial information to assess and evaluate the liquidity and financial position of the business. He is in a position to measure risk and return associated with different areas of the firm's activities. Budgeting and Profit Planning This area is concerned with forecasting the future operating and financial performance of the firm. He is in a position to compare alternative choices of action and select the one which gives him maximum profit with minimum risk. Capital Budgeting This area is concerned with
long-term planning for proposed capital outlays and their financing.
It includes both raising of long-term funds
and their utilization. The finance manager, with the help of various capital budgeting techniques, is in a position to predict the consequences of accepting different investment proposals and identify those which are more profitable keeping in view the risk and return involved. Financial Planning This area is concerned with estimating
the amount of capital to be raised, determining the form and proportionate amount of securities
and laying down the policies as to the administration of the financial plan. In order to get the maximum benefits, it is necessary that the finance manager raises the funds of the right amount by right securities and at the right time. Working Capital Management This area
is concerned with the
problems that arise in attempting to manage
the current assets, current liabilities and the interrelationship that exists between them.
It Check Your Progress 4. What is the criterion of 'Apply Hurdle Rates'? 5. What is 'prevention of risk method'? 6. What is 'retention of risk method'?
Risk and Return NOTES Self-Instructional 42 Material is a crucial area for the finance manager. Investment in current assets is generally less profitable as compared to the investment in fixed assets. As a result, higher investment in current assets increases the working capital and decreases the risk, but also decreases the profitability. While low investment in current assets decreases the working capital and increases the risk, but increases the profitability. The finance manager has, therefore, to strike a balance between the risk and profitability involved with investment in working capital. Cost of Capital This area is concerned with determination of
the rate of return the firm requires from its investments in order to maximize the value of the
firm'
s shares. Cost of capital determines the minimum rate

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of return or cut-off point for accepting or rejecting investment in new projects. This area is, therefore, of considerable significance to the finance manager. Valuation Theory This area is concerned with valuing the firm's shares under current and potential operating conditions. It also tries to identify the steps to be taken to increase the firm's wealth. Acquisitions This area is concerned with financial and operating impacts which a firm must consider while deciding about the acquisition of another firm. It helps in determining the firm's value which must be paid for acquisition of the other firm's shares. Most of these areas will be discussed in detail in the following pages of the book. 3.8 CAPITAL MARKET THEORY (CPT) CPT sets the environment in which securities analysis is performed. It is to be noted that securities analysis will be a futile activity without a well constructed view of modern capital markets. CPT consists of techniques, models or methods used for pricing assets, usually shares or baskets of them in terms of trade-off between risk and return that the investors seek. A financial consultant uses capital market theory each time when he puts together a financial plan, a retirement plan or an investment plan for his client. Markowitz Efficient Model, Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory are some of the major capital market theories, which have developed over the last forty years. They help an investor in planning their investment in portfolio keeping in mind both the return and the risk factors. These theories/models are being explained briefly in the following pages: (1) Markowitz Efficient Model Markowitz Efficient Model for Investment Portfolio Management was developed by Herry Markowitz in 1952. According to Markowitz, an investor should seek a portfolio of securities that lies on the efficient frontier. A portfolio is not efficient if there is another portfolio with a higher expected value of return and a lower standard deviation, a higher expected value and the same standard deviation, the same expected value but a lower standard deviation. In other words, efficient frontier portfolio provides the

Risk and Return NOTES Self-Instructional Material 43 highest possible expected return for any degree of risk or the least possible degree of risk for any expected return. Markowitz emphasized that variance of the return was a significant yardstick for measuring risk under reasonable assumptions. An investor can reduce the risk by diversification of his investment portfolio. Markowitz Model is based on the following assumptions regarding the investor's behaviour: 1. An investor considers each investment alternative as being represented by a probable distribution of the expected returns over the same holding period. 2. An investor estimates his risk on the basis of variability of expected returns. 3. The decision of the investor regarding selection of his investment portfolio lies basically on expected return and risk from the investment. 4. The investor prefers a higher return to lower return for a given degree of risk level. Similarly, he prefers less risk to more risk for a given level of expected return. Based on these assumptions, an investor considers a single asset or portfolio of assets as efficient if no other asset or portfolio of assets offers higher expected return with the same or lower risk. The measurement of the risk regarding an investment can be made by computing the variance of standard deviation of the expected returns. A large variance of standard deviation denotes a higher risk and vice versa. Another measure for measuring risk is the computation of the range in returns from the investment, based on the highest and the lowest future expected returns. However, the former measure for measuring risk is considered to be more appropriate and acceptable. Illustration 3.5. The following is the data regarding six securities: A B C D E F Return (per cent) 8 8 12 4 9 8 Risk (standard deviation) 4 5 12 4 5 6 (i) Assuming three will have to be selected, state which ones will be picked. (ii) Assuming perfect correlation show whether it is preferable to invest 75 per cent in A and 25 per cent in C or to invest 100 per cent in E. Solution: (i) Security A has a return of 8 per cent for a risk of 4, whereas B and F have a higher risk for the same return. Hence, among them A dominates. For the same degree of risk 4, security D has only a return of 4 per cent. Hence, D is also dominated by A. Securities C and E remain in reckoning as they have a higher return though with higher degree of risk. Hence, the securities to be selected are A, C and E. (ii) The average values for A and C for a proportion of 3 : 1 will be as under: Risk (3 4) (1 12) 6 per cent 4 Return (3 8) (1 12) 9 per cent 4 Therefore 75 per cent A E 25 per cent C – Risk 6 5 Return 9 per cent 9 per cent

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Risk and Return NOTES Self-Instructional 44 Material For the same 9 per cent return the risk is lower in E. Hence, E will be preferable. (2) Capital Assets Pricing Model (CAPM) Capital Assets Pricing Model (CAPM) was developed by Sharpe and Lintner in 1960. The model explains the relationship between the expected return unavoidable risk and the valuation of securities. The term unavoidable risk, discussed in detail later in the chapter means the risk which simply cannot be avoided by diversification. The greater the unavoidable risk of security, the greater is the return expected by the investor from that security. Hence, in case a security does not provide adequate return commensurate with its unavoidable risk, the security will not find favour with the investors. Hence, its market value will fall. CAPM expresses the following important ideas: 1. The required rate of return on all financial assets depends in part on riskless rate of return. 2. Investors are primarily concerned with unavoidable risk, i.e., the risk they cannot avoid by diversification. 3. Investors require premium for bearing the risk depending upon the degree of risk. 4. Since the investors are risk-averse, the higher the risk the greater is the expected return. The computation of expected return or cost of equity capital according to CAPM can be done on the basis of the following equation: ( ) e f m f R R R R = +β – where, R e = Expected return (also an expression of cost of equity capital) R f = Risk free return R m = Expected rate of return for the entire market as a whole (R m – R f) = Risk premium = Risk measurement, i.e., how closely security returns vary with the return of all securities in the market. The application of Capital Asset Pricing Model requires computation of Beta coefficient and expected return on security.

Beta coefficient is a measure of volatility of securities return relative to the returns of a broad based market portfolio. This can be understood with the following illustration: Illustration 3.6. An investor is seeking the price to pay for a security, whose standard deviation is 3.0 per cent. The correlation coefficient for the security with the market is 0.8 and the market standard deviation is 2.2

per cent. The return from government securities is 5.2 per cent and from the market portfolio is 9.8 per cent. The investor knows that, by calculating the required return, he can then determine the price to pay for the security. What is the required return on the security? Solution: Beta coefficient ( ) Correlation coefficient between the security and the market × Std. deviation of the security return Standard deviation of the market return (0.8) (0.03) 1.091 (0.22) × = = Check Your Progress 7. What is 'financial analysis and control area'? 8. What is 'valuation theory'? 9. Name two of the major capital market theories.

Risk and Return NOTES Self-Instructional Material 45 Required or Expected return on the security.

Rate of return on risk-free security + Beta coefficient (required return on market portfolio –

Rate of return on risk-free security.) (3) Arbitrage Pricing Theory (APT) The theory

was developed in 1970 by Ross. As the name implies the APT is based on the concept of

arbitrage.

The term 'Arbitrage' refers to an act of

buying an asset or security in one market

having lower price and selling it

in

another

market at a higher price.

The consequence of such action is that the market price of the securities of the two firms exactly similar in all respects except in their capital

structure cannot for long remain different in different markets. Thus, arbitrage process restores equilibrium in the value of securities. This is because in case

the market value of the

two firms, which are equal in all respects except their capital structures,

are not equal, investors of the overvalued firm would sell their shares, borrow additional funds on personal account and invest in the undervalued firm in order to obtain the same return on smaller investment outlay.

The use of debt by the investor for arbitrage is termed as 'home made' or 'personal leverage'. 3.9

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SUMMARY A business firm carries on its operations in an environment which is not within its control. It is exposed to all sorts of dangers both on account of internal as well as external factors. A finance manager has to keep all these risk and uncertainties in view while decision-making. Difference between Risk and Uncertainty The terms 'Risk' and Uncertainity' differ from each other. Risk may be defined as 'the chance of future loss that can be foreseen.' In other words, in case of risk an estimate can be made about the degree of happening of the loss. Uncertainty may be defined as 'the unforeseen chance for future loss or damages.' In case of uncertainty, since the firm cannot anticipate the future loss it cannot directly deal with it in its planning process, as is possible in the case of risk. Return and its Measurement The return represents the benefits derived by a business from its operations. The following are the approaches for measurement of return: (i) Profit Approach (ii) Income Approach (iii) Cash Flow Approach (iv) Ratios Approach Relationship between Risk and Return The rate of return required by the business consists of three components: (i) Return at Zero Risk (r 0) (ii) Premium for Business Risk (b) (iii) Premium for Financial Risk (f) The above three components may be put in the form of the following equation: Rate of Return = r 0 + b + f
Risk and Return NOTES Self-Instructional 46 Material Methods of Risk Management Broadly, there are five methods in general for risk management: (i) Avoidance of Risk (ii) Prevention of Risk (iii) Retention of Risk (iv) Transfer of Risk (v) Insurance Major Risk Return Decision Areas The major decision areas linked to risk and return can be identified as follows: (i) Financial Analysis and Control (ii) Budgeting and Profit Planning (iii) Capital Budgeting (iv) Financial Planning (v) Working Capital Management (vi) Cost of Capital (vii) Valuation Theory (viii) Acquisitions Criteria for Evaluating Proposals to Minimize Risk The criteria for evaluating proposals to minimize risk may be fixed keeping in view the following factors: (i) Select the Least Risky Proposals (ii) Apply Hurdle Rates (iii) Avoid Proposals with Fluctuating Risks (iv) Adopt Weighted Average Approach Capital Market Theory (CPT) CPT sets the environment in which securities analysis is performed. It is to be noted that securities analysis will be a futile activity without a well constructed view of modern capital markets. CPT consists of techniques, models or methods used for pricing assets, usually shares or baskets of them in terms of trade-off between risk and return that the investors seek. 3.10 KEY TERMS • Income: It is an accounting measurement of profits. • Risk: It is the chance of future loss that can be foreseen. • Uncertainty: It is the unforeseen chance for future loss or damages. • Capital Market Theory: It is a theory that consists of techniques, models or methods used for pricing assets, usually shares or baskets of them in terms of trade-off between risk and return that the investors seek. 3.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. According to this approach, the return from a business is measured on the basis of the profit it earns. 2. 'Earning before Tax' represents the excess of the firm's total revenue over its total expenses.
Risk and Return NOTES Self-Instructional Material 47 3. 'Return at Zero Risk' refers to the expected rate of return where a project involves no risk whether business or financial. 4. According to 'Apply Hurdle Rates' criterion, the firm determines different hurdle rates for different risk levels. 5. 'Prevention of risk method' states that the business should avoid risk by taking appropriate steps for prevention of business risk or avoiding loss. 6. 'Retention of risk method' states that the organization should voluntarily accept risk since either the risk is insignificant or its acceptance will be cheaper as compared to avoiding it. 7. 'Financial analysis and control area' is concerned with the financial statements that is Income statement, Balance Sheet, Funds Flow Statement, Cash Flow Statement, etc., which provide an overall view of the financial position of the business. 8. 'Valuation theory' is concerned with valuing the firm's shares under current and potential operating conditions. 9. Markowitz Efficient Model and Arbitrage Pricing Theory are two of the major capital market theories. 3.12 QUESTIONS AND EXERCISES Short-Answer Questions 1. How do you define risk ? 2. Explain cash flow approach. 3. What is 'Capital Budgeting'? Long-Answer Questions 1. Differentiate between risk and uncertainty with appropriate examples. 2. Explain the various approaches for measurement of business return. 3. Explain the procedure you would adopt to minimize your risk while selecting a capital investment project. 4. Write short notes on the methods of risk management. 5. Define Capital Market Theory. Explain any two such theories. 3.13 FURTHER READING
Maheshwari, S.N. Elements of Financial Management. New Delhi: Sultan Chand & Sons, 2008. Maheshwari, S.N. Financial Management—Principles and Practice. New Delhi: Sultan Chand & Sons, 2007.
Capital Budgeting NOTES Self-Instructional Material 49 UNIT 4
CAPITAL BUDGETING Structure 4.0 Introduction 4.1 Unit Objectives 4.2 Cases of Capital Budgeting Decisions 4.3 Concept of Capital Budgeting 4.4 Importance of Capital Budgeting 4.5 Kinds of Capital
Investment Proposals 4.6 Factors Affecting Capital Investment Decisions 4.7 Determination of Cash Flows for Investment Analysis 4.8 Capital Budgeting Appraisal Methods 4.9 Summary 4.10 Key Terms 4.11 Answers to 'Check Your Progress' 4.12 Questions and Exercises 4.13 Practical Problems 4.14 Further Reading 4.0 INTRODUCTION A finance manager is concerned with both financing as well as investment decisions. Financing decisions relate to determination of the amount of long-term finance required and the sources from which such finance is to be raised. He has to determine the optimum capital structure keeping in view the cost and risk associated with each source of finance. The methods for determining the amount of long-term finance required and the technique of determining optimum capital structure have already been explained in section B of the book. The sources from which long-term finance is to be raised has already been explained in an earlier unit. The

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investment decisions, also popularly termed as capital budgeting decisions, require comparison of cost against benefits over a long period.

For example, the deployment of finances of additional plant and equipment cannot be recovered in the short run. Such investment may affect revenues for the time period ranging from two to twenty years or more. Such investment decisions involve a careful consideration of various factors, viz., profitability, safety, liquidity, solvency, etc. The present unit primarily deals with this important function of the finance manager. 4.1 UNIT OBJECTIVES z Concept of capital budgeting z Difference between technical and strategic investment decisions z Importance of capital budgeting z Different kinds of capital investment decisions z Evaluation and ranking of different capital investment proposals Capital Budgeting NOTES Self-Instructional 50 Material 4.2 CASES OF CAPITAL BUDGETING DECISIONS A business organization has to quite often face the problem of capital investment decisions. Capital investment refers to the investment in projects whose results would be available only after a year. Investments in these projects are quite heavy and to be made immediately, but the return will be available only after a period of time. The following are some of the cases where heavy capital investment may be necessary: (i) Replacements: Replacements of fixed assets may become necessary either on account of their being worn out or becoming outdated on account of new technology. (ii) Expansion: A firm may have to expand its production capacity on account of high demand for its products and inadequate production capacity. This will need additional capital investment. (iii) Diversification: A business may like to reduce its risk by operating in several markets rather than in a single market. In such an event, capital investment may become necessary for purchase of machinery and facilities to handle the new products. (iv) Research and Development: Large sums of money may have to be expended for research and development in case of those industries where technology is rapidly changing. In case large sums of money are needed for equipment, these proposals will normally be included in the capital budget. (v) Miscellaneous: A firm may have to invest money in projects which do not directly help in achieving profit-oriented goals. For example, installation of pollution control equipment may by necessary on account of legal requirements. Thus, funds will be required for such purposes also. 4.3 CONCEPT OF CAPITAL BUDGETING The term 'Capital Budgeting' refers to long-term planning for proposed capital outlays and their financing.

Thus, it includes both raising of long-term funds as well as their utilization. It may thus be defined as ' the firm's formal process for the acquisition and investment of capital'. 1

It is the decision-making process by which the firms evaluate the purchase of major fixed assets. It involves the firm's decision to invest its current funds for addition, disposition, modification and replacement of long-term or fixed assets. However, it should be noted that investment in current assets necessitated on account of investment in a fixed assets is also to be taken as a capital budgeting decision. For example, a new distribution system may call for both a new warehouse and an additional investment in inventories. An investment proposal of this nature must be taken as a capital budgeting decision and evaluated as a single package, not as an investment in a fixed asset (i.e., warehouse) and in a current asset (i.e., inventory) separately. Capital budgeting is a many-sided activity. It includes searching for new and more profitable investment proposals, investigating engineering and marketing considerations to predict the consequences of accepting the investment and making economic analysis 1.

Hampton. John. J., Financial Decision-Making, p. 245.

Capital Budgeting NOTES Self-Instructional Material 51

to determine the profit potential of each investment proposal. Its basic features can be summarized as follows: (i) It has the potentiality of making large anticipated profits. (ii) It involves a high degree of risk. (iii) It involves a relatively long-time period between the initial outlay and the anticipated return.

On the basis of the above discussion it can be concluded that capital budgeting consists in planning the development of available capital for the purpose of maximizing the long-term profitability (i.e., ROI) of the

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firm. 4.4
IMPORTANCE OF
CAPITAL BUDGETING Capital budgeting
decisions are among the most crucial and critical business decisions.
Special care should be taken in making these decisions on account of the following reasons: (i) Involvement of heavy funds: Capital budgeting decisions require large capital outlays. It is, therefore, absolutely necessary that the firm should carefully plan its investment programme so that it may get the finances at the right time and they are put to most profitable use.
An opportune investment decision can give spectacular results. On the other hand, an ill-advised and incorrect decision can jeopardize the survival of even the
biggest firm. (ii) Long-term implications: The effect of capital budgeting decisions will be felt by the firm over a long period, and, therefore, they have a decisive influence on the rate and direction of the growth of the firm. For example, if a company purchases a new plant for manufacture of
a new product, the company commits itself to a sizable amount of fixed
cost in terms of indirect labour, such as supervisory staff salary and indirect expenses, such as rent, rates and insurance. In case the product does not come out or comes out but proves to be unprofitable,
the company will have to bear the burden of fixed cost unless it
decides to write off the investment completely. A wrong decision, therefore, can prove disastrous for the long-term survival of the firm. Similarly, inadequate investment in assets would make it difficult for the firm to run the business in the long run just as an unwanted expansion results in unnecessary heavy operating costs to the firm. (iii) Irreversible decisions: In most cases, capital budgeting decisions are irreversible. This is because it is very difficult to find a market for the capital assets. The only alternative will be to scrap the capital assets so purchased or sell them at a substantial loss in the event of the decision being proved wrong. (iv) Most difficult to make:
The capital budgeting decisions require an assessment of future events which are uncertain.
It is really a difficult task to estimate the probable future events, the probable benefits and costs accurately in quantitative terms because of economic, political, social and technological factors.
Capital Budgeting NOTES Self-Instructional 52 Material On account of these reasons, capital expenditure decisions are among the class of decisions which are best reserved for consideration by the highest level of management. In case some parts of it are delegated, a system of effective control by the top management should be evolved. 4.5 KINDS OF CAPITAL INVESTMENT PROPOSALS A firm may have several investment proposals for its consideration. It may adopt one of them, some of them or all of them depending upon whether they are independent, contingent or dependent or mutually exclusive. (i) Independent proposals These are proposals
which
do not compete with one another in a way that acceptance of one precludes the possibility of acceptance of another. In case of such proposals
the firm may straightaway 'accept or reject' a proposal on the basis of a minimum return on investment required.
All those proposals which give a higher return than
a
certain desired rate of return are accepted and the rest are rejected. (
ii) Contingent
or dependent proposals These are proposals whose acceptance depends on the acceptance of one or more other proposals. For example a new machine may have to be purchased on account of a substantial expansion of the plant. In this case investment in the machine is dependent upon the expansion of the plant. When a contingent investment proposal is made, it should also contain the proposal on which it is dependent in order to have a better perspective of the situation. (iii) Mutually exclusive proposals These
are proposals
which compete with each other in a way that the acceptance of one precludes the acceptance of other
or others. For example, if a company is considering investment in one of two temperature control systems, acceptance of one system will rule out the acceptance of another. Thus, two or more mutually exclusive proposals cannot both or all be accepted. Some technique has to be used for selecting the better or the best one. Once this is done, other alternatives automatically get eliminated. 4.6 FACTORS AFFECTING CAPITAL INVESTMENT DECISIONS The following are the four important factors which are generally taken into account while making a capital investment decision: 1. Amount of investment: In case a firm has unlimited funds for investment it can accept all capital investment proposals which give a rate of return higher than the minimum acceptable or cut-off rate. However, most firms have limited funds and therefore capital rationing has to be imposed. In such an event a firm can take only such project or projects which are within its means. In order to determine which project should be taken up on this basis, the projects should be arranged in an ascending order according to the amount of capital investment required, as shown below:

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Capital Budgeting NOTES Self-Instructional Material 53 S.No. Project Description Required Investment 1. 101 Purchase of new plant Rs 1,00,000 2. 102 Expansion of the existing plant 1,30,000 3. 103 Purchase of new sales office 1,50,000 4. 104 Introduction of a new product line 2,00,000 In case the funds available are only Rs 1,50,000, Project 104 cannot be taken up and it should, therefore, be rejected outright. Computation of cash capital investment required The term 'capital investment required' refers to the net cash outflow which is
the sum of all outflows and inflows occurring at zero time
period. 2 The net outflow is determined by taking into account the following factors: (i) Cost of the new project (ii) Installation cost (iii) Working capital Investment in a new project may also result in increase or decrease of net working capital requirements. For example, if the new project is expected to increase sales investment in accounts receivables, inventories, cash balance, etc., are also likely to increase. A
part of this increase in current assets may be offset by increase in current liabilities for the
balance additional funds will have to be arranged. This amount should therefore be taken as a part of the initial capital. The investment required in the form of networking
capital will be recovered at the end of the life of the project. This amount of working capital so recovered will become part of cash inflow in the last year of the life of the project. However, investment in working capital and the recovery of working capital will not balance each other
on account of time value of money. It may further be noted that the amount of working capital may show a continuous increase in each of the subsequent years on account of continuous increase in sales. Such increase in working capital should not be taken as a part of initial cash investment. It should rather be taken as an outflow of cash in the year in which additional working capital is required. Generally all capital investment proposals for increasing revenue require additional working capital, while almost all capital investment proposals for reduction in costs result in saving of working capital by increasing the firm's operational efficiency. (iv) Proceeds from sale of asset A new asset may be purchased for replacement of an old asset. The old asset may therefore be sold away. The cash realized on account of such sale will reduce the cost of new investment. (v) Tax effects The amount of profit or loss on the sale of the assets may affect the cash flows on account of tax effects. The profit/loss is ascertained by taking into account the cost of the asset, its book value and the amount realized on its sale. The tax liability of the company will be different in each of the following cases: (a) when the asset is sold at its book value (b) when the asset is sold at a price higher than its book value but lower than its cost 2 Refers to the time the expenditure is made to determine the initial investment requirement of the proposed capital expenditure.
Capital Budgeting NOTES Self-Instructional 54 Material (c) when the asset is sold at a price higher than its cost (d) when the asset
is sold at a price lower than its book value
This will be clear with the help of the following illustration : Illustration 4.1: A company purchased a machinery a few years back for Rs 10,000. It wants to replace this machinery by a new one costing Rs 15,000. The company is subject to income tax @ 50 per cent while capital gains tax @ 30 per cent. The present book value of the machinery is Rs 6,000. Calculate the net initial cash outflow if the company decides to purchase the new machine, in each of the following cases, if the old machine is sold for: (a) Rs 6,000; (b) Rs 8,000; (c) Rs 12,000; (d) Rs 4,000. Solution: (a) Cash required for purchase of the new machine Rs 15,000 Less: Cash realized on sale of the old machine 6,000 Net cash outflow 9,000 (b) Cash required for the purchase of the new machine Rs 15,000 Less: Amount realized on sale of old machine 8,000 7,000 Add: Income tax liability on profit made on sale of machinery (2,000 × 50/100) 1,000 Net cash outflow 8,000 (c) Cash required for the purchase of new machine Rs 15,000 Less: Cash realized on sale of the old machine 12,000 3,000 Add: Income tax liability (4,000 × 50/100) 2,000 Capital gains tax liability (2,000 × 30/100) 600 2,600 Net cash outflow 5,600 (d) Cash required for purchase of new machinery Rs 15,000 Less: Cash realized on sale of the old machine 4,000 11,000 Less: Saving in tax liability on account of loss on the sale of the old machine (2,000 × 50/100) 3 1,000 Net cash outflow 10,000 Note: It may be noted that the method of computing depreciation under the Companies Act is different from that under the Income Tax Act. As per Section 350 of the Companies Act, 1956, loss or profit on sale of individual asset is to be taken to the Profit and Loss Account as a balancing charge. However, as per the current income tax provisions, the profit or loss on an individual item of a fixed asset is not to be taken to the P & L Account. Depreciation is to be charged on a block of assets or according to the Group Depreciation Method. The total amount realized on sale of an individual asset comprising a block, is to be credited to the 'block of assets account' and thus reducing the written down value of the block of assets. Hence, there can be a profit or loss only when the whole block of assets is sold or where the block of assets comprises only of one individual asset which has been sold away. The profit or loss computed in Illustration 4.1 as above for 'tax effect' has been computed on the presumption that the sale is of an entire block of assets comprising one or more than one asset(s). 3 The loss can either be adjusted against current operational profits or be carried forward for eight years, under existing rules, for setting off against future profits.

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Capital Budgeting NOTES Self-Instructional Material 55 (vi) Investment allowance: This is allowed to encourage capital investment in machinery and equipment. In India this allowance was allowed at 20 per cent 4 of the cost of new machinery and equipment for calculating income tax liability for the year in which such asset was put into service. Such allowance thus reduces the cost of the initial investment on the project. Thus, the net cash outflow on account of capital investment proposal can be ascertained as shown below: Original cost of the asset xxx Add: Installation cost xxx Increase in working capital requirements xxx Increase in tax liability xxx xxx xxx Less: Decrease in working capital requirements xxx Decrease in tax liability xxx Investment allowance (if any) xxx xxx Net cash outflow xxx Illustration 4.2: A company intends to replace an old machine with a new machine. From the following information you are required to determine the net cash required for such replacement: Cost of the old machine Rs 50,000 Life of the old machine 5 years Depreciation according to straightline method Remaining useful life 2 years Cost of the new machine 70,000 Installation charges 10,000 Amount realized on sale of old machine 25,000 Additional working capital required 5,000 Income tax 50 per cent Capital gains tax 30 per cent Investment allowance 20 per cent Solution: ESTIMATION OF CASH REQUIREMENT FOR REPLACEMENT Cost of the new machine Rs 70,000 Add: Installation charges 10,000 Additional working capital required 5,000 Additional tax liability: Income tax 5,000 × 50/100 2,500 Capital gains tax — 87,500 Less: Amount realized on sale of old machine 25,000 Investment allowance (70,000 × 20/100) 14,000 39,000 Net cash outflow 48,500 2.
Minimum rate of return on investment: The management expects a minimum rate of return on
the capital investment. The minimum rate of return is usually decided on the basis of the cost of capital. For example, if the cost of 4 The investment allowance was 25% before 1st April, 1987. It was reduced to 20% w.e.f. 1st April, 1987. It has been discontinued w.e.f. 1st April, 1990.
Capital Budgeting NOTES Self-Instructional 56 Material capital is 10 per cent, the management will not like to accept a proposal which yields a rate of return less than 10 per cent. The projects giving a yield below the desired rate of return will, therefore, be rejected. Cut-off point Cut-off point refers to the point below which a project would not be accepted. For example, if 10 per cent is the desired rate of return, the cut-off rate is 10 per cent. The cut-off point may also be in terms of period. For example, if the management desires that the investment in the project should be recouped in three years, the period of three years would be taken as the cut-off period. A project incapable of generating necessary cash to pay for the initial investment in the project within three years will not be accepted. 3.
Return expected from the investment: Capital investment decisions are made in anticipation of increased return in
the future. It is therefore very necessary to estimate the future return or benefits accruing from the investment proposals. There are two criteria available for quantifying benefits from capital investment decisions. They are (i) accounting profit and (ii) cash flows. The term accounting profit is identical with the income concept used in accounting. While in estimating cash flows, depreciation charges and other amortization charges of fixed assets are not subtracted from gross revenue because no cash expenditure is involved. The difference between the two will be clear with the following example. Example Benefit as per Benefit as per Accounting Cash flow approach approach Sales (i) Rs 10,000 Rs 10,000 Less: Cost of sales (ii) : Direct material 3,000 3,000 Direct labour 2,000 2,000 Depreciation 1,000 — Indirect expenses 1,000 1,000 7,000 6,000 Net income/cash flow before tax (i) – (ii) 3,000 4,000 Tax (say at 50 per cent of net income of Rs 3,000) 1,500 1,500 Net income/cash after tax 1,500 2,500 The above example shows that the amount of cash flow is Rs 1,000 more than the amount of accounting profit. The accounting approach shows that only Rs 1,500 is available after meeting all expenses, while the cash flow approach shows that Rs 2,500 is available for investment. The cash flow approach for determination of benefit from a capital investment project is better as compared to the accounting profit approach on account of the following reasons: (i) Determination of economic value While making capital budgeting decisions, a firm is interested in determining the economic value of the project which can only be determined by comparing the cash inflows (benefits) with the cash outflows associated with the project. The firm can by comparing them to find out for itself whether the
future economic inflows are sufficiently large to warrant the initial investment. The
accounting profit approach allocates the cost of investment over the economic useful life of the asset in the form of depreciation rather than at the time when the cost is
Capital Budgeting NOTES Self-Instructional Material 57 actually incurred. It, therefore, fails to
reflect the original need for cash at the time of
investment. It also does not bring out clearly the actual size of cash inflows and outflows in later years. On account of these reasons the cash flow approach is more appropriate for capital budgeting decisions. (ii) Accounting ambiguities Accounting profit approach is full of ambiguities on account of different accounting policies and practices, regarding valuation of inventory, allocation of costs, calculation of depreciation and amortization of various other expenses. The amount of profit may therefore vary according to accounting policies and practices adopted while preparing the accounts. However, there will be only one set of cash flows associated with a project. Obviously, therefore,
the cash flow approach is superior to the accounting profit approach. (

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iii) Time value of money Under usual accounting practices revenue is considered to be realized not at the time when the cash is received, but at the time the sale is made. It means the amount of profit shown by the books may simply be a paper figure if the sales are not realized. Similarly, expenditure is recognized as being made not when the payment is made out, but at the time it is incurred. Thus, the time taken in realizing or making payments is completely ignored. The cash flow approach recognizes the time value of money by comparing actual cash inflows and cash outflows. Moreover, in order to have a better picture even the future cash inflows are discounted and their present worth is found out. On account of the above reasons, the accounting profit approach, though quite useful in measuring performance of an enterprise, is less useful as a tool for managerial decisions. Conventional and non-conventional cash flows: In case of conventional cash flows, an initial
cash outflow is followed by a series of cash inflows
whether of uniform or of different amounts. Most of the capital budgeting decisions follow this pattern. For example, a firm may spend Rs 5,000 on capital asset in zero time period and may receive Rs 1,000 each year for eight years. In case of unconventional cash flows, initial cash outflow is not followed by a series of cash inflows. In other words, there may be not one but a series of cash outflows followed by a series of cash inflows. For example, a firm may purchase a plant for a sum of Rs 10,000. This cash outflow may be followed by cash inflows of Rs 3,000 each year for five years. However, after five years the asset may need overhauling resulting in a cash outflow of Rs 3,000. This may give a new lease of life to the asset and it may be followed by a series of cash inflows. This practice may continue in future years also. 4. Ranking of the investment proposals: When a number of projects appear to be acceptable on the basis of their profitability the projects will be ranked in order of their profitability in order to determine the most profitable project. Ranking of capital investment proposals is particularly necessary in the following two circumstances: (a) Where capital is rationed, i.e., there is a limit on funds available for investment. This aspect is being discussed in detail later in the unit. (b) Where, two or more investment opportunities are mutually exclusive, i.e., only one of the opportunities can be undertaken.
Capital Budgeting NOTES Self-Instructional 58 Material Thus, the objective of ranking is to put the capital available to the best possible use. This will be clear from the following illustration. Illustration 4.3: A Ltd is considering the following five projects for capital expenditure. The company can spare a sum of Rs 1,50,000 and expect a minimum return of 15 per cent before tax on the investment. The details of the projects are as under: Projects Capital expenditure Estimated savings Percentage return after tax on investment (before tax) (i) (ii) (iii) (iv) A Rs 50,000 Rs 5,000 20 B 75,000 9,000 24 C 1,00,000 8,000 16 D 1,25,000 25,000 40 E 1,50,000 28,000 37 Tax rate may be taken at 50 per cent. Solution: On the basis of the information given, project D seems to be the most profitable, since it is giving the highest percentage return on investment. However, in case this project is taken up Rs 25,000 will be the surplus amount available with the company for alternative investment. In case project D is taken up, the full amount of Rs 1,50,000 would be used up. The difference between the additional investment required and the additional income before tax is Rs 25,000 and Rs 6,000 respectively giving a return of 24 per cent on the balance of Rs 25,000. In case such an opportunity is not available, the company should take up project E. 5. Risk and uncertainty: Different capital investment proposals have different degrees of risk and uncertainty. There is a slight difference between risk and uncertainty. Risk involves situations in which the probabilities of a particular event occuring are known whereas in uncertainty, these probabilities are not known. Of course in most cases these two terms are used interchangeably. Risk in capital investment decisions may be due to general economic conditions, competition, technological developments, consumer preferences, labour condition, etc. On account of these reasons the revenues, costs and economic life of a particular investment are not certain. While evaluating capital investment proposals, proper adjustment should therefore be made for risk and uncertainty. 4.7 DETERMINATION OF CASH FLOWS FOR INVESTMENT ANALYSIS Capital budgeting decisions require computation of both cash outflows for and cash inflows from a project. Cash Outflows: They consitute the capital investment required for a project. The capital investment required, as explained in the preceding pages, is computed on the following basis: (i) Cost of plant, equipment, building etc. (ii) Installation cost of plant, equipment, etc. (iii) Additional working capital required for the project (iv) Proceeds from sale of old asset(s). The amount, realized from sale of the old asset(s), as adjusted by tax effects, will reduce the capital investment. Check Your Progress 1. What do capital budgeting decisions require? 2. What are independent proposals? 3. What is cut-off point?
Capital Budgeting NOTES Self-Instructional Material 59 Cash Inflows: They represent the cash profit or return generated by the project year after year. The accounting profit will have to be adjusted for non-cash items for this purpose. The cash flows (both inflows and outflows) may take any one of the following parterns over the project life. (i) Conventional Cash Flows: A situation where initial
cash outflow is followed by a series of cash inflows,
whether of uniform or of different amounts. (ii) Unconventional Cash Flows: There may be a series of cash outflows and a series of cash inflows, whether of uniform or of different amounts. Investment analysis, i.e., evaluating the profitability or otherwise of a capital budgeting decision is largely based on the cash flows. This is explained in detail in the following pages. 4.8 CAPITAL BUDGETING APPRAISAL METHODS
There are several methods for evaluating and ranking capital investment proposals.

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In case of all these methods the main emphasis is on the return which will be derived on the capital invested in the project. In other words, the basic approach is to compare the investment in the project with the benefits derived therefrom. The following are the main methods generally used: 1. Payback Period Method 2. Discounted Cash Flow Method (a) The Net Present Value Method (b) Present Value Index Method 3. Accounting Rate of Return Method Each of the above methods have been explained in detail in the following pages. Payback Period Method The term payback (or payout or pay-off) refers to the period in which the project will generate the necessary cash to recoup the initial investment.

For example, if a project requires Rs 20,000 as initial investment and it will generate an annual cash inflow of Rs 5,000 for ten years, the payback period will be four years calculated as follows: Payback Period Initial Investment = Annual Cash Inflow Rs 20,000 Rs 5,000 = The annual cash inflow is calculated by taking into account the amount of net income on account of the asset (or project) before depreciation but after taxation. The income so earned, if expressed as a percentage of initial investment, is termed as 'unadjusted rate to return'. In the above case, it will be calculated as follows: Unadjusted Rate of Return Annual Return 100 Initial Investment = ×

Capital Budgeting NOTES Self-Instructional 60 Material Rs 5,000 100 25 per cent Rs 20,000 Uneven cash inflows In the above example, we have presumed that the annual cash inflows are uniform. However, it may not always be so. The cash flow each year may be different. In such a case cumulative cash inflows will be calculated and by interpolation, the exact payback period can be calculated.

For example, if the project requires an initial investment of Rs 20,000 and the annual cash inflows for five years are Rs 6,000, Rs 8,000, Rs 5,000, Rs 4,000 and Rs 4,000 respectively, the payback period will be calculated as follows:

Year Cash Inflows Cumulative Cash Inflows 1 Rs 6,000 Rs 6,000 2 8,000 14,000 3 5,000 19,000 4 4,000 23,000 5 4,000 27,000 The above table shows that in three years Rs 19,000 has been recovered. Rs 1,000 is left out of initial investment. In the fourth year the cash inflow is Rs 4,000. It means the payback period is between three to four years, ascertained as follows:

Payback Period = 3 years + 1,000 3.25 years 4,000 =

Accept or reject criterion The payback period can be used as a criterion to accept or reject an investment proposal.

A project whose actual payback period is more than what has been predetermined by the management will be straightaway rejected. The fixation of the maximum acceptable payback period is generally done by taking into account the reciprocal of the cost of capital. For example, if the cost of capital is 20 per cent the maximum acceptable payback period would be fixed at five years. This can also be termed as cut-off point. Usually projects having a payback period of more than five years are not entertained because of greater uncertainties. Illustration 4.4

An engineering company is considering the purchase of a machine for its immediate expansion programme. There are three possible machines suitable for the purpose. Their details are as follows: Machines 1 2 3 (Rs) (Rs) (Rs) Capital Cost 3,00,000 3,00,000 3,00,000 Sales (at standard prices) 5,00,000 4,00,000 4,50,000 Net Cost of Production: Direct Material 40,000 50,000 48,000 Direct Labour 50,000 30,000 36,000 Factory Overheads 60,000 50,000 58,000 Administration Costs 20,000 10,000 15,000 Selling and Distribution Costs 10,000 10,000 10,000

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The economic life of machine No. 1 is two years, while it is three years for the other two. The scrap values are

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Rs 40,000, Rs 25,000 and Rs 30,000 respectively. Sales are expected to be at the rates shown for each year during the full economic life of the machines. The costs relate to annual expenditure resulting from each machine. Tax to be paid is expected at 50 per cent of the net earnings of each year. It may be assumed that all payables and receivables will be settled promptly, strictly on a
cash basis with no outstanding from one accounting year to another. Interest on capital
has to be paid at 8 per cent per annum. You are requested to
show which machine would be the most profitable investment on the principle of 'payback method'.
Solution: STATEMENT SHOWING THE NET CASH FLOW OF THREE MACHINES Machine 1 Machine 2 Machine 3 Rs Rs Rs Capital Cost 3,00,000 3,00,000 3,00,000 Sales (i) 5,00,000 4,00,000 4,50,000 Cost of Production 1,50,000 1,30,000 1,42,000 Administration Cost 20,000 10,000 15,000 Selling and Distribution Cost 10,000 10,000 10,000 Total Cost (ii) 1,80,000 1,50,000 1,67,000 Profit before depreciation and interest (i) - (ii) - (iii) 3,20,000 2,50,000 2,83,000 Depreciation: Cost less scrap value Economic life 1,30,000 91,667 90,000 Interest on borrowings 24,000 24,000 24,000 Depreciation and Interest (iv) 1,54,000 1,15,667 1,14,000 Profit before tax (iii) - (iv) 1,66,000 1,34,333 1,69,000 Taxation (50 per cent) 83,000 67,167 84,500 Profit after tax 83,000 67,166 84,500 Add: Depreciation 1,30,000 91,667 90,000 Net Cash Inflow 2,13,000 1,58,833 1,74,500 Payback period 1.41 years 1,89 years 1.72 years Machine No. 1 is most profitable. Note: (i) It has been presumed that interest on borrowings throughout the economic life of the asset. (ii) Factory overheads do not include depreciation. (iii) No borrowings will be required for working capital. Merits The payback method has the following merits: 1. The method is very useful in evaluation of those projects which involve high uncertainty. Political instability, rapid technological development of cheap substitutes, etc., are some of the reasons which discourage one to take up projects having a long gestation period. Payback method is useful in such cases. 2. The method makes it clear that no profit arises till the payback period is over. This helps new companies in deciding when they should start paying dividends.
Capital Budgeting NOTES Self-Instructional 62 Material 3. The method is simple to understand and easy to work out. 4. The
method reduces the possibility of loss on account of obsolescence
as the method prefers investment in short-term projects. Demerits The method has the following demerits. 1. The method ignores the returns generated by a project after its payback period. Projects having long gestation period will never be taken up if this method is followed though they may yield high returns for a long period. Consider the following example. Example Project A Project B Initial Investment Rs 10,000 Rs 10,000 Cash Inflows: Year 1 4,000 3.000 2 4,000 3,000 3 2.000 3,000 4 —— 3,000 5 —— 3,000 Payback Period 3 years 3.33 years In the above case Project A has a shorter payback period and therefore it should be preferred over B. But this may not be rational decision since project B continues to give return after the payback period which fact has been completely ignored. As a matter of fact, on the whole, Project B is more profitable as compared to Project A 2. The method
does not take into account the time value of money.
In other words, it ignores the interest which is an important factor in making sound investment decisions. A rupee tomorrow is worth less than a rupee today. The following example makes this point clear: Example. There are two projects A and B. The cost of the project is Rs 30,000 in each case. The cash inflows are as under: Cash Inflows Year Project 'A' Project 'B' 1 Rs 10,000 Rs 2.000 2 10,000 4,000 3 10,000 24,000 The payback period is three years in both the cases. However, project A should be preferred as compared to project B because of speedy recovery of the initial investment. Discounted Payback Period Method. The method discussed above is Traditional Payback Period Method. However in order to overcome the criticism that this method
does not take into account the time value of money, the
discounted payback period method is recommended. In case of this method, the present value of cash inflows arising at different time intervals at the desired rate of interest (depending upon the cost of capital) are found out. The present values so calculated are now taken as the real cash inflows for determination of the payback period. This technique can better be understood by the students after studying NPV Method discussed in the following pages.
Capital Budgeting NOTES Self-Instructional Material 63 2. Discounted Cash Flow (DCF) Method or Time Adjusted Technique The discounted cash flow technique is an improvement of
the payback period method. It
takes into account both the interest factor as well as the return after the payback period.
The method involves three stages: (i) Calculation of cash flows, i.e., both inflows
and outflows (preferably after tax) over the full life of the asset. (ii) Discounting the cash flows so calculated
by a discount factor. (iii) Aggregating discounted cash inflows and comparing the total with the discounted cash outflows. Discounted cash flow

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technique thus recognizes that Re 1 of today (the cash outflow) is worth more than Re 1 received at a future date (cash inflow). Discounted cash flow methods for evaluating capital investment proposals are of three types as explained below: (a) The Net Present Value (NPV) Method This is generally considered to be the best method for evaluating the capital investment proposals. In case of this method cash inflows and cash outflows associated with each project are first worked out. The present value of these cash inflows and outflows is then calculated
at the rate of return acceptable to the management. This rate of return is considered as
the cut-off rate and
is generally determined on the basis of cost of capital suitably adjusted to allow for the risk element involved in the project. Cash outflows represent the investment and commitments of cash in the project at various points of time. The working capital is taken as a cash outflow in the year the project starts commercial production. Profit after tax but before depreciation
represents cash inflows. The
Net
Present Value (
NPV)
is the difference between the total present value of
future cash inflows and the
total present value of future cash outflows.
The equation for calculating NPV in case of conventional cash flows can be put as follows: 3 1 2 1 2 3 NPV 1 ( ) ( ) ( ) ( ) n n R R R R I K I K I K In case of non-conventional cash inflows (i.e., where there are a series of cash inflows as well cash outflows) the equation for calculating NPV is as follows: 3 1 2 1 2 3 NPV ( ) ( ) ( ) ( ) n n R R R R I K I K I K 3 1 2 0 1 2 3 ( ) ( ) ( ) ( ) n n I I I I I n I K I K I K I K where, NPV = Net present value, R = Cash inflows at different time periods, K = Cost of capital or Cut-off rate, I = Cash outflows at different time periods. Accept or reject criterion The net present value can be used as an 'accept or reject' criterion. In case the NPV is positive (i.e.,
present value of cash inflows is more than present value of
Capital Budgeting NOTES Self-Instructional 64 Material cash outflows) the project should be accepted. However, if the NPV is negative (i.e.,
present value of
cash
inflows is less than the present value of cash
outflows)
the
project
should be
rejected.
Symbolically, the accept/reject criterion can be put as follows: where NPV < Zero accept the proposal NPV > Zero reject the proposal Or where PV < C accept the proposal PV > C reject the proposal PV stands for
Present Value of Cash Inflows and C for Present Value of Cash Outflows (
or outlays). Illustration 4.5: Calculate the net present value
for a small sized
project requiring
an initial investment of Rs 20,000, and which provides a net cash inflow of Rs 6,000 each year for
six years. Assume the
cost of funds to be 8 per cent per annum and that there is no scrap value. Solution:
The present value of an annuity of Re 1 for six years at 8
per cent per annum interest is
Rs 4.623. Hence, the present value of Rs 6,000 comes to: 6,000 × 4.623 = Rs 27,738 Less Initial Investment Rs 20,000
Net Present Value (NPV)
Rs 7,738 Illustration 4.6: A choice is to be made between two competing projects which require an equal investment of Rs 50,000 and are expected to generate net cash flows as under: Project
I Project II End of year 1 Rs 25,000 Rs 10,000 End of year 2 15,000 12,000 End of year 3 10,000 18,000 End of year 4 Nil 25,000 End of year 5 12,000 8,000 End of year 6 6,000 4,000
The cost of capital of the company is 10 per cent. The following are the Present Value Factors @ 10
per cent per annum: Year P.V. Factors @ 10 per cent per annum 1 0.909 2 0.826 3 0.751 4 0.683 5 0.621 6 0.564 Which project proposal should be chosen and why? Evaluate the project proposals under: (a) Payback Period, and (b) Discounted Cash Flow methods, pointing out their relative merits and demerits.

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Capital Budgeting NOTES Self-Instructional Material 65 Solution: PAYBACK PERIOD METHOD Project I Project II Cash inflows Cum. cash Cash Cum. cash inflows inflows inflows End of year 1 Rs 25,000 Rs 25,000 Rs 10,000 Rs 10,000 End of year 2 15,000 40,000 12,000 22,000 End of year 3 10,000 50,000 18,000 40,000 End of year 4 Nil 50.000 25,000 65,000 End of year 5 12,000 62,000 8,000 73,000 End of year 6 6,000 68,000 4,000 77,000 Project I has the payback period of three years while project II has a payback period of 3.4 years (i.e., Rs 40,000 in three years and Rs 10,000 in the fourth year). Thus, Project I has to be preferred because it has a shorter payback period. DISCOUNTED CASH FLOW METHOD Project I Year Cash inflow Discount Present factor at value 10 per cent 1 Rs 25,000 0.909 Rs 22,725 2 15,000 0.826 12,390 3 10,000 0.751 7,510 4 Nil 0.683 – 5 12,000 0.621 7,452 6 6,000 0.564 3,384 Total Present Value of Future Cash Inflows 53,461 Initial Investment 50,000 Net Present Value (NPV) 3,461 Project II Year Cash inflow Discount Present factor at Rs 10 value per cent per annum Rs 1 10,000 0.909 9,090 2 12,000 0.826 9,912 3 18,000 0.751 13,518 4 25,000 0.683 17,075 5 8,000 0.621 4.968 6 4,000 0.564 2,256 Total Present Value of Future Cash Inflows 56,819 Initial Investment 50,000 Net Present Value (NPV) 6,819 Both projects need the same investment of Rs 50,000. However, in case of Project I, there is a surplus of Rs 3,461, while in case of Project II, there is a surplus of Rs 6,819. Hence Project II is to be preferred. Relative merits and demerits of the two methods: Payback period method is relatively simple to understand and easy to work out as compared to the discounted cash flow
method. However, it does not take into account the return after the payback period.
Moreover, payback period ignores the time value of money. Discounted cash flow method does not have these disadvantages. It takes into account the returns over the effective life of the asset besides considering the future cash inflows. The method is, therefore, more scientific and dependable.
Capital Budgeting NOTES Self-Instructional 66 Material (b) Excess Present Value Index This is a refinement of the net present value method. Instead of working out the net present value, a present value index is found out by comparing the total of present value of future cash inflows and the total of the present value of future cash outflows.
This can be put in the form of the following formula:
Excess Present Value Index (Or Benefits Cost (B/C) Ratio)
Present value of future cash inflows 100 Present value of future cash outflows = ×
Excess Present Value Index provides ready comparison between investment proposals of different magnitudes. For example, Project 'A' requiring an investment of Rs 1,00,000 shows excess present value of Rs 20,000 while another project 'B' requiring an investment of Rs 10,000 shows an excess on present value of Rs 5,000. If absolute figures of net present values are compared, Project 'A' may seem to be profitable. However, if excess present value index method is followed Project 'B' would prove to be profitable. Present Value Index for Project A 1,20,000 100 120 per cent 1,00,000 = × = Present Value Index for Project B 15,000 100 150 per cent 10,000 = × = Illustration 4.7: On the basis of figures given in the previous illustration, state which project is profitable according to the
Present Value Index Method. Solution:
Present Value Index
Present value of future cash inflows 100 Present value of future cash outflows = ×
Project I 53,461 100 107 per cent 50,000 = × = (approx.) Project II 56,819 100 114 per cent 50,000 = × = (approx.) Since, Project II has a higher Present Value Index hence it is more profitable as compared to Project I. (c)
Internal Rate of Return
Internal Rate of Return is that
rate at which
the
sum of
discounted cash inflows equals the sum of
discounted cash
outflows.
In other words, it is the rate
which discounts the
cash flows to zero. It can be stated in the form of a ratio as follows: Cash inflows 1 Cash outflows
Thus, in case of
this method the discount rate is not known but the cash outflows and cash inflows are known.
For example, if a sum of Rs 800 invested in

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Capital Budgeting NOTES Self-Instructional Material 67 a project becomes Rs 1,000 at the end of a year, the rate of return comes to 25 per cent, calculated as follows: R I I r = + where, I = Cash Outflow, i.e., Initial Investment R = Cash Inflow r = Rate of Return Yielded by the Investment (or IRR) Thus: 800 = 1,000/1 + r or 800 r + 800 = 1,000 or 800 r = 200 or r = 200/800 = 0.25 or 25% In case of return is over a number of years, the calculation would take the following pattern in case of conventional cash flows: 3 1 2 1 2 3 (1) (1) (1) (1) = + + + + + + + + n n R R R R I r r r r In case of unconventional cash flows, the equation would be as follows: 3 1 2 1 2 3 ..... (1) (1) (1) (1) ⎛ ⎞ + + + = ⎜ ⎟ ⎜ ⎟ + + + + ⎝ ⎠ n n R R R R r r r r 3 1 2 0 1 2 3 ..... (1) (1) (1) (1) n n R R R R I r r r r where, I = Cash outlay (or outflow) at different time periods. R = Cash inflows at different time periods. r = Rate of return yielded by the investment (or IRR). Since I and R are known factors, r is the only factor to be calculated. However, calculation will become very difficult over a long period if worked out according to the above equations. Tabular values are, therefore, used. Accept/Reject Criterion Internal rate of return is the maximum rate of interest which an organization can afford to pay on the capital invested in a project. A project
would qualify to
be accepted if IRR exceeds the cut-off rate.
While evaluating two or more projects,
a
project giving a higher internal rate of return would be preferred.
This is because the higher the rate of return, the more profitable is the investment. (1) Where cash inflows are uniform: In the case of those projects which result in uniform cash inflows, the
internal rate of return can be calculated by locating the Factor in Annuity Table
II. The factor is calculated as follows: I
F
C =
where, F = Factor to be located I = Original investment C = Cash inflow per year
Capital Budgeting NOTES Self-Instructional 68 Material
Illustration 4.8: An equipment
requires an initial investment of Rs 6,000. The annual cash flow is estimated at Rs 2,000 for five years. Calculate
the
internal rate or return. Solution: The annual cash flow is uniform at Rs 2,000 for five years. Hence, the 'Factor' or the 'Payback' is 3, calculated by: = I F C or F = 6,000 Rs 3 2,000 = This factor of 3 should be located in Table II 5 in the line of five years. The discount percentage would be somewhere between 18 per cent (
Rs 3.127 present value of annuity of Re 1) and 20 per cent (Rs 2.99 present value of annuity of
Re 1). It indicates that the internal rate of return is more than 18 per cent but less than 20 per cent. A more exact interpolation can be done (as explained in the next illustration). However, such an effort may not be very useful in the present case since Rs 2.99 is very near to 3 and hence the internal rate of returns can be taken as 20 per cent. Rs 2.99 is as a matter
of fact the present value of Re 1 received annuity for five years at 20 per cent interest rate.
In case this amount is multiplied by the annual cash inflow it will be equal to the initial investment as shown below: Rs 2,000 × 2.99 = Rs 5,980 (or say Rs 6,000) Relationship between payback reciprocal and rate of return Payback reciprocal is exactly equal to the unadjusted rate of return. Unadjusted rate means a rate which has not been adjusted by taking into account the time value of money. For example, in the illustration given above the payback period comes to three years. Its reciprocal is 1/3 or 0.33 or 33 per cent. The annual return is Rs 2,000 on an investment of Rs 6,000. It also comes to 33 per cent. Payback reciprocal also gives a reasonable approximation of the time-adjusted rate of return as is proved by the above illustration. Of course for calculating the discounted rate Table II has to be consulted. However, there are two assumptions for the use of payback reciprocal: (i) The useful life of the project/asset should be at least twice the payback reciprocal. In any case the payback reciprocal will always exceed the true or the discounted rate of return. (ii) The cash inflows should be uniform over the life of the project/asset. (2)
Where cash inflows are not uniform: When cash inflows are not uniform, the
internal rate of return is calculated by making trial calculations in
an attempt to compute the correct interest
rate
which
equates
the
present value of cash inflows with the present value of cash outflows.
In
the

process, cash inflows are
to be discounted by a number of trial rates. The first trial rate may be calculated on the basis of the same formula which is used for determining the internal rate of return when cash inflows are uniform,
as explained above. However, in this case 'C' stands for 'annual average cash inflow', in place of 'annual cash inflow.'
After applying the first trial rate, the second trial rate is determined when the total present value of the cash inflows is greater or less than the total present 5
Tables I and II are given at the end of the book.
Capital Budgeting NOTES Self-Instructional Material 69
value of cash outflows. In case
the total present value of cash inflows is less than the total present value of cash outflows,
the second trial rate taken will be lower than
the first rate. In case the present total value of cash inflows exceeds the present total value of cash outflows,
a trial rate higher than first trial rate will be used. This process will continue till the two flows more or less set off each other. This will be the 'internal rates of return'.
Illustration 4.9:
A company has to select one of the following two projects:
Cost Project
A Project B Cash inflows: Rs 11,000 10,000 Year 1 6,000 1,000 Year 2 2,000 1,000 Year 3 1,000 2,000 Year 4 5,000 10,000 Using the Internal Rate of Return Method suggest which project is preferable. Solution:
The cash inflows are not uniform and hence
the
internal rate of return will have to be calculated by the Trial and Error Method. In order to have an approximate idea about such rate,
it will be better to find out the 'factor'.
The factor reflects the same relationship of investment and 'cash inflows' as in case of payback calculations: Thus, = I F C where, F = Factor
to be located I = Original investment C = Average cash inflow per year The '
factor'
in case of project A would be: 11,000 3.14 3,500 = = F The 'factor' in case of project B would be: 10,000 2.86 3,000 = = F
The factor thus calculated will be located in Table II on the line
representing number of years
corresponding to estimated useful life of the asset.
This would give the estimated rate of return to be applied for discounting the cash inflows
for
the internal rate of return. In case of Project A, the rate comes to 10 per cent while in case of project B
it comes to 15 per cent. Project A: Year Cash Inflows Discounting Factor Present Value at 10 per cent 1 Rs 6,000 0.909 Rs 5,454 2 2,000 0.826 1,652 3 1,000 0.751 751 4 5.000 0.683 3,415 Total Present Value 11,272
Capital Budgeting NOTES Self-Instructional 70 Material The present value at 10 per cent comes to Rs 11,272.
The initial investment is Rs 11,000. Internal rate of return may be taken approximately at 10
per cent.
In case more exactness is required another trial rate which is slightly higher than 10 per cent (since at this rate the present value is more than initial investment) may be taken. Taking a rate of 12
per cent,
the following results would emerge. Year Cash Inflows Discounting Factor
at 12 per cent Present Value 1 Rs 6,000 0.893
Rs 5,358 2 2,000 0.797 1,594 3 1,000 0.712 712 4 5,000 0.636 3,180 Total
Present Value 10,844 The internal rate of return is thus more than 10
per cent, but less than 12 per cent. The exact rate may be calculated as follows:
Internal Rate of Return = Difference in calculated present value and required net cash outlay Difference in rate Difference in calculated present values × 11,272 11,000 10% 2 11,272 10,844 – = + × – 272 10% 2 11.3per cent 428 = + × =
The exact internal rate of return can also be calculated as follows: At 10 per cent the present value is + 272.
At 12 per cent
the present value is – 156. The internal rate would, therefore, be between 10
per cent and 12 per cent calculated as follows: 272 10 2 272 156 = + × + = 10 + 1.3 = 11.3 per cent
Project B: Year Cash Inflows Discount Factor Present Value at 15 per cent 1 Rs 1,000 0.870 Rs 870 2 1,000 0. 756 756 3 2,000 0. 658 1,316 4 10,000 0.572 5,720 Present Value 8,662 Since present value at 15 per cent comes only to
Rs 8,662,

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a lower rate of discount should be taken. Taking a rate of 10
per cent, the following will be the result: Year Cash Inflows Discount Factor Present Value at 10 per cent 1 Rs 1,000 0.909 Rs 909 2 1,000 0. 826 826 3 2,000 0.7518 1,502 4 10,000 0.683 6,830 Present Value 10,067
Capital Budgeting NOTES Self-Instructional Material 71 The present value at 10 per cent comes to Rs 10,067
which is more or less equal to the initial investment. Hence, the internal rate of return may be taken 10 per cent. In order to have more exactness, the internal rate of return can be interpolated as done in case of project A. At 10 per cent the present value is + 67
At 15 per cent
the present value is – 1,338 67 10% 5 67 1,338 + × + 67 10 5 1,405 = + × = 10 + .24 = 10.24 per cent. Thus, internal rate of return in case of Project 'A' is higher as compared to Project '
B'. Hence, Project 'A' is preferable. Merits The merits of discounted cash flow method are as follows: (i) Discounted cash flow technique takes into account the time value of money. Conceptually, it is better than other techniques such as payback or accounting rate of return. (ii) The method takes into account directly the amount of expenses and revenues over the project's life. In case of other methods simply their averages are taken. (iii) The method automatically gives more weight to those money values which are nearer to the present period than those which are farther from it. While in case of other methods, all money units are given the same weight which seems to be unrealistic. (iv) The method makes possible comparison of projects requiring different capital outlays, having different lives and different timings of cash flows at a particular moment of time because of discounting of all cash flows. Demerits The following are the demerits of discounted cash flow method: (i) The method is difficult to understand and work out as compared to other methods of ranking capital investment proposals. (ii) The method takes into account only the cash inflows on account of a capital investment decision. As a matter of fact the profitability or otherwise of a capital investment proposal can be judged only when the net income (and not the cash inflow) on account of operations is considered. (iii) The method is based on the presumption
that cash inflows can be reinvested at the discounting rate in the new projects.
However,
this presumption does not always hold good because it all depends upon the available investment opportunities.
Accounting or Average Rate of Return (ARR) Method
According to this method,
the capital investment proposals are judged on the basis of their relative profitability.
For this purpose, capital employed and related income
are
determined according to commonly accepted accounting principles and practices over the entire economic life of the project and then the average yield is calculated.
Such a rate is termed as Accounting Rate of Return. It may be calculated according to any of the following methods:
Capital Budgeting NOTES Self-Instructional 72 Material (i) Annual Average Net Earnings 100 Original Investment × (ii) Annual Average Net Earnings 100 Average Investment ×
The term 'average annual net earnings' is the average of the earning (after depreciation and tax) over the whole of the economic life of the project. (
iii) Increase in expected future annual net earnings 100 Initial increase in required investment × The amount of 'average investment' can be calculated according to any of the following methods: (iv) (a) Original investment 2 (b) Original investment – Scrap value of the asset 2 (c) Original investment +Scrap value of the asset 2 (d) Original investment – Scrap value Addl.Net Scrap 2 Working Capital Value + + It may be noted that results obtained under each of the above methods will be quite different from each other. It is, therefore, necessary that while evaluating capital investment proposals, the same method is followed in each case. Accept/Reject criterion Normally, business enterprises fix a minimum rate of return. Any project expected to give a return below this rate will be straightaway rejected. In case of several projects, where a choice has to be made, the different projects may be ranked in the ascending or descending order of their rate of return. Projects below the minimum rate will be rejected. In case of projects giving rates of return higher than the minimum rate, obviously projects giving a higher rate of return will be preferred over those giving a lower rate of return. Illustration 4.10: Alpha Limited is contemplating the purchase of a new machine to replace a machine which has been in operation in the factory for the last five years. Ignoring interest but considering tax at 50 per cent of net earnings, suggest which of the two alternatives should be preferred. The following are the details: Old Machine New Machine Purchase
price Rs 40,000 Rs 60,000 Estimated life of machine 10 years 10 years Machine running hours per annum 2,000 2,000 Units per hour 24 36 Wages per running hour 3 5.25

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Capital Budgeting NOTES Self-Instructional Material 73 Power per annum 2,000 4,500 Consumable stores per annum 6,000 7,500 All other charges per annum 8,000 9,000 Material cost per unit 0.50 0.50 Selling price per unit 1.25 1.25 Information regarding sales and cost of sales will hold good throughout the economic life of each of the machines. Depreciation has to be charged according to the straightline method. Solution: PROFITABILITY STATEMENT Old Machine New Machine Cost of the Machine (Rs) 40,000 60,000 Life of Machine (years) 10 10 Output (Units) 48,000 72,000 Sales Value (Rs) 60,000 90,000 Less: Cost of Sales : Direct material 24,000 36,000 Wages 6,000 10,500 Power 2,000 4,500 Consumable stores 6,000 7,500 Other charges 8,000 9,000 Depreciation 4,000 50,000 6,000 73,500 Profit before tax 10,000 16,500 Tax at 50 per cent 5,000 8,250 Profit after tax 5,000 8,250 Accounting Rate of Return Old Machine New Machine (i) Average Net Earnings 100 Original Investment × = 5,000/40,000 × 100 = 12.5 per cent 8,250 100 13.75 per cent 60,000 × = (ii) Average Net Earnings 100 Average Investment × = 5,000/20,000 × 100 = 25 per cent 8,250 100 30,000 × = 27.50 per cent (iii) Incremental Earnings 100 Incremental Investment × 3,250 100 Rs.60,000 Rs.20,000* = × – 3,250 100 8 per cent 40,000 = × = (approx.) Thus, replacement of the old machine by a new machine (ignoring interest) is profitable. Advantages The following are the advantages of this method: (i) The method takes into account savings over the economic life of the asset. Hence, it provides a better comparison of the projects as compared to the payback method. Check Your Progress 4. What are 'Cash Inflows'? 5. State one merit of the payback method. 6. What is 'unadjusted rate'?

Capital Budgeting NOTES Self-Instructional 74 Material (ii) The method embodies the concept of 'net earnings' while evaluating capital investment projects which is absent in case of all other methods. Disadvantages The method suffers from the following disadvantages: (i) The method

does not take into account the time value of money.

Thus, it has the same fundamental defect as that of the payback method. (ii) There are different methods for calculating the Accounting Rate of Return due to diverse concepts of investments as well as earnings. Each method gives different results. This reduces the reliability of the method. On account of the above disadvantages, the Accounting Rate of Return Method is not much in use these days. 4.9 SUMMARY z Capital investment refers to investments in projects whose results will be available only after a year. z Such projects require heavy capital outflow, and therefore, appropriate planning. z Capital investment proposals can be classified as independent proposals, contingent or dependent proposals and mutually exclusive proposals. z The factors affecting capital investment decisions are: amount of investment, minimum rate of return required on investment and the rate of return expected from the investment. z The capital budgeting appraisal methods are:

Pay Back Period Method, Net Present Value Method, Present Value Index Method and Accounting Rate of Return Method. 4.10

KEY TERMS z Accounting Rate of Return: It is the return computed on the basis of matching net accounting income with the investment required for a project. z Capital Budgeting: It is the decision-making process concerned with

the

deployment

of available capital for the purpose of maximizing the long-term profitability of the

firm.

z Cut-off Point: It is the dividing line between the acceptable and non-acceptable proposals. It may be in terms of a period or a rate. In the former case, it is termed as 'Cut-off Period'. z Capital Rationing: It is the process of allocating funds to most desirable projects due to limitations on the availability of financing. z Discounted Cash Flow Method: It is a method of evaluation by which the future cash flows from a project are discounted to current levels by the application of a discount rate with the objective of reducing all cash flows to a common denomination for making comparison. z Internal

Rate of Return (IRR): It is the rate of return

at which

the

present value of

the future

cash inflows is equal to the present value of the

future cash

outflows.

At this rate, the NPV is zero. z Net Present Value (NPV) Method: It is the method under which future cash flows are discounted to its current value at a given rate for identifying the relative return from a project.

Capital Budgeting NOTES Self-Instructional Material 75 z Payback Period: It is the length of time needed to regain the original investment. z Profitability Index: It is the ratio of

the total present value of future

cash inflows with the total present value of future cash outflows.

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It
is also known as
excess present value index or benefits/costs ratio. 4.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Capital budgeting decisions require large capital outlays. 2.
Independent proposals are those which do not compete with one another in a way that acceptance of one precludes the possibility of acceptance of another. 3.
Cut-off point refers to the point below which a project would not be accepted. 4. Cash inflows represent the cash profit or return generated by the project year after year. 5. The payback method is very useful in evaluation of those projects which involve high uncertainty. 6. Unadjusted rate means a rate which has not been adjusted by taking into account the time value of money. 4.12 QUESTIONS AND EXERCISES Short-Answer Questions 1. State whether each of the following statements is True or False: (a) The Internal Rate of Return and Net Present Value are synonymous terms. (b) Cash flows from a project can be estimated accurately. (c) Cash flows from a project can be worked out only on the basis of certain probabilities. (d) The inflation and deflation factors need not be taken into account while estimating future cash inflows since it is difficult to predict future price changes. (e) It is imperative to make an estimate regarding likely increase in costs on account of possibility of delay in implementing a project. (f) No additional working capital will be required in case of an expansion of an existing project. (g) Tax concessions have no role to play in estimating the cash flows from a project. (h) Internal rate of return determines the maximum rate of interest that a firm can afford to pay on the borrowings for a particular project. (i) Payback method takes into account the cash flows after the payback period. (j) Depreciation is considered while calculating the return on a project according to the Accounting Rate of Return Method. (k) Discounted cash flow techniques takes into account the time value of money. (
l) There are no mathematical techniques available for dealing with risk and uncertainty factors involved in determining future cash inflows from a project.
Capital Budgeting NOTES Self-Instructional 76 Material Long-Answer Questions 1. 'Payback method is a test of liquidity and not profitablility'. Discuss. 2. Explain briefly the following methods of ascertaining the profitability of capital expenditure project bringing out merits and demerits of each: (a) Payback method (b) Return on Investment method 3. 'Capital expenditure decisions are by far the most important decisions in the field of financial management'. Illustrate. 4. Discuss briefly the
Net Present Value Method vs. Internal Rate of Return Method of evaluation of projects. 5.
What are the basic components of capital budgeting analysis ? Explain the difference between IRR and NPV methods. 6. Explain the salient features of the 'Present Value Method' of project evaluation and examine its rationality. 7. Explain the importance of proper planning and control of capital expenditure and the various techniques that are used for comparative evaluation of mutually exclusive capital expenditure proposals. 8. Discuss the methods used for evaluating and ranking investment proposals. Compare the IRR Method with the NPV method. 4.13 PRACTICAL PROBLEMS Payback Method 1. ABC Ltd is considering two projects. Each requires an investment of Rs 10,000. The net cash inflows from investment in the two projects X and Y are as follows: Year X Y 1 Rs 5,00 Rs 1,000 2 4,000 2,000 3 3,000 3,000 4 1,000 4,000 5 – 5,000 6 – 6,000 The company has fixed three years payback period as the cut-off point. [Ans. Project X should be accepted] 2. Each of the following projects requires a cash outlay of Rs 10,000. You are required to suggest which project should be accepted if the standard payback period is five years: Year Cash Inflows Project X Project Y Project Z 1 Rs 2,500 Rs 4,000 Rs 1,000 2 2,500 3,000 2,000 3 2,500 2,000 3,000 4 2,500 1.000 4,000 5 2,500 [Ans. Payback period in each case is four years. However, Project Y is the best out of all since in its case the cash inflows are higher in the initial years]. 3. Using the information given below, compute the payback period under (a) Traditional Payback Method and (b) Discounted Payback Method and comment on the results: Initial outlay Rs 80,000 Estimated life Five years
Capital Budgeting NOTES Self-Instructional Material 77
Profit after tax: End of year 1 Rs 6,000 2 14,000 3 24,000 4 16,000 5 Nil Depreciation has been calculated
under the straightline method. The cost of capital may be taken at 20 per cent per annum and the P.V. of Re 1 at 20 per cent per annum is given below : Year 1 2 3 4 5 P.V. Factor 0.83 0.69 0.58 0.48 0.40 [Ans. (a) 2.7 years (b) 4.39 years] [Hint. (i) Add depreciation of Rs 16,000 to net profit each year for determining cash flows. (ii) Discount the cash flows for determining the present values for calculating payback period according to method (b)]. 4.
There are two projects X and Y. X requires an investment of Rs 26,000
while Y requires an investment of Rs 38,000.
The cost of capital is 12 per cent. On the basis of the

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following cash inflows and present value of Re 1 at 12 per cent, you are required to state which project should be accepted: Year Cash inflows Present Value of Re 1 at 12 per cent Project X Project Y 1 Rs 9,000 Rs 8,000 0.893 2 7,000 10,000 0.797 3 6,000 12,000 0.712 4 5,000 14,000 0.636 5 4,000 8,000 0.567 6 4,000 2,000 0.507 7 3,000 16,000 0.452 8 3,000 – 0.404 9 3,000 – 0.361 10 3,000 0.322 [Ans. NPV Project X Rs 3,981; NPV Project Y Rs 7,344; Project Y to be preferred] 5. Consider the following proposed investments with the indicated cash inflows: Year-end Cash Inflows Investment Initial Year 1 Year 2 Year 3 outlay (Rs '000) (Rs '000) (Rs '000) (Rs '000) A 200 200 Nil Nil B 200 100 100 100 C 200 20 100 300 D 200 200 20 20 E 200 140 60 100 F 200 160 160 80 Rank the investment deriving the Net Present Value (NPV) using a discount rate of 10 per cent, and state your views. Note: Present value of Re 1 Due at the end of year: Re 1 0.909 2 0.826 3 0.751 [Ans. NPV: Project A Rs 181.80, Project B Rs 248.60, Project C Rs 326.08, Project D Rs 213.34, Project E Rs 251.92, Project F Rs 337.68, Project F should be preferred.]

Capital Budgeting NOTES Self-Instructional 78 Material

Internal Rate of Return (IRR) 6.

A project costs Rs 16,000 and is expected to generate cash inflows of Rs 4,000

each

for five years. Calculate the

Internal Rate of Return. [

Ans. 8 per cent] 7.

A company is contemplating investment in a project which requires an initial investment of Rs 40,000

generating a cash flow of Rs 16,000 every year for four years. Calculate the Internal Rate of Return. [Ans. 22 per cent] 8. X Ltd has currently under examination a project which will yield the following returns over a period of time. Year Gross Yield (Rs) 1 80,000 2 80,000 3 90.000 4 90,000 5 75,000 Cost of the machinery to be installed works out to Rs 2,00,000 and the machine is to be depreciated at 20 per cent WDV basis. Income-tax rate is 50 per cent. If the average cost of raising capital is 11 per cent, would you recommend accepting the project under IRR Method ? [Ans. IRR 14% approx, the project may be accepted] [Hint. In the last year full remaining depreciable value of the asset is to be charged as depreciation. Scrap value assumed to be nil.] Accounting Rate of Return 9. ABC Ltd

is proposing to take up a project which will need an investment of Rs 40,000. The net income before

depreciation and tax is estimated as follows: Year Rs 1 10,000 2 12,000 3 14,000 4 16,000 5 20,000 Depreciation is to be charged according to the straightline method. Tax rate is 50 per cent. Calculate the Accounting Rate of Return. [Ans. ARR Rs 3,200/Rs 20,000 = 16 per cent] 4.14 FURTHER READING Maheshwari, S.N. Financial Management: Principles & Practice. New Delhi: Sultan Chand & Sons, 2007. Maheshwari, Dr. S.N, Dr. Suneel K. Maheshwari, Mr. Sharad K. A Textbook of Accounting for Management. New Delhi: Vikas Publication House Pvt. Ltd.

MODULE - 2

Cost of Capital NOTES Self-Instructional Material 81

UNIT 5

COST OF CAPITAL Structure 5.0 Introduction 5.1 Unit Objectives 5.2 Concept

of

Cost of Capital 5.3 Importance

of Cost of Capital 5.4 Classification of Cost of Capital 5.5

Controversy Regarding Cost of

Capital 5.6 Computation of Cost of

Capital 5.7

Summary 5.8

Key Terms 5.9 Answers to 'Check Your Progress' 5.10 Questions

and Exercises 5.11 Practical Problems 5.12 Further Reading 5.0 INTRODUCTION In the previous unit, while evaluating capital investment proposals according to

the sophisticated capital budgeting techniques—Net Present Value and Internal Rate of Return—

it has been explained that cost of capital is

the criterion to accept or reject a proposal. The cost of capital was presumed to have been known in all those cases. In the present unit, the concept of

the

cost of capital and the methods for its computation are being explained. 5.1

UNIT OBJECTIVES z The concept and importance of cost of capital z Classification of cost of capital into different categories z The controversy regarding cost of capital z Determining cost of capital raised through different sources 5.2

CONCEPT OF

COST OF CAPITAL

A firm's

cost of capital may be defined as '

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the rate of
return the firm requires from investment in order to increase the value of
the firm in the
marketplace.' 1
There are
three basic aspects of concept of cost: It Is Not a Cost as Such
A firm's cost of capital
is
really the rate of return that
it requires on the projects available. It is merely a 'hurdle rate'. Of course, such rate may be calculated on the basis of actual cost of different components of capital. 1. Hampton, John J., Financial Decision-making, (1977), p. 298.
Cost of Capital NOTES Self-Instructional 82 Material
It Is the Minimum Rate of Return A firm's cost of capital
represents the minimum rate of return that will result in at least maintaining (if not increasing) the value of its equity shares. It Comprises Three Components
A firm's cost of capital comprises three components: (a) Return at zero risk level refers to
the expected rate of return when a project involves no risk whether business or financial. (b) Premium for business risk. The term
business risk refers to the variability in operating profit (EBIT) due to change in sales.
In case a firm selects a project having more than
the
normal or average risk, the suppliers of funds for the project will
expect a higher rate of return than the normal rate. The cost of capital will thus go up. The business risk is generally determined by the capital
budgeting decision. (c) Premium for finanicial risk.
The term financial risk refers to the risk on account of
pattern of capital structure (or debt-equity mix). In general, it may be said that a firm having a higher debt content in its capital structure is more risky as compared to a firm which has a comparatively low debt content. This is because in the former case
the firm requires higher operating profit to cover periodic interest payment and repayment of principal at the time of maturity
as compared to the latter. Thus, the chances of cash insolvency are greater in case of such firms.
The suppliers of funds would, therefore, expect a higher rate of return from such firms as compensation for
higher risk. The above three components of
cost of capital may
be put in the form of
the following equation:
K = r 0 + b + f where, K =
Cost of capital
r 0 =
Return at zero risk level b = Premium for business risk
f = Premium for
financial risk 5.3
IMPORTANCE
OF COST OF CAPITAL
The determination of the firm's
cost of capital
is
important
from the point of view of both capital budgeting as well as
capital structure planning decisions.
Capital Budgeting Decisions In capital budgeting decisions, the cost of capital
is often used as a discount rate on the basis of which the firm's future cash flows are discounted to find out their present values. Thus, the cost of capital is the very basis for financial appraisal of new capital expenditure proposals. The decision of the finance manager will be irrational and wrong in case the cost of capital is not correctly determined. This is because the business must earn at least at a rate which equals to its cost of capital in order to at least break-even.
Cost of Capital

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Capital Structure Decisions The
cost of capital is also an important consideration in
capital structure decisions.
The finance manager must raise capital from different sources in a way that it optimizes the risk and cost factors. The sources of funds which have less cost involve high risk. Raising of loans may, therefore, be cheaper on account of income tax benefits, but it involves heavy risk because a slight fall in the earning capacity of the company may bring the firm near to cash insolvency. It is, therefore, absolutely necessary that cost of each source of funds is carefully considered and compared with the risk involved with it. 5.4
CLASSIFICATION OF COST OF CAPITAL
Cost
of capital can be classified as follows:
Explicit Cost
and Implicit
Cost
Explicit cost of any source of finance may
be defined as
the discount rate that
equates the present value of
the
funds received by the firm
net of underwriting
costs, with the present value of
expected cash outflows. These outflows may be interest payments, repayment of principal or dividend. 2 This may be calculated by computing value according to the following equation: 1 2 0 1 2 ..... (1) (1) (1) = + + + + + + n n C C C I K K K where, I 0 = Net amount
of funds received by the firm at time zero C = Outflow in the period concerned n = Duration for which the funds are provided K = Explicit cost of capital
Thus, the explicit cost of capital may be taken as
the rate of return of the cash flows of financing opportunity. It is,
in other words, the internal rate of return the firm pays for financing. For example, if a company raises a sum of Rs 1 lakh by way of debentures carrying interest at 9 per cent and payable after twenty years, the cash inflow will be a sum of Rs 1 lakh. However, annual cash outflow will be Rs 9,000 for twenty years. The explicit cost will, therefore, be that rate of internal return which equates Rs 1 lakh, the initial cash inflow with Rs 9,000 payable every year for twenty years and Rs 1 lakh at the end of twenty years.
The implicit
cost may
be defined as '
the rate of return associated with the best investment opportunity for the firm
and its shareholders that will be
forgone if the project
presently under consideration by the firm
were accepted.' 3
When the
earnings are retained by a company, the implicit cost is the income which the shareholders could have earned 2. V.N. Honey James C., Financial Management and Policy, p. 102. 3. Porterfield James, T.S., Investment Decision and Capital Costs, Englewood Cliffs, N.J. Prentice Hall, I.N.C., p. 45.

if such earnings would have been distributed and invested by them.
As a matter of fact explicit costs arise when the funds are raised, while the implicit costs arise whenever they are used. Viewed from this angle, funds raised from any source have implicit costs once they are invested. Future Cost and Historical Cost Future cost refers to the expected cost of funds to finance the project, while
historical cost is the cost which has already been incurred for financing a particular project.
In financial decision-making, the relevant costs are future costs and not the historical costs. However, historical costs are useful in projecting the future costs and providing an appraisal of the past performance when compared with standard or predetermined cost. Specific Cost
and Combined

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Cost
The cost of each component of capital (i.e., equity shares, preference shares, debentures, loans, etc.) is known as specific cost of capital.
In order to determine the
average cost of capital of the firm, it becomes necessary first to consider the costs of specific methods of financing. This concept of cost is useful in those cases where the profitability of a project is judged on the basis of the cost of the specific source from where the project will be financed. For example, if a company's estimated cost of equity share capital is 11 per cent, a project which will be financed out of equity shareholders' funds would be accepted only when it gives a rate of return of at least 11 per cent.
The composite or combined cost of capital is inclusive of all
cost of capital
from all sources, i.e., equity shares, preference shares, debentures and other
loans. In capital investment decisions, the composite cost of capital will be used as a basis for accepting or rejecting the proposal, even though the company may finance one proposal from one source of financing while another proposal from another source of financing. This is because it is an overall mix of financing over time, which is important in valuing the firm as an ongoing overall entity. Average Cost and Marginal Cost
The
average
cost of capital is the weighted average of the costs of
each component of funds
employed by the
firm.
The weights are in proportion of
the share of each component of capital
in the total capital structure. The computation of average cost of capital
involves the following
problems: (i) It requires measurement of costs of each specific source of capital. (ii) It requires assigning of appropriate weights to each component of capital. (iii) It raises a question whether the average cost of capital is at all affected by changes in the composition of the capital. The financial experts differ in their approaches. According to the traditional approach, the firm's cost of capital depends upon the method and level of financing, while according to the modern approach as propounded by Modigliani and Miller, the firm'
s total
cost of capital is independent of the method and level of financing.
All these problems have been discussed in detail later in the unit. Marginal cost of capital, on the other hand, is the weighted average cost of new funds raised by the firm. For capital budgeting and financing decisions, the marginal cost of capital is the most important factor to be considered. Check Your Progress 1. What is 'Return at zero risk level? 2. What is finanical risk? 3. What is future cost?
Cost of Capital NOTES Self-Instructional Material 85 5.5 CONTROVERSY REGARDING COST OF CAPITAL The concept of cost of capital has considerable practical utility. However, it should be noted that cost of capital is not only the most important, but also the most disputed topic in financial management. There are two important approaches in this regard: 1. Traditional Approach According to this approach, a firm's cost of capital depends upon the method and level of financing or its capital structure.
A firm can, change its overall cost of capital by
increasing or decreasing the debt-equity mix. For example, if a company has 9 per cent debentures (issued and payable at par) the cost of funds raised from this source comes to only 4.5 per cent (assuming 50 per cent tax rate). Funds from other sources, such as equity shares and preference shares, also involve cost. But the raising of funds through debentures is cheaper because of the following reasons: (i) Interest rates are usually lower than dividend rates. (ii) Interest is allowed as an expense resulting in a tax benefit, while dividend is not allowed as an expense while computing taxable profits of the company. The traditionalist theorists, 4 therefore, argue that
the weighted average cost of capital will decrease with every increase in the debt content in
the total capital employed. However, the debt content in the total capital employed should be maintained at a proper level because cost of debt is a fixed burden on the profits of the company. It may have adverse consequences in periods when the company has low profitability. Moreover, if the debt content is raised beyond a particular point,
the investors will start considering the company too risky and their expectations from equity shares
will go up. 2. Modigliani and Miller Approach According to this approach, the corporation's total
cost of capital is constant and it is independent of the method and level of financing. 5
In other words, according to this approach a change in the debt-equity ratio does not affect

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the total
cost of capital. According to the traditional approach, as explained above, the
cost of capital
is the weighted average cost of the debt and the cost of equity.
Each change in the debt-equity ratio automatically offsets change in one with the change in the other on account of change in the expectation of equity shareholders. For example, the capital structure of a company is as follows: 9 per cent Debentures Rs 1,00,000 Equity Share Capital Rs 1,00,000 The company has at present an even debt-equity ratio. It has been paying dividend at the rate of 12 per cent on equity shares. In case, the debt-equity ratio changes, to say, 60 per cent debt and 40 per cent equity, the following consequences will follow: (i) The debt being cheaper, the overall cost of capital will come down. (ii) The expectation of the equity shareholders from present dividend of 12 per cent will go up because they will find the company now more risky. 4. The composite cost (total) when put as a percentage to total capital employed, would be weighted average cost of capital. 5. ‘
The Cost of Capital, Corporation Finance and Theory of Investment’, American Economic Review, 48 (
June, 1958),
pp. 261-97.
Cost of Capital NOTES Self-Instructional 86 Material Thus, the overall cost of capital of the company will not be affected by change in the debt-equity ratio. Modigliani and Miller, therefore, argue that within the same risk class, mere change of debt-equity ratio does not affect the cost of capital. Their following observations in the article; ‘Cost of Capital, Corporation Finance and Theory of Investment,’ need careful consideration: (i) The total market
value of the firm and its cost of capital
are independent of its capital structure.
The total market value of the firm can be computed by capitalizing the expected
stream of operating earnings at a discount rate
considered appropriate for its risk class. (
ii)
The
cut-off rate for investment purposes is completely independent of the way in which investment is financed.
Assumptions
under the
Modigliani-Miller Approach The Modigliani-Miller Approach is subject to the following assumptions: Perfect Capital Market The securities are traded in perfect capital markets. This implies that: (a) The investors are free to buy or sell securities. (b) The investors are completely knowledgeable and rational persons. All information and changes in conditions are known to them immediately. (c) The purchase and sale of securities involve no costs such as broker’s commission and transfer fees. (d) The investors can borrow against securities
without restrictions on the same terms and conditions as the firms can.
Firms Can Be Grouped in Homogeneous Risk Classes Firms should be considered to belong to a homogeneous class if their expected earnings have identical risk characteristics. In other words, all firms can be categorized according to the return that they give and a firm in each class has the same degree of business and financial risk. Same Expectation
All investors have the same expectation of the firm’s net operating income (
EBIT)
which is used for evaluation of a firm. There is 100 per cent dividend payout, i.e., firms distribute all of their net earnings to the shareholders. No Corporate Taxes In the original formulation Modigliani and Miller hypothesis assumes that there are no corporate taxes. This assumption was removed later. In conclusion, it may be said that in spite of the correctness of the basic reasoning of Modigliani and Miller, the traditional approach is more realistic on account of the following reasons: (i) The corporations are subject to income tax and, therefore, due to the tax effect, the cost of debt is lower than cost of equity capital. (ii) The basic assumption of the Modigliani and Miller hypothesis that capital markets are perfect is seldom true.
Cost of Capital NOTES Self-Instructional Material 87 5.6
COMPUTATION OF
COST OF CAPITAL Computation of cost of capital involves: (i) Computation of cost of
each specific source of
finance
is termed as computation of specific costs, and (ii) Computation of composite cost is termed as weighted average cost.
Computation of Specific Costs Cost of each specific source of finance,
viz., debt, preference capital
and equity capital, can be determined as follows: I.
Cost of Debt

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Debt may be
issued at par, at premium or discount. It may be perpetual or redeemable.
The technique of computation of cost in each case has been explained in the following
pages.
Debt Issued at Par The computation of cost of debt issued at par is comparatively an easy task. It
is the explicit interest rate adjusted further for the tax liability of the company.
It may be computed according to
the following formula: Kd = (1 – T) R where, Kd = Cost of debt T =
Marginal tax rate R = Debenture interest rate
For example,
if a company has issued 9 per cent debentures and the
tax rate is 50
per cent, the after tax cost of debt will be 4.5
per cent, calculated as given below: Kd = (1 – T) R = (1 – 0.5) 9 = 0.5 × 9 = 4.5 per cent
The tax is deducted out of the interest payable because interest is treated as an expense while computing the firm's income for tax purposes. However, the tax-adjusted rate of interest should be used only in those cases where the firm's 'earnings before interest and tax' (EBIT) is equal to or exceed the interest. In case EBIT is in negative, the cost of debt should be calculated before adjusting the interest rate for tax.
For example, in the above case, the cost of debt before adjusting for tax effect will be 9 per cent.
Debt Issued at Premium or Discount In case the debentures are
issued at premium or discount, the cost of debt should be calculated on the basis of
net proceeds realized on account of issue of such debentures or bonds. Such cost may further be adjusted keeping in view the tax rate applicable to the company.
Illustration 5.1: A company issues 10 per cent
irredeemable debentures
of Rs 1,00,000. The company is in 55 per cent
tax bracket. Calculate
the cost of debt (
before as well as after tax) if the debentures are issued at (i) par, (
ii) 10
per cent discount, and (
iii) 10 per cent premium. Solution:
Cost of debentures can be calculated according to the following formula: (1) = – I Kd T NP
Cost of
Capital NOTES Self-Instructional 88 Material
where, Kd =
Cost of debt after tax I =
Annual interest payment NP = Net proceeds
of
loans or debentures T = Tax Rate (
i) Issued at par: 10,000 (1 0.55) 1,00,000 = – Kd 1 0.45 0.045 10 = × = or 4.5
per cent (ii) Issued at discount: 10,000 (1 0.55) 90,000 = – Kd 1 0.45 0.05 9 = × = or 5 per cent (iii) Issued at 10
per cent premium: 10,000 (1 0.55) 1,00,000 = – Kd 1 0.45 0.041 4.1per cent 11 = × = = Cost of Redeemable Debt In the preceding pages while calculating cost of debt,
we have presumed that debentures/ bonds are
not redeemable during the lifetime of the company. However,
if the
debentures are redeemable after the expiry of a fixed period the
effective Kd of debt before tax can be calculated by using the following formula: Kd (before tax) ( )/ ( )/2 + – = + I P NP n P NP where, I = Annual interest
payment P = Par value of debentures NP = Net proceeds of debentures n = Number of years to maturity
Illustration 5.2:
A firm issues debentures of Rs 1,00,000 and realizes Rs 98,000 after allowing 2 per cent commission to brokers.
The debentures carry an interest of 10 per cent.
The debentures are due for maturity at the end of
the 10th year.
You are required to

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calculate the effective cost of debt before tax. Solution: Kd (before tax) ( )/ ( )/2 + – = + I P NP n P NP 10,000 (1,00,000 98,000)/10 (1,00,000 98,000)/2 + – = +
Cost of Capital
NOTES Self-Instructional Material 89 10,000 200 0.103 99,000 + = = or 10.30 per cent In the above example, if the tax rate is 55 per cent, the cost of debt after tax can be calculated as follows: Kd (after tax) = Kd (before tax) × (1 – T) = 10.30 (1 – 0.55) = 10.30 × 0.45 = 4.64 per cent In order to keep sufficient earning available for equity shareholders for maintaining their present value, the company should see that it earns on the funds provided by raising loans at least equal to the effective interest rate payable on them. In case the firm earns less than the effective interest rate, earnings available for the equity shareholders will decrease. This would naturally affect adversely the market price of the company's equity shares. II.
Cost of Preference Capital The computation of the cost of preference capital poses some conceptual problems. In case of borrowings, there is a legal obligation on the firm to pay interest at fixed rates while in case of preference shares, there is no such legal obligation. Hence, some people argue that dividends payable on preference share capital do not constitute cost. However, this is not true. This is because, though it is not legally binding on the company to pay dividends on preference shares, it is generally paid whenever the company makes sufficient profits. The failure to pay dividend may be
a matter
of serious concern from the point of view of equity shareholders. They may even lose control of the company because of the preference shareholders getting the legal right to participate in the general meetings of the company with equity shareholders under certain conditions in the event of failure of the company to pay them their dividends. Moreover, the accumulation of arrears of preference dividends may adversely affect the right of equity shareholders to receive dividend. This is because no dividend can be paid to them unless the arrears of preference dividend are cleared. On account of these reasons the cost of preference capital is also computed on the same basis as that of debentures. The method of its computation can be put in the form of
the following equation: = Dp Kp
NP where, Kp = Cost of preference share capital Dp = Fixed
preference dividend NP = Net proceeds of preference shares
Illustration 5.3: A company raises preference
share
capital of Rs 1,00,000 by issue of 10 per cent
preference shares of Rs 10 each. Calculate the cost of preference capital when they are issued at (i) 10 per cent premium and (ii)
at 10 per cent discount. Solution: (i) When preference shares are issued at 10 per cent premium: 10,000 100 9.09 per cent 1,00,000 = = × = Dp Kp NP
Cost of Capital NOTES Self-Instructional 90 Material (ii) When preference shares are issued at 10 per cent discount: 10,000 100 11.11per cent 90,000 = = × = Dp Kp NP Cost of Redeemable
Preference Shares In case
of redeemable preference shares, the cost of capital
is
the discount rate that equals the net proceeds of sale of preference shares with the present value of future dividends and principal repayments.
Such cost
can be calculated according to the same formula which has been given in the preceding pages for calculating the cost of redeemable debentures. Illustration 5.4: A company has 10 per cent redeemable preference shares of Rs 10,000 redeemable at the end of the 10th year from the year of their issue. The underwriting costs came to 2 per cent. Calculate the effective cost of preference share capital: Solution: ( )/ 10,000 (1,00,000 98,000)/10 ( )/2 (1,00,000 98,000)/2 + – + – = = + + Dp P NP n Kp P NP 10,200 10.30 per cent 99,000 = = It should be noted that the cost of preference capital is not adjusted for taxes, since dividend on preference capital is taken as
an appropriation of profits and not a charge against profits.
Thus, the cost of preference capital is substantially greater than
the cost of debt. III.
Cost of Equity Capital The computation of the cost of equity capital is
a difficult task. Some people argue, as observed in
the

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case of preference shares, that the equity capital does not involve any cost. The argument put forward by them is that it is not legally binding on the company to pay dividends to the equity shareholders. This does not seem to be a correct approach because the equity shareholders invest money in shares with the expectation of getting dividend from the company. The company also does not issue shares without having any intention to pay them dividends. The market price of the equity shares, therefore, depends upon the return expected by the equity shareholders. Conceptually cost of equity share capital may be defined as the minimum rate of return that a firm must earn on the equity financed portion of an investment project in order to leave unchanged the market price of such shares. For example, in case the required rate of return on equity shares is 10 per cent and cost of debt is 12 per cent, and the company has the policy of financing with 75 per cent equity and 25 per cent debt, the required rate of return on the project could be estimated as follows: 16% × 0.75 = 12% 12% × 0.25 = 3% 15% This means that if the company accepts a project involving an investment of Rs 10,000, and giving an annual return of Rs 1,500, the project would provide a return which is just sufficient to leave the market value unchanged of the company's equity shares.

 The rate of return on the equity financed portion can be calculated as follows: Total Return Rs 1,500 Less: Interest on Debentures: 2,500 12 100 × Rs 300 Amount Available for Equity Shareholders Rs 1,200

Rate of Return on Equity 1,200 100 16% 7,500 × = = Thus, the expected rate of return is 16 per cent which just equals the required rate of return on investment. If the project earns less than Rs 1,500 a year, it would provide a return less than required by the investors.

As a result, the market value of the company's shares would fall. Theoretically, this rate of return could be considered as the cost of equity capital.

In order to determine the cost of equity capital, it may be divided into the following two categories: 1. The external equity or new issue of equity shares 2. The retained earnings The computation of the cost of each of these categories is explained below: The External Equity or New Issue of Equity Shares From the preceding discussion, it is implied that in order to find out the cost of equity capital, one must be in a position to determine what the shareholders as a class expect from their investment in equity shares. This is a difficult proposition because shareholders as a class are difficult to predict or quantify. Different authorities have conveyed different explanations and approaches.

The following are some of the approaches according to which the cost of equity capital can be worked out: 1. Dividend Price (D/P) Approach. According to this approach, the investor arrives at the market price of an equity share by capitalizing the set of expected dividend payments.

Cost of equity capital has, therefore, been defined as ' the discount rate that equates the present value of all expected future dividends per share with the net proceeds of the sale (or the current market price) of a share.' In other words,

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the cost of equity capital will be that
rate of expected dividends which will maintain the present market price of equity shares.
This approach rightly emphasizes the importance of dividends, but it ignores the
fact that the retained earnings also have an impact on the market price of the equity shares. The approach, therefore, does not seem to be very logical.
Illustration 5.5: A company
offers for public subscription equity shares of Rs 10 each at a premium of 10
per cent. The company pays 5 per cent of the issue price
as underwriting commission. The rate of dividend expected by the
equity shareholders is 20 per cent. You are required to calculate the cost of equity capital. Will your
cost of capital be different if it is to be calculated on the present market value of the equity shares, which is Rs 15 ?
Solution: The cost of
new equity can be determined according to the following formula:
Cost of Capital NOTES Self-Instructional 92 Material =
D
Ke NP
where, Ke =
Cost of equity capital D = Dividend per equity share NP = Net proceeds
of an equity share 2 0.19 10.45* = =
Ke or 19 per cent * Rs. 11 – Re. 0.55.
In case of existing equity shares, it will be appropriate to calculate the cost of equity on the basis of market price of the company's shares. In the present case, it can be calculated according to
the following formula: = D
Ke
MP
where, Ke = Cost of equity capital D = Dividend per equity share
MP = Market price
of
an equity share 2 0.133 15 = =
Ke or 13.3 per cent 2. Dividend
Price Plus Growth (D/P + g)
Approach.
According to
this
approach, the cost of equity capital is determined on the
basis of
the
expected dividend rate
plus the rate of growth in dividend.
The rate of growth in dividend is determined on the basis of the amount of dividends paid by the company for the last few years. The
computation of cost of capital according to this approach
can be done by using the following formula: = + D Ke g NP
where, Ke = Cost of equity capital
D = Expected dividend per share
NP = Net proceeds
per share
g = Growth in expected
dividend It may be noted that in case of existing equity shares, the cost of equity capital can also be determined by using the above formula However, the Market Price (MP) should be used in place of net proceeds (NP) of the share as given above.
Illustration 5.6:
The current market price of an equity share of a company
is
Rs 90. The current dividend per share is Rs 4.50.
In case
the dividends are expected to grow at the rate of 7

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per cent, calculate the
cost of equity capital. Solution: 4.50 .07 90 = + = + D Ke g MP = 0.05 + 0.07 = 0.12 or 12 per cent.
Cost of Capital NOTES Self-Instructional Material 93 Illustration 5.7:
From the following details of X Limited, calculate the cost of equity capital: (i) Each share is of Rs 150 each. (ii) The underwriting cost per share amounts to 2
per cent. (
iii) The following are the dividends paid by the company for the last five years: Year Dividend per share
Year Dividend per share 1994 Rs 10.50 1997 Rs 12.75 1995 11.00 1998 13.40 1996 12.50 (
iv) The company has a fixed dividend payout ratio. (v) The expected dividend on the new shares amount to
Rs 14.10 per share. Solution: In order
to calculate the cost of funds raised through equity share capital, calculation of
the growth rate will be necessary. During the last four years (and not five
years, since dividends at the end of 1994 are being compared with dividends at the end of 1998) the dividends declared by
the company have increased from Rs 10.50 to Rs 13.40 giving a compound factor of 1.276 (
i.e., 13.4/10.50). By looking at the 'compound sum of one rupee tables' in the line of
four years one can find out that a sum of Re 1 would accumulate to 1.276 in four years at 6 per cent
interest. This means that growth rate of dividends is 6 per cent. The cost of equity funds can now be determined as follows: 14.10 0.06 147 = + = +
D Ke g NP 0.096% + 0.060% = 0.156 or 15.6 per cent. The 'dividend price plus growth approach' is, to a great extent, helpful in determining satisfactorily the expectation of the investors. However, the quantification of the expectation of growth of dividends is a difficult matter. Usually, it is presumed that the growth in dividends will be equal to the growth rate in earnings per share. 3.
Earning Price (E/P) Approach.
According to this approach, it is the earning
per share which
determines the market price of the
shares. This is based on the
assumption that the shareholders capitalize a stream of future earnings (
as distinguished from dividends) in order to evaluate their shareholding. Hence, the cost of capital should be related to that earning percentage which could keep the market price of the equity shares constant. This approach, therefore, takes into account both dividends as well as retained earnings. However, the
advocates of this approach differ regarding the use of both earning and the market price figures. Some simply use the current earning rate and the current market price of the shares of the company for determining the cost of capital. While others recommend average rate of earning (based on the earnings of the past few years) and the average market price (calculated on the basis of market price for the last few years)
of equity shares. The formula for calculating the cost of capital according to this approach is as follows: = E Ke NP
Cost of Capital
NOTES Self-Instructional 94 Material
where, Ke =
Cost of equity capital E =Earning per share NP =Net proceeds of an equity share
However, in the
case of existing equity shares, it will be appropriate to use market price (MP) instead of net proceeds (NP) for determining the cost of capital.
Illustration 5.8: The entire capital employed by a company consists of one lakh
equity shares of Rs 100 each. Its current earnings are Rs 10 lakh per annum. The company wants to raise additional funds of Rs 25 lakh by issuing new shares. The floatation costs are expected
to be 10 per cent of the face value
of the shares. You are required to calculate the cost of equity capital presuming that the earnings of
the company are expected to remain stable over the next few years. Solution: 10 0.11 90 = = = E Ke NP or 11 per cent 4.
Realized
Yield
Approach.
According to this approach, the
cost of equity
capital should be determined on the basis of
return actually

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realized by the investors in a company on their equity
shares. Thus, according to this approach the past records in a given period regarding dividends and the actual capital appreciation in the value of the equity shares held by the shareholders should be taken to compute the cost of equity capital.
This approach gives fairly good results in case of companies with stable dividends and growth records. In case of such companies, it can be assumed with reasonable degree of certainty that the past behaviour will be repeated in the future also. Illustration 5.9: A purchased five shares in a company at a cost of Rs 240 on 1 January 1994, he held them for five years and finally sold them in January 1999 for Rs 300. The amount of dividend received by him in each of these five years was as follows: 1994
Rs 14 1997 Rs 14.50 1995
Rs 14 1998 Rs 14.50 1996 Rs 14.50
You are required to
calculate the
cost of equity capital.
Solution:
In order to calculate the cost of capital, it is necessary to
calculate
the internal rate of return. This
rate of return can be calculated
by the 'trial and error method'
as explained in the chapter on 'Capital Budgeting' earlier in the book. The rate comes to 10 per cent as shown below:
Year Dividend Sale Proceeds Discount Factor Present Value Rs Rs at 10 per cent Rs 1994 14.00 0.909 12.7 1995 14.00 0.826 11.6 1996 14.50 0.751 10.9 1997 14.50 0.683 9.9 1998 14.50 0.621 9.0 1999 300 0.621 186.3 240.4
Cost of Capital NOTES Self-Instructional Material 95 The purchase price of the five
shares on 1 January 1994 was Rs 240. The present value of cash inflows (as on 1 January 1994) amounts to Rs 240.40. Thus at 10
per cent,
the present value of the cash inflows over a period
of five
years is equal to the cash outflow in the year 1994. The cost of equity capital can, therefore, be taken as 10
per cent. The realized yield approach can be helpful in determining the rate of return required by the investors provided the following three conditions are satisfied: (i) The company will fundamentally remain the same as regards risk. (ii) The shareholders continue to expect the same rate of return for bearing this risk. (iii) The shareholders' reinvestment opportunity rate is equal to the realized yield. IV. Cost of Retained Earnings The companies do not generally distribute the entire profits earned by them by way of dividend among their shareholders. Some profits are retained by them for future expansion of the business. Many people feel that such retained earnings are absolutely cost free. This is not the correct approach because the amount retained by the company, if it had distributed among the shareholders by way of dividend, would have given them some earning. The company has deprived the shareholders of this earning by retaining a part of profit with it. Thus, the cost of retained earnings is the earnings forgone by the shareholders. In other words, the opportunity cost of retained earnings may be taken as the cost of retained earnings.
It is equal to the income that the shareholders could have otherwise earned by placing these funds in alternative investments.
For example, if the shareholders could have got a return of 10 per cent. This return of 10 per cent has been forgone by them because of the company not distributing the full profits to them. The cost of retaining earning may, therefore, be taken at 10 per cent. The above analysis can also be understood in the following manner. Suppose the earnings are not retained by the company and passed on to the shareholders and such earnings are invested by the shareholders in the new equity shares of the same company, the expectation of the shareholders from the new equity shares would be taken as the opportunity cost of the retained earnings. In other words, if earnings were paid as dividends and simultaneously an offer for the right shares was made, the shareholders would have subscribed to the right shares on the expectation of a certain return. This expected return can be taken as the cost of retained earnings of the company. Adjustments Required
In the example given above, we have presumed that the shareholders will have with them the entire amount of retained earnings available when distributed by the company. In actual practice, it does not happen. The shareholders have to pay tax on the dividends received, incur brokerage cost for making investments, etc. The funds available with the shareholders are, therefore, less than what they would have been with the company, had they been retained by it. On account of
this reason, the cost of retained earnings to the company would always be less than the cost of new equity shares issued by the company (see Illustration 5.10). The following adjustments are made for ascertaining the cost of retained earnings:

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Cost of Capital NOTES Self-Instructional 96 Material (i) Income tax adjustment. The dividends receivable by the shareholders are subject to income tax. Hence, the dividends actually received by them are not the amount of gross dividend but the amount of net dividend, i.e., gross dividends less income tax. (ii) Brokerage cost adjustment. Usually the shareholders have to incur some brokerage cost for investing the dividends received. Thus, the funds available with them for reinvestment will be reduced by this amount. The opportunity cost of retained earnings to the shareholders is, therefore, the rate of return that they can obtain by investing the net dividends (i.e., after tax and brokerage) in alternative opportunity of equal quality. Illustration 5.10: ABC Ltd is earning a net profit of Rs 50,000 per annum. The shareholders' required rate of return is 10 per cent. It is expected that retained earnings, if distributed among the shareholders, can be invested by them in securities of similar type carrying return of 10 per cent per annum. It is further expected that the shareholders will have to incur 2 per cent of the net dividends received by them as brokerage cost for making new investments. The shareholders of the company are in 30 per cent tax bracket. You are required to calculate the cost of retained earnings to the company. Solution: In order to calculate the cost of retained earnings to the company, it is necessary to calculate the net amount available to the shareholders for investment and the likely return earned by them. This has been done as follows: Dividends payable to the shareholders Rs 50,000 Less: Income tax @ 30 per cent Rs 15,000 After-tax dividends Rs 35,000 Less: Brokerage cost @ 2 per cent Rs 700 Net amount available for investment Rs 34,300 Since the shareholders have the investment opportunity of earning 10 per cent, the amount of earning received by them on their investment will amount to Rs 3,430 (i.e., 10 per cent of Rs 34,300). In case the earnings had not been distributed by the company among its shareholders, the company could have full Rs 50,000 for investment, since no personal income tax and brokerage cost, as above, would have been payable. The company could have paid a sum of Rs 3,430 to the shareholders if it could earn a return of 6.86 per cent calculated as follows: 3,430 Rs 100 6.86 per cent. 50,000 × = The rate of return expected by the shareholders from the company on their retained earnings comes to 6.86 per cent. It may, therefore, be taken as the cost of the retained earnings. The cost of retained earnings after making adjustment for income tax and brokerage cost payable by the shareholders can be determined according to the following formula: Kr = Ke (1 – T) (1 – B) where, Kr = Required rate of return on retained earnings Ke = Shareholders' required rate of return

Cost of Capital NOTES Self-Instructional Material 97 T = Shareholders' marginal tax rate B = Brokerage cost The cost of retained earnings using the data given in the above illustration. can be calculated according to the above formula, as follows: Kr = Ke (1 – T) (1 – B) = 10% (1 – 0.3) (1 – 0.02) = 10% × 0.7 × 0.98 = 6.86 per cent.

Weighted Average Cost of Capital

After calculating the cost of each component of capital, the average cost of capital is generally calculated on the basis of the weighted average method. This may also be termed as the overall cost of capital. The computation of the weighted average cost of capital involves the following steps:

Calculation of the Cost of Each Specific Source of Funds This involves the determination of the cost of debt, equity capital, preference capital, etc., as explained in the preceding pages. This can be done either on 'before tax' basis or 'after tax' basis. However, it will be more appropriate to measure the cost of capital on 'after tax basis'. This is because the return to the shareholders is an important figure in determining the cost of capital and they can get dividends only after the taxes have been paid. Assigning Weights to Specific Costs This involves determination of the proportion of each source of funds in the total capital structure

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of the company. This may be done according to any of the following methods: (a) Marginal weights method. In case of this method weights are assigned to each source of funds, in proportion of financing inputs the firm intends to employ. The method is based on this logic that our concern is with the new or incremental capital and not with capital raised in the past. In case the weights are applied in a ratio different than the ratio in which the new capital is to be raised, the weighted average cost of capital so calculated may be different from the actual cost of capital. This may lead to wrong capital investment decisions. However, the method of marginal weighting suffers from one major limitation. It does not consider the long-term implications while designing the firm's financing strategy. For example, a firm may accept a project giving an after-tax return of 6 per cent because it intends to raise funds required by issue of debentures having an after-tax cost of 5 per cent. In case next year the firm intends to raise funds by issue of equity shares having a cost of 9 per cent, it will have to reject a project which gives a return of only 8 per cent. Thus, marginal weighting method does not consider the fact that today's financing affects tomorrow's cost. (b) Historical weights method. According to this method, the relative proportions of various sources to the existing capital structure are used to assign weights. Thus, in this method the basis of weights is the funds already employed by the firm. This is based on the assumption that the firm's present capital structure is optimum and it should be maintained in the future also. Weights under historical system may be either (i) book value, or (ii) market value weights. The weighted average cost of capital will be different depending upon whether book value weights are used or market-value weights are used. Cost of Capital NOTES Self-Instructional 98 Material Adding of the Weighted Cost of All Sources of Funds to Get an Overall Weighted Average Cost of Capital Illustration 5.11: From the following capital structure of a company, calculate the overall cost of capital, using (a) book value weights, and (b) market value weights:

Source Book Value Market Value Equity Share Capital 45,000 90,000 (Rs. 10 shares) Retained Earnings 15,000 Preference Share Capital 10,000 10,000 Debentures 30,000 30,000 The after-tax cost of different sources of finance is as follows: Equity Share Capital: 14 per cent; Retained Earnings: 13 per cent; Preference Share Capital: 10 per cent; Debentures: 5 per cent.

Solution: (a)

COMPUTATION OF WEIGHTED AVERAGE COST OF CAPITAL (Book Value Weights) Source Amount Proportion After Tax Weighted Cost (1) (2) (3) (4) (5) = (3) × (4)

Equity Share Capital 45,000 0.45 14% 6.30% Retained Earnings 15,000 0.15 13% 1.95% Preference Share Capital 10,000 0.10 10% 1.00% Debentures 30,000 0.30 5% 1.50%

Weighted Average Cost of Capital (K 0) 10.75% Alternatively, the weighted average cost of capital can also be found as follows:

COMPUTATION OF WEIGHTED AVERAGE COST OF CAPITAL (Book Value Weights) Source Amount After Tax Cost Total after Tax Rs (1) (2) (3) Cost (4) = (2) × (3) Equity Share Capital 45,000 14% 6,300 Retained Earnings 15,000 13% 1,950 Preference Share Capital 10,000 10% 1,000 Debentures 30,000 5% 1,500 Total 1,00,000 10,750

Weighted Average Cost of Capital (K 0) 10,750

Rs. 100 10.75% 1,00,000 = × =

COMPUTATION OF WEIGHTED AVERAGE COST OF CAPITAL (

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Market Value Weights)
Source
Amount Proportion After Tax Weighted Cost
Rs. (1) (2) (3) Cost (4) (5) = (3) × (4) Equity Share Capital 90,000 0.692 14% 9.688 Preference Share Capital 10,000 0.077 10% 0.770 Debentures 30,000 0.231 5% 1.155 Weighted Average Cast of Capital (K 0) 11.613 Illustration 5.12: A limited company has the following capital structure: Equity Share Capital (2,00,000 Shares) Rs 40,00,000 6% Preference Shares 10,00,000 8% Debentures 30,00,000 80,00,000
The market price of the company's equity share is Rs 20.
It is expected that company will pay a current dividend of
Rs 2 per share which
will grow at 7 per cent for ever.
The tax rate may be presumed at 50 per cent. You are required to compute the following. (a) A weighted average cost of capital based on existing capital structure. (b) The new weighted average cost of capital if the company raises an additional Rs 20,00,000 debt by issuing 10 per cent debentures. This would result in increasing the expected dividend to Rs 3 and leave the growth rate unchanged but the price of share will fall to Rs 15 per share. (c) The cost of capital if in (b) above, growth rate increases to 10 per cent.
Solution: (a)
STATEMENT SHOWING
WEIGHTED AVERAGE COST OF CAPITAL Source of Capital Amount After-tax Weights Weighted Rs. Cost
Equity Share Capital* 40,00,000 0.17 0.500 0.0850 Preference Share Capital 10,00,000 0.06 0.125 0.0075 Debentures 30,00,000 0.04 0.375 0.0150 Weighted Average Cost of Capital (K 0) 0.1075 or 10.75% * The cost of equity shares is : Rs 2 0.07 Rs 50 D Ke g MP = + = + = 0.01 + 0.07 = 0.17 or 17% Check Your Progress 4. How can a firm change its overall cost of capital? 5. How can firms be categorized? 6. What is the 'realized yield approach'?
Cost of Capital NOTES Self-Instructional 100 Material (b)
STATEMENT SHOWING
WEIGHTED AVERAGE COST OF CAPITAL Amount After-tax Weights Weighted Rs. Cost Cost Equity Share Capital* 40,00,000 0.17 0.40 0.108 6% Preference Capital 10,00,000 0.06 0.10 0.006 8% Debentures 30,00,000 0.04 0.30 0.012 10% Debentures 20,00,000 0.05 0.20 0.010 Weighted Average Cost of Capital (K 0) *The cost of equity shares is : Rs 3 0.07 Rs15 D Ke g MP = + = + = 0.20 + 0.07 = 0.27 or 27% (c)
STATEMENT SHOWING
WEIGHTED AVERAGE COST OF CAPITAL Amount After-tax Weights Weighted Rs. Cost Cost Equity Share Capital* 40,00,000 0.30 0.40 0.120 6% Preference Capital 10,00,000 0.06 0.10 0.006 8% Debentures 30,00,000 0.04 0.30 0.012 10% Debentures 20,00,000 0.05 0.20 0.010 Weighted Average Cost of Capital (K 0) 0.148 or 14.80% *Cost of Equity Share is : Rs.3 0.10 Rs.15 D Ke g MP = + = + = 0.20 + 0.10 = 0.30 or 30 per cent 5.7
SUMMARY
The term cost of capital refers to the minimum rate of return a firm must earn on its investments so that the market value of the company's equity shares does not fall.
This is in consonance with the overall firm's objective of wealth maximization. This is possible only when the firm earns a return on the projects financed by equity shareholders' funds at a rate which is at least equal to the rate of return expected by them.

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If a firm fails to earn return at the expected rate, the market value of the shares would fall and thus result in reduction of overall wealth of the shareholders.
Cost of Capital
NOTES Self-Instructional Material 101 5.8 KEY TERMS z
Average Cost of Capital. It is the weighted average cost based on cost of each component of funds employed by a firm.
z Combined Cost. It is the composite cost of capital from all sources. z Cost of Capital. It is the minimum rate of return a firm must earn on its investments to maintain the market value of its equity shares. z Explicit Cost of Capital. It is the discount rate that equates the present value of the funds received by the firm net of underwriting costs, with the present value of expected cash outflows.
z Future Cost of Capital.
It refers to the expected cost of funds to be raised to finance a project. z Historical Cost. It is the cost of funds which has already been incurred for financing a particular project.
z Implicit Cost of Capital. It is the rate of return associated with the best investment opportunity for the firm and its shareholders that will be forgone if the project presently under consideration was accepted.
z Specific Cost. It is the cost of a specific source of finance. 5.9 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Return at zero risk level refers to the expected rate of return when a project involves no risk whether business or financial. 2. Financial risk refers to the risk on account of pattern of capital structure (or debt-equity mix). 3. Future cost refers to the expected cost of funds to finance the project. 4. A firm can change its overall cost of capital by increasing or decreasing the debt- equity mix. 5. All firms can be categorized according to the return that they give and a firm in each class has the same degree of business and financial risk. 6. According to the ' realized yield approach', the cost of equity capital should be determined on the basis of return actually realized by the investors in a company on their equity shares. 5.10

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QUESTIONS AND EXERCISES Short-Answer Questions 1. Define 'cost of capital'. 2. Why is determination of cost of capital important? 3. Do retained earnings have cost? 4. Differentiate between 'average cost' and 'marginal cost of capital'. 5. Explain the three basic aspects of concept of Cost of Capital. 6. What is the basic controversy regarding Cost of Capital?
Cost of Capital NOTES Self-Instructional 102 Material Long-Answer Questions 1. (a)
What is the relevance of cost of capital in corporate investment and financing decisions ? (
b) Examine the problems in the determination of composite cost of capital. 2. Write short notes on: (a) Financial Risk (b) Marginal Cost of Capital 3. Explain the concept of 'Cost of Capital' as a device for establishing a cut- off point of capital investment proposals. 4. What is meant by Cost of Capital for a firm and what relevance does it have in decision-making? How is it calculated with different types of sources of capital funds? Why is
the Cost of Capital most appropriately measured on an after-tax basis? 5.
What is meant
by
Cost of Capital? What are the components of
Cost of Capital? What is cost of
Retained Earnings ? How is the
cost of
new equity issue determined? 6. What is
a business risk and is it the same as financial risk? How does the use of financial leverage affect the financial risk? 7. What is the Modigliani-Miller approach to the problem of Cost of Capital Structure? Under what assumptions do their conclusions hold good ? 5.11 PRACTICAL PROBLEMS 1. A company's cost of capital was 15 per cent in 1997. According to the management this consisted of 8 per cent due to riskless cost of money, 3 per cent business risk premium and 4 per cent financial risk premium. The company intends to issue new equity shares in 1998.
You are required to determine the cost of equity capital in
each of the following cases: (a)In 1998 the riskless cost of money goes up by 1 per cent. Of course, the financial and business risks remain unchanged. (b) Besides increase in the riskless cost of money by 1 per cent, the business risk increases by 50 per cent on account of the company's undertaking a new line of production. (c) A competitor of the firm has 9 per cent riskless cost of money, 3 per cent business risk and only 1 per cent as financial risk since he has paid all long-term debts in 1996. [Ans. (a) 16%, (b) 17.50%, (c) 13%] 2. Mendex Ltd issued 10 per cent irredeemable preference shares. The nominal value of each share
is Rs 100. You are required to calculate the cost of preference share capital
in each of the following cases: (a) When issued at 5 per cent discount, and (b) When issued at 5 per cent premium. [Ans. (a) 10.53%, (b) 9.10%] 3. Mahendrao
is a shareholder in the Central India Ltd. Although earnings for the Central have varied considerably, Mahendrao has determined that the long- run average dividends for the firm have been Rs 2 per share. He expects a similar pattern to prevail in the future. Given the volatility of the Central's
Cost of Capital NOTES Self-Instructional Material 103 dividends, Mahendrao has decided that minimum rate of 20 per cent
should be earned on this share. What price would Mahendrao be willing to pay for
the Central's shares? [Ans. Rs. 10] 4. A company maintains debt equity ratio of 40 : 60. The desired rate of return after tax on debt is 4 per cent and on equity is 10 per cent. The company is intending for investing in a project which will cost Rs 40,000. You are required to calculate the yield per annum on the project so that the market value of the equity shares remains consistent even after raising additional funds. [Ans. 7.6%] 5. The following are the details regarding
the capital structure of a company: Type of Capital Book Value Market Value
Specific Cost Debentures 40,000 38,000 5% Preference Capital 10,000 11,000 8% Equity Capital 60,000 1,20,000 13% Retained Earnings 20,000 — 9% 1,30,000 1,69,000
You are required to
determine the
weighted average cost of capital
using: (i) book value as weights, (
ii) market value as weights.
Do you think,
there can be
a situation where weighted average cost of capital would be the same irrespective of the weights
used. [Ans. (i) 9.54%, (ii) 10.17%. Cost of capital

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would be the same irrespective of the weights in case the book value and the market value of the securities are the same.] [Hint. Market value of equity shares and retained earnings is Rs 1,20,000 against their book value of Rs 80,000. On this basis the market value of retained earnings is Rs 30,000 (i.e., 20,000 × 12/8) and Equity Capital Rs 90,000 (i.e., 60,000 × 12/8).] 5.12 FURTHER READING Maheshwari, S.N. Financial Management: Principles & Practice. New Delhi: Sultan Chand & Sons, 2007. Maheshwari, Dr. S.N, Dr. Suneel K. Maheshwari, Mr. Sharad K, A Textbook of Accounting for Management. New Delhi: Vikas Publication House Pvt. Ltd.

Leverages NOTES Self-Instructional Material 105 UNIT 6 LEVERAGES Structure 6.0 Introduction 6.1 Unit Objectives 6.2 Meaning of Leverage 6.3 Types of Leverages 6.4 Significance of Leverages 6.5 Summary 6.6 Key Terms 6.7 Answers to 'Check Your Progress' 6.8 Questions and Exercises 6.9 Practical Problems 6.10 Further Reading 6.0 INTRODUCTION A company can raise funds required for investment either by increasing the owners' claims or the creditors' claims or both. The claims of the owners increase when the company raises funds by issuing equity shares or ploughs back to its earnings. The claims of the creditors increase when the funds are raised by borrowings. The various means used to raise the funds represent the financial or the capital structure of the company.

The financing or capital structure decision is of tremendous significance for the management, since it influences the debt-equity mix of the company, which ultimately affects

the shareholders' return and risk. In case the borrowed funds are more as compared to the owners' funds, it results in increase of the shareholders' earnings together with increase in their risk. This is because the cost of borrowed funds is less than that of the shareholders' funds on account of the cost of borrowed funds being allowable as a deduction for income tax purposes. But at the same time, the borrowed funds carry a fixed interest, which has to be paid whether the company is earning profits or not. Thus, the risk of the shareholders increase in case there is a high proportion of borrowed funds in the total capital structure of the company. In a situation where the proportion of the shareholders' funds is more than the proportion of the borrowed funds, the return as well as the risk of the shareholders will be much less. In the present unit, you will learning about the effects of financing or debt-equity mix on the shareholders' earnings and risk. The concept of leverage helps in examining this aspect. 6.1 UNIT OBJECTIVES z The meaning of leverage z The difference between operating and financial leverages z The significance of leverages z Computing of different types of leverages

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MEANING OF LEVERAGE The dictionary meaning of the term

leverage refers to 'an increased means of accomplishing some purpose'.

For example, leverage helps us in lifting heavy objects, which may not be otherwise possible. However, in the area of finance, the term leverage has a special meaning. It

is used to describe the firm's ability to use fixed cost assets or funds to magnify the return to its owners.

James Horne has defined leverage

as '

the

employment of an asset or funds on which the firm pays a fixed cost or fixed return'. 1

Thus, according to him, leverage

is a result

of

the firm employing

an asset or source of funds which has a fixed

cost or

return.

The former may be termed as 'fixed operating cost', while the latter may be termed as 'fixed financial cost'. It should be noted that fixed cost or return is the fulcrum of leverage. If a firm is not

required

to pay fixed cost or fixed return, there will be no leverage. Since

fixed cost or return has to be paid or incurred

irrespective of the volume of output or sales, the size of such cost or return has

considerable influence over the

amount of profits available for the shareholders. When the volume of sales changes, leverage helps in quantifying such influence. It may, therefore, be defined as relative change in profits due to a change in sales. A high degree of leverage implies that there will be a large change in profits due to a relatively small change in sales and vice versa. Thus,

higher the leverage, higher is the risk and higher is the expected return. 6.3

TYPES OF

LEVERAGES Leverages are of three types: 1. Operating leverage, 2. Financial leverage, and 3. Composite leverage. 1. Operating Leverage:

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Operating leverage may be defined as
the tendency of the operating profit to vary disproportionately with sales.
It is
said to exist when a firm has to pay fixed cost regardless of volume of output or sales.
The
firm
is said to have a high degree of operating leverage
if it employs a greater amount of fixed costs and a smaller amount of variable costs. On the other hand,
a firm will have a low operating
leverage when it
employs a
greater amount of variable costs and a smaller amount of fixed costs.
Thus, the
degree of operating leverage depends upon the amount of fixed element in the cost structure.
Operating leverage in a firm is a function of the following three factors: 1. The amount of fixed cost 2. The contribution margin 3. The volume of sales
Of course, there will be no operating leverage, if there are no fixed operating costs. 2.
Financial Management and Policy, 3rd ed., p. 696.
Leverages NOTES Self-Instructional Material 107 Computation
The operating leverage can be calculated by the following formula:
Operating
Leverage Contribution or Operating Profit = C OP
Operating profit here means 'Earning before Interest and Tax' (EBIT). Operating leverage may be favourable or unfavourable. In case the contribution (i.e., sales less variable cost) exceed the fixed cost, there is favourable operating leverage. In a reverse case, the operating leverage will be termed as unfavourable.
Degree of Operating Leverage The degree of operating leverage may be defined as
the percentage change in
the
profits resulting from a percentage change in
the
sales. It may be put in the form of
the following formula:
Degree of Operating Leverage Percentage Change in Profits Percentage Change in
Sales =
Utility
Operating leverage indicates the impact of change in sales on
operating income.
If a firm has a high degree of operating leverage,
small changes in sales will
have large effects on operating income.
In other words, the operating profits (EBIT) of such a firm will
increase at a faster rate than the increase in sales.
Similarly, the operating profits of such a
firm will suffer
a greater loss as compared to reduction in its sales. Generally, the firms do not like to operate under conditions of a high degree of operating leverage. This is a very risky situation where a small drop in sales can be excessively damaging to the firm's efforts to achieve profitability. The concept of operating leverage will be clear with the help of the following illustration. Illustration 6.1:
The installed capacity of a factory is 600 units. Actual capacity used is 400 units. Selling
price per
unit is Rs 10. Variable cost is Rs 6 per unit. Calculate the
operating leverage
in each of the following three situations: 1. When fixed costs are Rs 400 2. When fixed costs are
Rs 1,000 3. When fixed costs are Rs 1,200
Solution: STATEMENT SHOWING OPERATING LEVERAGE Situation Situation Situation 1 2 3 (i) Sales Rs 4,000 4,000 4,000 (ii) Variable Cost 2,400 2,400 2,400 (iii) Contribution (

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i) – (ii) 1,600 1,600 1,600 (iv) Fixed Cost 400 1,000 1,200 (v) Operating Profit (iii) – (iv) 1,200 600 400 (vi) Operating Leverage ( ) C OP 1,600 1,200 1,600 600 1,600 400 = 1.33 = 2.67 = 4
Leverages NOTES Self-Instructional 108 Material The above example shows that the degree of operating leverage increases with every increase in share of fixed cost in the total cost structure of the firm. It shows, for example, in situation '3' that if sales increase by Re 1, the profit would increase by Rs 4. This can be verified by taking situation '3' when sales increase to Rs 8,000, the profit in such an event will be as follows: Sales Rs 8,000 Variable Cost 4,800 Contribution 3,200 Fixed Cost 1,200 Profit 2,000 Thus, the sales have increased from Rs 4,000 to Rs 8,000, i.e., a hundred per cent increase. The operating profits have increased from Rs 400 to Rs 2,000, i.e., by Rs 1,600 (giving an increase of 400 per cent). The operating leverage is 4 in case of situation '3' which indicates that with every increase of one rupee sales, the profit will increase four times. This has been verified by the above example where a 100 per cent increase in sales has resulted in 400 per cent increase in profits. The degree of operating leverage may, therefore, be put as follows: Percentage Change in Operating Income Percentage Change in Sales 400 = 4 100 As a matter of fact, operating leverage exists only when the quotient in the above equation exceeds one. 2. Financial Leverage Financial leverage may be defined as the tendency of the residual net income to vary disproportionately with operating profit. It indicates the change that takes place in the taxable income as a result of change in the operating income. It signifies the existence of fixed interest/fixed dividend bearing securities in the total capital structure of the company. Thus, the use of fixed interest/dividend bearing securities such as debt and preference capital along with the owners' equity in the total capital structure of the company, is described as financial leverage. Wherein the capital structure of the company, the fixed interest/dividend bearing securities are greater as compared to the equity capital, the leverage is said to be larger. In a reverse case the leverage will be said to be smaller.
Favourable and Unfavourable Financial Leverage Financial leverage may be favourable or unfavourable depending upon whether the earnings made by the use of fixed interest or dividend-bearing securities exceed or not the explicit fixed cost, the firm has to pay for the employment of such funds. The leverage will be considered to be favourable so long the firm earns more on assets purchased with the funds than the fixed costs of their use. Unfavourable or negative leverage occurs when the firm does not earn as much as the funds cost.
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Trading on Equity and Financial Leverage Financial leverage is also sometimes termed as 'trading on equity'. However, most of the authors on financial management are of the opinion that the term trading on equity should be used for the term financial leverage only when the financial leverage is favourable. The company resorts to trading on equity with the objective of giving the equity shareholders a higher rate of return than the general rate of earning on capital employed in the company, to compensate them for the risk that they have to

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bear. For example, if a company borrows Rs 100 at 8 per cent interest per annum, and earns a return of 12 per cent, the balance of Rs 4 per annum after payment of interest will belong to the shareholders and thus they can be paid a higher rate of return than the general rated earning of the company. But in case the company could earn a return of only 6 per cent on Rs 100 employed by it, the equity shareholders' loss would be Rs 2 per annum. Thus, the financial leverage is a double-edged sword. It has the potentiality of increasing the return to equity shareholders, but at the same time creates additional risk for them. Mr Waterman in his Essays on Business Finance has described the role of financial leverage in the following words: This role of financial leverage suggests a lesson in Physics, and there might be some point to considering the rate of interest paid as the fulcrum used in applying forces through leverage. At least it suggests consideration of pertinent variables; the lower the interest rate, the greater will be the profit and less the chances of loss. The less the amount borrowed, the lower will be the profit or loss; also greater the borrowing the greater the risk of unprofitable leverage and greater the chances of gain'. 2 Computation

Computation of financial leverage can be done according to the following methods: (i) Where capital structure consists of equity shares and debt. In such a case, financial leverage can be calculated according to the following formula: Financial leverage OP PBT where, OP = Operating profit or

Earning

before Interest and Tax (EBIT) PBT = Profit before Tax but after Interest Illustration 6.2: A company

has a choice of the following three financial plans. You are required to calculate the financial leverage in each case and interpret

it.

X Y Z

Rs Rs Rs Equity Capital 2,000 1,000 3,000 Debt 2,000 3,000 1,000 Operating Profit (EBIT) 400 400 400 Interest @ 10 per cent

on debt in all cases. Solution: The financial leverage will be computed as follows in case of each of these financial plans:

1.

Waterman, Merwin, H., 'Trading on Equity', in Essays on Business Finance, Master Co. Press, Ann Arbor, Michigan, 1953.

Leverages NOTES Self-Instructional 110 Material X Y Z Rs Rs Rs Operating Profit (OP) 400 400 400 Interest (10 per cent on Debt) 200 300 100 Profit before Tax (PBT) 200 100 300 Financial Leverage OP PBT 400 200 400 100 400 300 = 2 4 1.33

Financial leverage, as explained earlier,

indicates the change that will take place in the taxable income as a result of change in the operating income.

For example, taking Financial Plan X as the basis, if the operating profit decreases to Rs 200, its impact on taxable income will be as follows: Operating Profit (OP or EBM) Rs 200 Less: Interest 200 Profit before Tax (PBT) Nil Financial leverage in case of plan X is 2. It means every 1

per cent change in operating profit will result in 2 per cent

change in the taxable profit. In the above case operating profit has decreased from Rs 400 to Rs 200 (i.e., 50 per cent decrease), as a result the taxable profit has decreased from Rs 200 to zero (

i.e., 100 per cent decrease).

Degree of Financial Leverage Degree of financial leverage may be defined as the percentage

change in '

taxable profit' as a result of percentage change in 'operating profit'.

This may be put in the form of following equation: Degree of Financial Leverage (DFL) Percentage Change in Taxable Income Percentage Change in the Operating Income = For example, in the above case

the degree of financial leverage will be '2' calculated as follows: 100 2 50 = It should be noted that financial leverage exists only when the quotient as per the above equation is more than one. (

ii) Where the capital structure consists of preference shares and equity shares. The formula for computation of financial leverage can also be applied to a financial plan having preference shares. Of course, the amount of preference dividends will have to be grossed up (as per the tax rate applicable to the company) and then deducted from the earnings before interest and tax. Illustration 6.3: The capital structure of a company consists of the following securities: 10 per cent preference share capital Rs 1,00,000 Equity share capital (Rs 10 shares) 1,00,000 The amount of operating profit is Rs 60,000. The company is in 50

per cent tax bracket. You are required to calculate the financial leverage of the company.

Leverages NOTES Self-Instructional Material 111 What would be the

new

financial leverage if the operating profit increases to Rs 90,000 ? Interpret your results. Solution:

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COMPUTATION OF THE PRESENT FINANCIAL LEVERAGE Operating Profit (OP or EBIT) Rs 60,000 Less: Preference dividend (after grossing up) 20,000 PBT 40,000 Present financial leverage OP PBT 60,000 1.5 40,000 = = COMPUTATION OF NEW FINANCIAL LEVERAGE New operating profit 90,000 Less: Preference dividend (after grossing up) 20,000 PBT 70,000 Financial leverage OP PBT 90,000 1.286 70,000 The existing financial leverage is 1.5. It means 1 per cent change in operating profit (OP or EBM) will cause 1.5
per cent change
in taxable profit (PBT) in the same direction. For example, in the present case operating profit has increased by 50 per cent (i.e., from Rs 60,000 to Rs 90,000). This has resulted in 75
per cent
increase in the taxable profit (i.e., from Rs 40,000 to Rs 70,000). (iii) Where the capital structure consists of equity shares, preference shares and debt. In such a case the financial leverage is calculated after deducting from operating profit both interest and preference dividend on a pre-tax basis. Illustration 6.4:
A company has the following
capital structure: Equity share capital Rs 1,00,000 10 per cent preference share capital 1,00,000 8
per cent debentures 1,25,000 The present EBIT is Rs 50,000. Calculate the Financial Leverage assuming that
the
company is in 50 per cent tax bracket. Solution.
Operating profit Rs 50,000 Less: Interest on debentures 10,000 Pref. Dividend (pre-tax basis) 20,000 Rs 30,000 Profit before tax Rs 20,000 Financial leverage OP PBT 50,000 2.5 20,000
Alternative Definition of Financial Leverage One
of the objectives of planning an appropriate capital structure is to
maximize the return on equity shareholders' funds or maximize the earning per share (EPS). Some authorities have used the term 'financial leverage' in the context that it defines the relationship between EBIT and EPS. According to Gitman, financial leverage is 'the
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ability of a firm to use fixed financial charges to magnify the effects of changes in
EBIT on
the
firm's earning per share'. 3
The financial leverage,
therefore, indicates the percentage change in earning per share
in relation to a percentage change in EBIT. 4 The degree of financial leverage as per the above definition can be calculated according to the following equation:
Degree of
Financial Leverage Percentage Change in EPS Percentage Change in EBIT
Of
course, there will be no financial leverage according to the above equation if the quotient does not exceed one.
Illustration 6.5:
A company has the following capital structure: 10,000 Equity shares of Rs 10 each 1,00,000 2,000 10 per cent Pref. shares of Rs 100 each 2,00,000 2,000 10 per cent Debentures of Rs 100 each 2,00,000
Calculate the EPS for each of the following levels of EBIT: (i) Rs 1,00,000; (ii) Rs 60,000; (iii) Rs 1,40,000. The company is
in
the 50 per cent
tax bracket. Also calculate the financial leverage taking EBIT level under (i) as base.
Solution: COMPUTATION OF EARNING PER SHARE (i) (ii) (iii) EBIT Rs. 1,00,000 60,000 1,40,000
Less: Interest on Debentures 20,000 20,000 20,000 PBT 80,000 40,000 1,20,000 Less: Income Tax 40,000 20,000 60,000 PAT 40,000 20,000 60,000
Less: Preference Dividend 20,000 20,000 20,000 Earnings available for Equity Shareholders (
EAES) 20,000 — 40,000 Earning per share (EPS) 2 Nil 4 The above table shows that (
a) In case (ii) the EBIT has decreased by 40
per cent (i.
e., from Rs 1,00,000 to Rs 60,000 while the earning per share has decreased by 100
per cent (
from Rs 2 per share to nil). (b) In case (iii) the EBIT has increased by 40
per cent (
from Rs 1,00,000 to Rs 1,40,000) as compared to case (i) while the earning per share has increased by 100
per cent (

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from Rs 2 to Rs 4).
The degree of financial leverage can therefore be computed as follows: Percentage Change in EPS Percentage Change in EBIT
Financial leverage
in between (i) and (ii) 100 2.5 40 = = 3.
Principles of Managerial Finance, (New York): Harper & Row (1976), p. 84. 4. Home. James C. Van, Financial Management and Policy, 3rd ed., p. 708.
Leverages NOTES Self-Instructional Material 113
Financial leverage in between (i) and (iii) 100 2.5 40 = = The same result can be obtained by using the equation OP/PBT as shown below. COMPUTATION OF FINANCIAL LEVERAGE (i) (ii) (iii) OP Rs 1,00,000 60,000 1,40,000 Less: Interest 20,000 Pref. dividend (grossed up) 40,000 60,000 60,000 60,000 40,000 — 80,000 Financial leverage OP PBT 1,00,000 2.5 40,000 This means that with every 1
per cent
change in operating profit (OP), profit before tax (PBT) will change (in the same direction) by 2.5
per cent. For example, in situation (ii) OP has decreased by 40 per cent.
This has resulted in decrease of PBT by 100 per cent (i.e., 40 × 2.5). In situation (iii) OP has increased by 40
per cent. This has resulted in an increase of PBT by 100 per cent (i.e., 40 × 2.5). Utility Financial leverage helps the financial manager considerably
while devising the capital structure of the company.
A high financial leverage means high fixed financial costs and high financial risk.
A financial manager must plan the capital structure in a way that the firm is in a position to meet its fixed financial costs. Increase in fixed financial costs requires necessary increase in EBIT level. In the event of failure to do so, the company may be technically forced into
liquidation. 3. Composite Leverage As explained in the preceding pages, operating leverage measures
percentage change in operating profit due to percentage change in sales.
It explains the degree of operating risk.
Financial leverage measures the percentage change in taxable profit (or EPS) on account of percentage change in operating profit (i.e., EBIT). Thus,
it explains the degree of financial risk.
Both these leverages are closely concerned with the firm's capacity to meet its fixed costs (
both operating and financial). In case both the leverages are combined, the result obtained will disclose the effect of change in sales over change in taxable profit (or EPS). Composite
leverage thus expresses the relationship between revenue on account of sales (
i.e., contribution or sales less variable cost) and the taxable income. It helps in finding out the resulting
percentage change in taxable income on account of percentage change in sales. This can be computed as follows:
Composite leverage = Operative leverage × Financial leverage C OP C OP
PBT PBT
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where, C = Contribution (i.e., sales – variable cost) OP = Operating profit or
Earning
before Interest and Tax PBT = Profit before Tax but after Interest
The computation of the composite leverage
can be explained with the help of the following illustration.
Illustration 6.6: A company has sales of Rs 1 lakh. The variable costs are 40 per cent
of the sales while the fixed operating costs amount to Rs 30,000. The amount of interest on long-term debt is Rs 10,000. You are required to calculate the composite leverage and illustrate its impact if sales increase by
five per cent. Solution. STATEMENT SHOWING COMPUTATION OF COMPOSITE LEVERAGE Sales Rs 1,00,000 Less: Variable Cost (40 per cent
of sales) 40,000 Contribution (C) 60,000 Less: Fixed Operating Costs 30,000 Earning before Interest and Tax (EBIT) or Operating Profit (OP) 30,000
Less: Interest 10,000 Taxable Income (PBT) 20,000 Composite Leverage E PBT 60,000 3. 20,000
The composite leverage of '3' indicates that with every increase of Re 1 in sales, the taxable income will increase by Rs 3 (i.e., 1 × 3). This can be verified by the following computations when the sales increase by 5
per cent. Sales Rs 1,05,000
Less: Variable Costs 42,000 Contribution (C) 63,000 Less: Fixed Operating Costs 30,000 Earning before interest and Tax (EBIT) or Operating profit (OP) 33,000 Less: Interest 10,000 Taxable Income (PBT) 23,000 It is clear from the above computation that

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on account of increase in sales by 5
per cent, the profit before tax has increased by 15 per cent. This can be verified as follows: Check Your Progress 1. State the definition of 'leverage' given by James Horne. 2. Define the 'degree of the operating leverage'? 3. When does an 'unfavourable or negative leverage' occur?
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Increase in percentage profits Increase in Profit 100 Base Profit = × 3,000 100 15per cent 20,000 = × = 6.4
SIGNIFICANCE OF LEVERAGES
Operating leverage and financial leverage are the two quantitative tools used by the financial experts to measure the return to the owners (
viz., earning per share) and the market price of the equity shares. The financial leverage is considered to be
the
superior of these two tools, since it focuses the attention on the market price of the shares which
the management always tries to increase by increasing the net worth of the firm. The management for this purpose resorts to trading on
equity
because when there is increase in EBIT then there is corresponding increase in
the price of the equity shares. However, a firm cannot go on indefinitely raising the debt content in the total capital structure of the company.
If a firm goes on employing greater proportion of debt capital, the marginal cost of debt will also go
on increasing because the subsequent lenders will demand higher rates of interest. The company's inability to offer sufficient assets
as
security will also stand in the way of further employment on debt capital. Moreover, a firm with widely fluctuating income cannot afford to employ a high degree of financial leverage.
A company should try to have a balance of the two leverages because they have got
a tremendous
acceleration or deceleration effect on EBIT and EPS. It may be noted that a right combination of these leverages is a very big challenge for the management.
A proper combination of both operating and financial leverages is a blessing for the firm's growth, while an improper combination may prove to be a curse.
A high degree of operating leverage together with a high degree of financial leverage makes the position of the firm very risky. This is
because on the one hand it is employing excessively assets for which it has to pay fixed costs and at the same time it is also using a large amount of debt capital. The fixed costs towards using assets and fixed interest charges bring a greater risk to the firm. In case the earnings fall, the firm may not be in a position to meet its fixed costs. Moreover, greater fluctuations in earnings are likely to occur on account of the existence of a high degree of operating leverage. Earnings to the equity shareholders will also fluctuate widely on account of existence of a high degree of financial leverage. The existence of a high degree of operating leverage will result in a more than proportionate change in EPS even on account of a small change
in EBIT. Thus, a firm having a high degree of financial leverage and a high degree of operating leverage has to face the problems of inadequate liquidity or insolvency in one or the other year. It does not, however, mean that a firm should opt for low degree of operating and financial leverages. Of course, such lower leverages indicate the cautious policy of the management. But the firm will be losing many profit-
earning opportunities. A firm should, therefore, make all possible efforts to combine the operating and financial leverages in a way
that suits the risk-bearing capacity of the firm. It may be observed that a firm with high operating leverage should not have a high financial leverage. In fact, it should have a low financial leverage. Similarly, a firm having a low operating leverage will stand to gain by having
a high financial leverage provided it has enough profitable opportunities for the employment of borrowed funds.
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However, low operating leverage and
a high financial leverage is considered to be an ideal situation for the maximization of the profits with minimum
of risk.
The comprehensive illustrations given in the following pages will provide the readers a more conceptual clarity about the meaning and implications of leverage. Illustration 6.7:
The capital structure of the Progressive Corporation consists
of an ordinary share capital of Rs 10,00,000 (shares of Rs 100 par value) and Rs 10,00,000 of 10 per cent

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debentures. Sales increased by 20 per cent from 1,00,000 units to 1,20,000 units, the selling price is Rs 10 per unit; Variable cost amounts to Rs 6 per unit and fixed expenses amount to Rs 2,00,000. The income tax rate is assumed to be 50 per cent.

You are required to calculate the following: (i) the percentage increase in earnings per share (ii) the degree of financial leverage at 1,00,000 units and 1,20,000 units (iii) the degree of operating leverage at 1,00,000 units and 1,20,000 units

Comment on the behaviour of operating and financial leverages in relation to increase in production from 1,00,000 units to 1,20,000 units.

Solution:

Progressive Corporation STATEMENT SHOWING EPS AND OPERATING AND FINANCIAL LEVERAGES AT TWO LEVELS OF OPERATION

Particulars 1,00,000 units 1,20,000 units Sales (@ Rs 10 per unit) Rs 10,00,000 Rs 12,00.000 Less: Variable Costs 6,00,000 7,20,000

Contribution (C) 4,00,000 4,80,000 Less: Fixed Expenses 2,00,000 2,00,000 Operating Profit (EBIT or OP) 2,00,000 2,80,000 Less: Interest 1,00,000 1.00,000 Profit before Tax (PBT) 1,00,000 1 ,80,000 Less: Tax 50 per cent 50,000 90,000 Profit after Tax on net Profit 50,000 90,000 (i) Profit after tax : Number of Ordinary Shares EPS Rs 50,000 10,000 Rs 90,000 10,000 Rs 5 Rs 9 Percentage increase in EPS 80 per cent (ii) Operating leverage ( ) ( ) C OP 4,00,000 2 2,00,000 4,80,000 1.71 2,80,000 (iii) Financial Leverage ( ) ( ) OP PBT 2,00,000 2 1,00,000 2,80,000 1.55 1,80,000

Leverages NOTES Self-Instructional Material 117 On account of increase in sales from 1 lakh units to 1,20,000 units at the rate of Rs 10 per unit EPS rises by 80 per cent while the operating leverage comes down from 2 to 1.71 and financial leverage declines from 2 to 1.55. There is, therefore, a significant decrease in both the business risk and the financial risk of the company on account of reduction in both the leverages. This is generally the result when there is increase in sales without any increase in the fixed operating or financial cost.

Illustration 6.8:

X Corporation has estimated that for a new product, its break- even point is 2,000 units, if the item is sold for Rs 14 per unit; the Cost Accounting Dept. has currently identified variable cost of Rs 9 per unit. Calculate the degree of operating leverage for sales volume of 2,500 units and 3,000 units. What do you infer from the degree of operating leverage at the sales volume of 2,500 units and 3,000 units and their difference, if any?

Solution:

OPERATING LEVERAGE IN X CORPORATION Per unit 2,500 units 3,000 units Sales Rs 14 35,000 27,000 Variable costs 9 22,500 27,000 Contribution 5 12,500 15,000 Fixed costs (2,000 × Rs 5 per unit) 10,000 10,000 Operating profit 2,500 5,000 Operating leverage: Contribution 12,500 15,000 5 3 Operating Profit 2,500 5,000 Inference The degree of operating leverage is much higher at the sale volume of 2,500 units than at the sales volume of 3,000 units, i.e., five times and three times respectively. It means that at the sales volume of 2,500 units, the variation in operating profit will be five times the variation in sales volume. This is apparent from the profit statement for 3,000 units.

A 20 per cent increase in sales volume has resulted in a 100 per cent increase in operating profits. However, at the sales volume of 3,000 units, the degree of operating leverage is only 3 times the rise in sales volume. A very high degree of operating leverage is not considered desirable as a small fall in sales volume will result in a substantial fall in operating profit. Illustration 6.9:

Calculate operating leverage and financial leverage under situation A, B and C and Financial Plans I, II and III respectively from the following information relating to the operation and capital structure of

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XYZ Co.
Also find out the combinations of operating and financial leverages which give the highest value and the least value. How are these calculations useful to financial manager in a company?
Installed capacity 1,200 units Actual Production and
Sales 800
units
Selling Price per unit
Rs 15 Variable Cost per unit Rs 10 Fixed
Cost:
Situation
A
Rs 1,000 Situation B Rs 2,000
Situation C Rs 3,000
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Capital Structure: Financial Plan I II III Equity Rs 5,000 Rs 7,500 Rs 2,500 Debt Rs 5,000 Rs 2,500 Rs 7,500
Cost of Debt 12 per cent Solution: COMPUTATION OF OPERATING LEVERAGE Particulars Situation Situation Situation A B C
Sales (S) Rs. 12,000 12,000 12,000 Variable Cost (VC) 8,000 8,000 8,000
Contribution (C) 4,000 4,000 4,000 Fixed Cost (FC) 1,000 2,000 3,000 Operating Profit (OP) 3,000 2,000 1,000
Operating Leverage C
OP 1.33 2 4
COMPUTATION OF FINANCIAL LEVERAGE Particulars Fin. Fin. Fin. Plan I Plan II Plan III Situation A: Operating Profit Rs 3,000 3,000 3,000 Interest 600 300 900 PBT 2,400 2,700 2,100 Financial Leverage = OP/PBT 1.25 1.11 1.43 Situation B: Operating Profit 2,000 2,000 2,000 Interest 600 300 900 PBT 1,400 1,700 1,100 Financial Leverage 1.43 1.18 1.82 Situation C: Operating Profit 1,000 1,000 1,000 Interest 600 300 900 PBT 400 700 100 Financial Leverage 2.5 1.43 10 Combination of Operating Leverage and Financial Leverage: Higher Value Situation C and Financial Plan III 4 × 10 = 40 Least Value Situation A and Financial Plan II 1.33 × 1.11 = 1.476. Check Your Progress 4. Why is financial leverage considered to be superior than operating leverage? 5. Why should
a company try to have a balance of the two leverages? 6.
What makes the position of the firm very risky?
Leverages NOTES Self-Instructional Material 119 (b) The operating leverage and the financial leverage computed as above have a great utility for the financial manager. Since they disclose the extent of both operating and financial risk assumed by a company under a particular situation, both the leverages should neither be too high nor too low. A high degree of leverage will indicate that the company is working under a very high risk situation while a too low leverage will indicate that the company is observing extra conservatism at the cost of equity shareholders. A finance manager would try to keep the financial leverage high and the operating leverage low to maximize the earnings per share. In case the financial leverage is high, he should try to bring down the financial leverage gradually. Analysis of leverages is thus very crucial in financial decision-making. 6.5 SUMMARY
Financing or capital structure decision is of tremendous significance for the management since it influences the debt-equity mix of the company, which ultimately affect shareholders' return and risk.
The concept of leverage helps in examining this aspect. Meaning of Leverage
James Horne had
defined leverage
as '
the
employment of an asset or funds for which the firm pays a fixed cost or fixed return.
It should be noted that fixed cost or return is the fulcrum of leverage. If a firm is not required to pay fixed cost or fixed return, there will be no leverage.
Types of Leverages Leverages are of three types: 1.
Operating leverage, 2. Financial leverage, and 3. Composite leverage. 1.
Operating leverage: It
may be defined as
the tendency of the operating profit to vary disproportinately with sales.
It is
said to exist when a firm has to pay fixed cost regardless of volume of output or sales. Computation
The
operating leverage

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can be calculated by the following formula: Operating Leverage Contribution Operating Profit = or C OP Operating profit here means 'Earning before Interest and Tax' (EBIT). 2. Financial Leverage: It may be defined as the tendency of the residual net income to vary disproportionately with operating profit. It indicates the changes that takes place in the taxable income as a result of change in the operating income. Computation The computation of financial leverage can be done according to the following formula. Financial leverage OP PBT where, OP = Operating Profit or Earning before Interest and Tax (EBIT) PBT = Profit before Tax but after interest Leverages NOTES Self-Instructional 120 Material 3. Composite Leverage: Composite leverage expresses the relationship between revenue on account of sales (i.e., contribution or sales less variable cost) and the taxable income. This can be computed as follows : Composite leverage = Operative leverage × Financial leverage C OP C OP PBT PBT where, C = Contribution (i.e., sales – variable cost) OP = Operating Profit or Earning before Interest and Tax PBT = Profit before Tax but after interest Significance of Leverages A company should try to have a balance of the two leverages because they have got tremendous acceleration or deceleration effect on EBIT and EPS. It may be noted that a right combination of these leverages is a very big challenge for the management. A proper combination of both operating and financial leverages is a blessing for the firm's growth while an improper combination may prove to be a curse. 6.6 KEY TERMS • Financial Leverage: It is the tendency of the residual net income to vary disproportionately with operating profit. • Composite Leverage: It is a combination of both operating and financial leverages. It expresses the effect of change in sales over change in taxable profit. • Leverage: It refers to the employment of an asset or funds for which the firm pays a fixed cost or fixed return. • Operating Leverage: The tendency of the operating profit to vary disproportionately with sales. 6.7 ANSWERS TO 'CHECK YOUR PROGRESS' 1. James Horne has defined leverage as ' the employment of an asset or funds on which the firm pays a fixed cost or fixed return'. 2. The degree of operating leverage may be defined as the percentage change in the profits resulting from a percentage change in the sales. 3. Unfavourable

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or negative
leverage occurs
when the firm does not earn as much as the
funds cost. 4.
The financial leverage is
considered to be the
superior of these two tools, since it focuses attention on the market price of the shares which the management always tries to increase by increasing the net worth of the firm. 5.
A company should try to have a balance of the two leverages (
operating and financial) because they have got
a tremendous acceleration or deceleration
effect on EBIT and EPS. 6.
A high degree of operating leverage together with a high degree of financial leverage makes the position of the firm very risky.
Leverages NOTES Self-Instructional Material 121 6.8 QUESTIONS AND EXERCISES Short-Answer Questions 1. State whether each of the following statements is 'True' or 'False'. (i) Operating leverage shows the effect on residual net income on account of long-term funds bearing fixed charges. (ii) Dividend on preference share capital is ignored while calculating operating leverage. (iii) A high break-even point would indicate a high operating leverage. (iv) If company A has an operating leverage of '2' and company B has an operating leverage of '3' company B has less amount of risk. (v) It is risky to have a high operating leverage, since even a slight fall in sales would result in a disproportionately larger fall in profits. (vi) Composite leverage explains change in taxable income on account of change in sales. (vii) The ideal situation is to have a high financial leverage and low operating leverage. 2. Fill in the blanks: (i) It is risky to have both operating leverage and ..... leverage at a high level. (ii) Financial leverage indicates disproportionate change in taxable income as a result of change in ..... . (iii) An ideal situation would be to keep ..... leverage low and ..... leverage high. (iv) A management would be considered too cautious if both operating leverage and financial leverage are kept ..... . (v) The combined effect of operating leverage and financial leverage can be seen by ..... of the two. (vi) Trading on equity implies having a ..... debt-equity ratio. (vii) The shareholders of a company which has a high financial leverage stand to gain when the company's return on investment (ROI) is ..... as compared to ..... of debt. (viii) The term trading on equity is generally used for ..... financial leverage. Long-Answer Questions 1.
Define Leverage. Explain its types. Discuss its significance. 2. 'Operating Leverage is determined by firm's cost structure and Financial Leverage by the mix of debt-equity funds used to
finance the firm'. Explain. 3. (
a) Operating leverage is determined by the firm's cost structure and, therefore, by nature of business.
Financial leverage, on the other hand, is determined by
the mix of debt and equity funds used to finance the firm's assets. Operating and financial leverages combined provides a risky profile of the firm, the variability of returns to the equity shareholders arise from the business and financial risk.
Explain. (b) Which combination of operating and financial leverages constitutes (i) risky situation and (ii) ideal situation.
Leverages NOTES Self-Instructional 122 Material 6.9 PRACTICAL PROBLEMS 1.
The capital structure of ABC Limited consists of equity per cent
share capital of Rs 1,00,000 (10,000 shares of Rs 10 each)
and 8
per cent debentures of Rs 50,000.
You are required to calculate and verify the degree of Financial Leverage on Earning before Interest and Tax (EBIT) level of Rs 20,000. [
Ans. Financial
Leverage 1.25] 2.
An analytical statement of AB Company is shown below: It is based on an output (sales) level of 80,000 units. Sales
Rs. 9,60,000 Variable Cost 5,60,000 Revenue before Fixed Costs 4,00,000
Fixed Costs 2,40,000 1,60,000 Interest 60,000
Earning before Tax 1,00,000 Tax 50,000 Net Income 50,000 Calculate the degree of (i) Operation Leverage, (ii) Financial Leverage, and (iii)
the Combined Leverage from the above data. [
Ans. (i) 2.5; (ii) 1.6; (iii) 4] 3.
Calculate
degree of (i) Operating Leverage, (ii) Financial
Leverage, and (
iii)

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Combined
Leverage
from the following data: Sales 1,00,000 units @ Rs 2 per unit = Rs 2,00,000 Variable Cost: per unit @
Re 0.70 Fixed Costs: Rs 1,00,000 Interest Charges: Rs 3,668 [
Ans. (i) 4.33; (ii) 1.14; (iii) 4.9] 4.
Calculate
the Degree of Operating Leverage, Degree of Financial Leverage and the Degree of
Combined Leverage
for the following firms and interpret the results: P Q R Output (Units) 3,00,000 75,000 5,00,000 Fixed
Costs (
Rs) 3,50,000 7,00,000 75,000
Unit Variable
Cost (Rs) 1.00 7.50 0.10 Interest
Expenses (Rs) 25,000 40,000 Nil Unit Selling Price (Rs) 3.000 25.00 0.50 [
Ans. Operating Leverage P = 2.4, Q = 2.14, R = 1.6 Financial Leverage P = 1.11, Q = 1.07, R = 1.00 Combined Leverage P = 2.67, Q = 2.29, R = 1.60] 5. The
following
is the balance sheet of a company: BALANCE SHEET Liabilities Amount Assets Amount Equity Capital Net Fixed Assets Rs. 1,50,000 (
Rs 10 per share) Rs. 60,000 Current Assets 50,000 10
per cent Long-term Debt 80,000 Retained Earnings 20,000
Current
Liabilities 40,000 2,00,000 2,00,000 The company's total assets turnover ratio is 3.0, its fixed operating costs are Rs 1,00,000 and
its
variable operating costs ratio is 40
per cent. The income tax rate is 50 per cent.
Leverages NOTES Self-Instructional Material 123 (i) Calculate for the company all
the three
types of leverages. (
ii) Determine the likely level of EBIT if EPS is (
a) Re 1 (b) Rs 3 (c)
Zero. [Ans. (i) OL 1.385, FL 1.385, CL 1.429; (ii) (a) Rs 20,000, (b) Rs 44,000; (c) 8,000] [Hint. Apply formula (EBIT 1) (1 t) EPS N where 'N' stands for No. of shares and 't' stands for tax rate.] 6.
ABC Ltd. has an EBIT of Rs. 1,60,000. Its
capital structure consists of the following securities: 10 per cent Debentures Rs. 5,00,000 12 per cent Preference shares 1,00,000 Equal Shares of Rs 100 each 4,00,000 The company is in the 55
per cent
tax bracket. You are required to determine: (i) the company's EPS. (ii) the percentage change in EPS associated with 30 per cent increase and 30
per cent decrease in EBIT. (iii) the degree of financial leverage. [Ans. (i) Rs 9.375; ii) 57.6 per cent; (iii) 1.45] 7.
Calculate Operating, Financial and Combined Leverages under situations when fixed costs are (
a) Rs 5,000 and (
b) Rs 10,000
and financial plans 1 and 2 respectively from the following information pertaining to the operation and capital sturcture of
a taxtile company: Total Assets Rs 30,000 Total Assets Turnover 2 Variable Cost as percentage of sales 60 Financial Plan 1 2 Equity Rs 30,000 Rs 10,000 10
per cent Debentures 10,000 30,000 [Ans. OL (Fixed Costs Rs 5,000) 1.26; OL (Fixed Costs Rs 10,000) 1.71; FL (Financial Plan I) 1.055 and 1.077; FL (Financial Plan II) 1.187 and 1.273; CL (Financial Plan I) 1.392 and 1.842; CL (Financial Plan II) 1.496 and 2.177] 6.10 FURTHER READING Maheshwari, S.N. Financial Management: Principles & Practice. New Delhi: Sultan Chand & Sons, 2007. Maheshwari, Dr. S.N, Dr. Suneel K. Maheshwari, Mr. Sharad K, A Textbook of Accounting for Management. New Delhi: Vikas Publication House Pvt. Ltd.
Capital Structure NOTES Self-Instructional Material 125 UNIT 7 CAPITAL STRUCTURE Structure 7.0 Introduction 7.1 Unit Objectives 7.2 Meaning
of Capital Structure 7.3 Capital Structure and Financial Structure 7.4 Patterns of Capital Structure 7.5 Point of Indifference 7.6 Optimum Capital Structure 7.7 Capital Structure Theories 7.8 Capital Structure

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Financing Policy 7.9 Summary 7.10 Key Terms 7.11 Answers to 'Check Your Progress' 7.12 Questions and Exercises 7.13 Practical Problems 7.14 Further Reading 7.0 INTRODUCTION In the previous unit, you have already learned that the funds required by a business enterprise can be raised either through the ownership securities, i.e., equity shares and preference shares or the creditorship securities, i.e., debentures and/or bonds. A business enterprise has to maintain a proper mix of both these types of securities in a manner that both the cost and the risk are minimum. The mix of different securities is portrayed by the firm's
capital structure. This unit deals with the meaning of capital structure, patterns of capital structure, capital structure theorems etc. 7.1 UNIT
OBJECTIVES After going through this unit, you will be able: z The meaning of capital structure
z Differentiating capital structure from financial structure z The different patterns of capital structure z Identifying optimum
capital structure z The factors determining capital structure 7.2 MEANING OF CAPITAL STRUCTURE
According to Gerstenberg,
capital structure refers to 'the make up of a firm's capitalization'. In other words,
it represents the mix of different sources
of
long- term funds (such as equity shares, preference shares, long-term loans, retained earnings,
etc.) in the total capitalization of the company.
For example, a company has equity shares of Rs 1,00,000, debentures Rs 1,00,000, preference shares of Rs 1,00,000 and retained earnings of Rs 50,000. The term capitalization is used for total long-term funds. In this case it is of Rs 3,50, 000. The term capital structure is
Capital Structure NOTES Self-Instructional 126 Material used for the mix of capitalization. In this case it will be said that the capital structure of the company consists of Rs 1,00,000 in equity shares, Rs 1,00,000 in preference shares, Rs 1,00,000 in debentures and Rs 50,000 in retained earnings. 7.3 CAPITAL STRUCTURE AND FINANCIAL STRUCTURE The term capital structure differs from financial structure. Financial structure refers to the way the firm's assets are financed. In other words, it includes both long-term as well as short-term sources of funds.
Capital structure is the permanent financing of the company represented primarily by long-term debt
and
shareholders' funds but excluding all short-term credit.
Thus, a company's capital structure is only a part of its financial structure. 7.4 PATTERNS OF CAPITAL STRUCTURE In case of a new company the capital structure may be of
any of the following four patterns: (i)
Capital structure with equity shares only (ii) Capital structure with both equity and preference shares (
iii) Capital structure with equity shares and debentures (
iv) Capital structure with equity shares, preference shares and debentures The choice of an appropriate capital structure depends on a number of factors, such as the nature of the company's business, regularity of earnings, conditions of the money market, attitude of the investor, etc. All these factors have been discussed later in the chapter. However, we will like to emphasize only one point here. It is regarding the basic difference between debt and equity. Debt is a liability on which interest has to be paid irrespective of the company's profits. While equity consists of shareholders, or owners, funds on which payment of dividend depends upon the company's profits. A high proportion of the debt content in the capital structure increases the risk and may lead to financial insolvency of the company in adverse times. However, raising funds through debt is cheaper as compared to raising funds through shares. This is because interest on debt is allowed as an expense for tax purposes. Dividend is considered to be an appropriation of profits hence payment of dividend does not result in any tax benefit to the company. This means if a company, which is in the 50 per cent tax bracket, pays interest at 12 per cent on its debentures, the effective cost to it comes only to 6 per cent. While if the amount is raised by issue of 12 per cent preference shares, the cost of raising the amount would be 12 per cent. Thus, raising of funds by borrowing is cheaper resulting in higher availability of profits for shareholders. This increases the earnings per equity share of the company which is the basic objective of a financial manager.
The effect of the change in debt-equity mix on EPS of the company can be understood with the help
of the following
illustration:
Illustration 7.1: A
Ltd has a share capital of Rs. 1,00,000
divided into shares of Rs 10 each. It
has a major expansion programme requiring an investment of
Capital Structure NOTES Self-Instructional Material 127
another Rs 50,000.

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The management is considering
the following alternatives for raising this amount: (i)
Issue of 5,000 equity shares of Rs 10 each. (
ii)
Issue of 5,000, 12% preference shares of Rs 10 each. (
iii) Issue of 10% debentures
of Rs 50,000.
The company's present earnings before interest and
tax (EBIT) are Rs 40,000
p.a.
You are required to calculate the effect of each of the above modes on financing of
the earnings per
share (EPS) presuming: (a) EBIT continues to be the same even after expansion. (b) EBIT increases by
Rs 10,000.
Solution: (a) When EBIT is Rs 40,000
p.a. PRESENT AND PROJECTED EARNING PER SHARE Present Capital Proposed Capital Structure Structure Particulars All Equity (i) (ii) (iii) (All Eqty.) (Eqty.+ (Eqty.+ Pref.) Debt) EBIT Rs 40,000 40,000 40,000 40,000 Less: Interest — — — 5,000 PBT Rs 40,000 40,000 40,000 35,000 Less: Tax Rs 20,000 20,000 20,000 17,500 PAT Rs 20,000 20,000 20,000 17,500 Less: Pref. Dividend Rs — — 6,000 — Profit for Equity Shareholders Rs 20,000 20,000 14,000 17,500 No. of Equity Shares 10,000 15,000 10,000 10,000 EPS Rs 2 1.33 1.40 1.75 Dilution against initial EPS of Rs 2 — 0.67 0.60 0.25 The above table shows that dilution of earning per share has been the least when funds have been raised by issue of debentures. (b) When EBIT is Rs 50,000 p.a. PRESENT AND PROJECTED EARNING PER SHARE Present Capital Proposed Capital Structure Structure Particulars (i) (ii) (iii) (All Eqty.) (All Eqty.) (Eqty.+ (Eqty.+ Pref.) Debt) EBIT Rs 40,000 50,000 50,000 50,000 Less: Interest — — — 5,000 PBT 40,000 50,000 50,000 45,000 Less: Tax 20,000 25,000 25,000 22,500 PAT 20,000 25,000 25,000 22,500 Less: Pref. Dividend — — 6,000 — Profit for Equity Shareholders 20,000 25,000 19,000 22,500 No. of Equity Shares 10,000 15,000 10,000 10,000 EPS 2 1.67 1.90 2.25 Changes in EPS as against initial of Rs 2 — −0.33 −0.10 +0.25 The above table indicates that EPS has gone up by Re 0.25 per share as against the present EPS when the funds are raised by issue of debentures.
Capital Structure NOTES Self-Instructional 128 Material 7.5
POINT OF INDIFFERENCE It
refers to that EBIT level at which EPS remains the same irrespective of
the debt- equity mix. In other words, at this point, rate of return on capital employed is equal to the rate of
interest on debt. This is also known as break-even of EBIT for alternative financial plans. The point
of indifference
can be calculated
with the help of the following formula: 1 2 1 2 ( ) (1) ( )(1)
X I T
PD X I T PD S S
where, X = Point of Indifference or Break-even EBIT Level I 1 = Interest under alternative 1 I 2 = Interest under alternative 2 T = Tax Rate PD = Preference Dividend S l = Number of Equity Shares (or amount of equity share capital) under alternative 1 S 2 = Number of Equity Shares (or amount of equity share capital) under alternative 2 Illustration 7.2: A new
project under consideration by your company requires a capital investment of Rs 150 lakh. Interest on term loan is 12 per cent and tax rate is 50 per cent.
If the debt-equity ratio insisted by the financing agencies is 2:1,
calculate the point of indifference for the project.
Solution: In case of the project under consideration,
the debt-equity ratio insisted by the financing agencies is 2:1.
There are two alternatives available : (i) Raising the entire amount by issue of equity shares. (ii) Raising Rs 100 lakh by way of debt and Rs 50 lakh by way of
issue of shares. Thus, maintaining a debt-equity ratio of 2:1. In the first case the interest amount will be zero, while in the second case it will be Rs 12 lakh. Point of indifference. 1 2 1 2 ( ) (1) ( ) (1) X I T PD X I T PD S S Or (0) (1 0.5) 0 (12) (1 0.5) 0 15 5 – – – – – – = X X Or 0.5 15 X 0.5 6 5 – = X Or 2.5 X = 7.5 X – 90 Or −5 X = – 90 lakh Or X = 18 lakh EBIT at point of indifference is, therefore, Rs 18 lakh.

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Capital Structure NOTES Self-Instructional Material 129 If EBIT is Rs 18 lakh, the earning on equity after tax will be 6 per cent per annum notwithstanding whether the capital investment is financed fully by equity or any other mix of equity and debt provided the rate of interest on debt is 12 per cent. 7.6 OPTIMUM CAPITAL STRUCTURE A firm should try to maintain an optimum capital structure with a view to maintain financial stability. The optimum capital structure is obtained when the market value per equity share is the maximum. It may, therefore, be defined as that relationship of debt and equity securities which maximizes the value of a company's share in the stock exchange. In case a company borrows and this borrowing helps in increasing the value of the company's shares in the stock exchange, it can be said that the borrowing has helped the company in moving towards its optimum capital structure. In case the borrowing results in fall in the market value of the company's equity shares, it can be said that the borrowing has moved the company away from its optimum capital structure. The objective of the firm should therefore be to select a financing or debt-equity mix which will lead to maximum value of the firm. The Optimum Capital Structure and its implications have been expressed by Ezra Soloman in the following words: 'Optimum leverage can be defined as that mix of debt and equity which will maximize the market value of a company, i.e., the aggregate value of the claims and ownership interests represented on the credit side of the balance sheet. Further,
the advantages of having an optimum financial structure, if such an optimum does exist,
is twofold;
it minimizes the company's cost of capital which in turn increases its ability to find new wealth-creating investment opportunities. Also, by increasing the firm's opportunity to engage in future wealth-creating investment, it increases the economy's rate of investment and growth.' 1 7.7
CAPITAL STRUCTURE THEORIES In order to achieve the goal of
identifying an optimum debt-equity mix, it is necessary for the finance manager to be conversant with the basic theories underlying the capital structure of corporate
enterprises. In the following pages we are reviewing these major theories and trying to develop a unified theory of capital structure. However, it will be seen
that the existence of optimum capital structure is not accepted by all. There exist extreme views. There is a viewpoint that strongly supports the argument that
the
financing or debt-equity mix has a major impact on the shareholders' wealth.
While according to others, the decision about the financial structure is irrelevant as regards maximization of shareholders' wealth.
There are four major theories/approaches
explaining
the
relationship among capital structure,
cost of capital and value of the firm: 1.
Net Income (NI) Approach 2.
Net Operating Income (NOI) Approach 3.
Modigliani-Miller (
MM) Approach 4. Traditional Approach 1
Solomon E., Theory of Financial Management (New York), Columbia University Press, 1969, p. 42. Check Your Progress 1. What are the factors which determine the choice of an appropriate capital structure? 2. What might lead to financial insolvency of the company? 3. Why should a firm maintain an optimum capital structure?
Capital Structure NOTES Self-Instructional 130 Material 1.
Net Income (NI) Approach This approach has been
suggested
by Durand. 2
According to
this approach,
capital structure decision is
relevant to the valuation of the firm.
In other words,
a change in
the capital structure causes a corresponding
change in the overall cost of capital as well as
the total value of the firm.
According to this approach,
a higher debt content in the capital structure (i.e., high financial leverage)

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will result in decline in the overall or weighted average cost of
the
capital.
This will cause increase in the value of the firm and consequently increase in the value of equity shares of the company.
The opposite will happen
if the situation is reversed.
Net Income
approach is based on the following
three assumptions: (i)
There are no corporate taxes. (ii)
The
cost of debt is less than
cost of equity
or equity capitalization rate. (iii) The debt content does not
change the risk perception
of
the
investors.
The
value of the firm
on the basis of NI Approach
can be ascertained as follows: V = S +
B
where,
V = Value of Firm
S = Market Value of Equity
B = Market Value of Debt
Market value of
Equity
can be ascertained as follows: S = NI/
ke where,
S =
Market value of equity NI = Earnings available for equity shareholders ke = Equity Capitalization Rate
In order to examine effect of change in debt-equity mix in the capital structure of the firm, let us consider the following illustration.
Illustration 7.3:
X Ltd
is expecting an annual EBIT of Rs 1 lakh.
The company has Rs 4.00
lakh in 10
per cent
debentures. The cost of equity capital or capitalization rate is 12.5
per cent.
You are required to calculate the
total
value of the firm.
Also state the overall cost of capital.
Solution: STATEMENT SHOWING VALUE OF THE FIRM
Rs Earnings before Interest and Tax (EBIT) 1,00,000 Less: Interest
at 10 per cent on Rs 4.00 lakh 40,000 Earnings available for equity shareholders (NI) 60,000 Equity Capitalization Rate (Ke) 12.5 per cent 2
Durand David, 'Costs of Debt & Equity Funds for Business', reprinted in The Management of Corporate Capital: Ezra Solomon (Ed.) New York, The Free Press, 1959, pp. 91–116.
Capital Structure NOTES Self-Instructional Material 131
Market Value of Equity (S): 60,000 100 12.5 NI
Ke 4,80,0000 Market value of Debt (B) 4,00,000 Total value of
the firm (

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S + B) 8,80,000 Overall cost of capital:
EBIT 1,00,000 100 11.36
per cent 8,80,000 k V Increase
in value.
The value of the firm according to the NI Approach will
get increased in case the amount of equity is decreased by
issue of debentures, bonds, etc., to equity shareholders. 2.
Net
Operating Income (NOI)
Approach This approach has also been suggested by Durand. 3
This is the opposite of
Net Income
approach.
According
to this approach,
the market
value of the firm is not
at all
affected by the capital structure changes.
The market value of the firm is ascertained by capitalizing the net operating income at the
overall cost of capital (
k), which is considered to be constant.
The market value of equity is ascertained by deducting
the market value of the debt from the market
value
of the firm.
Value of the
Firm. According the
NOI Approach, the value of a firm can be determined by the following equation: EBIT V k where, V =
Value of firm k = Overall cost of capital EBIT = Earnings before interest and tax
Value
of Equity. The value of equity (S) is a residual value, which is determined by deducting the total value of debt (B) from the
total
value of the firm (V). Thus,
the value of equity (
S)
can be determined by the following equation:
S = V – B where, S = Value of
equity V = Value of
firm B = Value of
debt
Optimum Capital Structure According to Net Operating Income (NOI) Approach, the total value of the firm remains
constant irrespective of the debt-equity mix or the degree of leverage. The market price of equity shares will, therefore,
also not change on account of
change in debt-equity mix. Hence, there is nothing like optimum capital structure. Any capital structure
will be optimum according to this approach. In those cases where corporate taxes are presumed, theoretically there will
be optimum capital structure when there is 100
per cent debt content. This is because 3 Durand, D., op. cit.
Capital Structure NOTES Self-Instructional 132 Material with every increase in
debt content ‘k’ declines and the value of the firm goes up. However, due to legal and other provisions, there has to be
a minimum equity. This
means that optimum capital structure will be at a level where there can be maximum possible debt content in the capital
structure. Illustration 7.4: XY
Ltd, has an EBIT of
Rs 1 lakh.
The cost of debt is 10 per cent and the outstanding debt
amounts to Rs 4.00 lakh. Presuming the overall capitalization rate as 12.5

per cent,
calculate
the total
value of the firm and the equity capitalization rate.
Solution: STATEMENT SHOWING
THE VALUE OF THE FIRM
Earning before Interest and Tax (EBIT) Rs 1,00,000 Overall
Capitalization Rate (k) 12.5 per cent
Market Value of the Firm (
V): 1,00,000 100 12.5 8,00,000 Total
Value of Debt (B) 4,00,000 Market Value of Equity (S) 4,00,000 (
S = V – B) Equity
Capitalization Rate (ke):
EBIT 1,00,000 40,000 60,000 100 100 100 15
per cent 8,00,000 4,00,000 4,00,000 I ke V B
The validity of the NOI approach can be verified by calculating the overall cost of capital: ( ) ( ) = = | | | | \ J \ J B S k kd ke V V where, k =
Overall cost of capital kd = Cost of debt B = Total debt V = Total value of the firm ke = Cost of equity capital S = Market value of equity 4,00,000 4,00,000 10% 15% 8,00,000 8,00,000 ( ) ( ) = + | | | | \ J \ J k = 10% (1/2) + 15% (1/2) = 5% + 7.5% = 12.5 per cent Increase in Debt. In case the firm raises the debt content for reducing its equity content, the total value of the firm would remain unchanged. However the equity capitalization rate would go up.
Market Price of Shares. According to the NOI approach, the market price per share remains unaffected on account of change in the debt-equity mix. For instance, if in the illustration 7.4, the total number of equity shares are 4,000, the market price
Capital Structure NOTES Self-Instructional Material 133 of an equity share would be Rs 100 (i.e., 4,00,000/4,000). In case of illustration 7.5, the company would be in a position to redeem shares of Rs 1 lakh, and therefore, the total number of outstanding shares would amount to 3,000. The market value of a share would continue to be Rs 100 (i.e., 3,00,000/3,000). 3. Modigiliani-
Miller
Approach The Modilgiliani-Miller (MM) approach is similar to the Net Operating Income (NOI) approach.
In other words,
according to this approach, the value of a firm is independent of its capital structure.
However, there is a basic difference between the two. The NOI approach is purely
definitional or conceptual. It
does not provide operational justification for irrelevance of
the capital structure in the
valuation of the firm. While the MM approach supports the NOI approach
providing behavioural justification for the independence of the total valuation and the
cost of capital of the firm from its capital structure. In other words, the
MM
approach maintains that the average cost of capital does not change with change in the debt weighed
equity
mix or capital structure of the firm.
It also gives operational justification for this and not
merely states a proposition.
Basic Propositions. The following
are the
three basic propositions of the
MM approach: 1.
The
overall cost of capital (k) and the value of the firm (
V) are independent of the capital structure.
In other words k and V are constant for all levels
of
the
debt-equity mix.

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The total market value of the firm is given by capitalizing the expected net operating income (NOI) by the rate appropriate
for that risk class. 2.
The
cost of equity (
ke) is equal to
the capitalization
rate of a pure equity stream plus a premium for
the financial risk.
The financial risk increases with more debt content in the capital structure. As a result,
ke increases in a manner to offset exactly the
use of a less expensive source of funds represented by debt. 3.
The cut-off rate for investment purposes is completely independent of the way in which an investment is financed.
Limitations of MM
Hypothesis The arbitrage process is the behavioural foundation for the MM hypothesis. However, the arbitrage process fails to bring the desired equilibrium in the capital markets on account
of the following reasons: 1. Rates of Interest Are Not the Same for the Individuals and the Firms.
The assumption made under the MM hypothes is that the
firms and individuals can borrow and lend
at the same rate of interest does not hold good in
actual practice.
This is because firms have the higher credit standing as compared to the individuals on account of the firm's holding substantial fixed assets. 2. Home-made Leverage is Not the Perfect Substitute for Corporate Leverage.
The risk to which an investor is exposed is not identical when the investor himself borrows proportionate to his share in the firm's debt
and when the firm itself borrows. As a matter of fact, the risk exposure to the investor is greater in the former case as compared to the latter. When
the firm borrows,
the liability of the investor is limited only to the extent of his proportionate shareholding,
in case
the company is forced to go
for its liquidation. However, when an individual borrows, he has an unlimited
liability and even his personal property can be used for payment to his creditors.
Capital Structure NOTES Self-Instructional 134 Material 3. Transaction Costs Involved. Buying and selling of securities involves transaction costs. It would therefore become necessary for an investor
to invest a larger amount in the shares of the unlevered/levered firms than his present investment
to earn the same return. 4.
Institutional Restrictions. The switching option from unlevered to levered firm and vice-versa is not available to all investors, particularly institutional investors, viz., Life Insurance Corporation of India, Unit Trust of India, Commercial Banks, etc. Thus, the
institutional restrictions stand in the way of smooth operation of the arbitrage process. 5.
Corporate Taxes Frustrate MM Hypothesis. On account of corporate taxes, it is a known
fact
that the cost of borrowing funds to the firm is less than the contractual rate of interest.
As a result total return to the shareholders of an unlevered firm is always less than that of the levered firm. Thus, the total market value of a levered firm tends to exceed that of the unlevered firm on account of this very reason. 4. Traditional Approach In the preceding pages, we have explained that the Net Income (NI) Approach and Net Operating Income (NOI) Approach represent two extremes.
According to
the NI approach, the debt content
in the capital structure affects both the overall cost capital and total valuation of the firm, while the NOI approach suggests that capital structure is totally
irrelevant
so far as total valuation of the firm is concerned. The
MM approach supports the NOI approach.

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However, the limitations of the MM approach as discussed in the previous pages show that this approach with its assumptions is of doubtful validity. The traditional approach or the intermediate approach is a mid-way between the two approaches. It partly contains features of both the approaches as given here: 1. The traditional approach is similar to the NI Approach to the extent that it accepts that structure or leverage affects the cost of capital and its valuation. However, it does not subscribe to the NI approach that the value of the firm will necessarily increase with all degree of leverages. 2. It subscribes to
the NOI approach that beyond a certain degree of leverage,
the overall cost
of capital increases resulting in
decrease in the total value of the firm. However, it differs from
the
NOI approach in
the sense that the overall cost of capital will
not remain constant for all degree of leverages. The
essence of the Traditional Approach lies in the fact that a firm though
judicious use of debt- equity mix can increase its total value and thereby reduce its overall cost of capital. This is because debt is relatively a cheaper source of funds as compared to
raising money through shares because of tax advantage. However, beyond a point raising of funds through debt may become a financial risk and would result in a higher equity capitalization rate. Thus, up to a point, the content of debt in the capital structure will favourably affect the value of
a firm. However, beyond that
point, the use of debt will adversely affect the value of the
firm. At
this level of the debt-equity mix, the capital structure will be optimum. At this level, the average or the composite cost of capital will be the least. In other words, here the marginal real cost of equity will be equal to the marginal real cost (both implicit and explicit) of debt. 4 4 For more details please refer to the unit 5 'Cost of Capital' given in this book.
Capital Structure NOTES Self-Instructional Material 135 Illustration 7.5:
In considering the most desirable capital structure
for a company, the following estimates of the cost of debt and equity capital (after tax) have been made at various levels of debt-equity mix: Debt as Percentage of Cost of Debt Cost of Equity Total Capital Employed (per cent) (per cent) 0 5.0 12.0 10 5.0 12.0 20 5.0 12.5 30 5.5 13.0 40 6.0 14.0 50 6.5 16.0 60 7.0 20.0 You are required to determine the optimal company by calculating composite cost of capital. Solution:
STATEMENT SHOWING THE COMPANY'S
COMPOSITE COST OF CAPITAL (AFTER TAX) Debt as Percentage Cost of Cost of Composite Cost of Capital
of Total Capital Debt Equity (per cent) Employed (per cent) (per cent) 0 5.0 12.05 × 0 + 12 × 1.00 = 12.00 10 5.0 12.05 × .10 + 12 × .90 = 11.30 20 5.0 12.55 × .20 + 12.5 × .80 = 11.00 30 5.5 13.05.5 × .30 + 13 × .70 = 10.75 40 6.0 14.06 × .40 + 14 × .60 = 10.80 50 6.5 16.06.5 × .50 + 16 × .50 = 11.25 60 7.0 20.0 7 × .60 + 20 × .40 = 12.20 Optimal debt-equity mix is 30 per cent debt and 70 per cent equity, where the composite cost of capital is the least. Determination of Optimum Capital Structure — A Difficult Task It has already been stated that
at optimum capital structure, the value of an equity share is the maximum while the average cost of capital is the minimum.
The value of an equity share mainly depends on earning per share. So long as
the 'Return on Investment' (ROI) is more than cost of borrowings, each rupee of extra borrowing pushes up the earning per equity
share which in turn pushes up the market value of the share.
It means the company can borrow till the interest rate on borrowings is equal to or does not exceed the return from the project.
However, each extra rupee of borrowings increases the risk and therefore, in spite of increase in the earning per equity share, the market value of the equity share may fall because of
investors taking it as a more risky company. Of course, in some cases, in spite of increase in risk, the value of a company's equity shares may increase because of investors' speculation on future profits. It is
almost impossible to precisely measure the fall in the market value of an equity share on account of increase in risk due to high debt content. Market
factors are highly psychological, complex and do not always follow the accepted
theoretical principles since capital markets are never perfect.

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Capital Structure NOTES Self-Instructional 136 Material Thus, it is not possible to find out the exact debt-equity mix where the capital structure would be optimum. Of course, a range can be determined on the basis of empirical study within which if the company maintains its debt-equity mix, the investors will not discount its shares. For example, a company belongs to an industry where the average debt-equity ratio is of 1:1.
Empirical studies disclosed that the investors do not discount the value of the company's shares so
long as the debt-equity ratio remains within 40 per cent of the industry's average, i.e., between, 0.6:1 and 1.4:1. This means that if the company maintains capital structure within this range, the value of the equity share will not decline due to more risk perceived by the investors.
In order to have the maximum tax advantage on the interest payable, the company may maintain debt-equity ratio near the top of the range keeping in view other factors, such as profitability, solvency, flexibility
and control. The capital structure so arrived at may not be optimum but would be the most reasonable under the circumstances. Some people, therefore, prefer to use the term '
appropriate or sound capital structure' in place of the term 'optimum capital structure',
the former being a more realistic term than the latter. Features of an Appropriate Capital Structure A capital structure will be considered to be appropriate if it possesses
the following features: 1.
Profitability. The capital structure of the company should be most
profitable.
The
most profitable capital structure is one that
tends to minimize
the cost of financing and maximize the earning per equity share. 2. Solvency. The pattern of capital structure should be so devised as to ensure that the firm does not run the risk of becoming insolvent. Excess use of debt threatens the solvency of the company. The debt content should not, therefore, be such that it increases risk beyond manageable limits. 3. Flexibility. The capital structure should be such that it can be easily manoeuvred to meet the requirements of changing conditions. Moreover,
it should also
be possible for the company to provide funds whenever needed to finance its profitable activities. 4.
Conservatism. The
capital structure should be
conservative in the sense that the debt
content in the total capital structure does not exceed the limit which the company can bear. In other words, it should be such as is commensurate with the company's ability to generate future cash flows. 5. Control. The capital structure should be so devised that it involves
minimum risk of loss of control of the company. The
above principles regarding an appropriate capital structure are as a matter of fact relative to each other. For example, raising of funds through debt is cheaper and, is therefore, in accordance with the principle of profitability, but it is risky and, therefore, goes against the principle of solvency and conservatism. The prudent financial manager should try to have the best out of the circumstances within which the company is operating.
The relative importance of each of the above features will also vary from company to company. For example, one company may give more importance to flexibility
as compared to conservatism while the other may consider solvency to be more important than profitability. However, the fact remains that each finance manager has to make a satisfactory compromise between the management's desire for funds and the trends in the supply of funds. Check Your Progress 4. What are the
four
major theories
explaining
the
relationship among capital structure, cost of capital and value of the firm? 5.
Who has suggested the 'Net-Income (NI) approach? 6.
Discuss the
feature of profitability of an appropriate capital structure in brief.

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Capital Structure NOTES Self-Instructional Material 137 7.8 CAPITAL STRUCTURE FINANCING POLICY The capital structure of a company is to be determined initially at the time the company is floated. Great caution is required at this stage, since the initial capital structure will have long-term implications. Of course, it is not possible to have an ideal capital structure but the management should set a target capital structure and the initial capital structure should be framed and subsequent changes in the capital structure should be made keeping in view the target capital structure. Thus, the capital structure decision is a continuous one and has to be taken whenever a firm needs additional finances. The following are the factors which should be kept in view while determining the capital structure of a company: (1) Trading on Equity A company may raise funds either by issue of shares or by debentures. Debentures carry a fixed rate of interest and this interest has to be paid irrespective of profits. Of course, preference shares are also entitled to a fixed rate of dividend but payment of dividend depends upon the profitability of the company. In case the rate of return on the total capital employed (shareholders' funds plus long-term borrowed funds) is more than the rate of interest on debentures or rate of dividend on preference shares, it is said that the company is trading on equity.

For example, the total capital employed in a company is a sum of Rs 2 lakh. The capital employed consists of equity shares of Rs 10 each. The company makes a profit of Rs 30,000 every year. In such a case the company cannot pay a dividend of more than 15 per cent on the equity share capital. However, if the funds are raised in the following manner, and other things remain the same, the company may be in a position to pay a higher rate of return on equity shareholders' funds: (a) Rs 1 lakh is raised by issue of debentures, carrying interest at 10 per cent per annum. (b) Rs 50,000 is raised by issue of preference shares, carrying dividend at 12 per cent; (c) Rs 50,000 is raised by issue of equity shares. In the above case, out of the total profit of Rs 30,000, Rs 10,000 will be used for paying interest while Rs 6,000 will be used for paying preference dividends. A sum of Rs 14,000 will be left for paying dividends to the equity shareholders. Since the amount of equity capital is Rs 50,000, the company can give a dividend of 28 per cent. Thus, the company can pay a higher rate of dividend than the general rate of earning on the total capital employed. 5 This is the benefit of trading on equity. Limitations The trading on equity is subject to the following limitations: (i) A company can have trading on equity only when

the rate of return on total capital employed is more than the rate of interest/dividend on debentures/ preference shares. (ii) Trading on equity is beneficial only for companies which have stability in their earnings. This is because both interest and preference dividend impose 5 Tax factor has been ignored.

Capital Structure NOTES Self-Instructional 138 Material a recurring burden on the company. In the absence of stability in profits the company will run into serious financial difficulties in periods of trade depression. (iii) Every rupee of extra borrowings increases the risk and hence the rate of interest expected by the subsequent lenders goes on increasing. Thus, borrowings become costlier, which ultimately result in reducing the amount of profits available for equity shareholders. (2) Retaining Control

The

capital structure of a company is also affected by the

extent to which the promoter/ existing management of the company desire to maintain control over the affairs of the company. The

preference shareholders and debentureholders have not much say in the management of the company. It is the equity shareholders who select the team of managerial personnel. It is necessary, therefore, for the promoters to own the majority of the equity share capital in order to exercise effective

control over the affairs of the company. The promoters or the existing management are not interested in losing their grip over the affairs of the company

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and at the same time, they need extra funds. They will, therefore, prefer preference shares or debentures over equity shares so long as they help them in retaining control over the company. (3) Nature of Enterprise The nature of enterprise also to a great extent affects the capital structure of the company. Business enterprises which have stability in their earnings or which enjoy monopoly regarding their products may go for debentures or preference shares since they will have adequate profits to meet the recurring cost of interest/ fixed dividend. This is true in case of public utility concerns. On the other hand, companies which do not have this advantage should rely on equity share capital to a greater extent for raising their funds. This is, particularly, true in case of manufacturing enterprises. (4) Legal Requirements The promoters of the company have also to keep in view the legal requirements while deciding about the capital structure of the company. This is particularly true in case of banking companies which are not allowed to issue any other type of security for raising funds except equity share capital on account of the Banking Regulation Act. (5) Purpose of Financing The purpose of financing also to some extent affects the capital structure of the company. In case funds are required for some directly productive purposes, for example, purchase of new machinery, the company can afford to raise the funds by issue of debentures. This is because the company will have the capacity to pay interest on debentures out of the profits so earned. On the other hand, if the funds are required for non-productive purposes, providing more welfare facilities to the employees, such as construction of school or hospital building for company's employees, the company should raise the funds by issue of equity shares. (6) Period of Finance The period for which finance is required also affects the determination of capital structure of companies. In case funds are required, say for three to ten years, it will be appropriate to raise them by issue of debentures rather than by issue of shares. This is because in case the funds are raised by issue of shares, their repayment after

Capital Structure NOTES Self-Instructional Material 139 eight to ten years (when they are not required) will be subject to legal complications. Even if such funds are raised by issue of redeemable preference shares, their redemption is also subject to certain legal restrictions. However, if the funds are required more or less permanently, it will be appropriate to raise them by issue of equity shares. (7) Market Sentiments The market sentiments also decide the capital structure of the company. There are periods when people want to have absolute safety. In such cases, it will be appropriate to raise funds by issue of debentures. At other periods, people may be interested in earning high speculative incomes; at such times, it will be appropriate to raise funds by issue of equity shares. Thus, if a company wants to raise sufficient funds, it must take into account market sentiments, otherwise its issue may not be successful. (8) Requirement of Investors Different types of securities are to be issued for different classes of investors. Equity shares are best suited for bold or venturesome investors. Debentures are suited for investors who are very cautious while preference shares are suitable for investors who are not very cautious.

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

This is particularly true when a company needs heavy funds. (9) Size of the Company Companies which are of small size have

to rely considerably upon the owners' funds for financing. Such companies find it difficult to obtain long-term debt. Large companies are generally considered to be less risky by the investors and, therefore, they can issue different types of securities and collect their funds from different sources. They are in a better bargaining position and can get funds from the sources of their choice. (10) Government Policy It is also an important factor in planning the company's capital structure. For example, a change in the lending policy of financial institutions may mean a complete change in the financial pattern. Similarly, by virtue of the Securities & Exchange Board of India Act, 1992, and the rules made thereunder, the Securities & Exchange Board of India can also considerably affect the capital issue policies of various companies. Besides this, the

monetary and fiscal policies of the government also affect the capital structure

decision. (11) Provision for the Future While planning capital structure the provision for the future should also be kept in view. It will always be safe to keep the best security to be issued in the last instead of issuing all types of securities in one instalment. In the words of Gerestenberg, 'Manager of corporate financing operations must always think of rainy days or the emergencies. The general rule is to keep your best security or some of your best securities till the last.' 6 Thus, there are many factors which are to be considered while designing an appropriate capital structure of a company. As a matter of fact, some of them are conflicting in nature. The relative weightage assigned to each of

these factors will vary widely from company to company depending upon the characteristics of the 6

Financial Organization and Management of Business, p. 201. Check Your Progress 7. How does a company raise funds? 8. Who selects the team of managerial personnel?

Capital Structure NOTES Self-Instructional 140 Material company, the general economic conditions and the circumstances under which the company is operating. Companies issue debentures and preference shares to enlarge the earnings on equity shares, while equity share are issued to serve as a cushion to absorb the shocks of business cycles and to afford flexibility. Of course,

greater the operating risk, the less debt the firm can use.

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Hence in spite of the fact that the debt is cheaper the company should use it
with caution. Moreover, it should be remembered that 'Financial theory has not developed to the p where data related to these considerations are fed at one end of a computer and an ideal financial structure pops out of the other. Consequently, human judgment must be used to resolve the many conflicting forces in laying plans for the types of funds to be sought.' 7 7.9 SUMMARY z
Capital structure
refers to 'the make-up of a firm's
capitalization'. z It differs from financial structure. Capital structure is permanently financing of company's assets through long-term funds excluding short-term credits. While a financial structure refers to the way the firm's assets are financed. It includes both long-term as well as short-term credits. z Capital structure of a company may comprise of equity shares, preference shares, debentures, long-term loans, etc. z The Point of Indifference is that level where EPS remains the same irrespective of the debt-equity mix. The concept is important while making a choice among alternative financial plans. z A firm should try to maintain optimum capital structure with a view to maintain financial stability. z Optimum capital structure is obtained when market value per share is the maximum. z
The various approaches to
capital structure
are: Net Income Approach, Net Operating Income Approach, Modigliani-Miller (MM) Approach
and Traditional Approach.
z The factors determining the capital structure are trading on equity desired to retain control, nature of the enterprise, legal requirements, purpose of financing, the period of finance, market sentiments, requirements, size of the company, government policy, etc. 7.10 KEY TERMS z Arbitrage Process: It is an act of buying an asset or security
in one market at a lower
price and selling it in another
market at a higher price.
z Capital Structure: It refers to the mix of different sources of long-term funds, i.e., debt and equity. z Financial Structure: It refers to the way in which the firm's assets are financed. It includes long-term as well as short-term sources of funds. z Optimum Capital Structure: It refers to that relationship of debt and equity securities which maximizes the value of a company's shares on the stock exchange. At optimum capital structure, the composite cost of capital is the least. 7 Johnson R.W., Financial Management (1977), p. 234.
Capital Structure NOTES Self-Instructional Material 141 z Trading on Equity: In general, it refers to a situation in which a company earns a higher rate
of return on the total capital employed in the business
as compared to the cost it has to pay on funds carrying a fixed interest or dividend. 7.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. The choice of an appropriate capital structure depends on a number of factors, such as the nature of the company's business, regularity of earnings, conditions of the money market, attitude of the investor, etc. 2. A high proportion of the debt content in the capital structure increases the risk and may lead to financial insolvency of the company in adverse times. 3. A firm should try to maintain an optimum capital structure with a view to maintaining financial stability. 4.
There are four major theories/approaches
explaining
the
relationship among capital structure,
cost of
capital and value of the firm: (
i)
Net Income (NI) Approach (ii) Net Operating Income (NOI) Approach (
iii) Modigliani-Miller (MM) Approach (
iv) Traditional Approach 5.
The '
Net Income (NI)' approach has been suggested by Durand. 6.
The capital structure
of the company should be most profitable.
The most profitable capital structure is one that
tends to minimize
the cost of financing and maximize the earning per equity share. 7.
A company may raise funds either by issue of shares or by debentures. 8.

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It is the equity shareholders who select the team of managerial personnel. 7.12 QUESTIONS AND EXERCISES Short-Answer Questions 1. Explain the term 'Point of Indifference'. 2. Differentiate between 'Capitalization' and 'Capital Structure'. 3. What is 'Optimum Capital Structure'? Long-Answer Questions 1.
What do you understand by 'capital structure of a corporation'? Discuss the
qualities which a sound capital structure should possess. 2. Critically examine the Net Income and Net Operating Income approaches to capital structure. What is the traditional view on this question? 3.
There is nothing like an optimal capital structure for a firm. Critically evaluate this statement. 4.
What do you mean by an appropriate capital structure? What should generally be the features of an appropriate capital structure? 5. What do you mean by optimum capital structure?
Make a list of factors determining optimum capital structure.
Capital Structure NOTES Self-Instructional 142 Material 7.13 PRACTICAL PROBLEMS 1. Fitwell Company is now capitalized with Rs 50,00,000, consisting of 10,000 ordinary shares of Rs 500 each. Additional finance of Rs 50,00,000 is required for a major expansion programme launched by the company. Four possible financing plans are under consideration. These are: (i) Entirely through additional share capital, issuing 10,000 ordinary shares of Rs 500 each. (ii) Rs 25 lakh through ordinary share capital and Rs 25 lakh through borrowings from term-lending institutions at 12 per cent interest. (iii) Entirely through borrowings from the term-lending institutions at 13 per cent interest. (iv) Rs 25 lakh through ordinary share capital and Rs 25 lakh through 10 per cent preference shares, by issuing 5,000
preference shares of Rs 500 each.
The company's existing earnings before interest and
tax (EBIT)
amounted to Rs 6 lakh. By virtue of the increase in capitalization, the earnings before interest and tax are expected to double the present level. Examine the impact of financial leverage of these four plans and calculate the earnings per share (EPS) for the shareholders, in each case. Assume 50 per cent tax rate. 2. A Ltd is capitalized with Rs 10 lakhs divided into 10,000
shares of Rs 100 each. The management desires to raise another Rs 10 lakh to finance a major
expansion programme.
There are four possible financing plans: (i) all equity shares, (ii) Rs 5 lakh in equity shares and Rs 5 lakh in debentures carrying 5 per cent interest, (iii) all debentures carrying 6 per cent interest shares, and (iv)
Rs 5 lakh in equity shares and Rs 5 lakh in preference carrying 5 per cent dividend. The existing earnings before interest and tax
amounted to Rs 1,20,000 per annum. (a) You are required to calculate earnings per equity share under each of the above four financial plans. (b) Also calculate the earning per equity share if on account of expansion the level of EBIT is doubled. 3. Glorious Ltd has a total capitalization of Rs 10 lakh consisting entirely of equity shares of Rs 50 each. It wishes to raise another Rs 5 lakh for expansion through one of its two possible financial plans: (i)All equity shares of Rs 50 each (ii) All debentures carrying 9 per cent interest The present level of EBIT is Rs 1,40,000
and
Income Tax Rate is 50 per cent. You are required to
calculate
EBIT level at which earning per share would remain the same irrespective of raising of funds through equity shares or debentures. [Ans. EBIT = Rs 1,35,000, EPS at point of indifference
Rs 4.50] 4.
A company needs Rs 12,00,000 for the installation of a new factory which would yield an annual EBIT of Rs 200,000. The company
has the objective of maximizing the
earnings per share.
It is considering the possibility of issuing equity shares plus raising
a
debt
of Rs 2,00,000, Rs 6,00,000 or Rs 10,00,000. The current market price per share is Rs 40 which is expected to drop to Rs 25
per share if the market borrowings were to exceed Rs 7,50,000. Cost of
borrowings are indicated as under: Up to Rs 2,50,000 10
per cent per annum Between Rs 2,50,001 and Rs 6,25,000 14 per cent per annum Between Rs 6,25,001 and Rs 10,00,000 16 per cent per annum Assuming the tax rate to be 50 per cent,
work the EPS
and the scheme which would meet the objective of the management. [
Ans. EPS under Schemes: I Rs 3.60, II Rs 4.20 III Rs 3.91,

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Scheme II is the best since EPS is the highest.]
Capital Structure NOTES Self-Instructional Material 143 7.14 FURTHER READING Maheshwari, S.N. Financial Management: Principles & Practice. New Delhi: Sultan Chand & Sons, 2007. Maheshwari, Dr. S.N, Dr. Suneel K. Maheshwari, Mr. Sharad K, A Textbook of Accounting for Management. New Delhi: Vikas Publication House Pvt. Ltd.
Dividend Theory and Policy NOTES Self-Instructional Material 145 UNIT 8 DIVIDEND THEORY AND POLICY Structure 8.0 Introduction 8.1 Unit Objectives 8.2 Meaning of Dividend 8.2.1 Nature of Dividend Decision 8.3 Conflicting Theories 8.4 Dividend Policy 8.5 Forms of Dividend 8.6 Bonus Shares 8.7 Summary 8.8 Key Terms 8.9 Answers to 'Check Your Progress' 8.10 Questions and Exercises 8.11 Practical Problems 8.12 Further Reading 8.0 INTRODUCTION The establishment of the dividend policy is an important function of the finance manager. The present unit deals with the determination of dividend policy and the various forms of dividends. 8.1 UNIT OBJECTIVES z Dividend and dividend policy z Factors affecting dividend policy z Significance of a stable dividend policy z Different forms of dividends z Provisions concerning issue of
bonus shares 8.2
MEANING OF DIVIDEND
The term
dividend refers to that part of
the profit of a company which is distributed
amongst
its shareholders. It
may, therefore, be defined as
the return that a shareholder gets from the company, out of its profits, on his shareholdings.
According to the
Institute of Chartered Accountants of India,
dividend is 'a
distribution to shareholders out of profits or reserves available for this purpose.' 1 8.2.1
Nature of
Dividend
Decision
The
dividend decision of the firm is of crucial importance for
the finance
manager since it determines
the amount of profit to be distributed among shareholders and
the amount of
profit to be required in the business (
popularly termed as retained earnings) 1 Guidance Note on Terms used in Financial Statements, ICAI.
Dividend Theory and Policy NOTES Self-Instructional 146 Material for financing its long-term growth. There is a reciprocal relationship between the cash dividends and retained earnings. Larger dividends result in less retained earnings. Less dividends result in larger retained earnings.
While
taking dividend decision, the management will obviously take
into account
the effect of the decision on the maximization of
shareholders' wealth.
In case, the payment of
dividend helps the management in achieving this objective, it would be advisable to pay dividends. In case payment of dividend does not help in achieving this objective, the management would be well advised to retain the profits and use them for financing investment programmes. Thus, the dividend decision is largely based on its impact on
the
value of the firm. 8.3 CONFLICTING THEORIES
There are conflicting theories regarding the impact of dividend decisions on the valuation of a firm. According to one school of thought,
dividend decision does not affect the shareholders' wealth and so also the valuation of the firm. However, according to another school of thought, dividend decision materially
affects the shareholders' wealth and also the valuation of the firm.
For the sake of convenience of discussion, we can put the viewpoints of scholars under the following two groups: 1. Irrelevance concept of dividend 2. Relevance concept of dividend 1. Irrelevance Concept of Dividend

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This school of thought
is associated with Soloman, Modigliani and Miller. According to them,
dividend
policy has no effect on the share prices of a
company and is, therefore, of no
consequence.
In their opinion
investors do not differentiate between dividends and capital gains. Their basic desire is to earn higher return on their investment.
In case the company has
adequate investment opportunities giving a higher rate of return than the
cost of
retained earnings,
the investors would be content with the firm retaining the earnings. However, if the
expected return on projects
is
likely to be
less than what it would cost,
the investors would prefer to receive
the earnings (i.e., dividends). Thus, a dividend decision is essentially a financing decision, i.e., whether to finance the company's funds requirements by retained earnings or not. In case the company
has profitable investment opportunities, it will retain the earnings to finance them,
otherwise distribute them. The shareholders are only interested in income whether it is in the form of dividend or in capital gains. Modigliani and Miller's Approach Modigliani and Miller have expressed their opinion in a more comprehensive way. They have opined that price of shares
of a firm is determined by its earning potentiality and investment policy and never by
the pattern of income distribution.
As observed by them, 'under
conditions of perfect capital markets, rational investors, absence of tax discrimination between dividend income and capital appreciation, given
the firm's investment policy its dividend policy may have no influence on the market price of
the shares.' 2
The logic put forward by Modigliani and Miller
in support of their hypothesis is that whatever increase in
shareholders wealth results from
dividend payments,
will be exactly offset by the effect of raising additional
capital.
For example, if a company, 2 "
Dividend Policy, Growth and Valuation of Shares," Journal of Business, Oct. 1961, pp. 411–33.
Dividend Theory and Policy NOTES Self-Instructional Material 147
having investment opportunities, distributes all its earnings among the shareholders, it will have to raise
the capital required from outside. This will result in increasing the number of shares, resulting in fall in the future earning per share. Thus, whatever a shareholder has gained
as a result of increased dividends will be neutralized completely
on account of fall in-the value of shares due to decline in the expected earning per share.
Assumptions of MM Hypothesis
MM hypothesis is based on the following assumptions: (
i) Capital markets are perfect. (ii) Investors behave rationally. Information is freely available to them and
there are no floatation and transaction costs. (iii)
There are either
no taxes
or there are no differences in
the tax rates applicable to capital gains
and dividends. (
iv) The firm has a fixed investment policy. (v) Risk or uncertainty does not exist.
In other words,

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investors are able to forecast future prices and dividends with certainty
and one discount rate
can be used for all securities at all times. Proof for MM Hypothesis According to
MM hypothesis,
the market value
of a share in
the
beginning of the
period
is equal to the
present value of dividends paid at
the
end of the period
plus
the market price of the share at the end of
the
period.
This
can be put in
the form of the following
equation: 1 1 0 (1) + = +
e D P P K
where, P 0 =
Prevailing market price
of a share
K e = Cost of equity capital D 1 = Dividend to
the
received
at the end of period one P 1 = Market price of a share at the end of
period
one
From
the above equation, the following equation can be derived for determining the value of P 1 . P 1 = P 0 (1 + K e) – D 1
Computation of the
Number of New Shares to be Issued The investment programme of a firm, in a given period of time,
can be financed
either by retained earnings or by
issue of new shares
or both.
The number of new
shares to be issued can be determined
by the following equation: m × P 1 = I – (X – n D 1) where, m = Number of new shares to be issued P = Price at which new issue is to be made I = Amount of investment required X = Total net profit of the firm during period n D 1 = Total dividends paid during the period
Dividend Theory and Policy NOTES Self-Instructional 148 Material Illustration 8.1: The present share capital of A Ltd consists of 1,000
shares
selling at
Rs 100 each.
The company is contemplating
a
dividend of Rs 10
per share at the end of the
current financial year.
The
company
belongs to

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a
risk class for which
appropriate capitalization rate is 20 per cent.
The company expects to have a net income of Rs 25,000.
What will be
the price of the share at the end of the year
if (i) dividend is not declared,
and (ii) a dividend is declared.
Presuming that the company pays
the dividend and has
to make new investment of Rs 48,000 in the coming period, how many new shares be issued to finance the investment programme? You are required to use the MM model for this purpose.
Solution:
The
price of the share at the end of current financial year
can be ascertained by the following equation:
P 1 = P 0 (1 + K e) – D 1 where,
P 1 =
Market
price of the share
at the end of
the
financial year
K e =
Cost of equity
capital
D 1 =
Dividend
to be received at the end of
the
financial year. Substituting the values in the above equation,
the value of a share of A Ltd at the end of the current financial year can be ascertained as follows: When dividend is not paid P 1 = Rs 100 (1 + 0.20) – 0 = 100 × 1.20 = Rs 120 When dividend is paid P 1 = Rs 100 (1 + .20) – Rs 10 = Rs 110 From the
above it is clear that whether dividend is paid or not, the wealth of the shareholders remains equal. When the dividend is not paid, the shareholders can realize Rs 120 per share. In case dividend is paid, the shareholder gets Rs 10 as dividend and can realize further Rs 110. Thus, the total realization amounts to Rs 120 as is the case when the dividend is not paid. Number of new shares to be issued: m × P 1 = I – (X – n D 1) m × 110 = 48,000 – (25,000 – 10,000) 110 m = 33,000 m= 3,000. Criticism of MM Hypothesis MM hypothesis has come under severe criticism on account of unrealistic nature of assumptions as shown below: (i) Tax differential. MM hypothesis assumption that taxes do not exist, is far from reality. In practical life not only does the shareholder have to pay tax but there are different rates of tax for capital gains and dividends. Capital gains are subject to a lower rate of tax as compared to dividends. The cost of internal financing will, therefore, favour a dividend policy with retention of earnings as against the payment of dividends on account of tax differential.
Dividend Theory and Policy NOTES Self-Instructional Material 149 (ii) Floatation costs. A firm has always to pay floatation costs in term of underwriting fee and brokers' commission whenever it wants to raise funds from outside. As a result the external financing is costlier than internal financing. (iii) Transaction costs. The shareholder has to pay brokerage fee, etc., when he wants to sell the shares. Moreover, it is inconvenient to sell shares. On account of these reasons a shareholder would prefer to have dividends as compared to capital gains that he may realize on sale of shares if no dividends are paid. (iv) Discount rate. The assumption under MM hypothesis that a single discount rate can be used for discounting cash inflows at different time periods is not correct. Uncertainty increases with the length of the time period. Investors prefer present dividends to future dividends. It means the value of shares of that company which is paying higher dividend earlier will have a higher value as compared to a company which is following the policy of retention of earnings. 2. Relevance Concept of Dividend Myron Gordon, John Linter, James Walter and Richardson, among others, are associated with the relevance concepts of dividend. According to them a firm's dividend policy has a profound effect on the firm's position in the stock market. Higher dividends increase the value of stock while low dividends decrease their value. This is because

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dividends communicate information to the investors about the firm's profitability.
A firm must declare sufficient dividends to meet the expectations of investors and shareholders in order to maximize the net worth of the business. Prof. James E. Walter has very strongly argued in support of the above proposition. We are, therefore, explaining his approach.
Walter's Approach Prof. James E. Walter strongly supports the doctrine that dividend policy almost always affects the value of the enterprise.
The finance manager can, therefore, use it to maximize the wealth of the equity shareholders. He has also given a mathematical model to prove his point.
Prof.
Walter's model is based on
the relationship between the
firm's (i) return on investment
or internal rate of return (i.
e.,
r); and (ii)
cost of capital or required rate of return (
i.e., k).
According to Prof. Walter, if r < k, i.e., the firm can earn a higher
return than what the shareholders can earn on their investments,
the firm should retain the earnings. Such firms are termed as growth
firms, and
in their case the optimum dividend policy would be to plough back the entire earnings.
In their case the dividend payment ratio (D/P ratio) would, therefore, be zero. This would maximize the market value of their shares. In case of a firm which does not have profitable investment opportunities (i.e., where r > k),
the optimum dividend policy would be to distribute the entire earnings as dividend. The shareholders will stand to gain because they can use the dividends so received
by them in channels which can give them higher return. Thus, 100 per cent dividend payout ratio in their case would result in maximizing the value of the equity shares.
Dividend Theory and Policy NOTES Self-Instructional 150 Material In case of firms where r = k, it does not matter whether the firm retains or distributes its earnings. In their case the value of the firm's shares would not fluctuate with change in the dividend rates. There is, therefore, no optimum dividend policy for such firms. Assumptions
Walter'
s model is based on the following assumptions: (i) The firm
does the entire financing through retained earnings.
It does not use
external sources of funds such as debt or new equity capital. (ii) The firm's business risk does not change
with additional investment. It implies that
the firm's internal rate of return (i.e., r) and cost of capital (
i.e., k)
remain constant. (iii) In the beginning earning per share (i.e., E) and dividend (i.e., D) per share remain constant. It may be noted that the values of 'E' and 'D' may be changed in the model for determining the
results, but any given values
of 'E' and 'D' are assumed to remain constant in determining a given value. (
iv) The firm has a very long
life. Mathematical Formula Prof.
Walter has
suggested the following formula for determining the market value of a share: ( ) – + = e e
E D rD K P K
where,
P = Market price of an equity
share D = Dividend per share r = Internal rate of return
E = Earning per share
K e = Cost of equity capital or capitalization rate. The practical utility of this formula in taking dividend policy decision can be understood with the help of the following illustration. Illustration 8.2:
The
following are the details regarding three companies A Ltd, B Ltd
and C Ltd: A Ltd B Ltd C Ltd r = 15

per cent r = 5 per cent r = 10 per cent K e = 10 per cent K e = 10 per cent K e = 10 per cent
E = Rs 8 per cent
E = Rs 8 per cent E = Rs 8 per cent
Calculate
the value of an equity share
of each of these companies
applying Walter's formula when dividend payment
ratio (
D/P ratio) is: (a) 50%, (b) 75%, (c) 25%.
What conclusions do you draw?
Dividend Theory and Policy NOTES Self-Instructional Material 151 Solution: VALUE OF AN EQUITY SHARE ACCORDING TO WALTER'S FORMULA A Ltd B Ltd C Ltd (i) When D/P ratio is 50 per cent ( ) e e r D E D K P K + – = 0.15 4 (8 4) 0.10 0.10 P 0.05 4 (8 4) 0.10 0.10
P 0.10 4 (8 4) 0.10 0.10 P =
Rs 100 = Rs 60 = Rs 80 (ii) When D/P ratio is 75 per cent 0.15 6 (8 6) 0.10 0.10 P 0.05 6 (8 6) 0.10 0.10 P 0.10 6 (8 6) 0.10 0.10 P = Rs 90 = Rs 70 = Rs 80 (iii) When D/P ratio is 25 per cent 0.15 2 (8 2) 0.10 0.10 P 0.05 2 (8 2) 0.10 0.10 P 0.10 2 (8 2) 0.10 0.10 P = Rs 110 = Rs 50 = Rs 80
Conclusions A Ltd. This company may be characterized as a growth firm. In case of this company the
internal rate of return is higher than the cost of capital (
i.e., r <
K e).
In such a situation it will be better to retain the earnings rather than distributing it in term of dividends, for maximizing the equity shareholders' wealth. As will be seen the value of the share is the highest (Rs 110) when D/P ratio is
at its lowest (i.e., 25 per cent).
B Ltd. This company may be characterized as a 'declining firm'. In case of this company
the
internal rate of return is lower than the cost of capital (i.e., r >
K e).
It will, therefore, be appropriate for this company to distribute the earnings among its shareholders rather than retaining them with itself, for maximizing the shareholders' wealth. As will be seen, the value of share of this company goes on declining with every increase in the earnings retained by it. It is the highest (
at
Rs 70) when the retained earnings ratio is at its lowest (
i.e., the D/P ratio at 75 per cent). C Ltd. This may be characterized as a '
normal firm.' In case of this company r = K e . Hence, D/P ratio does not have any impact on the value of the company's shares. The value of the share continues to be Rs 80 in all
the three situations. Criticism Walter's model has also been the subject of criticism since many of its assumptions are unrealistic as explained below: (i) Walter's assumption that financial requirements of a firm are met only by retained earnings and not by external financing, is seldom true in real world situations. Firms do raise funds by
new equity shares or debentures whenever they are in need of additional funds.
Dividend Theory and Policy NOTES Self-Instructional 152 Material (ii) The assumption that the firm's
internal rate of return (i.e., r) will remain constant does not also hold good.
As a matter of fact with increased investments, 'r' also changes. (iii) The assumption that 'k' will also remain constant does not hold good. A firm's risk pattern does not
always remain constant and as such it is not correct to presume that 'k' will always remain constant. 8.4 DIVIDEND POLICY
The term dividend policy
refers to the policy concerning quantum of profits to be distributed as dividend.
The concept of dividend policy implies that companies through their Board of Directors evolve a pattern of dividend payments which has a bearing on future action.
Of course, in practice many companies do not have a dividend policy in this sense. They rather take each dividend decision independent of every other such decision. This is not a sound practice but the finance manager cannot do much about it since he works only in an advisory capacity and the power to recommend/ declare dividend vests completely with the Board of Directors of the company. Factors Affecting Dividend Policy There is a controversy amongst financial analysts regarding impact of dividend on market price of a company's shares. Some argue that dividends do not have any impact on such price while others hold a different opinion. However, preponderance of evidence suggests that dividend policies do

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have a significant effect on the value of the firm's equity shares
on the stock exchange. Having accepted this premise, it will now be appropriate to consider those factors which affect the dividend policy of a firm. The factors affecting the dividend policy are both external as well as internal. External Factors
The following are the external factors which affect the dividend policy of a firm: 1.
General state of economy. The general state of economy affects to a great extent the management's decision to retain or distribute earnings of the firm. In case of uncertain economic and business conditions, the management may likely retain the whole or a part of the firm's earnings to build up reserves to absorb shock in the future. Similarly, in periods of depression, the management may also withhold dividend payments to retain a large part of its earnings to preserve the firm's liquidity position. In periods of prosperity the management may not be liberal in dividend payments though the earning power of a company warrants it because of availability of larger profitable investment opportunities. Similarly in periods of inflation, the management may withhold dividend payments in order to retain larger proportion of the earnings for replacement of worn-out assets. 2. State of capital market. In case a firm has an
easy access to the capital market either because it is financially strong or
because favourable conditions prevail in
the capital market,
it can follow a liberal dividend policy.
However, if the firm has no easy access to capital
market because of either weak financial position or because of unfavourable conditions in the capital market, it is likely to adopt a more conservative dividend policy. 3. Legal restrictions. A firm may also be legally restricted from declaring and paying dividends. For example, in India, the Companies Act, 1956, has put several restrictions Check Your Progress 1. Who are associated with the 'irrelevance concept of dividend'? 2. Who are associated with the 'relevance concepts of dividend'? 3. Which doctrine is supported by Prof. James E. Walter'.
Dividend Theory and Policy NOTES Self-Instructional Material 153 regarding payment and declaration of dividends. Some of these restrictions are as follows: (i) Dividends can only be paid out of (a) the current profits of the company, (
b) the past accumulated profits, or (c) moneys provided by the Central or State Governments for the
payment of dividends
in pursuance of the guarantee given by the Government. Payment of
dividend out of capital is illegal. (ii) A company is not entitled to pay dividends unless (a) it has provided for present as well as all arrears of depreciations, or (b) a certain percentage of net profits of that year as prescribed by the Central Government not exceeding 10 per cent, has been transferred to the reserves of the company. (iii) Past accumulated profits can be used for declaration of dividends only as per the rules framed by the Central Government in this behalf. Similarly, the Indian
Income Tax Act also lays down certain restrictions on payment of dividends.
The management has to take into consideration all the legal restrictions before taking the dividend decision otherwise it may be declared as ultra vires. 4. Contractual restrictions. Lenders of the firm generally put restrictions on dividend payments to protect their interests in periods when the firm is experiencing liquidity or profitability problems. For example, it may be provided in a loan agreement that the firm shall not pay dividend of more than 12 per cent so long as the firm does not clear the loan. 5.
Tax policy. The tax policy followed by the government also affects the dividend policy. For example, the government may give tax incentives to companies
retaining larger share of their earnings. In such a case the management may be inclined to retain a larger amount of the firm's earnings. Internal Factors
The following are the internal factors which affect the dividend policy of a firm: 1.
Desire of the shareholders. Of course, the directors have considerable liberty regarding the disposal of the firm's earnings, but the shareholders are technically the owners of the company and, therefore, their desire cannot be overlooked by the directors while deciding about the dividend policy. Shareholders of a firm expect two forms of return from their investment in a firm: (i) Capital gains. The shareholders expect an increase in the market value of the equity shares held by them over a period of time. Capital gain refers to the profit resulting from the sale of a capital investment, i.e., the equity shares in case of shareholders. For example, if a shareholder purchases a share for Rs 40 and later on sells it for Rs 60 the amount of capital gain is a sum of Rs 20. (ii) Dividends. The shareholders also expect a regular return on their investment from the firm. In most cases the shareholders' desire to get dividends takes priority over the desire to earn capital gains because of the following reasons: (a) Reduction of uncertainty. Capital gains or a future distribution of earnings involves more uncertainty than a distribution of current earnings. (b) Indication of strength. The declaration and payment of cash dividend carries an information content that the firm is reasonably strong and healthy.

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Dividend Theory and Policy NOTES Self-Instructional 154 Material (c) Need for current income. Many shareholders require income from the investment to pay for their current living expenses. Such shareholders are generally reluctant to sell their shares to earn capital gain. 2. Financial needs of the company. The financial needs of the company are to be considered by the management while taking the dividend decision. Of course, the financial needs of the company may be in direct conflict with the desire of the shareholders to receive large dividends.
However, a prudent management should give more weightage to the
financial needs of the company rather than the desire of the shareholders. In order to maximize the shareholders' wealth, it is advisable to retain earnings in the business only when the
company has better profitable investment opportunities as compared to the shareholders.
However, the directors must retain some earnings, whether or not profitable investment opportunity exists, to maintain the company as a sound and solvent enterprise. 3.
Nature of earnings. A firm having stable income can afford to have a higher dividend payout ratio
as compared to a firm which does not have such stability in its earnings. For example, public utility companies, which enjoy more or less monopoly rights, can have a higher dividend payout ratio as compared to companies which work under highly competitive conditions. 4.
Desire of control. Dividend policy is also influenced by the desire of shareholders or the management to retain control over the company. The
issue of additional equity shares for procuring funds dilutes control to the detriment of the existing equity shareholders who have a dominating voice in the company. At the same time, recourse to long-term loan may entail financial risks and may prove disastrous to the interests of the shareholders in times of financial difficulties. In case of a strong desire for
control, the management
may be
reluctant to pay substantial dividends and prefer a smaller dividend payout ratio.
This
is particularly true in case of companies which need funds for financing profitable investment opportunities and an outside group is seeking to gain control over the company. However, where the management is strongly in control of the company either because of substantial shareholdings or because of
the shares being widely held, the firm can afford to have a high dividend payout ratio. 5.
Liquidity position. The payment of dividends results in cash outflow from the firm. A firm may have adequate earnings but it may not have sufficient cash to pay dividends. It is, therefore, important for the management to take into account the cash position and the overall liquidity position of the firm before and after payment of dividends while taking the dividend decision. A firm may not, therefore, be in a position to pay dividends in cash or at a higher rate because of insufficient cash resources. Such a problem is generally faced by growing firms which need constant funds for financing their expansion activities. 8.5 FORMS OF DIVIDEND Dividends can be classified into different categories depending upon the form in which they are paid. The various forms of dividend are as follows: Cash Dividend The usual practice is to pay dividends in cash. Payment of dividends in cash results in outflow of funds from the firm. The firm should, therefore, have adequate cash
Dividend Theory and Policy NOTES Self-Instructional Material 155
resources at its disposal or provide for such resources so that its liquidity position is not adversely affected on account of distribution of dividends in cash. Bond Dividend In case the company does not have sufficient funds to pay dividend
in cash it may issue bonds for the amount due to the
shareholders by way of dividends. The purpose of bond dividend is postponement of payment of immediate dividend in cash. The bond holders get regular interest on their bonds besides payment of the bond money on the due date. Bond dividend is not popular in India. Property Dividend In case of such dividend the company pays dividend
in the form of assets other than cash. This may be in the form of
certain assets which are not required
by the company or in the form of company's products. This type of dividend is also not popular in India. Stock Dividend Stock dividend is
next to cash dividend in respect of its popularity. In case of this
form of dividend, the
company issue its own shares to the existing shareholders in lieu of or in addition to cash
dividend.
Payment of stock dividend is popularly termed as 'issue of bonus shares'
in India.
This is explained in detail in the following pages. 8.6 BONUS SHARES According to Oxford English Dictionary bonus means 'an extra dividend to the shareholders in a joint stock company from surplus profits.'

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This extra dividend may be paid in the form of cash or shares.
When it is paid in the form of shares,
the shares so issued are termed as bonus shares. Bonus shares are, therefore, 'shares
allotted by capitalization of the reserves, or surplus of a corporate enterprise.' 3
Issue of bonus shares results in conversion of the company's profits into share capital. It is, therefore, also termed as capitalization of company's profits. Such shares are issued to the equity shareholders in proportion to their holdings of the
equity share capital of the company. Thus, a shareholder continues to retain his proportionate ownership of the company. Issue of bonus shares does not affect the total capital structure of the company. It is simply a capitalization of that portion of shareholders' equity, which is represented by reserves and surplus. It also does not affect the total earnings of the shareholders.
Companies Act and Bonus Issue In India, according to the provisions of the Companies Act, 1956, a bonus issue can be made only when the following conditions are satisfied. (i) The company's articles of association permit issue of bonus shares. (ii) The company has sufficient undistributed profits. (iii)
The proposal of the Board of Directors regarding the bonus issue has been approved by the members in the general meeting. (
iv) The
bonus issue is as per the guidelines issued by the Securities Exchange Board of India (SEBI) as summarized below: 3
Guidance Note on Tenns used
in Financial
Statements, issued by the Institute of Chartered Accountants of India,
New Delhi. Check Your Progress 4. Which Act in India has put several restrictions on the payment and declaration of dividends? 5. Why do lenders of the firms put restrictions on dividend payments? 6. What is Capital gain?
Dividend Theory and Policy NOTES Self-Instructional 156 Material (
a)
The bonus issue is made out of free reserves built out of
the genuine profits or share premium collected
in cash only. (b) Reserves created by revaluation of fixed assets are not
capitalized. (c) The declaration of bonus issue, in lieu of dividend, is not made. (d) The bonus issue is not made unless the partly-paid shares, if any existing, are made fully paid-up. (
e)
The company: (1) has not defaulted in payment of interest or principal in respect of fixed deposits and interest on existing debentures or principal on redemption thereof; and (2)
has sufficient reason to believe that it has not defaulted in respect of the payment of statutory dues of the employees, such as contribution to provident fund, gratuity, bonus,
etc. (f)A company which announces its bonus issue after the approval of the Board of Directors must implement the proposal
within a period of six months from the date of
such approval and shall not have the option of changing the decision. (g) There should be a provision in the Articles of Association of the company for capitalization of reserves, etc., and, if not, the company shall pass a resolution at its General Body Meeting making provisions in
the
Articles of Association for capitalization. (h) Consequent on the issue of bonus shares if the subscribed and paid-up capital exceed the authorized share capital, a resolution shall be passed by the company at its General
Body Meeting for increasing the authorized capital. 8.7 SUMMARY z
The term '
dividend' refers to that part of the profits of a company which is distributed
amongst
its shareholders.
z The general state of economy affects to a great extent the management's decision to retain or distribute earnings of the firm. z Larger dividends result in less retained earnings. Less dividends result in larger retained earnings. 8.8 KEY TERMS z Bonus Shares: These are
shares allotted by capitalization of reserves or surplus of a corporate enterprise.
z
Dividend: This
is
a

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distribution to shareholders out of profits or reserves available for this purpose.
z Dividend Policy:
It
is
the policy concerning the quantum of profits to be distributed as dividend.
Dividend Theory and Policy NOTES Self-Instructional Material 157 8.9 ANSWERS TO 'CHECK YOUR PROGRESS' 1. 'The irrelevance concept of dividend' is a school of thought associated with Soloman, Modigliani and Miller. 2. Myron Gordon, John Linter, James Walter and Richardson, among others, are associated with the 'relevance concepts of dividend'. 3. Prof. James E. Walter strongly supports the doctrine that dividend policy almost always affects the value of the enterprise. 4. In India,
the Companies Act, 1956, has put several restrictions regarding payment and declaration of dividends. 5. Lenders of the firm generally put restrictions on dividend payments to protect their interests in periods when the firm is experiencing liquidity or profitability problems. 6. Capital gain refers to the profit resulting from the sale of a capital investment, i.e., the equity shares in case of shareholders. 8.10 QUESTIONS AND EXERCISES Short-Answer Questions 1. Define 'Dividend Policy'. 2. Enumerate four factors which
have a bearing on the dividend policy of a company. 3. What is 'Stock Dividend'? 4. State the two basic conditions to be complied by a company for issue of bonus shares. 5. Explain the meaning of the terms 'Dividend' and 'Dividend Policy'. 6. What are the internal factors which affect the Dividend Policy of a company? Long-Answer Questions 1. What are the advantages of a Stable Dividend Policy? 2. What factors determine the dividend policy of a company? How a stable dividend policy is advantageous to the investors as well as the company? 3. What are 'Bonus Shares'? Do they differ from 'Stock Dividend'? State the advantages of issuing bonus shares. 4. What are the recent guidelines issued by the Securities Exchange Board of India (SEBI) regarding issue of bonus shares? 5. Write a lucid note on current dividend practices in India. 8.11 PRACTICAL PROBLEMS 1. Following are
the details regarding three companies: A Ltd B Ltd C Ltd
r = 15
per cent r = 10 per cent r = 8 per cent K e = 10 per cent K e = 10 per cent K e = 10 per cent E = Rs 10
E = Rs 10 E = Rs 10
Dividend Theory and Policy NOTES Self-Instructional 158 Material
You are required to calculate the effect of dividend payment on the profits of each of the above companies under the following different situations: (a) When no dividend is paid (b) When dividend is paid at Rs 4 per share (
c) When dividend is paid at Rs 8 per share (d) When dividend is paid at Rs 10 per share [Ans. A Ltd (a) Rs 150, (b) Rs 130, (c) Rs 110, (d) Rs 100 B Ltd (a) Rs 100, (b) Rs 100, (c) Rs 100, (d) Rs 100 C Ltd (a) Rs 80, (b) Rs 88, (c) Rs 96, (d) Rs 100] 2. X company
earns Rs 5 per share, is capitalized at a rate of 10
per cent and has a rate of return on investment of 18 per cent. According to
Walter's formula, what should be the price per share at 25 per cent dividend payout ratio? Is this
the optimum payout ratio according to Walter? [
Ans.
Rs 80. This is not the optimum dividend payout ratio since Walter suggested a zero per cent dividend
pay out ratio in situation where r < k] 8.12 FURTHER READING Maheshwari, S.N. Financial Management: Principles & Practice. New Delhi: Sultan Chand & Sons, 2007. Maheshwari, Dr. S.N, Dr. Suneel K. Maheshwari, Mr. Sharad K, A Textbook of Accounting for Management. New Delhi: Vikas Publication House Pvt. Ltd.
MODULE - 3
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 161 UNIT 9 FINANCING: LONG-TERM AND SHORT-TERM Structure 9.0 Introduction 9.1 Unit Objectives 9.2 Financial Markets 9.3 Classification of Sources of Finance 9.4 Security Financing 9.5 Issue of Warrants 9.6 Loan Financing 9.7 Specialized Financial Institutions or Development Banks 9.8 Difference between Hire Purchase and Lease Financing 9.9 Summary 9.10 Key Terms 9.11 Answers to 'Check Your Progress' 9.12 Questions and exercises 9.13 Further Reading 9.0 INTRODUCTION Finance is the lifeblood of a business. Business cannot run efficiently if it does not have adequate finance to meet its requirements. Financial requirements of business can be classified into the following two categories: (i) Short-term financial requirements (ii) Long-term financial requirements Short-term funds are required for meeting working capital needs. They are usually required for a period up to one year. 1
They are raised from sources which can provide funds only for a short period quickly and at reasonable cost. The requirement
of these funds is usually met by taking short-term loans or getting the bill discounted from the commercial banks.

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Long-term funds are required to a great extent for meeting the fixed capital requirements of the business. They are required for a period
exceeding one year. They are further classified into (i) intermediate or
medium-term funds, and (ii) long-term funds. The former category includes funds required for a period between one and
five years, while the latter category includes funds required for a period exceeding five years.
These funds are raised by business from sources which provide, in an uninterrupted way, the use of funds for a long period, viz., shares, debentures, loans from specialized financial institutions, etc. Recently commercial banks have also entered into this area and they
have also started providing medium-term as well as long-term funds 1.
In practice, due to the 'roll over' phenomenon actual maturity may be longer. For example, a loan of Rs 1 lakh is taken. At the end of 1 year Rs 40,000 are still outstanding. The borrower takes another loan of Rs 1,00,000 against which the old loan of Rs 40,000 will be adjusted and Rs 60,000 will be available to him.
Financing: Long-Term and Short-Term NOTES Self-Instructional 162 Material
to trade and industry, either independently or sometimes in collaboration with one or more specialized
financial institutions such as Industrial Finance Corporation of India and State Financial Corporations. It may be useful here to understand the meaning and types of financial markets before proceeding with the various types of sources of finance. 9.1 UNIT OBJECTIVES z Meaning of financial markets z Appropriate classification of sources of finance z Identification of specific sources of finance z Comparision of different sources of finance, both long-term and short-term z Role of specialized financial institutions in providing finance to trade and industry 9.2 FINANCIAL MARKETS Financial markets are an important constituent of financial system in an economy. Financial system aims at establishing and promoting a regular, smooth, efficient and cost effective link between the savers and the investors. Thus, it helps in encouraging both savings and investment. Banking and non-banking financial institutions, dealers, borrowers and lenders, investors and savers, etc., are the participants on the demand and supply side of a financial market. Financial market— may be a specific place or location, for example, a stock exchange, or it may be just an over-the-phone market. Financial markets are functionally classified into two markets — (a) money market and (b) capital market. This classification is on the basis of terms of credit, i.e., whether the credit is supplied for a long period or a short period. (1) Money Market: It is a market for short-term financial assets, which are near substitutes for money. According to the Reserve Bank of India, money market is 'the centre for dealing mainly in money of a short-term character in monetary assets. It meets the short-term requirements of the borrowers and provides liquidity or cash to the lenders.' Thus, a money market deals with financial claims, assets and securities which have a maturity period of up to one year. It includes the following: (a) Call Money Market: It is an important segment of the money market. Lending and borrowing in the call money market are for short duration ranging from overnight to a fortnight. Call loans are repayable on demand at the option of - the borrower or lender or at a very short notice. All loans are, therefore, very liquid and next only to cash. When money is borrowed or lent for a day, it is known as 'overnight' money. When money is borrowed or lent for more than a day and up to 14 days, it is termed as 'notice' money. No collateral security is required to cover these transactions. (b) Treasury Bill Market: Treasury bills are an important instrument of short-term borrowings by the government. They are an important money market instrument due to their high liquidity, zero default risk, ready availability, low transaction cost, assured yield, eligible security for Statutory Liquidity Ratio (SLR) and negligible risk of capital depreciation. The treasury bills are from fourteen days' duration to 364 days' duration.

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Financing: Long-Term and Short-Term NOTES Self-Instructional Material 163 The main participants in the treasury bill market are Reserve Bank of India (RBI), State Bank of India (SBI), Commercial Banks, State Governments and other approved bodies, viz., Securities Trading Corporation of India, Financial Institutions, viz., LIC, G1C, NABARD, IC1C1, Foreign Institutions Investors, Corporate Entities and General Public. Treasury bills are not very popular with the corporate entities and general public. RBI and commercial banks taken together, generally account for about 90 per cent of the annual sale of treasury bills. (c) Commercial Bill Market: The instrument of commercial bills is the keystone of a well developed and active money market. The system of bill financing imparts flexibility to the money market, facilitates balancing liquidity within the banking system and contributes towards the effectiveness of monetary policy of the Central Bank of the country. The bill financing has been popular in India since long in hundi form. In order to develop an active bill market, the RBI introduced the Bill Market Scheme (BMS) in 1952. Under the scheme, commercial banks were provided demand loans by the RBI against bank's promissory notes, supported by their constituents, ninety days usance bills or on promissory notes. The scheme, however, did not make much headway in spite of efforts by the RBI. On 1 November, 1970, the RBI introduced the Bill Rediscounting Scheme (BRS), which is also known as the new bill market scheme. The scheme continues till now with modifications from time to time. (d) Collateral Loan Market : This market refers to a market for loans against collateral securities, viz., stocks and bonds. These loans are mostly granted by commercial banks to private parties in the market against government securities or shares and debentures of corporations. (e) Commercial Papers and Certificates of Deposit Market: This market deals with Certificates of Deposits and Commercial Papers. Commercial paper is a
form of usance promissory note negotiable by endorsement and delivery. It may be issued
even on discount if the
issuing company so decides.
The Certificate of Deposit (CD) is a certificate of title similar to a Time Deposit Receipt issued by a bank.
However, there are no prescribed interest rates on such deposit and the banks have the freedom to issue at a discount or face value. It is a bearer document, hence readily negotiable. The specific features of certificate of deposit and commercial paper have been given in detail later in the chapter. (2) Capital Market: It deals in long-term securities with a maturity period above one year. In other words, it deals with financial assets other than near-money substitutes, e.g., long-term primary and secondary issues, claims or securities of maturity period of more than one year. It can be classified into two markets: (a) Securities Market: It may be of two types—Primary or New Issues Market and Secondary Market. Primary market deals in new financial claims or new securities, i.e., issue of shares or debentures by a company to the shareholders or debenture holders while the secondary market deals in existing securities, i.e., securities which have already been issued and are outstanding. (b) Long-term Loan Market: It deals with long-term loans given by the financial institutions for a period exceeding one year. Commercial banks, development banks and business firms are participants in this market. Money market and capital market are not totally independent of each other. They both provide an opportunity to those having surplus financial resources to invest them profitably and with ease.

Financing: Long-Term and Short-Term NOTES Self-Instructional 164 Material Capital Markets In India The Indian capital markets dates back to the 18th century when the securities of the East India Company were traded in Mumbai and Kolkata. However, the orderly growth of the capital market began with the setting up of The Stock Exchange, Bombay, in July 1875 and Ahmedabad Stock Exchange in 1894. Eventually, twenty-two other exchanges in various cities sprang up. In order to realize national aspirations and keep pace with the changing times, the capital markets in India have gone through various stages of liberalization, bringing about fundamental and structural changes in the market design and operation, resulting in broader investment choices, drastic reduction in transaction costs, more efficiency, transparency and safety, besides increased integration with the global markets. The opening up of the economy for investment and trade, the dismantling of administered interest and exchange rates regimes and setting up of sound regulatory institutions have all enabled and expedited this process. Initially the capital markets in India were underdeveloped and dominated by a handful of players, and concentrated in a few cities. The transformation of the Indian securities markets was initiated with the establishment of the Securities and Exchange Board of India (SEBI) in 1989, initially as a informal body and in 1992 as a statutory autonomous regulator with the twin objectives of protecting the interests of the investors and developing and regulating securities markets over a period of time. SEBI has been empowered to investigate, examine, visit company premises, summon records and persons and enquire and impose penalties commensurate with misconduct. SEBI's regulatory jurisdiction extends over corporates in the issuing capital and all intermediaries and persons associated with securities market. It can conduct enquiries, audits and inspection of all concerned participants and adjudicate offences under the SEBI Act. It has powers to register and regulate all the market intermediaries. Further, it can also penalize them in case of violations and provisions of the Act, Rules and Regulations made thereunder. Thus, SEBI has full autonomy and authority to regulate and develop an orderly securities market. Securities/capital markets in India have made enormous progress in recent years. India's equity market is now being increasingly recognized as a success story on the world scale. These reforms have boosted the confidence of investors (domestic and international) in the Indian capital market. Efficiency of Capital Markets Capital markets act as a brake on channelizing savings to low-yielding enterprises and impel enterprises to focus on performance. They continuously monitor performance through movements of share prices in the market and the threats of takeover. This improves efficiency of resource utilzation and thereby significantly increases returns on investment. As a result, savers and investors are not constrained by their individual abilities, but facilitated by the economy's capability to invest and save, which inevitably enhances savings and investment in the economy. Thus, capital market converts a given stock of investable resources into a larger flow of goods and services and augments economic growth. There is enough evidence to prove this assumption that there is a positive correlation between the developments in the securities market and economic growth. Hence, the efficiency of capital markets is of vital importance for the national economy. The efficiency of a capital market is concerned with its informational efficiency,

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 165 i.e., its ability to provide the required information to the investors. Based on the type of information reflected in the security prices, capital markets can be divided into the following three categories: (i) Capital Market with Weak Efficiency: Capital market is said to have weak form of efficiency if its security prices fully reflect the information content of past prices. (ii) Capital Market with Semi-Strong Efficiency: Capital market is said to have semi-strong form of efficiency if its security prices fully reflect all public information. (iii) Capital Market with Strong Efficiency. Capital market is said to have strong form of efficiency if its security prices fully reflect all information whether public or private. It may be noted that in case of capital market with a strong efficiency no one can consistently make abnormal profits simply by naive buy-and-hold strategy. Indian securities/capital markets are consistently gaining higher efficiency due to the continuous raising of the bar of good corporate governance by the Security Exchange Board of India. It is next only to the US market in terms of size. NSE is the third largest exchange in the world next only to NYSE, NASDAQ by the number of transactions and is followed by BSE, the fifth largest in the world. Investors and issuers in India can take comfort and undertake transactions with confidence since all intermediaries are now registered and regulated by SEBI. The turnover at the stock exchanges is increasing manifold. Both technological and regulatory changes have been really fast paced and largely implemented due to the cooperation of all the market participants, other regulatories and the Government of India. However, still much remains to be done to make capital or securities market strongly efficient. The following steps need to be taken for this purpose: (i) The market depth needs to be supplemented with further product diversification- mortgage and asset-backed securities, warrants and disinvestment in the public sector. (ii) The debt market of India, though large and next only to Japan in Asia, lacks vibrancy and does not provide adequate options for meeting medium-to long-term funds, required for green field projects, in particular. (iii) There is no market for below investment-grade paper or what is called junk bonds. (iv) The regulation of listed companies, a job performed in a fragmented manner by SEBI and Ministry of Company Affairs, needs to be consolidated by tightening the noose around unscrupulous operators, defying all regulations. (v) Law breakers are more clever than law makers as proved by a number of securities scams. SEBI should therefore continue to reorient and revise its regulations, its investigating abilities and its investor protection measures.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 166 Material 9.3 CLASSIFICATION OF SOURCES OF FINANCE The sources from which a business meets its financial requirements can be classified as follows: (i) According to period (a) Long-term finance, viz., shares, debentures, long-term loans, etc. (b) Short-term finance, viz., advances from commercial banks, public deposits, advances from customers and trade creditors, etc. (ii) According to ownership (a) Own capital, viz., share capital, retained earnings and surpluses, etc. (b) Borrowed capital viz., debentures, public deposits and loans, etc. (iii) According to source of generation (a) Internal sources, viz., retained earnings and depreciation funds, etc. (b) External sources, viz., securities such as shares and debentures and
loans. However, for the sake of convenience, the different sources of funds can be classified into three categories: (i) Security financing:
This includes financing through shares (including both equity and preference shares) and debentures. They are sources of long- term funds. (ii) Internal financing: This includes financing through retained earnings. This could also be a source of long-term funds. (
iii) Loan financing: This includes both short-term and long-term loans. (iv)
Asset Based Financing: This includes hire purchase financing and least finances. Each of the above sources of finance are discussed in the following pages. 9.4 SECURITY FINANCING 1. Issue of Shares This is the most common method of raising long-term funds. Every company in India generally uses this method. Meaning of Share A share may be defined as one of the units into which the share capital of a company has been divided. According to Section 2 (46) of the Companies Act, 'a share is the share in the capital of a company and includes stock except where a distinction between stock and share is expressed or implied.' The person holding the share is known as a shareholder. He receives dividend from the company as a consideration for investing his money into the company. However, payment of dividend is not legally compulsory. The power to recommend dividend vests in the Board of Directors of the company. The recommendation of the directors is put before the general meeting of the shareholders who may reduce the rate of dividend as recommended by the Board but cannot increase it. Types of Shares A public company can issue only two types of shares. They are: (a) Preference and (b) Equity shares.
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a) Preference Shares: Preference shares are those which carry the following preferential rights over other classes of shares: (
i) A preferential right in respect of a fixed dividend. It may consist of a fixed amount (say Rs 50,000 p.a.) or a fixed rate (say 12 per cent). (ii) A preferential right as to
repayment of capital in the case of winding up of the company
in priority to other classes of shares. Preference shares may be cumulative or non-cumulative, participating or non-participating, redeemable or irredeemable. 2 In case of cumulative preference shares, their dividend goes on accumulating unless paid. The accumulated arrears of dividend shall be paid before anything is paid out of the profits to the holders of any other class of shares. In case of non-cumulative preference shares, the right to claim dividend lapses if there are no profits in a particular year. In other words, they are not entitled to claim arrears of dividend (i.e., dividends which could not be paid on account of inadequacy of profits in earlier years). Participating preference shares also get a share out of the surplus profits remaining after paying dividend to the equity shareholders at a fixed rate as determined by the company's articles. In other words, besides getting dividend at a fixed rate in priority to other shareholders, they get a share out of the surplus profits also. Non-participating shares do not have such rights.
Redeemable
preference shares are those which can be redeemed during the lifetime of the company,
while
irredeemable preference shares can be redeemed only when the company goes for
liquidation.
Merits of Preference Shares (i) Financing through preference shares is a flexible financing arrangement since payment of dividend is not a legal obligation of the company issuing the preference shares. If earnings decline and the financial condition of the company deteriorates, the company can omit to pay dividend. (ii) Preference shares have no final maturity date (except redeemable preference shares) and thus, in a sense, the funds provided by them are sort of perpetual loan. 3 They give sufficient flexibility to the company by allowing it not to make interest payments or planning for repayment of principal. (iii) Preference shares add to the equity base of the company and thereby strengthen its financial position. Additional equity base enhances the ability of the company to borrow in the future. (iv) Preference share capital also is a sort of cushion to the debentureholders and, thus, they save the company from paying higher rate of interest. (v) Issue of preference shares does not create any sort of charge against assets of the company. Thus, the assets are freely available for raising additional funds from any other source. 2. According to the Companies (Amendment) Act, 1996, w.e.f. 1 March 1997, no company can now issue preference shares which are irredeemable or are redeemable after twenty years from the date of its issue. 3. Preference shares now have to be redeemed maximum after twenty years of their issue on account of the provision of the Companies (Amendment) Act, 1996.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 168 Material (vi) Preference shares are entitled to a fixed rate of dividend. The company may, therefore, pay dividend to the equity shareholders at a rate higher than the overall return on investment (ROI) and, thus, take advantage of trading on equity. (vii) Issuing of preference shares does not materially disturb the existing pattern of control of the company as compared to the issue of equity shares since preference shareholders are entitled to vote only on such resolutions which directly affect their interests. (viii) Financing through preference shares is cheaper as compared to financing through equity shares. (ix) Preference shares are particularly useful for those investors who want higher rate of return with comparatively lower risk. (x) The company can utilize huge surplus funds at its disposal by redeeming the redeemable preference shares as per the provisions of the Companies Act. Demerits
of Preference Shares (i) One of the principal disadvantages of financing through preference shares is that preference dividend is not deductible
as an expense for taxation purposes out of the profits of the company. As a result, the explicit cost of financing through preference shares is almost twice that of financing through debentures. Moreover, if
the preference shares are cumulative, arrears of dividend have to be cleared before anything can be paid to
the equity shareholders of the company. (ii) Preference shares may pave the way for the insolvency of the company in cases where the directors continue to pay dividends on them in spite of lower profits to maintain their attractiveness. (b) Equity Shares These are the shares which are not preference shares. They do not carry any preferential right. They will rank after preference shares for the purposes
of dividend and repayment of capital in the event of the company's winding up.
The rate of dividend on these shares is not fixed.
It depends
on the availability of divisible profits and the intention of the directors. Shares have the chance of earning nothing in periods of adversity. Equity shareholders control the company on account of their entitlement to vote at the general meeting of the company. These shares are preferred by persons who prefer risk to better return and also wish to have a say in the management of the company. Equity share capital is also termed as venture capital on account of the risk involved in it. Merits of Equity Shares The merits of equity shares are more or less on the same pattern as those of preference shares. They can be summarized as follows: (i) Financing through equity shares does not impose any burden on the company since payment of dividend on these shares depends on the availability of profits and the discretion of the directors. (ii) Capital raised through equity shares is also a sort of perpetual loan for the company since it is not repayable during the lifetime of the company. It is repayable only in the event of company's winding up and that too only after the claims of preference shareholders have been met in full.
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 169 (iii) Equity shares do not carry any charge against the assets of the company, hence, the capacity of the company to raise additional funds through borrowings on the security of its assets is in no way diminished. (iv) The company does not face the risk of magnifying its losses in periods of adversity. (v) Financing through equity shares also provides the company with sufficient flexibility in the utilization of its profits and funds since neither the payment of dividend is compulsory nor any provision is to be required for repayment of capital. Demerits of Equity Shares (i) Financing through equity shares is costly as compared to financing through preference shares or debentures since, on account of greater risk, the expectation of the equity shareholders is also high as compared to preference shares or debentures. Moreover, the dividend on equity shares is not deductible as an expense out of profits for taxation purposes. (ii) The control of the company can be easily manipulated through cornering of shares by a group of shareholders for their personal advantage at the cost of the company's interest. (iii) Conservative managements often avoid issue of additional equity shares to raise additional funds. Since the new shareholders are entitled to vote at par with the existing shareholders, this increases the possibility of transferring of control from the existing holders to new holders of equity shares. (iv) Excessive reliance on financing through equity shares reduces the capacity of the company to trade on equity. This may ultimately result in overcapitalization of the company. (v) The cost of underwriting and distributing the equity share capital is generally higher than that for preference share capital or debentures. Debentures Meaning
A debenture is a document issued by a company as an evidence of
a debt due from the company with or without a charge on the assets of
the company. It is a certificate issued by a company under its seal acknowledging a debt
due by it to its holders.
According to the Companies Act, the term
debenture includes 'debenture stock, bonds and any other securities of a company whether constituting a charge on the assets of the company or not'.

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The term ‘debenture stock’ is similar to ‘share stock’. It is the aggregate and consolidated amount of borrowings on account of debentures by a company. Fully paid debentures can only be converted into debenture stock. Such stock can be divided and transferred in any convenient parts. Types of Debentures Debentures can be of various types: (i) Naked debentures are those which do not carry any charge on the assets of the company. (ii) Mortgage debentures are secured by a mortgage or charge on the whole or a part of the assets of the company. (iii) Irredeemable debentures can be redeemed only in the event of the company’s winding up. (iv) Convertible debentures can be converted into equity shares of the
Financing: Long-Term and Short-Term NOTES Self-Instructional 170 Material company as per the terms of their issue while inconvertible debentures cannot be so converted. Call and Put Option A debenture may be issued with a call or put option. In case of a call option, the company issuing debentures has the liberty to redeem the debentures earlier than the redemption date at a predetermined price (or ‘strike price’) within a specified period. In case a company does not exercise the option within the specified period, the debentures continue. In case of a put option, the investor has a right to demand back the money earlier than the redemption date at a predetermined price (or strike price) within the specified period. A call option is beneficial to the company since it can redeem the debentures when it has surplus funds which it cannot possibly put to profitable use. A put option is beneficial to the investor since he can get back his money if he feels that he can invest it more profitably elsewhere. Difference between Debentures and Shares The following are the difference between shares and debentures: (i) Shares are a part of the capital of the company. Debentures constitute loan to the company. Shareholders are owners of the company. Debentureholders are creditors of the company. A shareholder enjoys all the rights of membership of a company, such as the right to vote and right to attend general meetings. These rights are not available to the debentureholders. (ii) Payment of fixed interest on debentures shall be made prior to payment of any dividend to the shareholders out of the profits of the company. (iii) Even as regards the return of principal, debentures will have a prior claim over share capital. (iv) Debentures usually have a charge on the assets of the company as distinguished from shares which have no such charge. (v) Interest on debentures is payable whether there are profits or not, but dividend on shares is paid only when the company has earned profits. Interest on debentures is a debt and may be paid even out of capital. But a dividend on a share can never be paid out of capital. (vi) Debentures carry a fixed rate of interest while dividends given to the shareholders may fluctuate from year to year according to the amount of profit. (vii) Debentures do not carry any voting rights, and therefore, debentureholders are not in a position to exercise any control over the affairs of the company. Shareholders, as members of the company, enjoy the right to vote in the general meetings and, thus, can exercise control over the management of the company. (viii) Unlike shares, debentures can be purchased and redeemed by the company unless they are perpetual or irredeemable. Debentures can be issued at a discount, but a share cannot be issued at a discount, unless the company satisfies the conditions of Section 79 of the Companies Act. Merits of Debenture Issue The following are the merits of raising capital through issue of debentures: (i) Debentures provide funds to the company for a specific period. Hence, the company can appropriately adjust its financial plan to suit its requirements.
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 171 (ii) Debentures provide funds to the company for a long period without diluting its control. (iii) Debentures enable the company to take advantage of trading on equity and, thus, pay to the equity shareholders dividend at a rate higher than the overall return on investment. (iv) Debentures are more suitable for investors who are cautious and conservative and who particularly prefer a stable rate of return with little or no risk. Demerits The raising of funds through debentures is subject to the following limitations: (i) Raising funds through debentures is risky, since
in the event of failure of the company to pay
interest or the principal instalment in time, the debentureholders may resort to the extreme remedy of filing a petition for winding up the company. (ii) Debentures are particularly not suitable for companies whose earnings fluctuate considerably. In case of such companies raising funds through debentures may lead to considerable fluctuations in the rate of dividend payable to the equity shareholders. (iii)
Every additional issue of debentures becomes more risky and costly on account of higher expectation of

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debentureholders. They may demand higher rate of interest besides power to have some say in the management of the company. As such, at times, the management may find it inadvisable to accept their conditions and decide not to use debentures as a source for meeting their financial requirements. Financing through Equity Shares Vs Financing through Debentures A company may prefer financing through debentures as compared to financing through equity shares on account of the following reasons: (i) Interest on debentures is allowed as a business expense. (ii) Debentureholders have generally no say in the management of the company. (iii) Underwriters may have little hesitation in accepting the company's proposal since debentures are adequately backed by the company's assets. Moreover, the company may find it beneficial to pay short-term loans by raising funds through debentures at a time when interest rates on such loans are higher as compared to the interest rate payable on the debentures. However, the company cannot go to an unlimited extent for financing through debentures. It has to strike a balance between 'risk' and 'saving' effected by raising funds through debentures. The ultimate objective is to maintain a balanced capital structure. This method of raising long-term funds was till recently not very popular in our country. In recent years more companies have started raising funds through this source because they have realized its usefulness. This form of finance is cheaper since the rate of interest payable on it is lower than the dividend rate of preference shares and is treated as an expense for income tax purposes. Moreover, debentures can be redeemed in case the company does not need the funds raised through this source. A company can buy its own shares subject to complying with certain legal provisions 4 but it can buy its own debentures without many of such formalities. Debentureholders, as stated above, do not have voting rights at general meetings of the company and, therefore cannot interfere in the management of the company. 4. The Companies (Amendment) Act, 1999, has permitted companies to buy their own shares.

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Convertible Debentures Convertible debentures are those debentures whose holders have the option to get them (debentures) converted wholly or partly into shares. Usually, these debentures are converted into equity shares. However, they may be converted into preference shares if the terms of conversion so provide. The terms of issue of these debentures provide for: (i) the time span over which these debentures can be converted. (ii) the conversion ratio, i.e., the number of shares for which each debenture will be convertible. Convertible Debentures and the Companies Act The Companies Act, 1956, permits the issue of convertible debentures subject to the following two conditions: (i) Issue of such debentures should be as per the guidelines issued by the Securities Exchange Board of India (SEBI). (ii) The terms of the issue of such debentures should be approved by a special resolution passed by the company in the general meeting. Advantages of Convertible Debentures Convertible debentures are advantageous both to the company and the investor. Advantages to the Company: The company stands to gain by raising funds through convertible debentures as follows: (i) The company is usually able to sell a convertible debenture at a lower interest rate as compared to the interest rate it would have been required to offer on a straight (i.e., non-convertible) debenture issue. This is because the investor is prepared to accept the lower return now in consideration of the higher gain that he expects to make by sale of shares obtained in future on conversion of the debentures. Thus, the cost of raising funds is lowered. (ii) There is no immediate dilution of earning per share (EPS) when funds are raised through convertible debentures as compared to the situation when additional funds are raised through shares. (iii) Interest on debentures is allowed as an expense for tax purposes and cost of capital over a period is less to the company as compared to the money raised through direct issue of shares. (iv) Raising of funds through convertible debentures is a good alternative particularly when the equity market is bad. Advantages to the Investor: The investor stands to gain in the following manner: (i) The investor continues to get a regular return on his investment with the possibility of making capital gains through sale of shares obtained on conversion of debentures. (ii) The investor gets immediate return on his investment and, therefore, purchase of convertible debentures is particularly beneficial to him in case of projects having long gestation period. 9.5 ISSUE OF WARRANTS A company, in order to attract the investors to buy its shares or debentures, may give the purchaser a right to buy additional equity shares at a concessional price for a specific number of shares or debentures held by the holder. Such right is given through a document

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Financing: Long-Term and Short-Term NOTES Self-Instructional Material 173 termed as 'warrant' attached with the share(s) or debenture(s) originally allotted. The following are some instruments having such rights: 1. Non-Convertible Debentures (NCDs) with Detachable Equity Warrants The holder of NCDs with detachable equity warrants is given an option to buy specific number of shares from the company at a predetermined price within a definite time- frame. The warrants attached to NCDs will be issued subject to full payment of NCDs value. There is a specific lock-in-period after which the detachable warrant holders have to exercise their option to apply for equities. If the option to apply for equities is not exercised, the unapplied portion of shares would be disposed of by the company at its liberty. 2 2. Equity Shares with Detachable Warrants In this category, along with fully paid equity shares, detachable warrants are issued which will entitle the warrant holder to apply for a specified number of shares at a determined price. Detachable warrants are separately registered with the stock exchanges and traded separately. The terms and conditions relating to issue of equities against warrants would be determined by the company. 3. Preference Shares with Warrants Attached Under this instrument, each preference share should carry a certain number of warrants entitling the holder to apply for equity shares for cash at 'premium' at any time in one or more stages between the third and fifth year from the date of allotment. If the warrant holder fails to exercise his option, the unsubscribed portion will lapse. The holder of warrants would be entitled to all rights/bonus shares that may be issued by the company. From the date of allotment, the preference shares with warrants attached would not be transferred/sold for a period of three years. 4. Secured Zero Interest Partly Convertible Debentures (PCDs) with Detachable and Separately Tradeable Warrants The instrument has two parts: Part A is convertible into equity shares at a fixed amount on the date of allotment and Part B is non-convertible, to be redeemed at par at the end of a specific period from the date of allotment. Part B will carry a detachable and separately tradeable warrant which will provide an option to the warrant holder to receive equity share for every warrant held at a price as worked out by the company. Internal Financing Financing through Retained Earnings This is strictly not a method of raising finance but refers to accumulation of profit by a company to finance its development activities or repay loans. It is also known as 'Internal Financing' or 'Ploughting Back of Profits'. According to the latest provision of the Companies Act, a
certain percentage, as prescribed by the Central Government (not exceeding 10 per cent), of the net profit after tax of a financial year have to be compulsorily transferred to reserves by a company before declaring dividends for the year. Money so retained can be used for meeting the long-term funds requirements of the business.
Financing: Long-Term and Short-Term NOTES Self-Instructional 174 Material Merits This method of raising finance for a company is very useful because on the one hand it does not cost anything to the company and on the other hand it strengthens the financial position of the company. The chief merits of this method of financing can be put as follows: (i) It enhances business reputation and increases the capacity of the business to absorb unexpected and sudden business shocks too. (ii) As compared to other sources of financing, this method of financing is least costly since it does not involve any floatation cost as is
the case with raising of funds by issuing different types of securities.
Of course, it may not be wholly correct to say that retained earnings have no cost to the company. As a matter of fact, the cost of retained earnings is the return which the shareholders could have earned on the amount of retained earnings if it had been distributed. (iii) This method of financing has been broadly found to be useful for financing expansion and improvements. (iv) This source of financing is also useful since it carries no fixed obligation regarding payment of dividend or interest. Demerits Financing through retained earnings is not free from evils or misuse. The demerits as a consequence of such misuse can be summarized as follows: (i) The retained earnings can be misused by the management to manipulate the value of the company's shares in the stock exchange and also to cover their inefficiency in managing the affairs of the company. (ii) Excessive use of retained earnings continuously for a long period may result in converting the company into a monopolistic organization. (iii) The method of financing through retained earnings may prove harmful to social interest also. The retained earnings are utilized by individual business units and the society does not get the chance of investing them through capital market into such business units which may be more useful to the society. (iv) The shareholders may also object to the use of retained earnings as a source of finance since it affects their regular income. This is particularly true for shareholders falling in lower income groups. The quantum of retained earnings is affected to a great extent by the dividend policy pursued by a firm. The higher dividend rate means less retained earnings and vice versa. The different aspects of dividend policy have been explained in detail in a separate chapter later in the book. 9.6 LOAN FINANCING A firm may meet its financial requirements by taking both short-term loans/credits and long-term loans. 1. Short-term Loans/Credits Short-term loans/credits are obtained for working capital requirements. The following are the important sources of short-term loans/credit: Check Your Progress 1. What is money market? 2. What is internal financing? 3. Define a share.
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 175 (1) Trade Credit It is a form of short-term financing common to
almost all types of business firms. As a matter of fact, it is the largest source of short-term funds.

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In an advanced economy, most buyers are not required to pay for goods on delivery. They are allowed a short- term credit period before payment is due. This credit may take the form of (a) An Open Account Credit Arrangement, and (b) Acceptance Credit Arrangement. In case of an Open Account Credit Arrangement, the buyer does not sign a formal debt instrument as an evidence of the amount due by him to the seller.
While in case of an Acceptance Credit Arrangement
the buyer accepts a bill of exchange or gives a promissory note for the amount due by him to the seller.
Thus, it is an arrangement by which the indebtedness of the buyer is recognized formally.
Trade Credit Arrangement is generally made available to the buyer on an informal basis without creating any charge on assets. Trade Credit Arrangements usually carry stipulation of allowing a cash discount to the buyer for prompt payment. The volume of trade credit and its popularity as a means of short-term financing depends on the following factors: (i) The terms of trade credit (ii) Reputation of the purchasing firm (iii) Financial position of the seller (iv) Volume of purchases to be made by the buyer Merits of Trade Credit (i) The major merit of trade credit as a source of finance is its ready availability. (ii) Trade credit is available on a continuing and informal basis. There is no need to arrange financing formally. In case the firm is now taking cash discounts, additional credit is readily available by not paying existing trade creditors till the expiry of the credit period. There is no need to negotiate with the supplier. The decision is entirely up to the firm. (iii) There is no need of creating any sort of charge against the firm's assets for obtaining the trade credit. (iv)
Trade credit is a flexible means of financing since the firm does not have to sign a note, pledge securities or adhere to strict payment schedule.
A seller views occasional late payment with a far less critical eye than a banker or any other lender. Demerits of Trade Credit (i) The cost of trade credit may be very high in case all factors are considered. The seller while fixing the selling price of his products to be sold on credit takes into account the interest, the risk and inconvenience attached with supplying goods on credit. As a matter of fact, many firms utilize other sources of short-term financing in order to enable them to take advantage of cash discount. (ii) Availability of liberal trade credit facilities may induce a firm to overtrading which may later prove to be disastrous for the firm. The firm must balance the advantage of trade credit as a discretionary source of financing without any explicit cost against the cost of losing of cash discount, the possibility of deterioration in reputation, if trade credit is stretched beyond agreed limits and the increased purchase price of the product.
Financing: Long-Term and Short-Term NOTES Self-Instructional 176 Material (2) Commercial Banks Commercial banks in our country mostly provide only short-term credit to the business. They have started providing medium-term finance also, but only marginally. Commercial banks make advances to the customers in the following forms: (i) Loans: A loan is a kind of advance made with or without security. In the case of a loan the banker makes a lumpsum payment to the borrower or credits his deposit account with the money advanced. It is given for a fixed period at an agreed rate of interest. Repayments may be made in instalments or at the expiry of a certain period. The customer has to pay interest on the total amount advanced whether he withdraws the money from his account (credited with the loan) or not.
A loan once repaid in full or in part cannot be drawn again by the borrower unless the banker sanctions a fresh loan.
The rate of interest charged by a bank in the case of loans is usually lower than in case of cash credits and overdrafts on account of the following reasons: (a) It involves lower cost of maintenance on account of not frequent operation of the account. (b) The bank gets interest on the total amount sanctioned whether the customer withdraws the whole money or not. Loan may be a 'term loan' or a 'demand loan'. Payment of term loan is spread over a long period. It includes a medium-term loan (repayable within one to five years) and a long-term loan (repayable after five years). Demand loan is payable on demand. Thus, it is for a short period. (ii)
Cash Credits: A cash
credit is an arrangement by which
a banker allows his customer to borrow money
up to
a certain limit.
Cash credit arrangements are usually made against the security of commodities hypothecated

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or pledged with the bank. (iii) Hypothecation: In case of hypothecation the possession of goods is not given to the bank. The goods remain at the disposal and in the godown of the borrower. The bank is given access to goods whenever it so desires. The borrower furnishes periodical return of stock to the bank. Such an advance is granted by the bank only to a person in whose integrity it has full confidence. (iv) Pledge: In the case of pledge, goods are placed in custody of the bank with its name on the godown where they are stored. The borrower has no right to deal with them. Customers favour hypothecation to pledge because the latter is considered to lower his prestige. Cash credits are the most favoured mode of borrowing by large commercial and industrial concerns in India, on account of the advantage that a customer need not borrow at once the whole amount he is likely to require, but draw such amounts as and when required. He can put back any surplus amount which he may find with him for the time being. Interest on a cash credit account has to be paid only on the amount actually drawn at any time and not on the full amount of the credit allowed. In order to safeguard the bank's interest on account of banker's locking of funds unnecessarily because of customer's drawing funds much less than the bank's estimate, a minimum interest clause is often inserted in
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 177 the cash credit agreements. The clause requires the customer to pay interest to the bank on a certain proportion of amount arranged for, say, one-third or one-fourth, even though he may not have drawn to this extent. (v) Overdrafts: The customer may be allowed to overdraw his current account, with or without security if he requires temporary accommodation. This arrangement, like the cash credit, is advantageous from the customer's point of view as he is required to pay interest on the actual amount used by him.
A cash credit differs from an overdraft in the sense that the former is used for long terms by commercial and industrial concerns doing regular business, while the latter is supposed to be a form of bank credit to be
made use of
occasionally and for shorter durations. (vi) Bills discounted and purchased: Banks also give advances to their customers by discounting their bills. The net amount after deducting the amount of
discount is credited to the account of the customer. The bank may discount the bills with or without security from the debtors in addition to the personal security of one or more persons already liable on the bill. The term 'discounting of bills' is used in respect of time bills, while the term 'purchasing of bills' is used in respect of demand bills. Merits (i) Short-term credit from commercial banks is generally cheaper as compared to any other source of short-term finance. (ii) Commercial banks, as explained above, have different schemes of financing thereby considerable flexibility can be maintained. (iii) Commercial banks also provide credit to trade and industry at concessional rates under their special schemes as per the directive of the Reserve Bank of India. (iv) Commercial banks also act as friend, philosopher and guide to their client business firms in respect of the new ventures to be taken up and the most appropriate sources from which finances have to be raised by them. Demerits (i) Financing from commercial banks requires signing of a number of documents involving cost as well as time. (ii) Commercial banks rarely grant unsecured credit to business firms. This acts as deterrent for the firm to depend more on commercial banks for their financial requirements. (iii) A commercial bank takes a very critical view of even a small irregularity committed by its customer in respect to the operation of his account. (3) Public Deposits Many companies accept deposits for short periods from their members, directors and the general public. This mode of raising funds is becoming popular these days on account of bank credit becoming quite costlier. According to the existing provisions, a company cannot accept deposits for a period of less than six months and more than thirty-six months. However, deposits up to 10 per cent of the paid-up capital and free reserves can be accepted for a minimum period of three months for meeting short-term requirements. Moreover, a company cannot accept or renew deposits in excess of 35 per cent of its paid-up capital and free reserves.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 178 Material Merits (i) Financing through public deposits is simple without too many complicated formalities. The company has simply to advertise and inform the public that it is interested in and authorized to accept public deposits. (ii) It is a less costly method for raising short-term as well medium-term funds required by the business. (iii) There is no need of creation of any charge against any of the assets of the company for raising funds through public deposits. (iv) The company can take advantage of trading on equity, since the rate of interest and the period for which the public deposits have been accepted are fixed. Demerits (i) Raising funds through public deposits is not a reliable and definite source of finance. A company enjoying good reputation in the market is in a position to raise sufficient funds through public deposit. However, companies which do not enjoy such reputation cannot raise sufficient funds by this method. Moreover, in a period of depression and financial stringency this source will dry up. (ii) This mode of financing sometimes puts the company into serious financial difficulties. Even a slight rumour that the company is not doing well may result in a rush of the public to the company for getting premature payments of the deposits made by them. (iii) The system may prove injurious for the growth of a healthy capital market. A heavy reliance on public deposits for medium-term financing by companies may adversely affect the supply of industrial securities, particularly shares and debentures, to the general public. (4) Business Finance Companies These are companies established primarily for providing short-term and medium-term loans to firms known to them. Since these firms have limited financial resources, their lending is also limited only to firms which are of medium and small size. These firms raise the resources mostly from their owners and their relatives or friends. Their lending is generally secured against accounts receivable, stock or any other asset. Some finance companies may even specialize in providing only loans meant for special purposes: financing of customer durables, financing of transport vehicles, etc. (5) Accrual Accrual accounts are a spontaneous source of financing since they are self-generating.

The most common accrual accounts are wages and taxes. In both cases the amount becomes due but is not paid immediately. Usually a date is fixed for payment, for example, wages are paid in the first week of the month next to the month in which the services were rendered. Similarly, a provision for tax is created out of the profits of the company at the end of the financial year, but the tax is paid only after the assessment is finalized. Thus, the time lag between receipt of income and making payment for the expenditure incurred in earning that income helps the business in meeting some of its short-term financial requirements. Accrual accounts become an important source of finance since with increase in scope of the operation of the business with the increase in sales, labour costs usually increase and with them the amount of accrued wages also increase. Similarly with increasing profits the amount of accrued taxes also increases with almost the same proportion and in the same direction.

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 179 Merits Financing through accruals is a costless or interest-free source of financing. Services are rendered by the employees but they are neither paid nor they expect to be paid until the end of the pay period. Similarly taxes are not paid until their due date. Demerits Accrual accounts is not a discretionary source of financing; for example, the company cannot indefinitely postpone the payment of taxes to the government without attracting penalties. Similarly the trade unions will also resent if the wages are not paid to the workers in time. Postponement of wages may also affect the morale of the employees resulting in absenteeism, reducing efficiency and higher labour turnover. This source of financing should be resorted to only in the end. However, many companies on the brink of cash insolvency find it a convenient remedy to save themselves by resorting to postponing payment of wages and other expenses. (6) Indigenous Bankers These are private individuals engaged in the business of financing small and local business units. They provide short-term or medium-term finance. However, they charge exorbitant rates of interest and are, therefore, considered only as a last resort of finance. (7) Advances from Customers Manufacturers and contractors engaged in producing or constructing costly goods involving considerable length of manufacturing or construction time usually demand advance money from their customers at the time of accepting their orders for executing their contracts or supplying the goods. This is a cost-free source of finance and really useful in those businesses where it has become customary to receive advance payment from the customers. (8) Miscellaneous Sources A business firm may resort to miscellaneous sources of finance in periods of pressing needs. Such sources may include loans from directors or sister business units. Specialized financial institutions also provide short-term finance to their client units in times of need. The cost of these funds is usually nominal. 2. Long-term or Term Loans The term 'Term Loans' is used for both medium as well as long-term loans. Medium- term loans are for periods ranging from one to five years while long-term loans are of period from five to ten or fifteen years. We will first explain the special features of such loans and then explain in brief the role played by different institutions in granting such loans. Special Features of Term Loans (1) Objectives Term loans are granted for one or more of the following objectives: (a) Establishment, renovation, expansion and modernization of industrial units. (b) For meeting the requirements of the core working capital. (c) For retiring bonds in order to reduce interest costs or to redeem preference shares so as to substitute tax deductible interest payment for non-deductible dividends.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 180 Material (2) Security Term loans are usually secured. They have either a fixed or a floating charge against the assets of the company. The lender bank usually prefers a first charge; however, in appropriate cases it accepts a second charge also. (3) Time Period Term loans are usually granted for a period ranging from two to fifteen years but generally from eight to fifteen years. Repayment is made in instalments typically designed to fit the project capacity of the borrower to pay. Repayment generally starts two or three years after sanctioning of loan. The lending institution requires payment only in accordance with the specified schedule so long as the borrower carries out his commitments under the loan agreement. In case of default in such a commitment, the agreement provides for accelerating of the maturity of the loan. (4) Formal Agreement The term loan is granted on the basis of a formal agreement. The agreement contains the terms of granting loan and provides for certain protective clauses for the benefit of the lender, e.g., limiting the dividend rate, the power to appoint directors, conversion of loan into share capital, etc. 5 (5) Participation Basis In case of term loans being of a substantial amount, different financial institutions participate in the credit on a syndicate basis. Such participation is done either because of statutory restrictions or for sharing the risk. The larger the loan, greater is the participation. (6) Introduces Financial Discipline Term loans introduce a proper financial discipline in the borrower. He has to forecast with reasonable accuracy his cash flows so that he can repay the loan and interest as per the agreed schedule. This makes necessary for the borrower to prepare a project cash flow statement. (7) Refinance Facility Commercial banks are granted refinance facility from the Industrial Development Bank of India on the term loans granted by them. The risk, of course, continues of the lending commercial bank. 5. Prior to the announcement of Industrial Policy on 24 July 1991, the Convertibility Clause was applicable only when the outstanding and proposed aggregate financial assistance of term lending institutions to an industrial unit exceeded Rs 5 crore. It was also required that the financial institutions should exercise the Convertibility Clause in a way that they did not come to hold more than 26 per cent of share capital in case of non-MRTP companies and 40 per cent of share capital in case of MRTP companies/larger houses. Moreover, the convertibility clause was applicable only in respect of loans exceeding Rs 5 crore. It may be noted that the New Industrial Policy, 1991, announced by the Government on 24 July 1991, provides that the mandatory Convertibility Clause will no longer be applicable for term loans from the financial institutions for new projects. In case of loan agreements executed before l August 1991, where conversion has been stipulated but not exercised, conversion could be waived by the financial institution subject to the borrower agreeing to pay the prevailing higher rates of interest. Chartered Secretary, February 1992, p. 173.
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 181 (8) Project-oriented Approach Financial institutions engaged in term-lending do not do security-oriented lending any longer. They have a detailed approach to each project and assess its merits themselves. The loan is sanctioned only when the project satisfies their tests. (9) Special Conditions In order to provide safeguards against time and cost overruns the loan agreements usually require the borrower to give an undertaking in respect of the following matters: (i) No further long-term loan shall be taken. (ii) The debt-equity ratio is not to exceed the specified limit. (iii) Current ratio will be maintained at the desired level. (iv) Selling commission to the sole selling agent shall not be disbursed unless interest and instalments of loan are paid. (v) Dividend shall not be declared for a specific period or shall not exceed the agreed rate. (vi) Loan shall become payable before maturity under specified circumstances. (vii) Financial data and other information as required by the lending institution will be supplied as and when desired. (viii) The directors will furnish personal guarantees for repayment of the loan in addition to the financial institution's charge on the firm's assets. Sources of Term Loans There are two major sources of term loans: (i) Specialized financial institutions or development banks and (ii) Commercial banks. However, the former happen to be the main source of term-finance for all business and industrial units. Each of these sources of finance has been explained in the following pages. 9.7 SPECIALIZED FINANCIAL INSTITUTIONS OR DEVELOPMENT BANKS A large number of specialized financial institutions have been set up in the country after independence to meet the specific term financial needs of industrial enterprises. They are popularly known as 'Development Banks'. A development bank is essentially 'a development catalyst'. It seeks to mobilize scarce resources such as capital, technology, entrepreneurial and managerial talents and channelize them into industrial activities in accordance with plan priorities. It has, therefore, to shape its policies, procedures and functions in a way so as to cater to the development needs of specific sectors as well as the economy in general. Some of such banks are as follows: 1. Industrial Finance Corporation of India Ltd (IFCI) The Corporation was set up in 1948 under an Act passed by the Parliament with the objective to provide medium and long-term financial assistance to industry. For ensuring greater flexibility and an ability to cater to the needs of the changing financial system, the undertaking of the IFCI now stands transferred to a newly formed company, the Industrial Finance Corporation of India Ltd (IFCI Ltd) w.e.f. June, 1993. Every shareholder of IFCI under the IFCI Act, 1948, has become the shareholder of IFCI Ltd. w.e.f. the same date. Financial assistance from IFCI is available to industrial concerns both in the Check Your Progress 4. How does a firm meet its financial requirements? 5. Who are indigenous bankers? 6. What are medium- term loans?

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Financing: Long-Term and Short-Term NOTES Self-Instructional 182 Material corporate and cooperative sectors. State owned public limited companies can also obtain financial assistance from the corporation. The expert committee constituted to formulate a medium to long-term strategic plan for IFCI has made wide-ranging recommendations in structural and operational areas of IFCI such as future business strategies, recapitalization, reduction of NPAs, improvement in recoveries and revamp of HR policies. In the interim, the government had also put into effect a restructuring package designed to arrest further deterioration of IFCI's financial health. Also, in order to achieve long-term viability, the board of directors of IFCI has agreed, in principle, for a merger with Punjab National Bank. A due diligence exercise, covering, inter alia, all assets, liabilities (including contingent liabilities), legal aspects, share exchange ratio, etc., is being carried out on which a final view will be taken on the merger. Resources As on 31 March 2004, IFCIs paid-up capital stood at Rs 1,068 crore, while its reserves and surplus aggregated to Rs 435 crore. Its borrowings from the Government of India amounted to Rs 961.5 crore, bonds and debentures Rs 13,061 crore and other borrowings to Rs 1,302 crore. 6 Management The management of the corporation vests in a board of directors appointed as follows: No. of Directors Nominated by the Central Government 3 Nominated by the Reserve Bank 3 Elected by bank, insurance companies, investment trusts and cooperative banks 6 Total 12 The board of directors have delegated their powers to a committee of directors consisting of five members, one of whom is the managing director of the corporation. Functions The functions of the corporation, as given in the Act, are as follows: (i) Guaranteeing loans raised by industrial concerns which are repayable within a period not exceeding twenty-five years and are floated in the public market. (ii) Undertaking the issue of stocks, shares, bonds or debentures issued by industrial concerns. However, they must be disposed of by the corporation within seven years of their acquisition. (iii) Granting loans or advances or subscribing to debentures of industrial concerns repayable within a period not exceeding twenty-five years. (iv) Extending guarantees in respect of deferred payments by importers who are able to make such arrangement with foreign manufacturers. (v) Acting as the agent of the Central Government or for World Bank (International Bank for Reconstruction and Development) in respect of loans sanctioned to the industrial concerns. 6. IDBI, 'Report on Development Banking in India', 2003-04, p. 5. Financing: Long-Term and Short-Term NOTES Self-Instructional Material 183 (vi) Financing of projects with the Industrial Development Bank of India and other financial institutions. These would include guaranteeing loans raised by industrial concerns from other financial institutions, the purchase of stock, shares, bonds and debentures from existing holders, doing merchant banking operations, undertaking research to carry out techno-economic studies in connection with industrial development, etc. The corporation provides financial assistance for setting up new industrial projects, renovation, modernization, expansion and diversification of the existing ones. It also provides financial assistance on concessional terms for setting up industrial projects in industrially less-developed districts in the union and state territories as may be notified by the Central Government. IFCI has also been registered with SEBI as a category I Merchant Banker since 1 August 1993, and also been granted registration to act as a debenture trustee. IFCI Financial Services Ltd incorporated during 1994-95, commenced its operations during 1996-97. The merchant banking services of IFCI have been transferred to this new company. Working Ever since its inception in 1948, till the end of March 2004, cumulative sanctions and disbursements amounted to Rs 46,294 crore and Rs 44,399 crore respectively. 2. ICICI Ltd (now merged with ICICI Bank Ltd) It is the new name for Industrial Credit & Investment Corporation of India Ltd. The Corporation was established on 5 January 1955 to assist industrial enterprises in the private sector. It started its operations as a wholly privately owned institution but with nationalization of life insurance business, the Life Insurance Corporation of India became its major shareholder. Objects The objects of the corporation are to assist industrial enterprises in private sector by the following measures: (i) Granting secured loans in rupees repayable over a period of fifteen years. (ii) Making similar loans in foreign currencies for payments of imported capital equipment and technical service. (iii) Guaranteeing rupees payments for credit made by others. (iv) Subscribing to equity and preference shares directly and underwriting public and private issues and offer of sale of industrial securities. (v) Furnishing technical and administrative assistance to Indian industries. Working Ever since its inception in January 1955, to 31 March 2002 cumulative sanctions and disbursements amounted to Rs 2,83,511 crore and Rs 1,71,698 crore respectively. ICICI is constantly revising and updating its business strategies. Its excellent performance is a result of its increased client-focus and the ability to structure financial solutions that meet client specific needs. New products, new services, new organization structures and new business models have been the hallmarks of ICICI's business strategy. In the context of the emerging competitive scenario in the financial sector, ICICI Ltd has merged with ICICI Bank Ltd with effect from 3 May 2002. Consequent upon the merger, the ICICI group's financing and banking operations, both wholesale and retail have been integrated into a single full-service banking company.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 184 Material 3. Small Industries Development Bank of India (SIDBI) SIDBI has been set up under Small Industries Development Bank of India Act, 1990, passed by the Parliament. It is a wholly-owned subsidiary of IDBI. The SIDBI is intended to work as a principal financial institution for the promotion, financing and development of small and medium-scale industrial enterprises. It is also expected to coordinate the functions of the financial institutions, viz., State Financial Corporations, State Industrial Development Corporations, State Small Industries Corporations, Scheduled Banks and State Cooperative Banks, etc., engaged in the promotion, financing and developing the small scale industries. Since its inception, SIDBI's assistance has encompassed the entire definitional ambit of SSI sector, including the tiny, village and cottage industries through suitable schemes tailored to meet the requirement of setting up of new projects, expansion, diversification, modernization and rehabilitation of the existing units therein. SIDBI offers refinance, bills rediscounting, lines of credit and resource support mechanisms to route assistance to SSI sector through a network of banks and state-level financial institutions. SIDBI also offers direct finance for meeting specific requirements of SSI sector. The government also extends line of credit of SIDBI to enable it to extend loans at more affordable rates to its traditional clientele. Besides, SIDBI undertakes a wide range of promotional and developmental activities for improving the inherent strengths of SSI units, creating employment opportinities and new avenues for economic development of the rural poor. Resources of the Bank Resources of SIDBI mainly comprise contributions from Industrial Development Bank of India (IDBI) in the form of loans and shares and may include market borrowings, short-term and long-term funds from the Reserve Bank of India (RBI) and loans from the Government of India. The authorized capital of the Bank is Rs 500 crore. The bank may increase the said capital upto Rs 1,000 crore. The paid-up capital of the bank on 31 March, 2004 was Rs 450 crore wholly subscribed by the IDBI. Management of the Bank The general superintendence, directions and management of the affairs of the Bank vest in the board of directors. The board consists of the following: (i) Chairman: The chairman/managing director of the Industrial Development Bank is the ex-officio chairman of SIDBI. (ii) Two directors nominated by the central government. (iii) Two directors nominated by the Industrial Development Bank of India. (iv) The managing director of SIDBI is appointed by the IDBI. Business of the Bank SIDBI functions as the principal financial institution for the promotion, financing and development of small-scale industrial concerns, and also coordinates the functions of institutions engaged in the work. It may carry on any of the following business transactions: (i) Grant loans, and advances to any SFC, SIDC, State Cooperative Banks, Scheduled Banks, repayable within a period not exceeding twenty- five years.
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 185 (ii) Accept, discount or rediscount bills of exchange/promissory notes made, drawn, accepted or endorsed by small-scale industrial concerns. (iii) Subscribe to or purchase shares, bonds or debentures of any SFC, SIDC, State or Small Industrial Corporations, National Small Industries Corporations, etc. (iv) Grant loans and advances to any small-scale industrial concern or subscribe to or purchase or underwrite the issue of shares, debentures, bonds of any such concerns. (v) Grant loans or credit to any foreign government or any financial institution or person outside India for the purpose of export or import. (vi) Finance export from or import into India of machinery equipments or other assets. (vii) Grant loans and advances to any person for investment in any small- scale industrial concern. (viii) Guarantee deferred payments due from any small-scale industrial concern. (ix) Provide technical and financial consultancy, merchant banking and extension services. (x) Leasing, sub-leasing or giving on hire or hire-purchase any movable or immovable property to any small-scale industrial concern. SIDBI has recently moved from being a mere traditional refinancing institution. It has emerged stronger in meeting the varied requirements of SSI sector by exploring new areas and seeding options for future growth like launching new financial products and instruments and support service programmes. 4. State Financial Corporations (SFCs) In order to provide financial assistance to small-scale industries and medium-size industries, State Finance Corporations Act was passed by the Parliament in 1951. The Act is applicable to all States except the State of Jammu and Kashmir. Almost all the States have set up such corporations. The corporations aim at achieving balanced regional growth, catalyse investments, generate employment and widen the ownership base of industries in their respective states. In tandem with the changing business environment, SFCs have also expanded the scope of their activities and coverage of their assistance. The capital of such corporation has to be fixed by the state government within the minimum and maximum limits of Rs 50 lakh to Rs 5 crore. Shares of the corporations are taken by the respective state governments, the Reserve Bank of India, scheduled banks, cooperative banks, insurance companies, investment trusts and private parties. Maximum allotment to private parties cannot exceed twenty-five per cent of the share capital of the corporation. The corporation can grant maximum assistance for a period of twenty years and maximum assistance to a company or a cooperative society would not exceed Rs 60 lakh and to a partnership or a sole proprietary firm Rs 30 lakh. The SFCs (Amendment) Act, 2000, which became effective from September 2000 provides greater flexibility to the SECs to cope with the challenges posed by the deregulated financial system. However, it is also felt that the future business prospects of SFCs are likely to be affected by the stiff competition emerging in the financial system. The report of the 'Working Group on Development of the Financial Institutions'

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Financing: Long-Term and Short-Term NOTES Self-Instructional 186 Material brought out by RBI in May 2004 also affirms this fact. It even advocates that the SFCs should be phased out within a definite time frame, and the credit gap, if any, created by the SFCs from the market, can be filled in by the banks and also by suitably repositioning SIDBI. Working There are eighteen State Financial Corporations in India. Since their inception, till the end of March 2004, the cumulative sanctions and disbursements by all the eighteen SFCs amounted to Rs 40,327 and Rs 33.676 crore respectively. 5. State Industrial Development Corporations (SIDCs) SIDCs were set up during the 1960s and early 1970s under the Companies Act, 1956 or as autonomous corporations under the specific State Acts as wholly government undertakings for promotion and development of medium and large industries. The main objective of SIDCs is to act as catalytic agents for industrial development in their respective States. SIDCs provide financial assistance to industrial units by way of term-loans, underwritings and direct subscription to shares, debentures and guarantees. They also undertake a variety of promotional activities like preparation of feasibility reports, industrial potential surveys, entrepreneurship development programmes and developing industrial estates/areas. SIDCs are also engaged in setting up medium and large industrial projects in joint sector in collaboration with the private entrepreneurs or as wholly owned subsidiaries. Some SIDCs also administer the incentive schemes of Central/State Governments and participate in risk capital. Working At present there are twenty-eight SIDCs all over the country. Since their inception upto the end of March 2004, cumulative sanctions and disbursements amounted to Rs 26,385 crore and Rs 21,656 crore respectively. 6. North Eastern Development Finance Corporation Ltd (NEDFi) NEDFi was set up on 9 August 1995 under the Companies Act with an authorized capital of Rs 500 crore and paid-up capital of Rs 100 crore contributed by IDBI, SIDBI, IFCI, ICICI, UTI, LIC, GIC and its subsidiaries and State Bank of India. The main objective of the NEDFi is to provide finance and other facilities for promotion, expansion and modernization of industrial and infrastructure projects in the north-eastern region. It also aims to help first-generation entrepreneurs during implementation and early operation stages of their projects. NEDFi is to extend a wide range of facilities and services such as providing working capital, discounting, rediscounting of bills, guarantees subscription to and/or underwriting of shares and securities, issuing letters of credit and providing consultancy and research facilities. NEDFi proposes to build up reliable databank for helping the industry, both internal and external, in identifying new technologies, markets, emerging trends in economy and other relevant information. Working As at the end of March 2004, cumulative assistance sanctioned and disbursed by the corporation since its inception amounted to Rs 389 crore and Rs 241 crore respectively.

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 187 7. Industrial Development Bank of India (transformed into IDBI Ltd w.e.f. 1 October 2004) IDBI was established in July 1964 under the Industrial Development Bank of India Act, as a wholly-owned subsidiary of the Reserve Bank of India. However, in February 1976, it was delinked from the reserve bank and has emerged as an independent organization. It now serves as an apex financial institution. The Industrial Development Bank of India has been converted into a limited company through the enactment of the Industrial Development Bank (Transfer of Undertaking and Repeal) Act, 2003. As a result, IDBI has become Industrial Development Bank of India Ltd (IDBI Ltd is now Scheduled Bank and) with effect from 1 October 2004 as a company registered under the Companies Act. 1956 and a Scheduled Bank under the Reserve Bank of India Act. Later on, IDBI Bank Ltd, a subsidiary of the erstwhile IDBI also merged with IDBI w.e.f. 1 October 2004. Resources The principal resources of IDBI are: (i) Share capital and reserves, (ii) Borrowings from the Government of India and RBI, (iii) Market borrowings by way of bonds, (iv) Foreign currency borrowings, and (v) Repayment of past assistance by borrowers. As at the end of March 2004, IDBI's equity capital was Rs 652.8 crore, and reserves and funds aggregated to Rs 6,651.9 crore. The board of directors of IDBI may from time to time increase its issued share capital by allotment of shares to such persons and on such terms and conditions as the board may determine. However, at no time the shareholding of the central government will be less than fifty-one per cent of the issued equity capital of IDBI. 7 Management IDBI has a board of directors appointed as follows: (a) A chairman and a managing director appointed by the Central Government provided that the same person may be appointed to function both as the chairman and as the managing director. (b) One whole-time director appointed by the Central Government on the recommendations of the board. (c) Two directors who shall be officials nominated by the Central Government. (d) Three directors nominated by the Central Government having special knowledge and professional experience in science and technology, economics, industry, banking, industrial cooperatives, industrial finance, marketing or any other matter useful to IDBI. (e) Such number of directors elected in the prescribed manner by shareholders other than the Central Government, where the total amount of equity share capital issued to such shareholders is: (i) Ten per cent or less of the total issued equity capital—two directors (ii) More than ten per cent, but less than twenty-five per cent of the total issued equity capital—three directors (iii) Twenty-five per cent or more of the total issued equity capital-four directors. 7. As amended by the Industrial Development Bank of India (Amendment) Ordinance, 1995, w.e.f 10 October 1994.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 188 Material Objectives and Functions The main objective of IDBI is to serve as the apex institution for term finance for industries in India. The bank was assigned a special role in respect of the following matters: (i) Planning, promoting and developing industries to fill the gaps in the industrial structure in India. (ii) Coordinating the working of institutions engaged in financing, promoting or developing industries and assisting in the development of such institutions. (iii) Providing technical and administrative assistance for promotion, management or expansion of industry. (iv) Undertaking market and investment research and surveys as also techno-economic studies in connection with development of industries. The bank's charter provided for considerable operational flexibility. IDBI could finance all types of industries irrespective of the form of organization or size of the unit. Also, there were no restrictions on the nature and type of security and quantum of assistance which the bank could provide. It may be noted that even after conversion of IDBI into a universal bank, IDBI would continue to perform the role of a development bank, besides wholesale and retail banking. Schemes of Assistance The schemes of assistance operated by the IDBI could broadly be divided into two categories, viz., (i) Direct Assistance Schemes: These include the following (a) Project Finance Scheme (b) Modernization Assistance Scheme (c) Textile Modernization Fund Scheme (d) Technical Development Fund Scheme (e) Equipment Finance Scheme (ii) Indirect Assistance Schemes: These include the following (a) Re-finance of Industrial Loans Scheme (b) Bills Re-discounting Scheme (c) Seed Capital Assistance Scheme (d) Resources Support Scheme In September 2003, IDBI diversified its business domain further by acquiring the entire shareholding of Tata Finance Ltd in Tata Home Finance Ltd, signalling IDBI's foray into the retail finance sector. The fully-owned housing finance subsidiary has since been renamed 'IDBI Home Finance Ltd.' IDBI's transformation into a commercial bank would provide a gateway to low- cost deposits like Current and Savings Bank Deposits. This would have a positive impact on the bank's overall cost of funds and facilitate lending at more competitive rates to its clients. The new entity would offer various retail products, leveraging upon its existing relationship with retail investors under its existing Suvidha/Flexibond schemes. In the emerging scenario, the new IDBI hopes to realize its mission of positioning itself as 'a one-stop super-shop' and the most preferred brand for providing total financial
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 189 and banking solutions to corporates and individuals, capitalizing on its intimate knowledge of the Indian industry and client requirements and the large retail base on the liability side. Working of IDBI The cumulative sanctions by the IDBI upto 31 March 2004 under its various schemes, since its inception, amounted to Rs 2,23,524 crore, while the disbursements amounted to Rs 1,75,572 crore. 8. Unit Trust of India (UTI) (reorganized effective from 1 February 2003) UTI came into existence on 1 February 1964 under the Unit Trust of India Act 1963. Its establishment has been a landmark in the history of investment trusts in India. The initial capital of Rs 5 crore was subscribed fully by the Reserve Bank of India (2.5 crore), the Life Insurance Corporation (Rs 75 lakh), the State Bank of India (Rs 75 lakh), and scheduled banks and other financial institutions (Rs 1 crore). The general administration and management of UTI is vested in the board of trustees consisting of a chairman and nine other trustees. The objective of the Unit Trust is to stimulate and pool the savings of the middle, mid low income groups and to enable them to share the benefits and prosperity of the rapidly growing industrialization of the country. The above objective is achieved by UTI through a three-fold approach: (i) By selling units of the trust among as many investors as possible in different parts of the country (ii) By investing the sale proceeds of the units and also the initial capital fund in industrial and corporate securities (iii) By paying dividends to those who have bought the units of the trust Working UTI is playing an important role in mobilizing savings of the community through sale of units under the various schemes and channelizing them into corporate investments. Over the years, it has floated forty-three schemes including two off-shore country funds to suit the diverse investment needs of the investors. Consequent upon amendment to the UTI Act, effective from 23 April 1986, UTI has been extending assistance to the corporate sector by way of term loans, bills re-discounting, equipment leasing and hire-purchase financing. In June 1990, UTI set up the UTI Institute of Capital Markets with a view to promote advanced professional education, training and research in the fields of capital markets. With the repeat of UTI Act, 1963, UTI has been reorganized into two separate institutions effective from 1 February 2003, viz., administrator of the specified undertaking of the Unit Trust of India (popularly known as UTI-I), comprising US-64 and all other assured return schemes, and UTI Mutual Fund (UTIMF), which houses all the net asset value-based schemes of UTI. While UTI-I is headed by an administrator and is governed by an advisory board, UTIMF is modelled on the norms of the Securities and Exchange Board of India, with sponsors, a trustee company and an asset management company to manage its affairs.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 190 Material At the end of January 2003, the total unit capital outstanding of UTI amounted to Rs 48,096 crore. The cumulative sanctions and disbursements to the corporate sector at the end of October 2002 amounted to Rs 70,458 crore and Rs 53,954 crore respectively. 9. Industrial Investment Bank of India Ltd (IIBI) The erstwhile Industrial Reconstruction Bank of India (IRBI) has reconstituted into a full-fledged all purpose development financial institution under the Companies Act with adequate operational flexibility and functional autonomy. The entire assets and liabilities of IRBI were transferred to the new company by the name of Industrial Investment Bank of lndia Ltd on 27 March 1997. It may be noted that IRBI itself was set up under the IRBI Act of 1984 to takeover the business of Industrial Reconstruction Corporation of India Ltd. In view of certain structural and financial problems adversly impacting its long- term viability, IIBI submitted a financial restructuring proposal to the Government of India on 25 July 2003. IIBI has since received certain directives from the Government of India, which inter alia, include restricting fresh lending to existing clients/ approved cases/ rated corporates, restrictions on fresh borrowings, an action plan to reduce the overhead expenditure, disposal of fixed assets and a timebound plan for asset/recovery reconstruction. The Government of India has also given its approval for the merger of IIBI with IDBI and the latter has already started the due diligence process. Resources As on 31 March 2004, the paid-up capital of IIBI stood at Rs 446.1 crore and reserves and funds aggregated to Rs 29 crore. Borrowings from the Government of India amounted to Rs 155.1 crore and bonds and debentures were of Rs 2,126.2 crore. Management The general superintendence and management of the affairs and business of the bank vests in a board of directors. The board consists of the following: (i) Chairman to be appointed by the Central Government who shall also function as the managing director. (ii) A deputy governor of the Reserve Bank of India nominated by that bank. (iii) A director nominated by Industrial Development Bank of India. (iv) Not more than fifteen directors to be nominated by the Central Government of whom (a) three shall be officials of the Central Government, (b) not more than three shall be from the public financial institutions, (c) not more than five from the State Bank of India, Nationalized Banks and State Financial Corporations and (d) not more than four shall be from amongst the persons having special knowledge and experience in science, technology, economics, industries, finance, accounting, marketing, etc. Functions Transformation of IRBI into IIBI has consequently witnessed a paradigm shift in its operations from rehabilitation finance to development banking, resulting in increased business by offering customized financial products to its clients, and hence increasing its volume of operations by diversifying into new areas, to earn more profit, remain competitive and build up a high quality asset portfolio. Working During the year 2003-04, the IIBI sanctioned assistance to the tune of Rs 2,412 crore and its disbursernents amounted to Rs 2,252 crore. The cumulative sanctions since the

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 191 inception of the bank (including those of IRBI till March 2004 amounted to Rs 14,050 crore, while the disbursements amounted to Rs 13.396 crore. 10. Export Import Bank of India (EXIM Bank) The Export Import Bank was set up on 1 January 1982, under a separate Act, passed by the Parliament. It is the apex banking institution in the field of financing foreign trade of India. The bank is a statutory corporation owned by the government and it acts as a lead bank in the matters of export-import financing. The EXIM bank has taken over the entire business relating to export financing from the IDBI. The salient features of the bank are as follows: Finances of the Bank The financial resources of the EXIM bank primarily consist of its share capital, borrowings from the government and the Reserve Bank of India, and deposits from the public. It is also authorized to borrow money from a broad, subject to the overall ceiling prescribed by the government. Its authorized capital is Rs 1,000 crore. As on 31 March 2004, EXIM Bank's paid-up share capital stood at Rs 450 crore and reserves and surplus at Rs 4,143 crore. Management The bank is managed by a board of directors consisting of the following persons: (i) Chairman-cum-managing director (ii) Five representatives of the government (iii) Three representatives, one each from RBI, IDBI, ECGC (iv) Three representatives of commercial banks (v) Four representatives from the exporting community Functions of the Bank The main function of the bank is to work as an apex institution for assisting and supporting development of such financial institutions which are engaged in financing export and import. Besides that, it will take up promotional activities and provides counselling services to persons connected with the export-import business. The EXIM Bank is to concentrate on the deferred payment credit for medium and long-term duration as well as the issue of guarantees solely or in consortium with commercial banks. It also extends refinance facilities to commercial banks in respect of export credit guaranteed by them. The EXIM Bank has taken over the export loan and guarantees portfolio of IDBI. The Reserve Bank has also authorized the EXIM Bank to undertake certain types of transactions in all permissible currencies which are incidental to its normal functions. Working The total assistance sanctioned and disbursed by EXIM Bank since its inception till the end of March 2004 stood at Rs 50,846 crore and Rs 38,885 crore respectively. 11. Infrastructure Development Finance Company Ltd (IDFC) Pursuant to the recommendations of the expert group on Commercialization of Infrastructure Projects (Dr. Rakesh Mohan Committee), for setting up of a specialized financing intermediary to address the needs of infrastructure sector, Infrastructure Development Finance Company Ltd (IDFC) was incorporated on 30 January 1997 with its headquarters at Chennai.

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Financing: Long-Term and Short-Term NOTES Self-Instructional 192 Material Resources IDFC has been promoted jointly by Government of India, RBI, IDBI, UTI, IFCI, ICICI, HDFL, SBI and foreign institutions. IDFC's initial paid-up capital is Rs 1,000 crore. At present, the Government of India and GOI institutions hold 40 per cent, domestic institutions 20 per cent and foreign institutions 40 per cent of its paid-up capital. In addition to the equity participation, GOI and RBI have also provided to IDFC subordinated debts amounting to Rs 650 crore for a period of fifteen years. Functions IDFC has been conceived as an institution that will be able to lend private capital to commercially viable infrastructure projects in India. Product and processes will be designed that would help in mitigating some of the risks—both commercial and structural —that today constrain the smooth flow of projects as well as capital for infrastructure. One of the major objectives of IDFC is to provide strong input for policy decisions with respect to the constraints presently being faced by infrastructure projects in terms of financial closure and implementation thereafter. Initially, IDFC will concentrate on the power, roads, ports, telecommunications and urban finance sectors. Conditional/ unconditional take-out financing risk participation facilities, stepped-down pricing, maturity enhancement, liquidity support to bond issues and some amount of term funding would constitute some of the product armoury of IDFC. Equity and Mezzanine capital support would also be considered in specific situational contexts. Working IDFC commenced operations on 9 June 1997. Since then, it has received several proposals seeking various forms of assistance, viz., term finance, guarantees to foreign lenders, lengthening maturity of loans, credit enhancement of buyers of services, contingent support in terms of cost overruns, private liquidity support to institutional guarantors and help in the preparation of bid documentation. IDFC approved financial assistance since its inception upto end of March 2004 to various projects aggregating to Rs 18,187 crore. Of this, disbursements were made of sums aggregating to Rs 6,878 crore. 12. Commercial Banks Term-lending by commercial banks is a recent phenomenon. Initially, it was felt that commercial banks could not afford to lock up large funds in long-term assets, because it would affect their liquidity and would make it difficult for them to meet the working capital needs of trade and industry. However, since 1958, when Refinance Corporation was established by the RBI, the Reserve Bank of India was eager to recommend a change in the attitude of commercial banks towards term lending because on the one hand, it could boost the profits of the lending banks and on the other, enable the borrowing units to enjoy certainty of having funds for a specified period irrespective of any change in the monetary policy. As a result of this, commercial banks had started taking interest in term-lending but on a very nominal scale. Recently, there has been a major shift in the policy of participation of commercial banks in term lending. With effect from April 1997 stipulations for obligatory formation of consortium for borrowers with credit limits of over Rs 50 crore were withdrawn. Banks are now free to provide need-based finance required by borrowers on their own or with other banks subject to observance of exposure norms. They may adopt syndication route as the alternative to sole multiple banking concept of consortium arrangement that suits the borrower and the financing bank/banks. Besides this, effective from April 1997 consistent with the policy of liberalization, the banks are permitted to evolve their own

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 193 methods of assessing the working capital needs of the borrowers within the prudential guidelines and exposure norms. All instructions earlier issued relating to Maximum Permissible Bank Finance (MPBF) were withdrawn and banks were given freedom to retain the system, if necessary, with suitable modifications or any other system. The loan policy in respect of each broad category of nature is to be laid down by every bank with the approval of its board. Asset Based Financing Investment in a capital asset needs heavy funds. This heavy investment can be avoided by either purchasing the asset on hire purchase or taking it on lease. Both these methods are briefly explained below: Concept of Hire Purchase A contract of hire purchase is a contract where goods are purchased or sold with the stipulations that: (i) The delivery of goods will be given by the owner of the goods to the hire purchaser. (ii) The payment of the price for the goods will be made in instalments. (iii) Ownership of the goods passes to the hire purchaser only on payment of all the instalments. (iv) In the event of the hire purchaser's failure to pay any instalment, the hire vendor will be entitled to seize the goods and adjust the money paid by the hire purchaser against the hire charges for use of goods. Thus, in a contract of hire purchase, the hire vendor parts only with the possession of goods but not with its ownership. He retains the ownership with him till he receives all the stipulated instalments. He, as a matter of fact, has the option to buy that goods. In case he decides not to buy the goods, he may terminate the contract by refusing to pay any future instalments towards the cost. Concept of Leasing Leasing may be defined as a method of acquiring right to use an equipment or asset for a consideration. It enables the entrepreneur to reduce his investment in the project by taking a plant or an equipment on hire rather than owning it. A contract of lease is entered for this purpose. It may be defined as

a 'contract whereby the owner of an asset (lessor) grants another party (lessee) the exclusive rights to use the asset usually for an agreed period of time in return for the payment of rent.' 1

In other words, a contract of lease provides a person (lessee) an opportunity to use an asset, which belongs to another person (lessor). 9.8 DIFFERENCE BETWEEN HIRE PURCHASE AND LEASE FINANCING In case of a hire purchase transaction, the goods are delivered by the owner to another person on the agreement

that such person pays the agreed amount in periodical instalments. The property in the goods passes to such person only on the payment of the last

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instalment. In a hire purchase transaction, therefore, theoretically the seller continues to retain the title to the asset. However, the ownership has to ultimately pass to the buyer, unless the buyer exercises the option not to buy the asset by stopping payments of future instalments. The buyer can claim depreciation on the cost of the asset and interest as an expense for

Financing: Long-Term and Short-Term NOTES Self-Instructional 194 Material tax purposes. On the other hand, in case of lease financing, the lease rent is deducted as an expense for tax purposes. Depreciation on the leased asset is claimed by the lessor. In case of a hire purchase, on completion of the contract, the residual value of the asset goes to the buyer. While in case of a lease financing, the residual value goes to the lessor, in case where the lessee has a right to cancel the arrangement as in the case of vehicles or aircraft leases. However, in case of a finance lease where the financing is made for purchase of equipment useful only to the lessee, there is no provision for cancellation of the lease agreement. In such a case, the residual value devolves on the lessee. The residual value in such a case is zero or if positive it will be treated as miscellaneous income and be subject to taxation. Project Financing Project financing is an innovative and timely financing technique that has been used on many high-profile corporate projects, including Euro Disneyland and the Eurotunnel. Employing a carefully engineered financing mix, it has long been used to fund large- scale natural resource projects, from pipelines and refineries to electricity generating facilities and hydro-electric projects. Project finance is finance for a particular project, such as a mine, toll road, railway, pipeline, power station, ship, hospital or prison, which is repaid from the cash-flow of that project. Project finance is different from traditional forms of finance, because the financier principally looks to the assets and revenue of the project in order to secure and service the loan. In contrast to an ordinary borrowing situation, in a project financing the financier usually has little or no recourse to the non-project assets of the borrower or the sponsors of the project. In this situation, the credit risk associated with the borrower is not as important as in an ordinary loan transaction; what is most important is the identification, analysis, allocation and management of every risk associated with the project. Project financing essentially requires taking two basic decisions as detailed below: (i) Investment Amount in the Project The amount of total investment required for a project is determined on the basis of the fixed capital and working capital required for it. Fixed capital is generally required for acquisition of fixed assets, while working capital is required for meeting the day-to-day requirements of the business. Fixed assets may be defined as assets held for the purpose of providing or producing goods or services and not for resale in the normal course of business. Such assets may further be classified into: (a) tangible fixed assets and (b) intangible fixed assets. The tangible fixed assets include land, building, plant and machinery; while intangible assets include patents, copyrights, goodwill, formation expenses, etc. The relevant volume and nature of investment in fixed assets considerably varies with the types of projects. However, in general, investment in fixed assets will consist of investment on the following items: (a) cost of land; (b) cost of research; (c) experiments and preliminary studies; (d) cost of buildings; (e) cost of plant and machinery including cost of installation; (f) cost of auxiliary installation and construction period, etc. Working capital is required for investment in inventories, accounts receivable, pre-paid expenses, cash in hand, etc. A part of the working capital requirements is financed through current liabilities, viz., accounts payable, outstanding expenses, etc.

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 195 Hence, the working capital represent that part of current assets which has been financed through long-term funds. The project report should clearly mention separately the items under both fixed capital and working capital. (ii) Financing the Project In the preceding chapter, the various sources of finance have already been explained. It has been stated that the funds required for a project can be obtained both through internal as well as external sources. The internal sources include retained earnings and depreciation funds, while external sources include funds raised through issue of shares, debentures or raising of loans. Financing from internal sources is possible only in case of an already well- established firm. A new firm has to depend entirely on external sources of funds. Of course, an already existing firm may also resort to external financing for meeting its additional financial requirements which cannot be made good out of internal sources. The project report should provide for raising funds through various sources and should also highlight the reason for choosing the financing mix as mentioned in it. The following example with imaginary figures will help students in understanding the various items which constitute the cost of or investment in a project and the sources from which the project is to be financed. ABCS Ltd Project X (Rs in crore) I. Cost of the project (a) Land and buildings 600 (b) Plant and machinery 4,200 (c) Miscellaneous fixed assets 1,400 (d) Preliminary and pre-operative expenses 100 (e) Contingencies 1,000 (f) Margin money for working capital 500 Total 7,800 II. Financing the project (a) Share capital 600 (b) Convertible secured debentures 2,400 3,000 (c) Term loans from banks: (i) Foreign currency loan through SBI — EXIM Bank, USA 1,100 — Private Exports Funding Corporations of USA 1,100 — Euro Dollar Loan 900 — Export Credit and Development Corporation of U.K. 200 (ii) Rupee loan: — Consortium of banks 1,500 4,800 7,800

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Financing: Long-Term and Short-Term NOTES Self-Instructional 196 Material Venture Capital Financing Concept of Venture Capital Venture capital is a form of equity financing designed specially for funding high risk and high reward projects. It not only plays an important role in financing hi-technology projects, but also helps to turn research and development projects into commercial production. Venture capital, besides financing the technology, is also involved in fostering the growth and development of enterprises. In the western countries, much of this capital is put behind establishing technology and expanding business or is used to help the evolution of new management teams. Venture Funds in India The venture fund or venture capital scheme is of recent origin in India. The following are some of the institutions which have established venture funds in India: (1) IFCI Venture Capital Funds Ltd IFCI Venture Capital Funds Ltd (IVCF), (erstwhile Risk Capital and Technology Finance Corporation Ltd established in 1988) has been managing a venture capital fund under the Venture Capital Unit Scheme III (VECAUS III), floated by UTI with participation from IF1CI Ltd, to assist potentially highly profitable ventures involving innovative products/ technologies /services aimed at futuristic or new markets and having characteristics of high risk and high return. The fund was enlarged through 5 : 1 rights issue which was subscribed to in full, to the extent of Rs 500 million each by UTI and IFCI raising total corpus of Rs 1,200 million. IVCF receives VCF management fee and is entitled to commission on surplus generated on termination of the Fund. (2) Venture Capital Fund of SIDBI The Small Industries Development Bank of India (SIDBI) has also set up a venture capital fund with an initial corpus of Rs 10 crore during the year 1992-93. The fund is exclusively meant for providing financial assistance for innovative ventures in the small- scale sector. To promote development of IT industry, the SIDBI also set up in April 2000 National Venture Fund for Software and IT Industries (NFSIT). The fund has provided assistance for software services product development, Internet services and software education. (3) ICICI Venture Funds Management Company Ltd ICICI Venture Funds Management Company Limited (erstwhile TDICI Ltd) was set up by ICICI and UTI as the country's first venture capital finance company in July 1988. ICICI Venture primarily provides assistance to small and medium industries conceived by technocrat entrepreneurs in the form of project loans, direct subscriptions to equity and a quasi-equity instrument called conditional loan spread across knowledge-based sectors like information technology, healthcare and services. (4) Other Venture Capital Funds Besides the public financial institutions (IFCI, ICICI and SIDBI), as discussed above, certain banks, viz., State Bank of India, Canara Bank and Grindlays Bank have also set up venture capital fund. The State Bank of India has set up the venture capital fund through its subsidiary SBI Capital Markets Limited. Canara Bank has also set up a venture capital fund through its subsidiary Canbank Financial Services Limited. Grindlays Bank has also launched India Investment Fund. The funds are raised from NRIs abroad, and will provide venture finance to suitable projects.

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 197 In the private sector, the Credit Capital Corporation has set up the Credit Capital Venture Fund India Ltd. The corporation intends to involve multinational bodies, like Asian Development Bank and Commonwealth Fund in its financing. Guidelines for Venture Capital Fund Companies The Government of India announced on 25 November 1989 certain guidelines regarding the establishment and functioning of Venture Capital Funds Companies. These guidelines were found to be restrictive and were repealed on 25 July 1995. The new guidelines for functioning of Venture Capital Fund in the country were announced by SEBI on 4 December 1996. The basic features regulating Venture Capital Fund can be summarized as follows: 1. Meaning.
VCF means
a fund established in the form of a company
or trust which raises money through loans, donations, issue of securities, or units,
as the case may be,
and makes or proposes to make investments in accordance with these regulations. 2.
Registration with SEBI. Any company or trust proposing to carry on any activity as venture capital fund has to apply to SEBI for grant of a certificate. The existing venture capital funds were also required to make such applications. 3.
Eligibility Criteria. Eligibility criteria for the grant of certificate requires fulfilling of the following conditions: (a) If the application is made by a company: (i) Memorandum of association has the main objective as carrying on of the activity of a venture capital fund. (ii) It is prohibited by its memorandum and articles of association from making an invitation to the public to subscribe to its securities. (iii) Its director or principal officer employee
is not involved in any litigation connected with the securities market which may have an adverse bearing on
the business of the applicant. (iv)
Its director, principal officer or employee has not at any time been convicted of any offence involving moral turpitude or any economic offence. (b) If the application is made by a trust: (i) The
instrument of trust is in the form of a deed and is duly registered. (ii) The main objective of the trust is to carry on the activity of a
venture capital fund. (iii) The directors of its trustee company, if any, or any trustee
is not involved in any litigation connected with the securities market which may have an adverse bearing on
the business of the applicant. (iv) The directors of its trustee company, if any, or any trustee
has not at any time been convicted of any offence involving moral turpitude

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or of any economic offence. (c) The company or trust has not been refused a certificate by SEBI or its certificate should not have been cancelled or suspended as per the regulations framed for the purpose. 4. Grant of Certificate. If SEBI is satisfied that the applicant is eligible for grant of certificate, it will on receipt of the requisite fee from the applicant grant such a certificate. Any
applicant whose application has been rejected shall not carry on any activity as a
venture capital fund. Check Your Progress 7. What are 'development banks'? 8. When was IFCI set up? 9. What are fixed assets?
Financing: Long-Term and Short-Term NOTES Self-Instructional 198 Material 5. Investment. A venture capital fund may raise money from any investor whether Indian or non-resident Indian. However, the minimum investment from the concerned investor should not be less than Rs 5 lakh. 6. Restrictions on Investment. All investments made or to be made by a venture capital fund shall be subject to the following restrictions: (a) The venture capital fund shall not invest in the equity shares of the company or institutions providing financial services. (b) At least 80 per cent of funds raised by a venture capital fund shall be invested in the following: (i) The equity shares or equity-related securities issued by a company whose securities are not listed on any recognized stock exchange. (ii) The equity shares or equity-related securities of a financially weak company or a sick industrial company, where securities may or may not be listed on the recognized stock exchange. (iii) Providing financial assistance in any other manner to companies in whose equity shares the venture capital fund has invested under clauses (b) (i) and (b) (ii) above. 7. Prohibition on Listing. No venture capital fund is entitled to get its securities or units, as the case may be,
listed on any recognized stock exchange till the expiry of three years from the date of issuance of
securities or units, as the case may be, by the venture capital fund. 9.9 SUMMARY The financial requirements of a business can be classified into two categories: (i) Short-term financial requirements (ii)
Long-term financial requirements Short-term funds are required for meeting
the
working capital needs. They are usually required for a period up to one year.
The requirement
of these funds is usually met by taking short-term loans or getting the bill discounted from the commercial banks.
The
long-term funds are required to a great extent for meeting the fixed capital requirements of the business. They are required for a period
exceeding one year. These funds are raised by business from sources, which provide, in an uninterrupted way, the use of funds for a long period, viz., shares, debentures, loans from specialized financial institutions, etc. Financial Markets
Financial markets are an important constituent of financial system in an economy. Financial markets are functionally classified into two markets (a) Money Market (b) Capital Market (i) Money Market: It is a market for short-term financial assets, which are near substitutes for money. Thus, a money market deals with financial claims, assets and securities which have a maturity period of up to one year. It includes the following: (a) Call Money Market (b) Treasury Bill Market (c) Commercial Bill Market
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 199 (d) Collateral Loan Market (e) Commercial Papers and Certificates of Deposit Market (ii) Capital Market: It deals with long-term securities with maturity period above one year. In other words, it deals with financial assets other than near- money substitutes. It can be classified into two markets: (a) Securities Market (b) Long-term Loan Market Classification of Sources of Finance
For the sake of convenience, the different sources of funds can be classified into four categories: (i) Security Financing: This includes financing through shares (including both equity and preference shares) and debentures. They are sources of long-term funds. (ii) Internal Financing: This includes financing through retained earnings. This could also be a source of long-term funds. (
iii) Loan Financing: This includes both short-term and long-term loans. (iv)
Asset Based Financing: This includes hire purchase financing and lease financing. Security Financing (i) Issue of shares: This is the most common method of raising long-term funds. Almost all companies in India generally uses this method. Types of Shares A public company can issue only two types of shares. They are: (a) preference shares and (b) equity shares. (
a) Preference shares: Preference shares are those which carry the following preferential rights over other classes of shares: (
i) A preferential right in respect of a fixed dividend. (ii) A preferential right as to the
repayment of capital in the case of winding up of the company

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in priority to other classes of shares. (b) Equity shares: These are the shares which are not preference shares. They do not carry any preferential right. (ii) Issue of debentures: A debenture is a document issued by a company as an evidence of a debt due from the company with or without a charge on the assets of the company. Types of Debentures (i) Naked Debentures (ii) Mortgage Debentures (iii) Irredeemable Debentures (iv) Convertible Debentures (iii) Issue of Warrants: A company, in order to attract the investors to buy its shares or debentures, may give the purchaser a right to buy additional equity shares at a specified concessional price, for a specific number of shares or debentures held by the holder. Such a right is given through a document termed as 'warrant' attached with the share(s) or debenture(s) originally allotted.

Financing: Long-Term and Short-Term NOTES Self-Instructional 200 Material Internal Financing Financing through retained earnings This is strictly not a method of raising finance but refers to the accumulation of profits by a company to finance its developmental activities or repay loans. It is also known as 'Internal Financing' or 'Ploughing back of Profits'. Loan financing A firm may meet its financial requirements by taking both short-term loans/credits and long-term loans. 1. Short-term loans/credits: Short-term loans/credits are obtained for working capital requirements. The following are the important sources of short-term loans/credits: (a) Trade credits (b) Commercial banks (c) Public deposits (d) Business finance companies (e) Accrual accounts (f) Indigenous bankers (g) Advances from customers 2. Long-term or term loans: The term 'term loans' is used for both medium as well as long-term loans. Medium-term loans are for periods ranging from one to five years, while long-term loans are for periods from five to ten or fifteen years. Sources of term loans There are two major sources of term loans: (i) Specialized financial institutions or development banks and (ii) Commercial banks. These sources of finance are enumerated below: 1. Specialized Financial Institutions or Development Banks. These include: (i) Industrial Finance Corporation of India Ltd (IFCI) (ii) ICICI Ltd (now merged with ICICI Bank Ltd) (iii) Small Industries Development Bank of India (SIDBI) (iv) State Financial Corporations (SFCs) (v) State Industrial Development Corporations (SIDCs) (vi) North Eastern Development Finance Corporation Ltd (NEDFi) (vii) Industrial Development Bank of India (transformed into IDBI Ltd w.e.f. 1 October 2004) (viii) Unit Trust of India (UTI) (reorganized effective from 1 February 2003) (ix) Industrial Investment Bank of India Ltd (IIBI) (x) Export Import Bank of India (EXIM Bank) (xi) Infrastructure Development Finance Company Ltd (IDFC) 2. Commercial Banks: They have also started granting long-term loans besides short- term loans. Asset Based Financing This includes the Hire Purchase Financing and Lease Financing

Financing: Long-Term and Short-Term NOTES Self-Instructional Material 201 Project Financing Project financing is an innovative and timely financing technique used to fund large- scale natural resource projects, from pipelines and refineries to electricity-generating facilities and hydro-electric projects. Project financing essentially requires taking two basic decisions: (i) Amount invested in the project (ii) Financing of the project Venture Capital Financing Concept of Venture Capital Venture capital is a form of equity financing designed specially for funding high risk and high reward projects. Venture Funds in India Venture fund or venture capital scheme is of recent origin in India. The following are some of the institutions which have established venture funds in India: (i) IFCI Venture Capital Funds Ltd (ii) Venture Capital Fund of SIDBI (iii) ICICI Venture Funds Management Company Ltd (iv) Other Venture Capital Funds, viz., VCF Set-up 9.10 KEY TERMS • Internal Financing: It is financing that includes financing through depreciation funds and retained earnings. • Loan Financing: It is financing that includes financing through both short-term and long-term loans. • Long-term Loans: These are loans taken for a period exceeding one year, for meeting . the fixed capital requirements of the business. • Security Financing: This is financing that includes financing through shares (both equity and preference) and debentures. • Short-term Loans: These are loans taken for a period upto one year, for meeting working capital needs. 9.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Money market is a market for short-term financial assets, which are near substitutes for money. 2. This includes financing through retained earnings. This could also be a source of long-term funds. 3. A share may be defined as one of the units into which the share capital of a company has been divided. 4. A firm may meet its financial requirements by taking both short-term loans/credits and long-term loans.

Financing: Long-Term and Short-Term NOTES Self-Instructional 202 Material 5. Indigenous bankers are private individuals engaged in the business of financing small and local business units. They provide short-term or medium-term finance. 6. Medium-term loans are for periods ranging from one to five years. 7. A large number of specialized financial institutions have been set up in the country after independence to meet the specific term financial needs of industrial enterprises. They are popularly known as 'Development Banks'. 8. The IFCI was set up in 1948. 9. Fixed assets may be defined as assets held for the purpose of providing or producing goods or services and not for resale in the normal course of business. 9.12 QUESTIONS AND EXERCISES Short-Answer Questions 1. State whether each of the following statements is 'True' or 'False': (i) Equity shares are entitled to dividends at a fixed rate. (ii) Preference shares are entitled to dividends in all cases irrespective of company's profits. (iii) Raising funds through debentures is cheaper as compared to raising funds through shares. (iv) Retained earnings, as a source of finance, is most useful for a new company. (v) Borrower prefers hypothecation as compared to pledge. (vi) Public deposits are used as a source of long-term finance. 2. Select the most appropriate answer: (i) Equity shares have: (a) A preferential right as to dividend (b) A preferential right as to the repayment of capital in the event of company's winding up (c) No preferential right (ii)

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Trade credit is a source of: (a) Long-term finance (b)
An appropriation of profits (c) None of these (iii) Interest payable on debentures is: (a) A charge against profits (b) An appropriation of profits (c) None of these (iv) The share capital of SIDBI has been wholly subscribed by: (a) Small-Scale industrial Development Corporations (b) Industrial Development Bank of India (c) Reserve Bank of India Long-Answer Questions 1. What are 'Preference Shares'? How do they differ from equity shares? 2. Differentiate between Hypothecation and Pledge. 3. Between equity share and debentures which is preferable for raising additional long-term capital for a manufacturing company and why?
Financing: Long-Term and Short-Term NOTES Self-Instructional Material 203 4. What are the various methods of issue of shares? Explain. 5. Explain the role of IFCI and IDBI in providing long-term finance to industries. 6. Explain in brief the various financial institutions providing long-term financing. 7. Explain the guidelines issued by SEBI for regulating venture capital funds. 9.13 FURTHER READING Maheshwari, S.N. Financial Management: Principles & Practice. New Delhi: Sultan Chand & Sons, 2007. Maheshwari, Dr. S.N, Dr. Suneel K. Maheshwari, Mr. Sharad K, A Textbook of Accounting for Management. New Delhi: Vikas Publication House Pvt. Ltd.
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 205 UNIT 10 FINANCIAL STATEMENTS: ANALYSIS AND INTERPRETATION (Accounting Ratios) Structure 10.0 Introduction 10.1 Unit Objectives 10.2 Relationship between Analysis and Interpretation 10.3 Steps Involved in the Financial Statements Analysis 10.4 Ratio Analysis 10.5 Classification of Ratios 10.6 Profitability Ratios 10.7 Turnover Ratios 10.8 Financial Ratios 10.9 Advantages of Ratio Analysis 10.10 Limitations of Accounting Ratios 10.11 Summary 10.12 Key Terms 10.13 Answers to 'Check Your Progress' 10.14 Questions and Exercises 10.15 Practical Problems 10.16 Further Reading 10.0 INTRODUCTION Financial statements are prepared with the objective of knowing the profitability and financial soundness of the business. This requires proper analysis and interpretation of financial statements. This aspect has been discussed in detail in this unit. 10.1 UNIT OBJECTIVES z Concept of financial statement analysis z Difference between analysis and interpretation of financial statements z Steps involved in financial analysis z Utility of ratio analysis as a tool for financial analysis z Classification of accounting ratios into different categories z Understanding and computation of different accounting ratios z Critical analysis of financial statements on the basis of accounting ratios
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 206 Material 10.2 RELATIONSHIP BETWEEN ANALYSIS AND INTERPRETATION Financial statements, as stated earlier, are indicators of the two significant factors: 1. Profitability 2. Financial soundness Analysis and interpretation of financial statements, therefore, refers to the treatment of the information contained in the income statement and the balance sheet so as to afford full diagnosis of the profitability and the financial soundness of the business. A distinction here can be made between the two terms—'analysis' and 'interpretation'. The term 'analysis' means the
methodical classification of the data given in the financial statements. The
figures given in the financial statements will not help one unless they are put in a simplified form. For example, all items relating to 'Current Assets' are put at one place, while all items relating to 'Current Liabilities' are put at another place. The term 'interpretation' means 'explaining the meaning and significance of the data so simplified'. However, both 'analysis' and 'interpretation' are complementary to each other.
Interpretation requires analysis, while analysis is useless without interpretation. Most of the authors have used the term 'analysis' to cover the meanings of both analysis and interpretation, since analysis involves interpretation. According to Myers, '
financial statement analysis is largely a study of the relationship among the various financial factors in a business as disclosed by a single set of statements and a study of the trend of these factors as shown in a series of
statements.' For the sake of convenience, we have also used the term 'financial statements analysis' throughout the unit to cover both analysis and interpretation. 10.3 STEPS INVOLVED IN THE FINANCIAL STATEMENTS ANALYSIS The analysis of the financial statements requires: (1)
Methodical classification of the data given in the financial statements. (2)
Comparison of the various interconnected figures with each other which is popularly termed as 'ratio analysis'. Each of the above steps has been explained in the following pages: (1) Methodical Classification. In order to have a meaningful analysis it is necessary that figures should be arranged properly. Usually, instead of the two-column (T form) statements, the statements are prepared in single (vertical) column form 'which should throw up significant figures by adding or subtracting.' This also facilitates showing the figures of a number of firms or number of years side by side for comparison purposes. OPERATING (INCOME) STATEMENT for the year ending Particulars Rs Rs Gross Sales .... Less: Sales Returns Sales Tax/Excise .... Net Sales (or sales) for the year (1) .... (Contd.)
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 207 Less: Cost of Sales: (2) Raw Materials consumed .... Direct Wages .... Manufacturing Expenses ....
Add: Opening Stock of Finished Goods .... Less: Closing Stock of Finished Goods

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Gross Profit (1) – (2) = (3) .... Less: Operating Expenses: (4) Administration Expenses .... Selling and Distribution Expenses .... Net Operating Profit (OPBIT) (3) – (4)= (5) .... Add. Non-trading Income .... (such as dividends, interest received, etc.) .... Less: Non-trading Expenses (such as discount on .... issue of shares written off) .... Income or Earning before Interest and Tax (EBIT) (6) .... Less: Interest on Debentures (7) .... Net Income or Earning before Tax (EBT) (8) .... Less: Tax (9) .... Income or Profit After Tax (PAT) (10) .... BALANCE SHEET as on..... Particulars Rs Cash in Hand .... Cash at Bank .... Bills Receivable .... Book Debts (less provision for bad debts) .... Marketable Trade Investments .... Liquid Assets (1) .... Inventories (stock of raw materials, finished goods, etc.) .... Prepaid Expenses .... Current Assets (2) .... Bills Payable .... Trade Creditors .... Outstanding Expenses .... Bank Overdraft .... Other Liabilities Payable within a year .... Current Liabilities (3) .... Provision for Tax .... Proposed Dividends .... Other Provisions .... Provisions (4) .... Current Liabilities and Provisions (3) + (4) = (5) .... Net Working Capital .... [Current Assets–Current Liabilities and Provisions (2) – (5)] (6) .... Goodwill at cost* .... Land and Building .... Plant and Machinery .... Loose Tools .... Furniture and Fixtures .... Investments in Subsidiaries .... Patents, Copyright, etc.** .... Fixed Assets (7) .... Capital Employed (6) + (7) = (8) .... Other Assets: (9) .... Investment in Government Securities, Unquoted Investments, etc. .... Other Investments (non-trading) .... Advances to Directors .... Company's Net Assets (8) + (9) = (10) .... Debentures .... Other Long-term Loans (payable after a year) .... Long-term Loans (11) .... (Contd.)

Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 208 Material Shareholders' Net Worth (10) – (11) = (12) .... (or total tangible net worth) .... Preference Share Capital (13) .... Equity Shareholders' Net Worth (12) – (13) = (14) .... Equity Shareholders' Net Worth is represented by: .... Equity Share Capital .... Forfeited Shares .... Reserves .... Surplus .... Equity Shareholders' Claims .... Less: Accumulated Losses .... Miscellaneous Expenditure (such as preliminary expenses, discount on issue of shares or debentures not written off) .... Equity Shareholders' Net Worth .... * Goodwill to be included only when it has been paid for and has the value. ** Patents, Copyrights, etc., should be shown only when they have the value. In case these assets are valueless, they should not be included here but should be written off against shareholders' claims with other losses. The process of methodical classification of the data will be clear with the help of the following illustration: Illustration 10.1: Below is, given the Balance Sheet of Prospective Ltd as on 31 March, 1996, together with the Profit and Loss Account. BALANCE SHEET as on 31 March, 1996 (Rs in thousand) Liabilities Rs Assets Rs Equity Share Capital 500 Trade Investments 200 Dividend Equilisation Reserve 70 Patents 30 General Reserve 110 Land and Building (at cost) 320 Profit and Loss A/c 190 Plant and Machinery (at cost) 650 6 per cent Debentures 250 Cash at Bank 88 Bank Overdraft 150 Stock: Staff Provident Fund 80 Materials 90 Creditors 210 Finished goods 160 Unpaid Dividend 10 Work-in-progress 60 310 Proposed Dividend 60 Sundry Debtors 230 Provision for Taxation 170 Less: Provision for Provision for Depreciation 250 doubtful debts 8 222 Bills Receivable 30 Staff provident fund investment 80 Deposits with Customs Authorities 20 Advance for Purchase of Machinery 60 Preliminary Expenses 30 2,050 2,050

PROFIT AND LOSS ACCOUNT for the year ended 31 March, 1996 (Rs in thousand) Particulars Rs Particulars Rs To Stock: By Sales 2,000 Materials 90 By Stock: Finished goods 120 Materials 90 Work-in-progress 40 250 Finished goods 160 To Purchase of Materials 850 Work-in-progress 60 310 To Wages 280 By Dividend on Investment 30 To Power 40 By Sales of Scrap 8 (Contd.)

Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 209 To Miscellaneous Factory Expenses 110 To Office Salaries 80 To Miscellaneous Expenses 90 To Selling and Distribution Expenses 120 To Advertisements 80 To Preliminary Expenses 5 To Debenture Interest 15 To Depreciation: Plant 60 Land and Building 12 72 To Provision for Taxation 170 To Proposed Dividend 60 To Balance of Profit 126 2,348 2,348 You are required to present the information suitably summarized in single-column statements (vertical form) showing distinctly the following: (i) Total capital employed (ii) Shareholders' funds (iii) Gross profit (iv) Net operating profit (v) Cost of goods sold Solution: Prospective Limited BALANCE SHEET as on 31 March 1996 (Rs in thousand) Cash at Bank 88 Book Debts (net) 222 Bills Receivable 30 Liquid Assets (1) 340 Deposit with Customs 30 Stock: Materials 90 Finished goods 160 Work-in-progress 60 310 Current Assets (2) 680 Bank Overdraft 150 Creditors 210 Unpaid Dividend 10 Current Liabilities (3) 370 Proposed Dividend 60 Provision for Taxation 170 Current Liabilities and Provisions (4) 600 Net Working Capital (2) – (4) = (5) 80 Land and Building (at cost) 320 Plant and Machinery (at cost) 650 Patents 30 Fixed Assets 1,000 Less: Provision for Depreciation (6) 250 Net Fixed Assets 750 Advance against Machinery 60 Trade Investments 200 Total Fixed Investment (7) 1,010 Staff Provident Funds Investments 80 Less: Staff Provident Funds 80 Nil Total Capital employed (8) 1,090 Less: 6 per cent Debentures (9) 250 Shareholders' Funds (10) 840 (Contd.)

Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 210 Material Represented by: Equity Share Capital 500 General Reserve 110 Dividend Equalisation Reserve 70 Profit and Loss A/c (Less: Preliminary Expenses) 160 840

PROFIT AND LOSS ACCOUNT
for the year ended 31 March 1996 (Rs in thousand)

Sales 2,000 Less: Cost of goods sold 1,284 Gross Profit 716 Less:

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Operating Expenses:
Salaries 80 Miscellaneous Expenses 90 Selling and Distribution Expenses 120 Advertisements 80 370 Net Operating Profit 346
Add: Non-operating Income (Dividends on Investments) 30 Less: Non-operating Expenses (interest on debentures) 15 15 361 Less: Preliminary Expenses written off 5
Profit before Tax 356 Less: Income Tax payable 170 Profit after Tax 186 Less: Proposed Dividend 60
Profit
retained in the business 126 STATEMENT OF COST OF GOODS SOLD for the year ended 31 March 1996 (Rs in thousand)
Cost of goods manufactured: Work-in-progress on 1 April, 1995 40 Materials consumed: Opening stock 90 Purchases 850 940 Less: Closing Stock 90 850 Wages 280 Power 40 Miscellaneous Factory Expenses 110 Depreciation 72 1,392 Less: Sale of Scrap 8 Work-in-progress on 31 March, 1996 60 68
Cost
of goods manufactured 1,324
Add: Opening stock of Finished Goods 120 1,444 Less: Closing Stock of Finished Goods 160
Cost of goods sold 1,284 10.4
RATIO
ANALYSIS Accounting ratios are relationships expressed in mathematical terms between figures which are connected with each other in some manner. Obviously, no purpose will be served by comparing two sets of figures which are not at all connected with each other.
Moreover, absolute figures are also unfit for comparison.
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 211 10.5
CLASSIFICATION OF RATIOS Ratios can be classified into different categories depending upon the basis of classification.
Traditional Classification. This classification has been on the basis of the financial statements to which the determinants of a ratio belong. On this basis, the ratios could be classified as: 1. Profit and Loss Account Ratios, i.e., ratios calculated on the basis of the items of the profit and loss account
only, e.g., gross profit ratio, stock turnover ratio, etc. 2. Balance Sheet Ratios, i.e., ratios calculated on the basis of the figures of balance sheet only, e.g., current ratio, debt-equity ratio, etc. 3. Composite Ratios or Inter-statement Ratios, i.e., ratios based on figures of profit and loss account as well as the balance sheet, e.g., fixed assets turnover ratio, overall profitability ratio, etc. Functional Classification. The traditional classification has been found to be too crude and unsuitable because analysis of balance sheet and income statement cannot be done in isolation. They have to be studied together in order to determine the profitability and solvency of the business. In order that ratios serve as a tool for financial analysis, they are classified according to their functions as follows: 1. Profitability Ratios 2. Turnover Ratios 3. Financial Ratios In the following pages we will explain the ratios covered by each of the above categories in detail. 10.6
PROFITABILITY RATIOS Profitability is
an indication of the efficiency with which the operations of the business are carried on.
Poor operational performance may indicate poor sales and hence poor profits. A lower profitability may arise due to the lack of control over the expenses. Bankers, financial institutions and other creditors look at the profitability ratios as an indicator of whether or not the firm earns substantially more than it pays interest for the use of borrowed funds, and whether the ultimate repayment of their debt appears reasonably certain. Owners are interested to know the profitability as it indicates the return which they can get on their investments.
The following are the important profitability ratios. 1. Overall Profitability Ratio.
It
is also called as 'Return on Investment' (ROI). It indicates the percentage of return on the total capital employed in the business. It is calculated
on the basis of the following formula: OperatingProfit 100 Capital Employed The term capital employed has been given different meanings by different accountants. Some of the popular meanings are as follows: (i) Sum-total of all assets, whether fixed or current (ii) Sum-total of fixed assets Check Your Progress 1. What does 'analysis and interpretation of financial statements' mean? 2. What does the term 'analysis' mean? 3. What is the basis for traditional classification?
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 212 Material (iii)
Sum-total of long-term funds employed in the business,
i.e.: Share + Reserves + Long-term + Non-business + Fictitious Capital and Surplus Loans Assets Assets In management accounting, the term 'capital employed' is generally used in the meanings given in the point (iii) above.
The term 'operating profit' means 'profit before interest and tax'. The term '
interest' means 'interest on long-term borrowings'. Interest on short-term borrowings will be deducted for computing operating profit. Non-trading incomes such as interest on government securities or non-trading losses or expenses such as loss on account of fire, etc., will also be excluded. Significance of ROI. The return on capital invested is a concept that measures the profit which a firm earns on investing a unit of capital. '

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Yield on capital' is another term employed to express the idea.
It is desirable to ascertain this periodically. The profit being the net result of all operations,
the return on capital expresses all efficiencies or inefficiencies of a business collectively and,
thus, is a dependable measure for judging its overall efficiency or inefficiency.
On this basis, there can be comparisons of the efficiency of one department with that of another, of one plant with that of another, one company with that of another and one industry with that of another. For this purpose, the amount of profits considered is that before making deductions on account of interest, income tax and dividends and capital is the aggregate of all the capital at the disposal of the company, viz., equity capital, preference capital, reserves, debentures, etc. Return on capital, as explained, may also be calculated on equity shareholders' capital. In that case, the profit after deductions for interest, income tax and preference dividend will have to be compared with the equity shareholders' funds. It would not indicate operational efficiency or inefficiency, but merely the maximum rate of dividend that might be declared. A business can survive only when the return on capital employed is more than the cost of capital employed in the business. 2. Earning Per Share (EPS). In order to avoid confusion on account of the varied meanings of the term 'capital employed', the overall profitability can also be judged by calculating 'earning per share' with the help of the following formula: Net profit after tax and preference dividend 1 Earning per equity share = ———————————————————— Number of equity shares Illustration 10.2: Calculate the earning per share from the following data: Net profit before tax Rs 1,00,000 Taxation at 50 per cent of net profit 10 per cent preference share capital (Rs 10 each) Rs 1,00,000 Equity Share Capital (Rs 10 shares) Rs 1,00,000 Solution: Net profit after tax and pref. dividend Earning per share = ———————————————————— Number of equity shares 1 Profit available for equity shareholders.
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 213 Rs 40,000 = ————— = Rs 4 per share 10,000 Significance. Earning per share helps in determining the market price of the equity share of the company. A comparison of earning per share of the company with another will also help in deciding whether the equity share capital is being effectively used or not. It also helps in estimating the company's capacity to pay dividend to its equity shareholders. Illustration 10.3: From the following details, compute the basic earnings per share: Net profit for the year ending 31 December 2002 after tax and preference dividend Rs 21,000 Equity as on 1 January 2002 1,800 Issued equity shares for cash on 31 May 2002 600 Bought-back equity shares on 1 November 2002 300 Solution: Weighted average number of equity shares outstanding = (1,800 × 12/12 + 600 × 7/12 – 300 × 2/12) = 2,100 shares Basic earnings per share Net profit for the period attributable to equity shareholders = Weighted average no. of equity shares utstanding during the eary o 21,000 = 2,100 = Rs 10 per share 3.
Price Earning Ratio (PER). This ratio indicates the number of times the earning per share is covered by its market price. This is calculated according to the following formula:
Market price per equity share ———————————— Earning per share For example,
the market price of a share is Rs 30 and earning per share is Rs 5, the
price earning ratio would be 6 (i.e., 30 ÷ 5).
It means the market value of every one rupee of earning is six times or Rs 6. The ratio is useful in financial forecasting. It also help in knowing whether the shares of a company are under or overvalued. For example, if the earning per share of AB Limited is Rs 20, its market price Rs 140 and earning ratio of similar companies is 8, it means that the market value of a share of AB Limited should be Rs 160 (i.e., 8 × 20). The share of AB Limited is, therefore, undervalued in the market by Rs 20. In case the price earning ratio of similar companies is only 6, the value of share of AB Limited should have been Rs 120 (6 × 20), thus the share is overvalued by Rs 20.
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 214 Material Significance. Price-earning ratio
helps the investor in deciding whether not to buy the shares of a company at a particular
market
price. 4. Gross Profit Ratio. This ratio expresses the relationship between gross profit and net-sales.
Its formula is: Gross Profit ————— × 100 Net Sales Illustration 10.4: Calculate the gross profit ratio from the following figures: Sales Rs 1,00,000 Purchases Rs 60,000 Sales returns 10,000 Purchases returns 15,000 Opening stock 20,000 Closing stock 5,000 Solution: Gross profit Gross Profit Ratio = ————— × 100 Net sales Net sales – Cost of goods sold = ———————————— × 100 Net sales Rs 90,000 – Rs 60,000 = ———————————— × 100 Rs 90,000 Rs 30,000 = ————— ×100 Rs 90,000 = 1 33 3 per cent Significance. This ratio indicates the degree to which the selling price of goods per unit may decline without resulting in losses from operations to the firm.
It also helps in ascertaining whether the average percentage of mark up on the goods is maintained.
There is no norm for judging the gross profit ratio, therefore, the evaluation of the business on its basis is a matter of judgment. However, the gross profits should be adequate to cover the operating expenses and to provide for fixed charges, dividends and building up of reserves. 5.
Net Profit Ratio. This ratio indicates the net margin earned on a sale of Rs 100. It is calculated as follows: Net

Operating Profit ———————— × 100 Net Sales Net operating profit is arrived at by deducting operating expenses from the gross profit. Illustration 10.5: Calculate the net profit ratio from the following data: Sales less returns Rs 1,00,000 Selling Expenses Rs 10,000 Gross profit 40,000 Income from Investments 5,000 Administration expenses 10,000 Loss on account of fire 3,000 Solution: Net Operating Profit Net Profit Ratio = ———————— × 100 Net Sales
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 215 20,000 = ———— × 100 1,00,000 = 20 per cent Significance. This ratio helps in determining the efficiency with which affairs of the business are being managed. An increase in the ratio over the previous period indicates improvement in the operational efficiency of the business, provided the gross profit ratio is constant. The ratio is thus an effective measure to check the profitability of a business. An investor has to judge the adequacy or otherwise of this ratio by taking into account the cost of capital, the return in the industry as a whole and market conditions such as boom or depression period. No norms can be laid down. However,
constant increase in the above ratio year after year, is a definite indication of improving conditions of the business. 6. Operating Ratio. This ratio is a complementary of net profit ratio. In case the net profit ratio is 20
per cent, it means that
the operating ratio is 80 per cent. It is calculated as follows: Operating costs ——————— × 100 Net sales Operating costs include the cost of direct materials, direct labour and other overheads, viz., factory, office or selling.
Financial charges such as interest, provision for taxation, etc., are
generally excluded from operating costs. Significance. This
ratio is the test of the operational efficiency with which the business is being carried. The operating ratio should be low enough to leave a portion of sales to give a fair return to the investors.
A comparison of the operating ratio will indicate whether the cost component is high or low in the figure of sales. In case the comparison shows that there is an increase in this ratio, the reason for such increase should be found out and the management advised to check the increase. 7. Fixed Charges Cover. This ratio is very important
from the lender's point of view. It indicates whether the business would earn sufficient profits to pay the interest charges periodically. The
higher the number, the more secure the lender is in respect of his periodical interest income. It
is calculated as follows: Income before interest and tax = ———————————— Interest charges This ratio is also known as 'Debt Service Ratio'. The standard for this ratio for an industrial company is that interest charges should be covered six to seven times. Illustration 10.6: The operating profit of A Ltd after charging interest on debentures and tax is a sum of Rs 10,000. The amount of interest charged is Rs 2,000 and the provision for tax has been made of Rs 4,000. Calculate the interest charges cover ratio. Solution: Net profit before interest and tax Interest Charges Cover = ———————————— Interest charges
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 216 Material Rs 16,000 = ——————— = 8 times Rs 2,000 In case it is desired to compute the 'fixed dividend cover', it can be computed on the following basis: Net profit after interest and tax Fixed dividend cover = ———————————— Preference dividend In the above illustration if the amount of preference dividend payable is a sum of Rs 1,000, the fixed dividend cover will be computed as follows: Rs 10,000 = ————— = 10 times Rs 1,000 8. Payout
Ratio. This ratio indicates what proportion of earning per share has been used for paying
dividends. The ratio
can be calculated as follows: Dividend per equity share ———————————— Earning per equity share
A complementary of this ratio is retained earning ratio. It is calculated as follows: Retained earning per equity share = ———————————— Earning per equity share or Retained earnings = ———————— × 100 Total earning Illustration 10.7: Compute the Payout Ratio and the Retained Earning Ratio from the following data: Net Profit Rs 10,000 No. of Equity Shares 3,000 Provision for Tax 5,000 Dividend per Equity Share Re 0.40 Preference Dividend 2,000 Solution: Dividend per equity share Payout Ratio = ———————————— × 100 Earning per equity share Re 0.40 = ————— × 100 = 40 per cent Re 1 Retained earnings Retained earning ratio = ————————— × 100 Total earning Rs 1,8000 = ————— ×100 = 60 per cent Rs 3,000 Retained earning per share = ———————————— × 100 Total earning per share Re 0.60 = ———— × 100 = 60 per cent Re 1 Significance. The payout ratio and the retained earnings ratio are indicators
of the amount of earnings that have been ploughed back into the business. The
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 217 lower the payout ratio, the higher will be
the amount of earnings ploughed back into the business and vice versa. Similarly, the lower the retained earnings ratio, the lower will be the amount of earnings ploughed back into the business
and vice versa. A lower payout ratio or a higher retained earnings
ratio means a stronger financial position of the company. 9. Dividend Yield Ratio. This ratio is
particularly useful for those investors who are interested only in dividend incomes.

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The ratio is calculated by comparing the rate of dividend per share with
the market value. Its formula can be put as follows: Dividend per share ———————————— Market price per share For example, if a company declares dividend at 20 per cent on its shares, each having a paid-up value of Rs 8 and market price of Rs 25, the dividend yield ratio will be calculated as follows: 20 Dividend per share = —— × 8 = Rs 1.60 100 Dividend per share 1.6 Dividend Yield Ratio = ———————————— × 100 = —— × 100 = 6.4
per cent Market price per share 25 Significance. The ratio helps an intending investor in knowing the effective return he will get on
the proposed investment. For example, in the above case though the company is paying a dividend of 20 per cent on its shares, a person who purchases the shares of the company from the market will get only an effective return of 6.4 per cent. Therefore, he can decide whether or not he should opt for this investment. 10.7 TURNOVER RATIOS Turnover ratios or activity ratios indicate the efficiency with which the capital employed is rotated in the business. The overall profitability of the business depends on two factors: (i) the rate of return of capital employed; and (ii) the turnover, i.e., the speed at which the capital employed in the business rotates. Higher the rate of rotation, the greater will be the profitability. Overall Turnover Ratio. This ratio is calculated as follows: Sales Overall Turnover Ratio = ———————— Capital employed Turnover
ratio indicates the number of times the capital has been rotated in the process of doing business.
In order to find out which part of capital is efficiently employed and which part is not, different turnover ratios are calculated. These ratios are as follows: Fixed assets turnover ratio. This
ratio indicates the extent to which the investments in fixed assets contributed towards sales.
If compared with a previous period, it
indicates whether the investment in fixed assets has been judicious or not.
The ratio is calculated as follows:
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 218 Material Net sales ———————————— . Fixed assets (net) Illustration 10.8: The following details have been given to you for Messrs Reckless Ltd for two years. You are required to find out the fixed assets turnover ratio and comment on it. 1997 1998 Fixed assets at written down value Rs 1,50,000 Rs 3,00,000 Sales Less Returns 6,00,000 8,00,000 Solution: Fixed assets turnover ratio = Sales Fixed assets 1997 1998 = 6,00,000 1,50,000 = 4 times 8,00,000 3,00,000 = 2.67 times There has been a decline in the fixed assets turnover ratio though absolute figures of sales have gone up. It means increase in the investment in fixed assets has not brought about commensurate gain. However, the results for next two or three years must also be seen before commenting on the judiciousness or otherwise of increase in investment in the fixed assets. Working capital turnover ratio. This is also known as working capital leverage ratio. This ratio indicates whether or not the working capital has been effectively utilized in making sales. In case a company can achieve higher volume of sales with relatively small amount of working capital, it is an indication of the operating efficiency of the company. This ratio is calculated as follows: Net Sales Working Capital Working capital turnover ratio may take different forms for different purposes. Some of them are explained below: (i) Debtors' turnover ratio (debtors' velocity). Debtors form an important constituent of current assets and therefore the quality of debtors to a great extent determines a firm's liquidity. Two ratios are used by financial analysts to judge the liquidity of a firm. They are (i) Debtor's turnover ratio, and (ii) Debt collection period ratio. Debtor's turnover ratio
is calculated as under: Credit Sales Average Accounts Receivable The term Accounts Receivable include 'trade debtors' and 'bills receivable'.

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Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 219 Illustration 10.9: Calculate the debtors turnover ratio from the following figures: Total Sales for the year 1998 Rs 1,00,000 Cash Sales for the year 1998 20,000 Debtors as on 1 January 1998 10,000 Debtors as on 31 December 1998 15,000 Bills Receivable as on 1 January 1998 7,500 Bills Receivable as on 31 December 1998 12,500 Credit Sales Rs 80,000 = = = 3.56 times Average Accounts Receivable Rs 22,500* * 1/2 of (Rs 17,500 + Rs 27,500). In case details regarding opening and closing receivables and credit sales are not available the ratio may be calculated as follows: Total Sales ——————————— Accounts Receivable Significance. Sales to accounts receivable ratio indicates the efficiency of the staff entrusted with the collection of book debts. The higher the ratio, the better it is, since it would indicate that debts are being collected more promptly. For measuring the efficiency, it is necessary to set up a standard figure; a ratio lower than the standard will indicate inefficiency. The ratio helps in cash budgeting since the flow of cash from customers can be worked out on the basis of sales. (ii) Debt collection period ratio. The ratio indicates the extent to which the debts have been collected in time. It gives the average debt collection period. The ratio is very helpful to the lenders because it explains to them whether their borrowers are collecting money within a reasonable time. An increase in the period will result in greater blockage of funds in debtors. The ratio may be calculated by any of the following methods: Months (or days) in a year (a) ——————————————— Creditors' turnover Average accounts receivable × months (or days) in a year (b) ——————————————————————————— credit Sales for the year Accounts receivable (c) ——————————————————— . Average monthly or daily credit sales Illustration 10.10: The following is the trading account of Skylarks Ltd. Calculate the stock turnover ratio: Dr. TRADING ACCOUNT Cr. Particulars
Rs
Particulars
Rs
To Opening Stock 40,000 By Sales 2,00,000 To Purchases 1,00,000 By Closing Stock 20,000 To
Carriage 10,000 To Gross Profit 70,000 2,20,000 2,20,000
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 220 Material Solution: Cost of Sales Rs 1,30,000 Stock Turnover Ratio = ———————— = ———————— = 4.33 times. Average Stock 30,000 Significance of the ratio. As already stated, the inventory turnover
ratio signifies the liquidity of the inventory. A high inventory turnover ratio indicates brisk sales. The ratio is, therefore, a measure to discover
the possible trouble in the form of overstocking or overvaluation. (iii) Creditors' turnover ratio (creditors' velocity). It is similar to debtors' turnover ratio. It indicates the speed with which
the payments for credit purchases are made to creditors. The ratio
can be computed as follows: Credit Purchases Average Accounts Payable The term Accounts Payable include 'trade creditors' and 'bills payable'.
In case the details regarding credit purchases, opening and closing accounts payable have not been given the ratio may be calculated as follows: Total Purchases Accounts Payable (iv) Debt payment period enjoyed ratio (average age of payable). The ratio gives the average credit period enjoyed from the creditors. It can be computed by any one of the following methods: (a) Months (or days) in a year Creditors' turnover (b) Average accounts payable × Months (or days) in a year Credit purchases in the year (c) Average accounts payable Average monthly (or daily) credit purchases Illustration 10.11: From the following figures calculate the creditors' turnover ratio and the average age of accounts payable: Rs Rs Credit purchases during 1998 1,00,000 Bills Payable on 1 January, 1998 4,000 Creditors on 1 January, 1998 20,000 Bills Payable on 31 December 1998 6,000 Creditors on 31, December, 1998 10,000 Solution: Creditor's turnover ratio = Credit purchases Rs 1,00,000 5 times Average accounts payble Rs 20,000 Average age of accounts payable (or credit period enjoyed) = Months in a year 12 2.4 months Creditors turnover 5 = =
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 221 = Average accounts payable × Months in a year 20,000 12 2.4 months Credit purchases in the year 1,00,000 × = = = Average accounts payable 20,000 2.4 months Average monthly credit purchases 8,333.33 = = Significance. Both the creditors' turnover ratio and the debt payment
period enjoyed ratio indicate about the promptness or otherwise in making payment
of
credit purchases. A higher 'creditors turnover ratio' or a 'lower credit period enjoyed ratio' signifies that the creditors are being paid promptly, thus enhancing the creditworthiness of the company. However, a very favourable ratio
of
this effect also shows that the business is not taking full advantage of credit facilities which can be allowed by the creditors. Stock Turnover Ratio. This ratio indicates whether the investment in inventory is efficiently used
or not. It, therefore, explains whether investment in inventories is within proper limits or not.
The ratio
is calculated as follows: Cost of goods sold during the year Average inventory

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The average inventory is calculated on the basis of
the average of inventory
at the beginning and
at the end of the
accounting
period.
Inventory at the beginning of
the accounting period + Inventory at the end of the
accounting period
Average Inventory = 2 Illustration 10.12: Following is the Trading Account of Skylarks Ltd. Calculate the stock turnover ratio: Dr. TRADING ACCOUNT Cr.
Rs
Rs To Opening Stock 40,000 By Sales 2,00,000 To Purchase 1,00,000 By Closing Stock 20,000 To
Carriage 10,000 To Gross Profit 70,000 2,20,000 2,20,000
Solution: Stock Turnover Ratio = Cost of Sales Rs 1,30,000 4.33 times Average stock 30,000 Significance. As already stated, the inventory
ratio signifies the liquidity of the inventory. A high inventory turnover ratio indicates brisk sales. The ratio is, therefore, a measure to discover
the possible trouble in the form of overstocking or overvaluation. The stock position is known as the graveyard of the balance sheet. If the sales are quick such a position would not arise unless the stocks consist of unsaleable items. A low inventory turnover ratio results in blocking of funds in inventory which may ultimately result in heavy losses due to inventory becoming obsolete or deteriorate in quality. Check Your Progress 4. What is 'profitability'? 5. What is 'price earning ratio'? 6. What is 'debt collection period ratio'?
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 222 Material 10.8
FINANCIAL
RATIOS Financial ratios indicate the financial position of the company. A company is deemed to be financially sound if it is in a position to carry on its business smoothly and meet all its obligations—both long-term
as well as short-term without strain. Thus, its financial position has to be judged from two angles—long-term as well as short- term. It is a sound principle of finance
that long-term requirements of funds should be met out of long-term
funds and short-term requirements should be met out of short-term funds. For example, if fixed assets are purchased out of funds provided by bank overdraft, the company will come to grief because such assets cannot be sold away when payment is demanded by the bank. We are giving below some of the important ratios which are calculated in order to judge the financial position of the company. 1. Fixed Assets Ratio. This ratio is expressed as follows: Fixed Assets
———————— Long-term Funds The ratio should not be more than one. If it is less than one, it shows that a part of the working capital has been financed through long-term funds. This is desirable to some extent because a part of the working capital termed as 'core working capital' is more or less of a fixed nature. The ideal ratio is 0.67. Fixed assets include 'net fixed assets' (i.e., original cost–depreciation to date) and trade investments including shares in subsidiaries. Long-term funds included share capital, reserves and long-term loans. Illustration 10.13: From the following compute the fixed assets ratio: Particulars Rs Particulars Rs Share Capital 1,00,000 Furniture 25,000 Reserves 50,000 Trade Debtors 50,000 12 per cent Debentures 1,00,000 Cash Balance 30,000 Trade Creditors 50,000 Bills Payable 10,000 Plant and Machinery 1,00,000 Stock 40,000 Land and Buildings 1,00,000 Solution: Fixed Assets 2,25,000 Fixed Assets Ratio =
———————— = ———— = 0.9 Long-term Funds 2,50,000 2.
Current Ratio. This ratio is an indicator of the firm's commitment to meet its short-term liabilities. It is expressed as follows:
Current Assets ———————— Current
Liabilities Current assets include cash and other assets convertible or meant to be converted into cash during the operating cycle of the business (which is of not more than a year). Current liabilities mean liabilities payable within a year's time either out of the existing current assets or by the creation of new current liabilities. A list of items included in current assets and current liabilities has already been given in the proforma analysis balance sheet in the preceding pages.
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 223 Book debts outstanding for more than six months and loose tools should not be included in current assets. Prepaid expenses should be taken into current assets. 3.
Liquidity
Ratio. This ratio is also termed as 'acid test ratio' or 'quick ratio'. This ratio is ascertained by comparing the liquid assets (i.e., assets

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which are immediately convertible into cash without much loss)
to the current liabilities. Prepaid expenses and stock are not taken as liquid assets. The ratio may be expressed as under:
Liquid Assets ———————— Current Liabilities On the basis of figures given in the Illustration 1.15 the liquidity ratio will be computed as under: LiquidAssets Rs90,000 Rs40,000 Rs50,000 = = = =1. Current Liabilities Rs 50,000 Rs 50,000 –
Some accountants prefer the term 'Liquid Liabilities' for 'Current Liabilities'
for the purpose of ascertaining this ratio. Liquid liabilities mean liabilities which are payable within a short period. The bank overdraft (if it becomes a permanent mode of financing) and cash credit facilities will be excluded from the current liabilities in such a case:
Liquid Assets ———————— Liquid Liabilities The ratio is also an indicator of short-term solvency of the company. A comparison of the current ratio to quick ratio shall indicate the inventory hold-ups. For example, if two units have the same current ratio but different liquidity ratios, it indicates overstocking by the concern having low liquidity ratio as compared to the concern which has a higher liquidity ratio. 4.
Debt-equity Ratio. The debt-equity ratio is determined to ascertain the soundness of the long-term financial policies of the company. It is also known as 'external-internal' equity ratio. It may be calculated as follows: External equities Debt-equity Ratio = ———————— Internal equities The term external equities refers to total outside liabilities and the term internal equities refers to shareholders' funds or the tangible net worth (as used in the proforma balance sheet given in the preceding pages). In case the ratio is 1 (i.e., outsider's funds are equal to shareholders' funds), it is considered to be quite satisfactory. (i)
Debt-equity Ratio = Total long-term debt Total long-term funds (
ii) Debt-equity Ratio = Shareholder's funds Total long-term funds (iii) Debt-equity Ratio = Total long-term debt Shareholder's funds
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 224 Material Method (iii) is the most popular. Ratios (i) and (ii) give the proportion of long-term debts/shareholders' funds in total long-term funds (including borrowed as well as owned funds). While ratio (iii) indicates the proportion between shareholders' funds (i.e., tangible net worth), and the total long-term borrowed funds. Ratios (i) and (ii) may be taken as ideal if they are 0.5 each while ratio (iii)may be taken as ideal if it is 1. In other words, the investor may take debt-equity ratio as quite satisfactory if the shareholders' funds are equal to the borrowed funds. However, a lower ratio, say 2/3rds, borrowed funds and 1/3rd owned funds may also be considered as satisfactory if the business needs heavy investment in fixed assets and has an assured return on its investment, e.g., in case of public utility concerns. It is to be noted that preference shares redeemable within a period of twelve years from the date of their issue should be taken as a part of debt. 5.
Proprietary Ratio. It is a variant of debt-equity ratio. It establishes
the
relationship between the proprietors' or shareholders' funds and the total tangible assets. It may be expressed as under:
Shareholders' Funds ———————— Total Tangible Assets
Illustration 10.14: From the following calculate the proprietary ratio:
Liabilities Rs Assets Rs Preference share capital 1,00,000 Fixed assets 2,00,000 Equity share capital 2,00,000
Current assets 1,00,000 Reserves and surplus 50,000 Goodwill 50,000 Debentures 1,00,000 Investments 1,50,000
Creditors 50,000 5,00,000 5,00,000 Solution: Shareholders' funds Rs 3,00,000 Proprietary ratio = = = 0.67 or 67 per cent
Total tangible assets Rs 4,50,000 Significance. This ratio focuses the
attention on the general financial strength of the business enterprise. The ratio is of particular importance to the creditors who can find out the proportion of shareholders' funds in the total assets employed in the business. A high proprietary ratio will indicate a relatively little danger to the creditors, etc., in the event of forced reorganization or winding up of the company.
A low proprietary ratio indicates greater risk to the creditors, since in the event of losses a part of their money may be lost besides loss to
the proprietors of the business. The higher the ratio, the better it is. A ratio
below 50 per cent may be alarming for the creditors, since they may have to lose heavily in the event of company's liquidation on account of heavy losses. 10.9 ADVANTAGES OF RATIO ANALYSIS The following are some of the advantages of ratio analysis: 1. Simplifies Financial Statements. Ratio analysis simplifies the comprehension of financial statements. Ratios tell the whole story of changes in the financial condition of the business.

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Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 225 2. Facilitates Inter-firm Comparison. Ratio analysis provides data for inter- firm comparison. Ratios highlight the factors associated with successful and unsuccessful firms. They also reveal strong firms and weak firms, over-valued and under-valued firms. 3. Makes Intra-firm Comparison Possible. Ratio analysis also makes possible comparison of the performance of the different divisions of the firm. The ratios are helpful in deciding about their efficiency or otherwise in the past and likely performance in the future. 4. Helps in Planning. Ratio analysis helps in planning and forecasting. Over a period of time a firm or industry develops certain norms that may indicate future success or failure. If the relationship changes in the firm's data over different time periods, the ratios may provide clues on trends and future problems. Thus, ratios can assist management in its basic functions of forecasting, planning, coordination, control and communication. 10.10 LIMITATIONS OF ACCOUNTING RATIOS Accounting ratios are subject to certain limitations. They are given below: 1. Comparative Study Required. Ratios are useful in judging the efficiency of the business only when they are compared with the past results of the business or with the results of a similar business. However, such a comparison only provides a glimpse of the past performance and forecasts for
the
future may not prove correct since several other factors like market conditions, management policies, etc., may affect the future operations. 2.
Based only on
financial statements. Ratios are based only on the information which has been recorded in the financial statements. As indicated in the preceding pages, financial statements suffer from a number of limitations, the ratios derived therefrom, therefore, are also subject to those limitations. For example, non-financial
charges though important for the business are not revealed by the
financial statements. If the management of the company changes, it may have ultimately adverse effects on the future profitability of the company, but this cannot be judged by having a glance at the financial statements of the company. Similarly, the management has a choice about the accounting policies. Different accounting policies may be adopted by
the
management of different companies regarding valuation of inventories, depreciation, research and development expenditure and treatment of deferred revenue expenditure, etc. The comparison of one firm with another on the basis of ratio analysis without taking into account the fact of companies having different accounting policies, will be misleading and meaningless. Moreover, the management of the firm itself may change its accounting policies from one period to another. It is, therefore, absolutely necessary that financial statements are themselves subjected to close scrutiny before an analysis is attempted on the basis of accounting ratios. The financial analyst must carefully examine the financial statements and make necessary adjustments in the financial statements on the basis of disclosure made regarding the accounting policies before undertaking financial analysis. The growing realization among accountants all over the world, that the accounting policies should be standardized, has resulted in the establishment of International Accounting Standard Committee, which has issued a number of International Accounting
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 226 Material
Standards. In our country, the Institute of Chartered Accountants of India has established Accounting Standards Board
of
formulation of requisite accounting standards. The Accounting Standards Board has already issued
twenty-three accounting
standards including AS 1: Disclosure of Accounting Policies. The standard has become mandatory in respect of accounts for periods commencing on or after 1 April 1991. 3.
Ratios Alone are not Adequate. Ratios are only indicators, they cannot be taken as final regarding
the
good or bad financial position of the business. Other things have also to be seen. For example, a high current ratio does not necessarily mean that the concern has a good liquid position in case current assets mostly comprise outdated stocks. It has been correctly observed, ‘
No ratio may
be regarded as good or bad inter se.’ It may be an indication that a firm is weak or strong but it must never be taken as the proof of either one. Ratios may be linked to rail roads.
They tell the analysist, ‘stop, look and listen.’ 4. Window Dressing. The term window dressing means manipulation of accounts in a way so as to conceal vital facts and present the financial statements in a way to show a better position than what it actually is. On account of such a situation,
the

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presence of a particular ratio may not be a definite indicator of good or bad management. For example, a high stock turnover ratio is generally considered to be an indication of operational efficiency of the business. But this might have been achieved by unwarranted price reductions or failure to maintain proper stock of goods. Similarly, the current ratio may be improved just before the balance sheet date by postponing replenishment of inventory. For example, if a company has got current assets of Rs 4,000 while current liabilities of Rs 2,000, the current ratio is 2, which is quite satisfactory. In case the company purchases goods of Rs 2,000 on credit, the current assets would go up to Rs 6,000 and current liabilities to Rs 4,000, thus reducing the current ratio to 1.5. The company may, therefore, postpone the purchases for the early next year so that its current ratio continues to remain at 2 on the balance sheet date. Similarly, in order to improve the current ratio, the company may pay off certain pressing current liabilities before the balance sheet date. For example, if in the above case, the company pays current liabilities of Rs 1,000, the current liabilities would stand reduced to Rs 1,000, current assets would stand reduced to Rs 3,000 but the current ratio would go up to 3. 5. Problem of Price Level Changes. Financial analysis based on accounting
ratios
will give misleading results if the effects of changes in price level are not taken into account. For example,
two companies set up in different years, having plant and machinery of different ages, cannot be compared on
the basis of traditional accounting statements. This is because, the depreciation charged on plant and machinery in
the case of the
old company would be at a much lower figure as compared to the company which has been set up recently. The financial statements of the companies should, therefore, be adjusted keeping in view the price level changes if a meaningful comparison is to be made through accounting ratios. The techniques of current purchasing power and current cost accounting are quite helpful in this respect. 6. No Fixed Standards. No fixed standards can be laid down for ideal ratios. For example, current
ratio
is generally considered to be ideal if current assets are
Check Your Progress 7. When is a company considered to be financially sound? 8. What are 'liquid liabilities? 9. State one advantage of 'ratio analysis'?
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 227 2 Batty J. ''Management Accounting'' (1978), p. 413. twice the current liabilities. However, in the
case of those concerns which have adequate arrangements with their bankers for providing funds when they require, it may be perfectly ideal if current assets are equal to
or slightly more than current liabilities.
It may, therefore, be concluded that ratio analysis, if done mechanically, is not only misleading but also dangerous. It is indeed a double-edged sword which requires a great deal of understanding and sensitivity of the management process rather than mechanical financial skill. It has rightly been observed, 'The ratio analysis is an aid to management in taking correct decisions, but as a mechanical substitute for thinking and judgment, it is worse than useless. The ratios, if discriminately calculated and wisely interpreted, can be a useful tool of financial analysis.' 2 10.11
SUMMARY z Accounting ratio is a mathematical relationship expressed between two interconnected accounting figures. It may be expressed in 'times' or 'percentage'. z Ratios are useful only when they are given in a comparative form. Moreover,
ratios are only indicators. They cannot be taken as final regarding good or bad financial position of the business. Other things have also to be seen.
z
No fixed standards can be laid down for ideal ratios.
Moreover, a particular ratio may be calculated in more than one way without violating any basic principle of accounting. It is, therefore, advisable for a student to give the basis for computing a particular ratio. z While making inter-firm (comparison of one firm with another) or intra-firm (comparison within the firm itself) comparison on the basis of accounting ratios, it must be seen that the different firms or departments, which are being compared, have the same accounting policies and adopt the same accounting procedures. 10.12 KEY TERMS z Accounting Ratio: It is the relationship expressed in mathematical terms between two accounting figures related to each other. z Balance Sheet: It is a statement of financial position of business at a specified moment of time. z Balance Sheet Ratios: These are ratios calculated on the basis of the figures of balance sheet only. z Composite Ratios: These are ratios based on figures of profit and loss account as well as the balance sheet. They are also known as Inter-statement Ratios. z Financial Analysis: These are critical evaluation of data given in the financial statements. z Financial Ratios: These are ratios disclosing the financial position or solvency of the firm. (They are also known as solvency ratios.)
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 228 Material z Financial Statement: This

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is an organized collection of data according to logical and consistent accounting procedures conveying an understanding of some financial aspects of
a business firm. z Interpretation: This is the act of explaining the meaning and significance of the financial data. z Profitability Ratios. These are ratios which reflect the final results of business operations. z Turnover Ratios. These are ratios measuring the efficiency with which the assets are employed by a firm. They are also known as activity or efficiency ratios. 10.13 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Analysis and interpretation of financial statements, therefore, refers to the treatment of the information contained in the income statement and the balance sheet so as to afford full diagnosis of the profitability and the financial soundness of the business. 2. The term 'analysis' means the methodical classification of the data given in the financial statements. 3.
This classification has been on the basis of the financial statements to which the determinants of a ratio belong. 4. Profitability is
an indication of the efficiency with which the operations of the business are carried on. 5. The '
price earning ratio' indicates the number of times the earning per share is covered by its market price. 6.
The 'debt collection period' ratio indicates the extent to which the debts have been collected in time. It gives the average debt collection period. 7.
A company is deemed to be financially sound if it is in a position to carry on its business smoothly and meet all its obligations—both long-term
as well as short- term—without strain. 8. Liquid liabilities are liabilities which are payable within a short period. 9. Ratio analysis simplifies the comprehension of financial statements. Ratios tell the whole story of changes in the financial condition of the business. 10.14 QUESTIONS AND EXERCISES Short-Answer Questions 1. Discuss the concepts regarding financial statements and limitations of financial statements. 2. Explain
the role of ratio analysis in the interpretation of financial statements.
Examine the limitations of ratio analysis. Long-Answer Questions 1. How do you analyse and interpret financial statements of a company for reporting on the soundness of its capital structure and solvency? 2. 'Ratios like statistics have a set of principles and finality about them which at times may be misleading.' Discuss with illustrations.
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional Material 229 3.
'Accounting ratios are mere guides and complete reliance on them in decision- making is suicidal.' Elucidate. 10.15 PRACTICAL PROBLEMS Computation of Ratios 1.
From the following statements of X Ltd. for the year ending 31 March 1997, you are required to rearrange the items for purposes of financial analysis and
calculate
the following ratios: (i) Current Ratio, (ii) Quick Ratio, (iii) Operating Ratio, (iv) Stock Turnover Ratio, (v) Fixed Assets Turnover Ratio, (vi) Debtors' Turnover Ratio, and (vii) Net Profit to Capital employed.
BALANCE SHEET Liabilities Rs Assets Rs Share Capital:
Land and Buildings 5,00,000 Issued and fully paid up 50,000 Plant and
Machinery 2,00,000 Equity shares of Rs 10 each 5,00,000 Stock 1,50,000 General Reserve 4,00,000 Sundry Debtors 2,50,000
Profit and Loss A/c 1,50,000 Cash and Bank balances 1,50,000 Sundry Creditors 2,00,000 12,50,000 12,50,000
PROFIT
AND LOSS ACCOUNT for the year
ending 31 March 1997 Particulars Rs Particulars
Rs
To opening stock 2,50,000 By Sales 18,00,000 To purchases 10,50,000 By Closing Stock 1,50,000 To
gross profit 6,50,000 19,50,000 19,50,000
To selling and distribution By Gross Profit 6,50,000
expenses 1,00,000 By Profit on sale of fixed To administration expenses 2,30,000 assets 50,000 To finance expenses 20,000 To net profit 3,50,000 7,00,000 7,00,000 [Ans. (i) 2.75, (ii) 2, (iii) 0.82, (iv) 5.75, (v) 18/7 = 2.6 or 11.5/7, (vi) 7.2, i.e., 51 days, (vii) 30 per cent] 2. The following data has been abstracted from the annual accounts of a company: Share Capital Rs in lakhs 20,000 Equity Shares of Rs 10 each 200.00 General Reserve 156.00 Investment Allowance Reserve 50.00 Share Capital Rs in lakhs 15% Long-term Loan 300.00 Profit before Tax 140.00 Provision for Tax 84.00 Proposed Dividends 10.00 Calculate from the above the following details: (i) Return on Capital Employed, and (ii) Return on Net Worth. [Ans. (i) 26.4 per cent, (ii) 14 per cent]
Financial Statements: Analysis and Interpretation (Accounting Ratios) NOTES Self-Instructional 230 Material 10.16 FURTHER READING Maheshwari, S.N., S.K. Maheshwari. An Introduction to Accountancy. New Delhi: Vikas Publishing House, 2003. Maheshwari, S.N., S.K. Maheshwari, Sharad K., A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.
Cash Flow Analysis NOTES Self-Instructional Material 231 UNIT 11 CASH FLOW ANALYSIS Structure 11.0 Introduction 11.1

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Unit Objectives 11.2 Meaning of Cash Flow Statement 11.3 Preparation of Cash Flow Statement 11.4 Computation of Cash from Operating Activities 11.5 AS-3 (Revised) and Cash Flow Statement 11.6 Difference between Cash Flow Analysis and Funds Flow Analysis 11.7 Utility of Cash Flow Analysis 11.8 Limitations of Cash Flow Analysis 11.9 Summary 11.10 Key Terms 11.11 Answers to 'Check Your Progress' 11.12 Questions and Exercises 11.13 Practical Problems 11.14 Further Reading 11.0 INTRODUCTION

Information about the cash flows of an enterprise is useful in providing users of financial statements with a basis to assess the ability of the enterprise to generate cash and cash equivalents and the need of the enterprise to utilize those cash flows. The economic decisions that are taken by the users require an evaluation of the ability of an enterprise to generate cash and cash equivalents and the timing and uncertainty of their generation.

In view of the importance of cash flows in decision making, an enterprise should prepare a cash flow statement giving both inflows and outflows of cash during a particular period.

A cash flow statement, when used in conjunction with other financial statements, provides information that enables the users to evaluate the changes in net assets of an enterprise, its financial structure and its ability to affect the amount and timings of the cash flows in order to adapt to changing circumstances. This unit deals with all these aspects in detail. 11.1 UNIT OBJECTIVES z Meaning of cash flow statement z Preparation of cash flow statement z Concept of funds in cash flow analysis z Sources and applications of cash z Difference between cash flow analysis and funds flow analysis z Utility and limitations of cash flow analysis

Cash Flow Analysis NOTES Self-Instructional 232 Material 11.2 MEANING OF CASH FLOW STATEMENT A cash flow statement is a statement depicting changes in cash position from one period to another. For example, if the cash balance of a business is shown by its balance sheet on 31 December 1997 at Rs 20,000, while the cash balance as per its balance sheet on 31 December, 1998 is 30,000, there has been an inflow of cash of Rs 10,000 in the year 1998 as compared to the year 1997. The cash flow statement explains the reasons for such inflows or outflows of cash, as the case may be. It also helps the management in making plans for the immediate future. A projected cash flow statement or a cash budget will help the management in ascertaining how much cash will be available to meet obligations to trade creditors, to pay bank loans and to pay dividends to the shareholders.

A proper planning of the cash resources will enable the management to have cash available whenever needed and put it to some profitable or productive use in case there is surplus cash available. The term 'cash' here stands for cash and bank balances. It has already been explained in the previous unit that the term 'funds', in a narrower sense, is also used to denote cash. In such a case, the term 'funds' will exclude from its purview all other current assets and currents liabilities and the term 'funds flow statement' and 'cash flow statement' will have synonymous meanings. However, for the purpose of this study, we are calling this part of study as cash flow analysis and not funds flow analysis. 11.3 PREPARATION OF CASH FLOW STATEMENT The cash flow statement is to be prepared as per AS-3 discussed in detail later. As per AS-3 the following are the sources and applications of cash: (i) Operating Activities: These are the principal revenue producing activities of an enterprise.

Operating activities could be a source as well as an application of cash. In case, an enterprise is earning profits from operating activities, it becomes a source of cash. However, if the operating activities result in loss to the enterprise, it becomes an application of cash. (ii) Investing Activities: Such activities include acquisition and disposal of long- term assets. An enterprise may invest its money in the acquisition of fixed assets, both tangible and intangible. In such a case investing activities will be an application of cash. However, if an enterprise disposes some of its fixed assets, the investing activities becomes a source of cash. (iii) Financing Activities: These are activities that result in changes in the size and composition of owners' capital and borrowings of an enterprise. A financing activity, if it raises funds through shares or debentures, becomes a sources of cash. While, if an enterprise redeems the share capital or debentures such an activity will become an application of cash.

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Cash Flow Analysis NOTES Self-Instructional Material 233 11.4 COMPUTATION OF CASH FROM OPERATING ACTIVITIES Cash from operating activities is the main internal source. Its computation therefore, has to be understood by the students as follows: Identification of Non-cash Items. The net profit shown by the profit and loss account will have to be adjusted for non-cash items for finding out cash from operations. Some of these items are as follows: (i) Depreciation. Depreciation does not result in the outflow of cash and, therefore, net profit will have to be increased by the amount of depreciation or development rebate charged, in order to find out the real cash generated from operations. (ii) Amortization of intangible assets. Goodwill, preliminary expenses, etc., when written off against profits, reduce the net profits without affecting the cash balance. The amounts written off should, therefore, be added back to the profits to find out the cash from operations. (iii) Loss on sale of fixed assets. It does not result in outflow of cash and, therefore, should be added back to the profits. (iv) Gain from sale of fixed assets. Since sale of fixed assets is taken as a separate source of cash, it should be deducted from the net profits. (v) Creation of reserves. If profit for the year has been arrived at after charging transfers to reserves, such transfers should be added back to the profits. In case operations show a net loss, such net loss after making adjustments for non-cash items will be shown as an application of cash. Thus, cash from operations is computed on the pattern of computation of 'funds' from operations, as explained in the earlier chapter. However, to find out real cash from operations, adjustments will have to be made for 'changes' in current assets and current liabilities arising on account of operations, viz., trade debtors, trade creditors, bills receivable, bills payable, etc. For the sake of convenience, computation of cash from operations can be studied by taking two different situations: (1) when all transactions are cash transactions, and (2) when all transactions are not cash transactions. When All Transactions are Cash Transactions. The computation of cash from operations will be very simple in this case. The net profit as shown by the profit and loss account will be taken as the amount of cash from operations as shown in the following example: Example

PROFIT AND LOSS ACCOUNT for the year ended 31 December 1998 Particulars Rs Particulars Rs To Purchases 15,000 By Sales 50,000 To Wages 10,000 To

Rent 500 To Stationery 2,500 To Net profit 22,000 50,000 50,000 In the example given above, if all transactions are cash transactions, i.e., all purchases have been paid for in cash and all sales have been realized in cash, the cash from operations will be Rs 22,000, i.e., the net profit as shown by the

Cash Flow Analysis NOTES Self-Instructional 234 Material profit and loss account. Thus, in case of all transactions being cash transactions, the equation for computing cash from operations can be put as follows: Cash from Operations = Net Profit When all transactions are not cash transactions. In the example given above, we have computed cash from operations on the basis that all transactions are cash transactions. It does not really happen in actual practice. The business sells goods on credit. It purchases goods on credit. Certain expenses are always outstanding and some of the incomes are not immediately realized. Under such circumstances, the net profit made by a firm cannot generate equivalent amount of cash. The computation of cash from operations in such a situation can be done conveniently if it is done in two stages: (i) Computation of funds (i.e., working capital) from operations as explained in the preceding chapter (ii) Adjustments in the funds so calculated for changes in the current assets (excluding cash) and current liabilities. We are giving below an illustration for computing 'funds' from operations. However, since there are no credit transactions, hence the amount of 'funds' from operations is as a matter of cash from operations as shown in the illustration.

Illustration 11.1:

TRADING

AND

PROFIT AND LOSS ACCOUNT

for the year ended 31 March 2005

Particulars Rs Particulars Rs To Purchases 20,000 By Sales 30,000 To Wages 5,000 To Gross Profit c/d 5,000 30,000 30,000

To Salaries 1,000 By Gross Profit

b/d 5,000 To

Rent 1,000 By Profit on sale of

building: To Depreciation on Plant 1,000 Book value Rs 10,000 To Loss on sale of Furniture 500 Sold for 15,000 5,000 To Goodwill written off 1,000 To Net Profit 5,500 10,000 10,000 Calculate the cash from operations. Solution: CASH FROM OPERATIONS Net Profit as per P & L A/c Rs 5,500 Add: Non-cash items (i.e., items which do not result in outflow of cash): Depreciation Rs 1,000 Loss on sale of furniture 500 Goodwill written off 1,000 2,500 8,000 Less: Non-cash items (items which do not result inflow of cash): Profit on sale of building 5,000 (Rs 15,000 will be taken as a source of cash) Cash from Operations 3,000 Adjustments for Changes in Current Assets and Current Liabilities In the illustration given above, the cash from operations has been computed on the same pattern on which funds from operations are computed. As a matter of fact, the funds from operations is equivalent to cash from operations in this case. This is because of the presumption that all are cash transactions and all goods

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Cash Flow Analysis NOTES Self-Instructional Material 235 have been sold. However, there may be credit purchases, credit sales, outstanding and prepaid expenses, etc. In such a case, adjustments will have to be made for each of these items in order to find out the cash from operations. The overall effect of stock, debtors, creditors, outstanding expenses, income received in advance, prepaid expenses and accrued can be shown in the form of the following formula: + Decrease in Debtors + Decrease in Stock + Decrease in Prepaid Expenses + Decrease in Accrued Income + Increase in Creditors Cash from Operations = Net Profit + Increase in Outstanding Expenses – Increase in Debtors – Increase in Stock – Increase in Prepaid Expenses – Increase in Accrued Income – Decrease in Creditors – Decrease in Outstanding Expenses The above formula may be summarized in the form of following general rules: Increase in a Current Asset Decrease in a Current Liability results in Decrease in Cash and Decrease in a Current Asset Increase in a Current Liability results in Increase in Cash Illustration 11.2: Continuing the figures given as Illustration 9.1 calculate the cash from operations with the following additional information: Balance as on 31 March 2004 31 March 2005 Rs Rs (i) Stocks 10,000 12,000 (ii) Debtors 15,000 20,000 (iii) Creditors 5,000 7,500 (iv) Bills Receivable 5,000 8,000 (v) Outstanding Expenses 3,000 5,000 (vi) Bills Payable 4,000 2,000 (vii) Prepaid Expenses 1,000 500 Solution: The computation of cash from operations can be done conveniently if it is done as explained before in two stages: (i)Computation of 'funds' from operations, taking the meaning of 'funds' as working capital.

Cash Flow Analysis NOTES Self-Instructional 236 Material (ii) Adjustment in the amount of 'funds' so computed on the basis of 'current assets' and 'current liabilities'. The funds from operations amount to Rs 3,000 (as computed in Illustration 11.1). However, adjustments will have to be made in this amount for current assets and current liabilities in order to compute cash from operations. This has to be done by taking each item of current assets and current liabilities independently as explained below: (i) The investment in stock has increased by Rs 2,000 as compared to the previous year. This means cash must have gone out to the extent of Rs 2,000. It will, therefore, decrease the cash balance. (ii) Debtors have gone up from Rs 15,000 in March 2004 to Rs 20,000 on 31 March 2005. There is an increase of Rs 5,000. It shows that sales to the of Rs 5,000 have not been realized in cash. Hence, cash from operations will be reduced by Rs 5,000. (iii) Creditors have gone up by Rs 2,500. Thus, purchases to the extent of this amount have not been paid in cash. It is, therefore, a 'source' of cash. (iv) Bills receivable have increased by Rs 3,000. Thus, sales to the extent of Rs 3,000 have not been paid in cash. Hence cash, on account of operations will be reduced by Rs 3,000. (v) Bills Payable have come down by Rs 2,000. It shows more payments of cash. The cash from operations will stand reduced by Rs 2,000. (vi) Outstanding expenses have increased by Rs 2,000. Thus, expenses to this extent have not been paid resulting in increase of cash from operations by this amount. (vii) Prepaid expenses have come down by Rs 500. This shows less of payment and hence cash operations will increase by Rs 500. Cash from operations now can be computed as follows: Increase (+) Decrease (–) Cash from Operations as per P. & L. A/c (Illustration 9.1) Rs 3,000

Increase in Stock 2,000 Increase in Debtors 5,000 Increase in Creditors 2,500 Increase in Bills Receivable 3,000 Decrease in Bills Payable 2,000

Increase in Outstanding Expenses 2,000 Decrease in Prepaid Expenses 500 5,000 12,000 (7,000) (Inflow) of cash on account of operations (4,000) 11.5 AS-3 (REVISED) AND

CASH FLOW STATEMENT

The cash flow statement is to be prepared as per

AS-3 (Revised) issued by the Institute of Chartered Accountants

of India (

ICAI) in

March 1997. It is mandatory for all enterprises from accounting period commencing on or after 1 April 2001. As per AS-3 the following is the format of cash flow statement. Check Your Progress 1. What are operating activities? 2. What are financing activities? 3. What are the two different situations in which computation of cash from operations can be studied?

Cash Flow Analysis NOTES Self-Instructional Material 237

CASH FLOW STATEMENT Particulars Rs (i)

Cash flows from operating activities ..... (ii) Cash flows from investing activities ..... (iii)

Cash flows

from financing .....

Net increase

or

decrease in cash or cash equivalents ..... Add cash and cash equivalents

in

the beginning

of the year ..... cash and equivalent at the end of

the

year .....

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The details of
each of the above items as per AS-3 are given below: 1. Definitions The following terms are used in this statement with the meanings specified: (1)
Cash comprises
cash on hand and demand deposits with banks. (2)
Cash equivalents
are short-term, highly liquid investments that are readily convertible into known amounts of
cash and which are subject to an insignificant risk of changes in value. (3)
Cash flows are inflows and outflows of cash and cash equivalents. (4)
Operating activities
are the principal revenue-producing activities of the enterprise and other activities that are not investing or financing activities. (5)
Investing activities
are
the acquisition and disposal of long-term assets and other investments not included in cash equivalents. (6)
Financing activities are activities that result in
changes in the size and composition of the
owner's
capital (
including preference share capital in the case of a company) and borrowings of the enterprise. 2.
Presentation of a Cash
Flow Statement
The
cash flow statement should report cash flows during the period
classified by operating investing and financing activities. (1)
Operating activities.
Cash flows from operating activities are
primarily derived from the
principal revenue-producing activities of the enterprise.
Therefore,
they generally result from the transactions and other events that enter into the determination of net profit or loss.
Examples of cash
flows from operating activities are
as follows: (
a)
Cash receipts from the sale of goods and the rendering of services. (
b)
Cash receipts from royalties, fees, commissions, and other revenue. (c)
Cash payments to suppliers for goods and services. (d) Cash payments to and on behalf of
employees. (
e) Cash
receipts and cash payments of
an insurance enterprise for premiums and claims, annuities and other policy benefits. (f) Cash payments
or refunds
of income taxes unless they can be specifically identified with financing and investing activities. (
g) Cash receipts and payments relating to futures contracts, forward contracts, option contracts and swap contracts when the contracts are held for dealing or trading
purposes.
Cash Flow Analysis NOTES Self-Instructional 238 Material (2) Investing activities.
Examples of cash flows arising from investing activities are as follows: (a)
Cash payments to acquire fixed assets (including intangibles). These payments include those relating to capitalized research
and development costs and self-constructed fixed assets. (
b) Cash receipts from
the
disposal of
fixed assets (including intangibles). (c)

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Cash payments to acquire shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than payments for those instruments considered to be cash equivalents and those held for dealing or trading purposes). (d) Cash receipts from the disposal of shares, warrants, or debt instruments of other enterprises and interests in joint ventures (other than receipts from those instruments considered to be cash equivalents and those held for dealing or trading purposes). (e) Cash advances and loans made to third parties (other than advances and loans made by financial enterprises). (f) Cash receipts from the repayment of advances and loans made to third parties (other than those advances and loans of financial enterprises). (g) Cash payments for futures contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes, or the payments and classified as financing activities. (h) Cash receipts from futures contracts, forward contracts, option contracts, and swap contracts except when the contracts are held for dealing or trading purposes, or the receipts are classified as financing activities. 3. Financing activities. Examples of cash flows arising from financing activities are as follows: (a) Cash proceeds from issuing shares or other similar instruments. (b) Cash proceeds from issuing debentures, loans, notes, bonds, and other short-or long-term borrowings. (c) Cash repayments of amounts borrowed. The following illustration will help the students in understanding the preparation of cash flow statement. Illustration 11.3: The following are the summarized balance sheets of a company as on December 2002 and 2003: Liabilities 2002 2003 Assets 2002 2003 RsRs Rs Rs Share capital 2,00,000 2,50,000 Land and buildings 2,00,000 1,90,000 General reserve 50,000 60,000 Machinery 1,50,000 1,69,000 Profit and loss 30,500 30,600 Stock 1,00,000 74,000 Bank loan (Long-term) 70,000 — Sundry debtors 80,000 64,200 Sundry creditors 1,50,000 1,35,200 Cash 500 600 Provision for taxation 30,000 35,000 Bank — 8,000 Goodwill — 5,000 5,30,500 5,10,800 5,30,500 5,10,800 Additional Information: During the year ended 31 December 2003: 1. Dividend of Rs 23,000 was paid. Cash Flow Analysis NOTES Self-Instructional Material 239 2. Assets of another company were purchased for a consideration of Rs 50,000 payable in shares. The following assets were purchased: Stock Rs 20,000: Machinery Rs 25,000 3. Machinery was further purchased for Rs 8,000. 4. Depreciation written-off on machinery is Rs 12,000. 5. Income tax provided during the year is Rs 33,000. 6. Loss on sale of machinery Rs 200 was written off to general reserve. You are required to prepare a cash flow statement as per AS-3. Solution: CASH FLOW STATEMENT for the ending 31 December 2003 Particulars Rs Cash Flows Operating Activities: Funds from operations 88,300 Adjustments for: Decrease in stock 46,000 Decrease in debtors 15,800 Decrease in creditors (14,800) Tax paid 28,000 Net cash from operating activities 1,07,300 Cash Flows investing activities: Sale of machinery 1,800 Purchase of Machinery (8,000) Net cash used for investing activities (6,200) Cash Flows from Financing Activities Payment of dividend (23,000) Mortgage loan repaid (70,000) Net Cash used in financing activities (93,000) Net Increase in Cash and Cash Equivalents 8,100 Cash and cash equivalents as on 1 Dec 2003 500 Cash and cash equivalents 31

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Dec 2003 8,600 (Cash Rs 600 + Bank Rs 8,000) Working Notes: 1. ADJUSTED PROFIT & LOSS ACCOUNT Particulars Rs Particulars Rs To Dividend 23,000 By Balance b/d 30,500 To Depreciation on Building 10,000 By Funds from Operations To Provision for Tax 33,000 (balancing figure) 88,300 To Transfer to General Reserve 10,200 To Deprn. on Machinery 12,000
To Balance c/d 30,600 1,18,800 1,18,800 2. MACHINERY ACCOUNT Particulars Rs Particulars Rs To Balance b/d 1,50,000 By Depreciation 12,000 To
Share Capital 25,000 By General Reserve 200 To Bank 8,000 By Bank 1,800 By Balance c/d 1,69,000 1,83,000 1,83,000 Cash Flow Analysis NOTES Self-Instructional 240 Material 3. GENERAL RESERVE
Particulars Rs Particulars
Rs
To Machinery A/c 200 By Balance b/d 50,000 To Balance c/d 60,000 By Profit & Loss
b/d 10,200 60,200 60,200 4. PROVISION FOR TAXATION Particulars Rs
Particulars Rs To
Bank 28,000
By Balance b/d 30,000 To Balance c/d 35,000 By
Profit & Loss A/c 33,000 63,000 63,000 11.6
DIFFERENCE BETWEEN CASH FLOW ANALYSIS AND FUNDS FLOW ANALYSIS The following are the points of difference between a cash flow analysis and a funds flow analysis: 1. A cash flow analysis is concerned only with the change in cash position while a fund flow analysis is concerned with changes in working capital position, between two balance sheet dates. Cash is only one of the constituents of working capital besides several other constituents such as inventories, accounts receivable and prepaid expenses. 2. A cash flow statement is merely a record of cash receipts and disbursements. Of course, it is valuable in its own way but it fails to bring to light many important changes involving the disposition of resources. While studying the short-term solvency of a business one is interested not only in cash balance, but also in the assets which can be easily converted into cash. 3. Cash flow analysis is more useful to the management as a tool of financial analysis in short-periods as compared to funds flow analysis. It has rightly been said that shorter the period covered by the analysis, greater is the importance of cash flow analysis. For example, if it is to be found out whether the business can meet its obligations maturing after ten years from now, a good estimate can be made about the firm's capacity to meet its long-term obligations, if changes in working capital position on account of operations are observed. However, if the firm's capacity to meet a liability maturing after one month is to be seen, the realistic approach would be to consider the projected change in the cash position rather than an expected change in the working capital position. 4. Cash is part of the working capital and, therefore, an improvement in cash position results in the improvement in the funds position but the reverse is not true. In other words 'inflow of cash' results in 'inflow of funds' but inflow of funds may not necessarily result in 'inflow of cash'. Thus, sound funds position does not necessarily means sound cash position, but a sound cash position generally means sound funds position. 5. Another distinction between a cash flow analysis and a funds flow analysis can be made on the basis of the techniques of their preparation. An increase in a current liability or decrease in a current asset results in decrease in working
Cash Flow Analysis NOTES Self-Instructional Material 241 capital and vice versa. While an increase in a current liability or decrease in a current asset (other than cash) will result in an increase in cash and vice versa. Some people, as stated before, use term 'funds' in a very narrow sense of 'cash' only. In such an event the two terms 'funds' and 'cash' will have synonymous meanings. 11.7
UTILITY OF CASH FLOW ANALYSIS A cash flow statement is useful for short-term planning. A business enterprise needs sufficient cash to meet its various obligations in the near future such as payment for
the
purchase of fixed assets, payment of debts maturing in the near future, expenses of the business, etc. A historical analysis of the different sources and applications of cash will enable the management to make reliable cash flow projections for the immediate future. It may then plan out for investment of surplus or meeting the deficit, if any. Thus, cash flow analysis is an important financial tool for the management. Its chief advantages are as follows: 1. Helps in efficient cash management.
Cash flow analysis helps in evaluating financial policies and cash position. Cash is the basis for all operations and hence, a projected cash flow statement will enable the management to plan and coordinate the financial operations properly. The management can know how much cash is needed, from which source it will be derived, how much can be generated internally and how much could be obtained from outside. 2. Helps in internal financial management. Cash flow analysis provides information about funds which will be available from operations. This will help the management in determining policies regarding internal financial management, e.g., possibility of repayment of long-term debts, dividend policies, planning replacement of plant and machinery, etc. 3. Discloses the movements of cash.
Cash flow statement discloses the complete story of cash movement. The increase in or decrease of cash and the reasons therefore can be known.

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It discloses the reasons for low cash balance in spite of heavy operating profits or for heavy cash balance in spite of low profits. However, comparison of original forecast with the actual results highlights the trends of movements of cash which may otherwise go undetected. 4. Discloses success or failure of cash planning. The extent of success or failure of cash planning can be known by comparing the projected cash flow statement with the actual cash flow statement and the necessary remedial measures can be taken. 11.8
LIMITATIONS OF CASH FLOW ANALYSIS Cash flow analysis is a useful tool of financial analysis. However, it has its own limitations. These limitations are as under: 1. Cash flow statement cannot be equated with the income statement. An income statement takes into account both cash as well as non-cash items and, therefore, net cash does not necessarily mean net income of the business.
Check Your Progress 4. What are 'Cash equivalents'? 5. How are cash flows from operating activities derived? 6. Why does a business enterprise need sufficient cash?
Cash Flow Analysis NOTES Self-Instructional 242 Material 2.
The cash balance as disclosed by the cash flow statement may not represent the real liquid position of the
business, since it can be easily influenced by postponing purchases and other payments. 3. Cash flow statement cannot replace the income statement or the
funds flows statement. Each of them has a separate function to perform.
In spite of these limitations it can be said that cash flow statement is a useful supplementary instrument. It discloses the volume as well as the speed at which the cash flows in the different segments of the business. This helps the management in knowing the amount of capital tied up in a particular segment of the business. The technique of cash flow analysis, when used in conjunction with ratio analysis, serves as a barometer in measuring the profitability and financial position of the business. 11.9 SUMMARY z Cash flow statement
describes the inflows (sources) and outflows (uses) of cash and cash equivalents during a specified period of time. z AS 3 (Revised) classifies the cash flows in a period in the following three categories: (a) cash flows from operating activities; (b) cash flows from investing activities; and (c) (deducting) cash flows
from financing activities. z Net increase (decrease) in cash and cash equivalents
is arrived at by adding (deducting) the cash inflows (outflows) during a particular period. The cash and cash equivalents in the beginning of the accounting period is added to the amount computed as above to ascertain the amount of cash or cash equivalents at the end of the accounting period. 11.10 KEY TERMS z Cash: This term stands for cash
and demand deposits with bank. z
Cash Equivalents: This term includes
short-term highly liquid investments
that are readily convertible into known amounts of
cash and which is subject to insignificant
risks or change in values. z Cash Flow Analysis: This is a technique involving analysis of the causes of flows of cash from one period to another. z Cash Flow Statement: This is a statement depicting the change in cash position from one period to another. 11.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Operating activities are the principal revenue producing activities of an enterprise. Operating activities could be a source as well as an application of cash. 2.
Financing activities are those that result in changes in the size and composition of owners' capital
and borrowings of an enterprise.
Cash Flow Analysis NOTES Self-Instructional Material 243 3. Computation of cash from operations can be studied by taking two different situations: (1) when all transactions are cash transactions, and (2) when all transactions are not cash transactions. 4.
Cash equivalents are short-term, highly liquid investments that are readily convertible into known amounts of
cash and which are subject to an insignificant risk of changes in value. 5.
Cash flows
from operating activities are primarily derived from the
principal revenue-producing activities of the enterprise. 6.
A business enterprise needs sufficient cash to meet its various obligations in the near future such as payment for
the
purchase of fixed assets, payment of debts maturing in the near future, expenses of the business, etc. 11.12
QUESTIONS AND EXERCISES Short-Answer Questions 1. Why is cash flow analysis better than funds flow analysis? 2. How does cash flow analysis help in internal financial management? 3. State the limitation of cash flow analysis. Long-Answer Questions 1. Explain the meaning of a cash flow statement. Discuss its utilities. 2.
Explain the technique of preparing a cash flow statement with imaginary figures. 3.
Distinguish between funds flow statement and cash flow statement. 4. What is a cash flow statement? 11.13

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PRACTICAL PROBLEMS Cash from Operations 1. Compute cash from operations from the following figures: (i) Profit for the year 1993 is a sum of Rs 10,000 after providing for depreciation of Rs 2,000. (ii) The current assets for the business for the year ending 31 Dec 1992 and 1993 are as follows: Particulars 31 Dec., 1992 31 Dec., 1993 Rs Rs Sundry debtors 10,000 12,000 Provision for doubtful debts 1,000 1,200 Bills receivable 4,000 3,000 Bills payable 5,000 6,000 Sundry creditors 8,000 9,000 Inventories 5,000 8,000 Short-term investments 10,000 12,000 Outstanding expenses 1,000 1,500 Prepaid expenses 2,000 1,000 Accrued income 3,000 4,000 Income received in advance 2,000 1,000 [Ans. Cash from operations Rs 7,700]

Cash Flow Analysis NOTES Self-Instructional 244 Material Simple Cash Flow Statement 2. The following are the summarized balance sheet of M/s Rahul Brother Private Ltd March, 2004 and 2005. Liabilities 2004 2005 Assets 2004 2005 Rs Rs Rs Rs 12per cent Redeemable Fixed Assets 4,100 4,000 Preference Shares — 1,000 Less: Depreciation 1,100 1,500 Equity Shares 4,000 4,000 3,000 2,500 4,000 5,000 Debtors 2,000 2,400 General Reserve 200 200 Stock 3,000 3,500 Profit and Loss A/c 100 120 Prepaid Expenses 30 50 Debentures 600 700 Cash 120 350 Creditors 1,200 1,100 Provision for Taxation 300 420 Proposed Dividend 500 580 Bank Overdraft 1,250 680 8,150 8,800 8,150 8,800

You are required to prepare a Statement of Cash Flow. [

Ans. Cash from Operations Rs 400, Sources Rs 1,600, Applications Rs 800] Comprehensive Cash Flow Statement 3. Wearwell Ltd supplies you the following balance sheets on 31 December: Liabilities 2004 2005 Assets 2004 2005 Rs Rs Rs Rs Share capital 70,000 74,000 Bank balance 9,000 7,800 Bonds 12,000 6,000 Receivable 14,900 17,700 Accounts payable 10,360 11,840 Inventories 49,200 42,700 Provision for Land 20,000 30,000 doubtful debts 700 800 Goodwill 10,000 5,000 Reserves & surplus 10,040 10,560 1,03,100 1,03,200 1,03,100 1,03,200 The following additional information has also been supplied to you: (i) Dividends amounting to Rs 3,500 were paid during the year 2005. (ii) Land was purchased for Rs 10,000. (iii) Rs 5,000 were written off on goodwill during the year. (iv) Bonds of Rs 6,000 were paid during the course of

the year. You are required to prepare a cash flow statement. [

Ans. Cash from Operations Rs 14,300, Sources Rs 18,300, Applications 19,500] 4. Tiny Tot Limited furnish you the following balance sheets for the years ending on 31 December 2004 and 2005.

You are required to prepare a cash flow statement for year ended 31

December 1995.

Liabilities 2004 2005 Assets 2004 2005 Rs Rs Rs Rs Equity Share Capital 10,000 10,000 Goodwill 1,200 1,200 General Reserve 1,400 1,800 Land 4,000 3,600 Profit and Loss A/c 1,600 1,300 Building 3,700 3,600 Sundry Creditors 800 540 Investments 1,000 1,100 Outstanding Exps. 120 80 Inventories 3,000 2,340 Prov. for Taxation 1,600 1,800 Receivables 2,000 2,220 Prov. for Bad Debts 40 60 Bank balance 660 1,520 15,560 15,580 15,560 15,580 The following additional information has also been supplied to you: (i) A piece of land has been sold for Rs 400.

Cash Flow Analysis NOTES Self-Instructional Material 245 (ii) Depreciation amounting to Rs 700 has been changed on building. (iii) Provision for taxation has been made for Rs 1,900 during the year. [Ans. Cash from Operations Rs 2,860, Sources Rs 3,260, Application Rs 2,400] 11.14 FURTHER READING Maheshwari, S.N., S.K. Maheshwari, An Introduction to Accountancy. New Delhi: Vikas Publishing House, 2003. Maheshwari, S.N., S.K. Maheshwari, Sharad K., A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.

Financial Planning and Strategy NOTES Self-Instructional Material 247 UNIT 12 FINANCIAL PLANNING AND STRATEGY Structure 12.0 Introduction 12.1 Unit Objectives 12.2 Meaning of Financial Planning 12.3 Meaning of Financial Plan 12.4 Estimating Capital Requirements 12.4.1 Fixed Capital 12.4.2 Working Capital 12.5 Capitalization 12.6 Patterns of Financing 12.7 Time of Floatation 12.8 Summary 12.9 Key Terms 12.10 Answers to 'Check Your Progress' 12.11 Questions and Exercises 12.12 Further Reading 12.0 INTRODUCTION The funds requirement decision and the financing decision are two of the major areas of financial decision-making. Funds requirement decision

is concerned with the estimation of the total funds or capital requirements for the business enterprise, while the financing decision is concerned with

the

sources from which the funds are to be raised.

In order that the business enterprise gets the funds required at a reasonable cost, it is also necessary to raise the funds at the proper time. It is, therefore, necessary that the promoters or the persons responsible for the management of the business enterprise take care of all these aspects right at the time of formation of the company by having a proper financial planning. In this unit, you will learn about the meaning of financial planning, fixed capital, working capital, capitalization, time of floatation etc. 12.1 UNIT OBJECTIVES z Meaning of financial planning z Meaning and principles governing a financial plan z Fixed capital and the factors that are to be considered for its determination z Meaning of capitalization and the basis of its computation z Difference between under and overcapitalization and their implications z Patterns of financing z Appropriate time for floatation of securities

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Financial Planning and Strategy NOTES Self-Instructional 248 Material 12.2 MEANING OF FINANCIAL PLANNING
Financial planning means evaluating the investing and finacing options available to a firm. Financial planning, therefore, includes: (i) Estimating
the amount of capital to be raised. (ii) Determining the form and proportionate amount of securities. (
iii) Laying down the policies as to the administration of the financial plan. 12.3 MEANING OF FINANCIAL PLAN Financial planning results in the formulation of the financial plan. It
is primarily a statement estimating the amount of capital and determining its composition.
It states the following: (i) The quantum of finance, i.e., the amount needed for implementing the business plans. (ii) The patterns of financing, i.e., the form and proportion of various corporate securities to be issued to raise the required amount. (iii) The policies to be pursued for the floatation of various corporate securities, particularly regarding the time of their floatation. Each of these aspects are being explained in detail later in the chapter. Principles Governing a Financial Plan A financial plan should be prepared keeping in view the following principles: Simplicity A financial plan should envisage a simple financial structure capable of being managed easily. The types of securities should be minimum, since securities of various types will give rise to unnecessary suspicion in the mind of the investing public and create avoidable complications. Long-term View A financial plan should be formulated and conceived by the promoters/ management keeping in view the long-term needs of the corporation, rather than finding out the easiest way of obtaining the original capital. This is because the original financial plan would continue to operate for a long period even after the formation of the company. Foresight A financial plan should be prepared keeping in view the future requirements of capital for the business. Of course, it is a difficult task since it requires making of accurate forecasts regarding the future scale of operations of the company. Technological improvements, demand forecast, resource availability and other secular changes should be kept in view while drafting the financial plan. A plan visualized without foresight may bring disaster for the company, in case it fails to meet the requirements for both fixed and working capital. Optimum Use A financial plan should provide for meeting the genuine needs of the company. The business should neither be starved of funds nor it should have unnecessary spare funds.
Financial Planning and Strategy NOTES Self-Instructional Material 249
Wasteful use of capital is as bad as inadequate capital. A proper balance should be
maintained between the long-term and the
short-term funds since the surplus of one would not be able to offset
a shortage of the other. Contingencies A financial plan should keep in view the requirements of funds for contingencies likely to arise. It does not, however, mean that capital should be kept unnecessarily idle for unforeseen contingencies. The promoters' foresight will considerably reduce this risk. Flexibility A financial plan should have a degree of flexibility also. Flexibility is helpful in making changes or revising the plan according to the pressure of circumstances with minimum possible delay. Liquidity Liquidity is the ability of the enterprise to make available the ready cash whenever required to make disbursement. Adequate liquidity in the financial plan gives it a degree of flexibility too. It could act as a shock absorber in the event of business operations deviating from the normal course.
This will help in avoiding embarrass-ment to management and loss of goodwill of the company among the public. Economy The cost of raising the required capital should be minimum. It should not impose disproportionate burden on the company.
This is possible by having a proper debt-equity mix. 12.4
ESTIMATING CAPITAL REQUIREMENTS Capital requirements of a business enterprise can broadly be classified into two main categories. They are: (i)
Fixed capital requirements (ii) Working capital requirements 12.4.1
Fixed Capital It means the capital
which is meant for meeting the permanent or long-term needs of the business. According to Shubin, 'fixed capital is the funds required for the, acquisition of those assets that are to be used over and over for a long period.' 1 Such assets are termed as 'fixed assets.' Fixed capital is required for the acquisition of the following assets: (i) Tangible assets such as land, buildings, plant and machinery, furniture and fittings, etc. (ii) Intangible assets such as goodwill, patents, copyrights, promotion costs, etc. It should be noted that the fixed capital cannot be withdrawn from the business without disturbing the normal working of the undertaking. It is, therefore, necessary that sufficient funds are raised for acquisition of fixed assets. These funds are required not only while establishing a new enterprise, but also for expanding, diversifying and maintaining intact the existing enterprise. 1. Business Management, p. 23.

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Financial Planning and Strategy NOTES Self-Instructional 250 Material Assessment of Fixed Capital Requirements The assessment of fixed capital requirements for a business can be made by preparing a list of the fixed assets needed by the business. Having compiled a list of the fixed assets required for the business, it will not be difficult to ascertain the total funds required for the purchase of fixed assets. The price of land can be found out from the property agents, the information regarding the estimated cost of construction of building can be obtained from the building contractors, the suppliers of machines can be asked to give quotations for the plant and equipment to be installed. Similarly, the amounts to be paid for patents, trade marks, goodwill, etc., can also be ascertained. Factors Determining Fixed Capital The amount of fixed capital requirements of a business depends basically on the following factors: Nature of the Business The nature of the business to a great extent determines the amount of fixed capital required by the business. For example, public utility concerns like electricity supply companies, water supply undertakings or railway companies would require heavy investment in fixed assets; on the other hand, a trading concern would require relatively much less investment in fixed assets. Size of the Business Size of the business has also its impact on the fixed capital requirements of the business. It can generally be said that larger the size of the business, the heavier would be the investment in fixed capital. Types of Products A company manufacturing simple consumer articles like soap, oil, etc.,
will require a smaller amount of fixed capital as compared to
a company manufacturing complicated industrial goods such as heavy machinery, tractors, etc. Diversity of Production Lines More fixed capital will be required in case of companies which have diversity of production lines as compared to companies which do not have much of diversification. For example, a company producing ancillary products or by-products together with the main product will require greater amount of fixed capital as compared to companies which manufacture only the main product. Method of Production A company manufacturing each part of a finished product by itself requires a greater amount of fixed capital as compared to a company which gets the parts manufactured from outside and merely assembles them in its own factory premises. Method of Acquisition of Fixed Assets A company which purchases fixed assets against immediate cash payment or ownership basis requires a greater amount for fixed capital as compared to a company which acquires fixed assets on hire-purchase system or lease system. Management of Fixed Capital Management of fixed capital is concerned with the raising of the required fixed capital at minimum cost and its effective utilization. The following principles should be observed in order to have an efficient management of fixed capital:
Financial Planning and Strategy NOTES Self-Instructional Material 251 (i) Generally only such fixed assets should be purchased which are likely to increase the earning capacity of the business. (ii) Wherever feasible, fixed assets should be purchased on rental or hire-purchase system. This would result in releasing the pressure on bulk funds. (iii) Obsolete or outmoded fixed assets should not be bought even though they may be available at lower prices. (iv) There should not be any idle capacity. This would increase the overhead burden. In other words, new fixed assets should be bought only when there is already full utilization of the existing fixed assets. (v) Fixed assets should be maintained properly. Periodical inspection, overhaul and scheduled repairs would considerably increase the working life of the assets. (vi) Proper depreciation should be provided out of profits to enable timely replacement of the fixed assets. (vii) Investment in fixed assets should have a proper relationship with sales and profits. Fixed assets turnover ratio for different years can be found out to determine whether investment in fixed assets has been judicious or not. (viii) The requirements of fixed capital should be met out of long-term funds such as share capital, debentures, loans from financial institutions, etc. 12.4.2 Working Capital The term ‘
working capital’ refers to the capital required for the day-to-day operations of a business
enterprise,
particularly to complete the operating cycle. The details about the concept of working capital, the factors determining the quantum requirements are being explained in detail later in a separate chapter. 12.5 CAPITALIZATION Capitalization is an important constituent of the financial plan. In common parlance the term capitalization means the total amount of capital employed in a business. However, scholars of financial management are not unanimous regarding the concept of capitalization. As a matter of fact, there are as many definitions of the term as there are writers on the subject. Some have given a very broad interpretation to the term, while others have taken a narrow view. Broad Interpretation According to this interpretation, the term capitalization is synonymous with the term financial planning. It has already been explained earlier that financial planning of a company includes the following: (i) The determination of the total amount of capital to be raised. (ii) The decision regarding the types of securities to be issued for the purpose of raising such capital. (iii) The relative proportion of the different securities and the administration of the capital. Thus, in a broad sense, the term capitalization refers to the process of determining the quantum as well as patterns of financing. It includes not only the mere determination Check Your Progress 1. Why should a proper balance be maintained between the long- term and the short- term funds? 2. What is ‘liquidity’?

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Financial Planning and Strategy NOTES Self-Instructional 252 Material of the quantity of finance, but also about the quality of financing. In other words, it includes the decision regarding the amount of finance and the modes of finance. Narrow Interpretation According to this interpretation, the term capitalization refers to the process of determining the quantum of long-term funds that an enterprise would require to run its business. Decisions regarding make-up of capitalization are manifest in the term capital structure. Some of the authoritative definitions are given below: 'Capitalization is the sum of the par values of the stocks and bonds outstanding.' 2 According to this definition the term capitalization includes only the par value of share capital and debentures. It does not include reserves and surplus. However, in actual practice, it is found that reserves and surplus are frequently resorted to by firms to meet their long-term capital requirements. The definition, therefore, seems to be illogical. '
Capitalization comprises
ownership capital which includes capital stocks and surplus in whatever form it may appear and borrowed capital which consists of bonds or similar evidence of long-term debt.' 3 '
Capitalization refers to the balance sheet values of stocks and bonds outstanding.' 4 On the basis of the above definitions the constituents of capitalization can be put as follows: (i) Par value of share capital (ii) Reserves and surplus (iii) Long-term loans Capital and Capitalization It should be noted that the term capitalization is used only in respect of companies and not in relation to partnership firms or sole proprietorships. The term capital in the accounting sense means the net worth of a business undertaking. Net worth means assets minus liabilities of the business. Similarly, the term share capital refers only to the paid-up value of shares issued by a company. It definitely excludes debentures and other forms of borrowing. The term capitalization is also used by accountants in varied senses. For example, when bonus shares are issued out of profits, it is said that the profits have been capitalized. Similarly, heavy expenditure incurred by a company, say, on advertising, may be capitalized by the company and treated as a deferred revenue expenditure in its books. Basis of Capitalization After estimating the financial requirements of a business, the promoters of the company have to determine the value at which the company has to be capitalized. This helps them in determining the quantum of securities to be issued for raising the necessary funds. There are two recognized theories of capitalization for new companies: (i) Cost Theory (ii) Earnings Theory. 2. Guthman and Dougall, Corporate Financial Policy, p. 138. 3. Gerstenberg, Financial Organization and Management of Business, 4th edn., p. 72. 4. Bonneville and Dewey, Organizing and Financing Business, p. 175.
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Cost Theory According to this theory, the total
amount of capitalization for a new company is arrived at by adding up the cost of fixed assets (
such as plant, machinery, building, etc.),
the amount of working capital and the cost of establishing
the business (
e.g., preliminary expenses, underwriting commission, expenses on issue of shares, etc.). For example, if the fixed assets for a company would cost Rs 1,00,000, working capital required amounts to Rs 50,000 and the cost of establishing the business would amount to Rs 20,000, the amount of capitalization for the company would be Rs 1,70,000. The company would sell securities (i.e., shares and debentures) of this amount. Cost theory
is useful in so far as it enables the promoters to know the amount of capital to be raised. However, it is
unsatisfactory on account of several reasons. It fails to provide the basis for ascertaining the net worth of the business in real terms, since net worth depends not on the cost of the assets but on its earning capacity. Moreover, assets might have been purchased at inflated prices or they might have become obsolete, but all these aspects are ignored if capitalization of the company is determined on the basis of the original cost of the assets. Cost-based capitalization will not also be fair in case of companies having irregular earnings. Earnings Theory According to this theory
the true value (capitalization) of an enterprise depends upon its earning capacity.
In other words, the worth of a company is not measured by the capital raised, but by the earnings made out of the productive harnessing of the capital. For this purpose, a new company will have to estimate the average annual future earnings and normal earning rate (also termed as capitalization rate) prevalent in the same industry.
For example, if a new company estimates that its annual average earnings will amount to a sum of Rs 50,000, while the companies in the same industry are earning a return of 10

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per cent on their capital employed, the amount of capitalization for the company would be a sum of Rs 5,00,000 (i.e., 50,000 × 100/10). This method has the advantage of correlating the value (capitalization) of a company directly with its earning capacity. However, it has a limitation. In case of new companies it may be difficult to estimate correctly the amount of future earnings. In case earnings are not correctly estimated, the capitalization based on earnings might prove to be risky for the company. On account of the above risks, it is advisable to adopt the cost theory of capitalization in the case of new companies. The above theories of capitalization can also be used in the case of established companies. However, if the cost basis is adopted, it may not disclose the fair worth of the business, on account of the reasons explained earlier. Since in case of established companies it is relatively easier to estimate the stream of future earnings, the earnings basis would be a more appropriate basis for determining their capitalization. Actual Capitalization Vs. Proper Capitalization Actual capitalization of a company is arrived at by adding the paid-up value of the company's shares and debentures, reserves and other surpluses, while proper capitalization of a company is arrived at according to any of the two theories which have been explained in the preceding pages. In case a company's actual capitalization is more than its proper capitalization, the company is said to be 'overcapitalized'. In case the actual capitalization
Financial Planning and Strategy NOTES Self-Instructional 254 Material of the company is less than its proper capitalization, the company is said to be 'undercapitalized'. These terms are being explained in detail in the following pages. Overcapitalization The term overcapitalization signifies that the company possesses an excess of capital in relation to its activity level and requirements. Such a situation arises when the earning capacity of the company has fallen due to internal or external factors. On account of reduction in its earning capacity, the company is not in a position to pay interests and dividends at proper rates. It, therefore, follows that an overcapitalized company fails to pay a fair return on its capital investments. For example, a company is earning a sum of Rs 1,50,000 on a total capital investment of Rs 15,00,000. This company is said to be properly capitalized, if the general expectation is 10 per cent. However, if the company earns only Rs 90,000 while the general expectation is 10 per cent the company is said to be overcapitalized, because it will be in a position to give a return of only 6 per cent on the total capital employed. Gerstenberg states that, 'a corporation is overcapitalized when its earnings are
not large enough to yield a fair return on the amount of stocks and bonds that have been issued or when the amount of securities outstanding exceeds the current value of
the assets.' 5 The same view has been expressed by Gilbert in these words, 'when a company has consistently (regularly) been unable to earn the prevailing rate of return on its outstanding securities (considering the earning of similar companies in the same industry and the degree of risk involved) it is said to be overcapitalized.' Book Value Vs. Real Value of Shares The existence or otherwise of overcapitalization can be conveniently ascertained by comparing the book value and real value of the
equity shares of the company. The book value of equity shares is computed on the basis of the net assets available for the equity shareholders as per books, while real value is ascertained on the basis of capitalized value of earnings
for the equity shareholders. In case the book value exceeds the real value, the company is said to be overcapitalized. In a reverse case the company is undercapitalized. Illustration 12.1:
Balance Sheet of A Ltd Liabilities Rs Assets Rs Share Capital: Sundry Assets 40,000 1,000
Equity Shares of Rs 10 each 10,000 1,000 10% Pref. Shares of Rs 10 each 10,000 Reserves and Surplus 10,000 Sundry Creditors 10,000 40,000 40,000 5.
Financial Organization and Management, p. 90.
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The normal earning rate in case of similar companies is 15 per cent. Ascertain whether the company is
properly capitalized when earnings available for equity shareholders are: (i) Rs 1,000 (ii) Rs 5,000 (iii) Rs 3,000 Solution: Book Value of Equity Shares of the Company
Sundry Assets Rs 40,000 Less: Sundry Creditors 10,000 Pref. Share Capital 10,000 20,000 Net assets available for equity shareholders 20,000 Book value of an equity share = 20.000/1,000 = Rs 20 Real Value of Equity Shares of the Company (i) When earnings available are Rs 1,000 Capitalized value of earnings: Rs1,000 100 Rs 6,667 15 Real value of an equity share = 6,667/1,000 = Rs 6.67 Since
the book value of the company's equity share is more than the real value, the company is
overcapitalized. (ii) When earnings available are Rs 5,000 Capitalized value of earnings: Rs.5,000 100 Rs 33,333. 15 Real value of an equity share = 33,333/1,000 = Rs 33.33 Since the book value of
company's equity share is less than its real value, the company is undercapitalized. (iii) When earnings available are Rs 3,000 Capitalized value of earnings: Rs 3,000 100 Rs 20,000. 15 Real value of an equity share = 20,000/1,000 = Rs 20 Since the
book value and real value of an equity share of the company are the same, the company is properly capitalized. Overcapitalization and Excess of Capital It may be noted that overcapitalization is different from excess of capital. Overcapitalization is there only
when the existing capital is not effectively utilized on account of fall in

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the earning capacity of the company, while excess of capital means that the company has raised funds more than its requirements. The chief sign of overcapitalization is fall in the rate of dividends in the long run, which results in fall in the value of the shares of the company. Thus, a company will be said to be overcapitalized when it has consistently been unable to earn the prevailing rate of return on its capital employed.

Financial Planning and Strategy NOTES Self-Instructional 256 Material Causes of Overcapitalization Overcapitalization may be due to the following reasons: (i) Raising of more money by issue of shares and debentures than what the company can profitably use. (ii) Borrowing large sums of money at a rate of interest higher than the rate of the company's earnings. (iii) Payment of excessive amounts for acquisition of goodwill and fixed assets. (iv) Insufficient provision for depreciation, replacement of assets and distribution of dividend at higher rates. (v) High rates of taxation, since this would result in the decline of net earnings for the shareholders. (vi) Underestimation of capitalization rate or overestimation of earnings. Evils of Overcapitalization Overcapitalization will have the following evil consequences: (i) Considerable reduction in the rate of dividends on the equity shares. (ii) Fall in the market price of the company's shares resulting in the loss of investor's confidence in the company. (iii) Resorting to window-dressing by questionable practices. In the words of Hoagland, 'even unearned unwise dividends are used at times as promoters to revive the credit standing.' 6 (iv) The company may have to opt for reorganization. In case the matters go worse, the company may resort to its liquidation. Remedies for Overcapitalization An overcapitalized company is like an extremely fat person. It will have, therefore, to mercilessly cut all its dead weight. The company may have to go through complete reorganization. The shareholders, debenture holders, creditors, etc., may have to reduce their claims against the company. The rate of interest on debentures and the dividend rate on preference shares may have to be reduced. The number of equity shares may have also to be reduced. This will all result in leaving sufficient funds for the company to carry out replacement of assets and expansion of business, which will ultimately result in increasing the earning capacity of the company.

Undercapitalization Undercapitalization is just the reverse of overcapitalization. A company is said to be undercapitalized when its actual capitalization is lower than its proper capitalization as warranted by its earning capacity. This happens particularly in case of well-established companies, which have insufficient capital, but large secret reserves in the form of considerable appreciation in the value of the fixed assets not brought into books.

In case of such companies, the dividend rate will be high and the market value of their shares will be higher than the value of shares of other similar companies, because of their earning rate being considerably more than the prevailing rate on such securities.

According to Gerstenberg, ' a corporation may be undercapitalized when the rate of profit is exceptionally high in relation to the return enjoyed by similarly situated companies 6.

Financial Organization and Management. pp. 190–92.

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in the same industry.' He adds further that in case of such companies 'the assets may be worth more than the values reflected in the books.' Hoagland also confirms this view by defining undercapitalization as ' an excess of true asset values over the aggregate of stocks and bonds outstanding.' 7

The state of undercapitalization of a company can easily be ascertained by comparing the book value of equity shares of the company with their real value. In case the real value is more than the book value, the company is said to be

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undercapitalized. This has already been explained earlier in the unit. Inadequate Capital and Undercapitalization Some people use the term undercapitalization for a state of affairs when a company does not have sufficient amount of funds at its disposal to carry on its activities. Properly speaking, such a situation should be termed as 'inadequacy of capital' rather than undercapitalization. Causes of Undercapitalization The possible causes of undercapitalization are as follows: (i) Underestimation of initial earnings. (ii) Using low capitalization rate. (iii) Setting up of a company in recessionary conditions. Such a company becomes undercapitalized after recession is over because of two reasons: (a) Purchase of assets at exceptionally low prices during recession. (b) Lower capitalization rate. As soon as the recession is over the earning capacity of the company increases which results in increasing the real value of the assets of the company. (iv) Conservative dividend policy resulting in the availability of large funds for financial development and expansion. All this improves the earning capacity of the company. (v) Maintaining high standards of efficiency.
Effects of Undercapitalization Undercapitalization has the following effects: (i) It encourages acute competition. High profitability
of undercapitalized companies encourages new entrepreneurs to come in the same line of business. (ii) High rates of dividend give an opportunity to workers to demand high wages. (iii) Consumers develop a feeling that they are being exploited by the company. (iv) It encourages the management to manipulate the share values. (v) It may lead to more government control and higher taxation. Remedies The situation of undercapitalization may be corrected by taking the following measures: Splitting up of the Shares This will result in reducing the dividend per share, though the average earning rate of the company will remain the same. 7. Financial Organization and Management, pp. 190–92. Check Your Progress 3. What is net worth? 4. How is the book value of the equity shares computed?
Financial Planning and Strategy NOTES Self-Instructional 258 Material Issue of Bonus Shares This is the most appropriate remedy for correcting undercapitalization. This will reduce both the
dividend per share and the average rate of earning. Increase in Par Value of Shares
The value of
the assets may be revised upwards and the shareholders may be given shares of higher par value in exchange for
the existing shares held by them. The above discussion about overcapitalization and under capitalization shows that both are bad and there is little to choose between them. However, overcapitalization may prove dangerous to the company, the shareholders and the society than undercapitalization. The situation of undercapitalization may be corrected relatively more easily than the situation of overcapitalization. Moreover, undercapitalization is
indicative of sound financial position and good management of the company. It has been rightly said that 'undercapitalisation
is not an economic problem but a problem of adjusting
the capital structure.' 8 Thus, undercapitalization should be called the lesser evil, though both are bad. The object of every company should be to have a proper or fair capitalization. 12.6 PATTERNS OF FINANCING After having determined the amount of capitalization, the promoters of a company have to decide about the patterns of financing such requirements. In other words, they have to decide about the types of securities that should be issued for raising the necessary funds. The corporate securities can be divided into two categories: (i) Ownership securities (ii) Creditorship securities Ownership securities include the equity shares and preference shares, while creditorship securities include debentures or bonds. Preference shares are entitled to dividends at a fixed rate. Debentures are also entitled to interests at a fixed rate. However, there is no fixed dividend rate on equity shares. The rate of equity dividend generally varies with the amount of profits earned by the company. Thus, on the basis of yield the corporate securities can be classified as follows: CORPORATE SECURITIES FIXED YIELD-BEARING SECURITIES PREF. SHARES (FIXED DIVIDEND) EQUITY SHARES (VARIABLE DIVIDEND) DEBENTURES (FIXED INTEREST) VARIABLE YIELD BEARING SECURITIES 8. Bonneville and Dewey, Organizing and Financing Business, p. 180. -

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Financial Planning and Strategy NOTES Self-Instructional Material 259 A proper proportion between fixed and variable yield-bearing securities is very necessary for the liquidity and solvency of the company. This is reflected in the capital structure of the company. 12.7 TIME OF FLOATATION It has already been stated earlier in the chapter that financial planning also involves the determination of the right time for the floatation of company's securities. Enough care must be exercised while determining the time for floatation in order to make the capital issue a complete success. There are usually ups and downs in the business activity at more or less regular intervals of three to five years. Such changes in the economy are referred to as 'trade cycles.' The trade cycles, therefore, consist of alternate periods of prosperity and depression. There are usually four marked phases of trade cycles. Boom This is the peak period of prosperity when the factories work at full capacity and the economy starts showing signs of inflation. The demand for funds and the rate of interest are very high. In other words, during this period, economy starts showing signs of overdevelopment. Recession Recession is the period of falling prices, reduced income and lower levels of employment. This follows the boom period. In such a period, the production runs ahead of demand which ultimately results in fall in the volume of business activities. Depression This is the direct opposite of a boom. As a matter of fact, the downward trend started by recession is completed by depression. During this period, economic activity is at its lowest. It is'a period of crisis for business and industry. Recovery This is the period of revival of business activity. This comes after depression. As a matter of fact, depression has the germs of improvement. They come to life after the worst has happened to the business. The low prices of securities start attracting the investors. The price levels, income levels and capacity utilization of factories consistently show improvement. This gradually sets the stage for another boom period. The best time for floatation of securities by a company is the period of recovery, i.e., the period when the improvement is on and the economy is experiencing a boom. According to Gerstenberg, 'the best time to raise funds is when business is booming and people are optimistic.' 9 Such a period is suitable for issue of securities not only for an existing business, but also for a new business enterprise. 12.8 SUMMARY z Financial plan is primarily
a statement estimating the amount of capital and determining its composition. z The
principles governing a financial plan are simplicity, long-term view and foresight. 9. Financial Organization and Management of Business, p. 301. Check Your Progress 5. What are the two categories of corporate securities? 6. What are 'trade cycles'?
Financial Planning and Strategy NOTES Self-Instructional 260 Material z
Fixed capital is the capital which is meant for meeting the permanent or long- term needs of the business.
z Capitalization refers to the balance sheet values of stocks and bonds outstanding. z Overcapitalization is a situation where the earnings of an organization
are not adequate enough
to yield a fair return on the amount of
capital employed in the business;
whereas undercapitalization
is a situation when actual capitalization is lower than proper capitalization as warranted by
the earning capacity of the firm. z Patterns of financing refers to the types of securities that should be issued for raising the necessary funds. 12.9 KEY TERMS z Boom: The peak period of prosperity when the factories are working at full capacity and the economy starts showing signs of inflation. z Capitalization: The quantum of long-term funds that an enterprise would require to run its business. z Depression: It is the period when economic activity is at its lowest. It is the direct opposite of boom. z
Fixed Capital: The capital meant for meeting the permanent or long-term needs of the business.
z
Financial Plan: It is primarily a statement estimating the amount of capital and determining its composition. z Financial Planning:
It involves analysing the financial flows of a firm as a whole. It includes determination of the quantum of finance, patterns of financing and laying down the policies for administration of the financial plan. z Overcapitalization: A situation where the earnings of an organization
are not adequate enough
to yield a fair return on the amount of
capital employed in the business.
z Recovery: It is the period of revival of business activity. It comes after depression. z Recession: It is the period of falling prices, reduced income and lower levels of employment. z Undercapitalization:
A situation when actual capitalization is lower than proper capitalization as warranted by
the earning capacity of the firm. 12.10 ANSWERS TO 'CHECK YOUR PROGRESS' 1. A proper balance should be maintained between the long-term and the
short-term funds since the surplus of one would not be able to offset

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a shortage of the other. 2. 'Liquidity' is the ability of the enterprise to make available the ready cash whenever required to make disbursement. 3. Net worth means assets minus liabilities of the business. 4.
The book value of equity shares is computed on the basis of the net assets available for
the equity shareholders as per books.
Financial Planning and Strategy NOTES Self-Instructional Material 261 5. Corporate securities can be divided into two categories: (i) Ownership securities (ii) Creditorship securities 6. There are usually ups and downs in the business activity at more or less regular intervals of three to five years. Such changes in the economy are referred to as 'trade cycles.' 12.11 QUESTIONS AND EXERCISES Short-Answer Questions 1. Define Financial Planning. 2. Differentiate between 'fixed yield' and 'non-fixed yield'-bearing securities. 3. What is a 'boom period'? Long-Answer Questions 1. Enumerate the principles governing a financial plan. 2. Explain the factors determining fixed capital. 3. Differentiate between capital and capitalization. 4. What is financial planning? Explain the principles governing a sound financial plan. 5. Explain the different bases of determining the capitalization
of a firm. 6. Explain the factors to be kept in mind while determining the fixed capital requirements
of a business. 7. 'The consequences of overcapitalization are far more serious and fatal than undercapitalization.' Discuss. 8. '
Between under and overcapitalization, the former is the lesser evil of the two, but still both should be discouraged.' Comment. 12.12 FURTHER READING Maheshwari, S.N., S.K. Maheshwari, An Introduction to Accountancy. New Delhi: Vikas Publishing House, 2003. Maheshwari, S.N., S.K. Maheshwari, Sharad K., A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.
MODULE - 4
Working Capital Management NOTES Self-Instructional Material 265
UNIT 13
WORKING CAPITAL MANAGEMENT Structure 13.0 Introduction 13.1 Unit
Objectives 13.2 Concept
of Working Capital 13.3 Need for
Working Capital 13.4 Types of Working Capital 13.5 Adequacy of Working Capital 13.6 Management of Working Capital 13.7
Management of
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of Inventories 13.9 Management of Accounts Receivable 13.10 Factoring Institutions 13.11 Management of Accounts Payable 13.12 Working Capital Finance 13.13 Summary 13.14 Key Terms 13.15 Answers to 'Check Your Progress' 13.16 Questions and Exercises 13.17 Practical Problems 13.18 Further Reading 13.0 INTRODUCTION In the previous unit, it has been explained that the capital requirement of a business can be divided into two main categories: (i) Fixed Capital requirements, and (ii) Working Capital requirements.The present unit deals with the various aspects concerning working capital management. 13.1 UNIT OBJECTIVES z Adequacy of working capital z Management of working capital z Management of cash, inventories z Management of accounts receivable z Concept of factoring institutions and their function types z Management of accounts payable and working capital finance
Working Capital Management NOTES Self-Instructional 266 Material 13.2
CONCEPT
OF
WORKING CAPITAL
There are two concepts
of
working capital: Gross Working Capital
It refers to the firm's investment in
total current
or circulating assets.
Net Working Capital The term 'Net Working Capital' has been defined in two different ways: (i) It is the excess of current assets over current liabilities.
This is, as a matter of fact, the most commonly accepted definition. Some people define it as only the difference between current assets and current liabilities. The former seems to be a better definition as compared to the latter. (ii) 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, accounts receivable
and short-term investment etc., to the
extent of Rs 15,000. 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 accounts payable, outstanding expenses, etc. Suppose the amount of current liabilities comes to Rs 10,000.

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This means the business still needs Rs 5,000 for its working capital purposes. This amount will have to be financed from long-term sources of funds as indicated in the definition of Net Working Capital given above. 13.3 NEED FOR WORKING CAPITAL It has already been stated that the basic objective of financial management is to maximize shareholders' wealth. This is possible only when the company earns sufficient profits. The amount of such profit largely depends upon the magnitude of sales.

However, sales do not convert into cash instantaneously. There is always a time gap between the sale of goods and receipt of cash.

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 company will not be in a position to sustain the sales since it may not be in a position to purchase raw materials, pay wages and other expenses required for manufacturing the goods to be sold. Operating cycle

From the above, it is clear that working capital is required because of the time gap between the sales and their actual realization in cash. This time gap is technically termed as the 'operating cycle' of the business. In the case of a manufacturing company, 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-process (iii) Conversion of work-in-process into finished goods (iv) Conversion of finished goods into accounts receivable (v) Conversion of accounts receivable into cash

This cycle will be repeated again and again. In the case of a trading firm, the operating cycle will include the length of time required to convert (i) cash into inventories, (ii) inventories into accounts receivable, and (iii) accounts receivable into cash.

Working Capital Management NOTES Self-Instructional Material 267 In the case of a financing firm, the operating cycle includes the length of time taken for (i) conversion of cash into debtors, and (ii) conversion of debtors into cash. 13.4 TYPES OF WORKING CAPITAL Working Capital can be divided into two categories on the basis of time: 1. Permanent Working Capital 2. Temporary or Variable Working Capital 1. Permanent Working Capital

This refers to that minimum amount of investment in all current assets which is required at all times to carry out a minimum level of business activities. In other words, it represents the current assets required on a continuing basis over the entire year.

The following are the characteristics of this type of working capital: 1. Amount of permanent working capital remains in the business in one form or another. This is particularly important from the point of view of financing. The suppliers of such working capital should not expect its return during the life-time of the firm. 2. It also grows with the size of the business. In other words, greater the size of the business, greater is the amount of such working capital and vice versa. Permanent working capital is permanently needed for the business and therefore it should be financed out of long-term funds. 2. Temporary Working Capital The amount of such working capital keeps on fluctuating from time to time on the basis of business activities.

In other words, it represents the additional current assets required at different times during the operating year. For example, extra inventory has to be maintained to

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support sales during
the peak sales period. Similarly, the receivables also increase and must be financed during a
period of high sales. On the other hand investment
in inventories, receivables, etc., will decrease in periods of depression.
Suppliers of temporary working capital can expect its return during
the
off
season when it is not required
by the firm.
Hence,
temporary working capital is generally financed from short-term sources of finance such as bank credit. 13.5
ADEQUACY OF
WORKING
CAPITAL
A firm must have adequate working capital, i.e., as much as needed by the firm. It should neither be excessive nor inadequate. Both situations are dangerous. Excessive working capital means the firm has
idle funds which earn no profits for the firm. Inadequate working capital
means the firm
does not have sufficient funds for running its operations which ultimately results in production interruptions and lowering
of
profitability. It will be interesting to understand the relationship between working capital, risk and return. In a manufacturing concern, it is generally accepted that higher levels of working capital decrease the risk and decrease the profitability too. While lower levels of working capital increase the risk but have the potential of increasing the profitability also. This principle is based on the following assumptions:
Working Capital Management NOTES Self-Instructional 268 Material (i)
There is a
direct relationship between risk and profitability—higher the risk, higher is the
profitability; while lower the risk, lower is the profitability. (ii) Current assets are less profitable than fixed assets. (iii) Short-term funds are less expensive than long-term funds. On account of the above principles, an increase in the ratio of current assets to total assets will result in a decline in the profitability of the firm. This is because investment in current assets, as stated above, is less profitable than that in
the fixed assets. However, an increase in this ratio would decrease the risk of the firm becoming technically insolvent. On the other hand, a decrease
in the ratio of current assets to total assets would increase the profitability of the firm because investment in fixed assets is more profitable than
the investment
in current assets. However, this will increase the risk of the firm becoming technically insolvent on account of its possible inability of meeting its commitments in time due to shortage of funds. 13.6 MANAGEMENT
OF WORKING CAPITAL
Objectives:
The basic objective
of working capital management is to
manage the firm's
current assets and
current liabilities in such a way that
the
satisfactory level of working capital is maintained, i.e., it is neither inadequate nor excessive.
The current assets should be sufficient enough to cover the current liabilities in order to maintain a reasonable safety margin. Moreover, the different components of working capital are to be properly balanced. In the absence of such a situation, the financial position in respect of the firm's liquidity may not be satisfactory in spite of a satisfactory liquidity ratio. For example, if the proportion of inventories is very high in the total current assets because of slow moving or obsolete inventory, this cannot provide the cushion of liquidity. Similarly, if the proportion of accounts receivable is very high in the total current assets on account of the firm's inability to recover money from its debtors, the firm's liquidity ratio will be deceptive. Similarly, if a firm is maintaining higher cash and bank balances, it also means that the firm is not making profitable use of its resources.
Working capital management policies have a great effect on a firm's profitability, liquidity and structural health.

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A finance manager should, therefore, chalk out appropriate working capital management policies in respect of each of the components of working capital so as to ensure higher profitability, proper liquidity and sound structural health of the organization. (i) The Conservative Approach According to this approach all requirements of funds should be met from long-term sources. The short-term sources should be used only for emergency requirements. The conservative approach is less risky, but more costly as compared to the hedging approach. In other words conservative approach is 'low profit-low risk' (or high cost, high net working capital), while the hedging approach results in high profit- high risk (or low cost, low net working capital). (ii) Trade-off Between Hedging and Conservative Approaches The hedging and conservative approaches are both on two extremes. Neither of them can therefore help in efficient working capital management. A trade-off between these two can give satisfactory results. The level of such trade-off will differ from case to case depending upon perception of the risk by the persons involved in financial decision-making. However, one way of determining the level of trade-off is by finding the average of the minimum and maximum requirements of working capital Working Capital Management NOTES Self-Instructional Material 269 during a period. The average working capital so obtained may be financed by long- term funds and the balance by short-term funds. For example, if during the quarter ending 31 March 2008, the minimum working capital required is estimated at Rs 10,000 while the maximum at Rs 15,000 the average level comes to Rs 12,500 [i.e,.(10,000 + 15,000) ÷ 2). The firm should therefore, finance Rs 12,500 from long-term sources while any extra capital required any time during the period, from short- term sources (i.e., current liabilities). Management of Different Components of Working Capital: Working capital management involves management of the different components of working capital such as cash, inventories, accounts receivable, creditors, etc. A brief description follows regarding the various issues involved in the management of each of these components of working capital. 13.7 MANAGEMENT OF CASH It is the duty of the finance manager to provide adequate cash to all segments of the organization. He has also to ensure that no funds are blocked in idle cash since this will involve cost in terms of interest to the business. A sound cash management scheme, therefore, maintains a balance between the twin objectives of liquidity and cost. Meaning of cash The term 'cash' with reference to cash management is used in two senses. In a narrower sense it includes coins, currency notes, cheques, bank drafts held by a firm and the demand deposits held by it in banks. In a broader sense it also includes 'near-cash assets' such as marketable securities and time deposits with banks. Such securities or deposits can immediately be sold or converted into cash if the circumstances require. The term cash management is generally used for management of both cash and near-cash assets. Objectives of cash management There are two basic objectives of cash management: 1. To meet the cash disbursement needs as per the payment schedule 2. To minimize the amount locked up as cash balances As a matter of fact, both the objectives are mutually contradictory and, therefore, it is a challenging task for the finance manager to reconcile them and to have the best in this process. 1. Meeting cash disbursements The first basic objective of cash management is to meet the payments schedule. In other words, the firm should have sufficient cash to meet the various requirements of the firm at different periods of times. The business has to make payment for purchase of raw materials, wages, taxes, purchase of plant, etc. The business activity may come to a grinding halt if the payment schedule is not maintained. Cash has, therefore, been aptly described as the 'oil to lubricate the ever-turning wheels of the business, without it the process grinds to a stop.' 2. Minimizing funds locked up as cash balances The second basic objective of cash management is to minimize

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the amount locked up as cash balances. In the process of minimizing the cash balances, the finance manager is confronted with two conflicting aspects. A higher cash balance ensures proper payment with all its advantages. But this will result in a large balance of cash

Check Your Progress 1. Why is working capital required? 2. What is inadequate working capital? 3. What is the basic objective of working capital management?

Working Capital Management NOTES Self-Instructional 270 Material remaining idle. A low level of cash balance may result in

the

failure of the firm to meet the payment schedule. The finance manager should, therefore, try to have an optimum amount of cash as balance keeping the above facts in view. Cash Management—Basic Problems

Cash management involves the following four basic

problems: 1. Controlling the

levels of cash 2. Controlling inflows of cash 3. Controlling outflows of cash 4. Optimum investment of surplus cash 1. Controlling

the levels

of cash One of the basic objectives of cash management is to minimize the level of cash balance with the firm. This objective is sought to be achieved by means of the following: (i) Preparing a cash budget: A cash budget or cash forecast is the most significant device for planning and controlling the use of cash. It involves a projection of future cash receipts and cash disbursements of the firm over various intervals of time. It reveals to the finance manager the timings and amount of expected cash inflows and outflows over

the period studied.

With this information, he is better able to determine the future cash needs of the firm, plan for the financing of these needs and exercise control over the cash and liquidity of the firm. 1

Thus, if a cash budget is properly prepared it correctly reveals the timings and size of net cash flows as well as the periods during which the excess cash may be available for temporary investment. In a small company, the preparation of a cash budget or a cash forecast does not involve much complications and is, therefore, relatively a minor job. However, in case of big companies, it is almost a full-time job handled by a senior person—the budget controller or a treasurer. The technique of preparing the cash budget has already been explained in the unit 'Budgetary Control', discussed earlier in the book. (ii) Providing for unpredictable discrepancies: A

cash budget, as explained above, predicts discrepancies between cash inflows and outflows on the basis of normal business activities. It does not take into account discrepancies between cash inflows and outflows on account of unforeseen circumstances such as strikes, short-term recession, floods, etc. A certain minimum amount of cash balance has, therefore, to be

kept for meeting such unforseen contingencies. Such amount is fixed on the basis of past experience and some intuition regarding the future. (

iii) Consideration of short costs: The term 'short cost' refers to the costs incurred as a result of shortage of cash. Such costs may take any of the following forms: (a) The failure of

a

firm to meet its obligations in time may result in legal action by the firm's creditors against the firm. This cost is in terms of the firm's reputation besides

damage to the

financial costs incurred in defending the suit. (b) Borrowing may have to be resorted to at high rates of interest. The firm may also be required to pay penalties, etc., to banks for not meeting the obligations in time. 1

Bolten S.E., Managerial Finance, Boston: Houghton Miffin Co., 1976, p. 388.

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iv) Availability of other sources of funds: A firm can avoid holding

an unnecessarily

large balance of cash for contingencies in case it has

adequate arrangements with its bankers for borrowing money in times of emergencies. Of course, for such arrangements the firm

has to pay a slightly higher rate of interest than on a long-term debt. But considerable saving in interest costs will be effected because such interest will have to be paid only for

a shorter period. 2. Controlling inflows of cash

Having prepared the cash budget, the finance manager should also ensure that there

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is no significant deviation from the projected cash inflows and the projected cash outflows. This requires controlling of both the inflows as well as outflows of cash. The finance manager has to devise appropriate techniques which help not only in the prevention of fraudulent diversion of cash receipts but also in speeding up collection of cash. A proper system of internal checks can, to a great extent, minimize the possibility
of cash defalcations. Speedier collection of cash can be made possible by adoption of the following techniques which have been found to be quite useful and effective in the US. (i)
Concentration banking: It is a system of decentralizing collection of accounts receivable in case of large firms having their business spread over a large area. According to this system, a large number of collection centres are established by the firm in different areas selected on
a
geographical basis. The firm opens its bank accounts in local banks of different areas where it has its collection centres. The collection centres are required to collect cheques from their customers and deposit them in the local bank account. Instructions are given to the local banks to transfer funds telegraphically over a certain limit daily to the bank at the Head Office. This facilitates fast movement of funds. The company's treasurer, on the basis of the daily report received from the Head Office bank about the collected funds, can use them for disbursement according to needs. This system of concentration banking results in the following advantages: (a) The mailing time is reduced since the collection centres themselves collect cheques from the customers and immediately deposit them in local bank accounts. Moreover, when the local collection centres are also used to prepare and send bills to the customers in their areas, the mailing time in sending bills to the customer is also reduced. (b) The time required to collect cheques is also reduced since the cheques deposited in the local bank accounts are usually drawn on banks in that area. All this helps in quicker collection of cash. (ii) Lock-Box system: The
lock-box system is a further step in speeding up collection of cash. In the case of concentration banking, cheques are received by collection centres who, after processing, deposit
them in the local bank accounts. Thus, there is a time gap between the
receipt of cheques by a collection centre and its actual depositing in the local bank account.
The lock-
box system has been devised to eliminate delay on account of this time gap. According to this system,
the firm hires a post office box and instructs its customers to mail their remittances to the box. The firm's local bank is given the authority to pick the remittances directly from the post office box.
The bank picks up the mail several times a
day and deposits
the cheques in the firm's account.
Standing instructions are given to the local bank to transfer funds to the Head Office bank when they exceed a particular limit. The lock-box system offers the following advantages: (a) All remittances are handled by the banks even prior to their deposit with them at a very low cost;
Working Capital Management NOTES Self-Instructional 272 Material (b) The cheques are deposited immediately upon receipt of remittances and the collecting process starts much earlier than that under the system of concentration banking. Besides the above methods, firms use other methods also for prompt collection. For example, in case large funds are involved, they may also request their collecting bankers to present them before the drawee banks via air mail or through special messenger. In order to avoid unnecessary pockets of idle funds, the firms should maintain a minimum number of bank accounts. Of course, small accounts with a number of banks may create some goodwill with bankers but it bardly helps in the efficient management of cash. The firm, by closing these unnecessary accounts, can release funds which it can put to profitable use. 3.
Control over cash outflows An effective control over cash outflows or disbursements also helps a firm in conserving cash and reducing financial requirements. However, there is a basic difference between the underlying objective of exercising control over cash inflows and cash outflows. In case of the former, the objective is the maximum acceleration of collections while in the
case of latter, it is to slow down the disbursements as much as possible. The combination of fast collections and slow disbursements will result in maximum availability of funds. 2 A firm can advantageously control outflows of cash if the following considerations are kept in view: (i) Centralized system of disbursements should be followed as compared to
a
decentralized system in case of collections. All payments should be made from a single control account. This will result in delay in presentment of cheques for payment by parties who are away from the place of
the control
account. (ii) Payments should be made on the due dates, neither before nor after. The firm should neither lose cash discount nor its prestige on account of delay in payments. In other words,
the firm should pay within the terms offered by the suppliers. 4.

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Investing surplus cash The following are the two basic problems regarding the investment of surplus cash: (i) Determination of the amount of surplus cash (ii) Determination of the channels of investments (i) Determination of surplus cash Surplus cash is the cash in excess of the firm's normal cash requirements. While determining the amount of surplus cash, the finance manager has to take into account the
minimum cash balance that the firm must keep to avoid risk or cost of running out of funds.
Such minimum level may be termed a 'safety level for cash'. Determining the safety level for cash The finance manager determines the safety level of cash separately both for normal periods and peak periods. In both the cases, he has to decide about the following two basic factors: (a) Desired days of cash: It means the number of days for which the cash balance should be sufficient to cover payments. 2 Horne, James C., Financial Management and Policy. 3rd Edn., p. 426. Working Capital Management NOTES Self-Instructional Material 273 (b) Average daily cash outflows: This means the average amount of disbursements which will have to be made daily. The 'desired days of cash' and 'average daily cash outflows' are separately determined for normal and peak periods. Having determined them, the safety level of cash can be calculated as follows: During normal periods: Safety level of cash = Desired days of cash × Average daily cash outflows For example, if the finance manager feels that a safety level should provide sufficient cash to cover cash payments for seven days and the firm's average daily cash outflows are Rs 6,000, the safety level of cash will be Rs 42,000 (i.e., 7 × 6,000) During peak periods: Safety level of cash = Desired days of cash at the busiest period × Average of highest daily cash outflows. For example, during the three busiest days in the month of December, the firm's cash outflows were Rs 7,000, Rs 8,000, and Rs 9,000. The average cash outflows comes to Rs 8,000. If the finance manager desires sufficient cash to cover cash payments for five days during the peak periods, the safety level would be Rs 40,000 (i.e., Rs 8,000 × 5). The above ratios are helpful in monitoring the level of cash balances. The actual cash balance is compared with the daily cash outflows to determine the number of days for which cash is available. Such number of days is then compared with the desired days of cash to ascertain whether the firm is below or above the safety level. (ii) Determination of channels of investment The finance manager can determine the amount of surplus cash by comparing the actual amount of cash available with the safety or minimum level of cash, as explained above. Such surplus cash may be either of a temporary or a permanent nature. Temporary cash surplus consists of funds which are available for investment on a short-term basis (maximum six months), since they are required to meet regular obligations such as those of taxes, dividends, etc. Permanent cash surplus consists of funds which are kept by the firm to avail of some unforeseen profitable opportunity of expansion or acquisition of some asset. Such funds are, therefore, available for investment for a period ranging from six months to a year. Criteria for investment In most companies there are usually no formal written instructions for investing the surplus cash. It is left to the discretion and judgement of the finance manager. While exercising such discretion or judgement, he usually takes into consideration the following factors: (i) Security: This can be ensured by investing money in securities whose price remains more or less stable. (ii) Liquidity: This can be ensured by investing money in short-term securities including short-term fixed deposits with banks. (iii) Yield: Of course most corporate managers give less emphasis to yield as compared to security and liquidity of the investment. They, therefore, prefer short- term government securities for investing cash. However, some corporate managers follow aggressive investment policies which maximize the yield on their investments. (iv) Maturity: Surplus cash is not available for an indefinite period. Hence, it will be advisable to select securities according to their maturities keeping in view the Working Capital Management NOTES Self-Instructional 274 Material period for which surplus cash is available. If such selection is done carefully, the finance manager can maximize the yield as well as maintain the liquidity of investments. For example, a firm can divide the surplus cash available with it in to three categories: (i) Surplus cash which is to be made available for meeting unforeseen disbursements. Such cash should, therefore, be invested in securities which can be immediately sold without much loss. In case of such cash, liquidity is more important than yield. (ii) Surplus cash which is to be made available on certain definite dates for making specific payments such as those on account of tax, dividends capital expenditure, etc. Such cash should, therefore, be invested in securities whose maturities coincide with the dates of payment. (iii) Surplus cash which is a sort of general reserve and not required to meet any specific payment. Such cash can therefore, be invested in securities with relatively longer maturities and more favourable yields. 13.8 MANAGEMENT OF
INVENTORIES Inventories are goods held for eventual sale by a firm. Inventories are thus one of the major elements which help the firm in obtaining the desired level of sales.
Kinds
of inventories Inventories can be classfied into three categories. (i)
Raw materials: These are goods which have not yet been committed
to
production in a manufacturing
firm.
They may consist of basic raw materials or finished components. (ii) Work-in-process: This include those materials which have been

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committed to the
production process but have not yet been completed. (
iii) Finished goods: These are completed products awaiting sale.They
are
the final output of the production process in a manufacturing firm. In case of wholesalers and retailers, they are generally referred to as merchandise
inventory. The levels of the above three kinds of inventories differ depending upon the nature of the business. For example, a manufacturer will have all the three kind of inventories. A retailer or a wholesaler will have a high level of inventories of finished goods but will have no inventories of raw materials or work-in-process. Moreover, depending upon the nature of the business, inventories may be durable or non-durable, valuable or inexpensive, perishable or non-perishable, etc.
Management of inventory Inventories often constitute a major element of the total working capital and hence it has been correctly observed
that, 'good inventory
management is good financial
management'. Inventory management covers a large number of issues including fixation of minimum and maximum levels; determining the size of
the inventory to be carried; deciding about the issue price policy; setting up receipt
and inspection procedures; determining the economic order quantity; providing proper storage facilities; keeping
a
check on obsolescence and setting up effective information systems with regard to inventories. However, the management of inventories involves two basic problems: (i) Maintaining
a sufficiently large size of inventory for efficient and smooth production and sales operations.
Working Capital Management NOTES Self-Instructional Material 275 (
ii) Maintaining a minimum investment in inventories to minimize the direct- indirect costs associated with holding inventories to maximize the profitability. Inventories should neither be excessive nor inadequate. If inventories are kept at a high level, higher interest
and
storage costs would be incurred. On the other hand, a low level of inventories may result in frequent interruption in the production schedule resulting in
under-utilization of
capacity and lower sales. The objective of inventory management is, therefore, to determine and maintain the optimum level of investment in inventories which helps in achieving the following objectives: (i) Ensuring a continuous supply of materials to
the production department facilitating uninterrupted production (ii) Maintaining a
sufficient stock of raw material in periods of short supply (iii) Maintaining
a
sufficient stock of finished goods for smooth sales operations (iv) Minimizing the carrying costs (v) Keeping investment in inventories at the optimum level
Techniques of inventory management
Effective inventory management requires an effective control over inventories. Inventory control
refers to a system which ensures supply of
the
required quantity and quality of inventories at the required time and at the same time prevent unnecessary investment in inventories.
The techniques of inventory control/inventory management are as follows: 1. Determination of
Economic Order Quantity (EOQ) Determination of the quantity for which an order should be placed is one of the important problems concerned with efficient inventory management. Economic Order Quantity refers to the size of the order which gives maximum economy in purchasing any item of raw material or finished product. It is fixed mainly after taking into account the following costs. (i) Ordering cost:
It is the cost of placing an order and securing the supplies.
It varies from time to time depending upon the number of orders placed and the number of items ordered. The more frequently the orders are placed, and lesser the quantities purchased on each order, the greater will be the ordering cost and vice versa. (ii) Inventory carrying cost: It is
the

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cost of keeping items in stock. It includes interest on investment, obsolescence losses, store-keeping cost, insurance premium, etc. The larger the value of inventory, the higher will be the inventory carrying cost and vice versa. The former cost may be referred
to as the 'cost of acquiring' while the latter as the '
cost of holding' inventory. The cost of acquiring decreases while the cost of holding increases with every increase in the quantity of purchase lot. A balance is therefore struck between the two opposing factors and the economic ordering quantity is determined at a level for which aggregate of
the two costs is the minimum. Formula: Q = 2U P S × Q = Economic ordering quantity U = Quantity (units) purchased in a year (month) P = Cost of placing an order S = Annual (monthly) cost of storage of one unit
Working Capital Management NOTES Self-Instructional 276 Material
Illustration 13.1: A, a refrigerator manufacturer purchases 1,600 units of a certain component from B. His annual usage is 1,600 units.
The order placing cost is Rs 100 and the cost of carrying one unit for a year is Rs 8. Calculate the Economic Ordering Quantity
and tabulate your result. Solution: 2
U P Q S × = 2 1,600 100 8 × × = 40,000 200 units = = The EOQ can also be calculated by the tabular method as shown below: TABLE SHOWING THE ECONOMIC ORDERING QUANTITY Annual Orders Units per Order Average Carrying Total require- per order placing inventory costs annual ment year costs in units costs (50% of order placed) Rs Rs Rs 1,600 1 1,600 100 800 6,400 6,500 2 800 200 400 3,200 3,400 3 533 300 267 2,136 2,436 4 400 400 200 1,600 2,000 5 320 500 160 1,280 1,780 6 267 600 134 1,072 1,672 7 229 700 115 920 1,620 8 200 800 100 800 1,600 9 178 900 89 712 1,612 10 160 1,000 80 640 1,640
The above table shows that total cost is minimum when each order is of 200 units. Therefore,
the economic ordering quantity is 200 units only. Assumptions The
EOQ model is based on the following assumptions: (i) The firm knows with certainty the annual usage or demand of the particular items of inventories. (ii) The rate at which the firm uses the inventories or makes sales is constant thougthout the year. (iii) The orders for replenishment of inventory are placed exactly when inventories reach the zero level.
The above assumptions may also be called the limitations of the EOQ Model. There is every likelihood of a discrepancy between actual and estimated demand for a particular item of inventory. Similarly, the assumptions as to constant usage or sale of inventories and instantaneous replenishement of inventories are also of doubtful validity. On account of these reasons, the EOQ Model may sometimes give a wrong estimate about economic ordering quantity. 2. Determination of the Optimum Production Quantity The EOQ Model can be extended to production runs to determine the optimum production quantity. The two costs involved in this process are: (i) Set-up cost (ii) Inventory carrying cost
Working Capital Management NOTES Self-Instructional Material 277 The set-up cost is a fixed cost and is incurred at the time of commencement of each production run. The larger the size of the production run, the lower will be the set-up cost per unit. However, the carrying cost will increase with increase in the size of the production run. Thus, there is an inverse relationship between the set-up cost and inventory carrying cost. The optimum production size is that where the total of the set-up cost and inventory carrying cost is the minimum. In other words, at this level the two costs will be equal. The formula for EOQ can also be used for determining the optimum production quantity as given below: E = 2U P S × where, E = Optimum production quantity U = Annual (monthly) output P = Set-up cost for each production run S = Cost of carrying inventory per annum (per month) Illustration 13.2: Calculate the optimum production quantity per production run from the following information: Estimated annual production 90,000 units Set-up cost per production run Rs 50 Carrying cost per unit per annum Re 1 Solution: 2U P E S × = 2 90,000 50 1 × × = = 3,000 units per production run 3. Determination of Reorder Level Having determined the economic order quantity or optimum production quantity, it is also important to decide when to order for the new stock. This problem is solved by determining the reorder level. Reorder level is the level of inventory at which the firm should place an order to replenish the inventory. In case the order is placed at this level, the new goods will arrive before the firm runs out of goods to sell. In order to determine the reorder level, information is required about the following: (a) the lead time (b) the usage rate.
The term 'lead time' refers to
the time normally taken in receiving the delivery
of inventory after the order has been placed.
In case there is no uncertainty about the usage rate and the lead time, the reorder level can be determined by simply applying the following formula: Reorder Level = Average Usage × Lead Time For example, if the lead time is three weeks and the average usage is 50 units per week, the reorder level can be computed as follows: Reorder Level = Lead Time × Average Usage = 3 weeks × 50 units = 150 units It may be noted that if the economic order quantity in the above case is 500 units and there is no lead time, the economic order quantity would have been sufficient for ten weeks and the order would have been placed only at the end of the tenth week

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Working Capital Management NOTES Self-Instructional 278 Material the time when the reorder quantity reaches the zero level. Since in the above problem, the lead time is three weeks, the order should be placed at the end of the seventh week when only 150 units are left. Safety stock In the example given above, the reorder level was computed presuming that there is no uncertainty regarding the usage as well as the lead time. However, in actual practice, it is almost impossible to correctly predict either of them. The actual usage as well as the lead time may be different from the normal usage or the normal lead time. In order to guard against such a contingency, the firm maintains a safety stock—the minimum of buffer stock—as a cushion against possible increase in usage or delay in delivery. The level of safety stock can be calculated by applying the following formula: Safety Stock = Average Usage × Period of Safety Stock For example, if the usage rate is 50 units per week, and the firm wants to hold sufficient inventory for at least one week of production, the amount of safety stock will be 50 units. 4. ABC Analysis ABC analysis is a technique of exercising selective control over inventory items. The
technique is based on the assumption that a firm should not exercise the same degree of control on items
which are more costly as compared to those items which are less costly. According to this approach, the inventory items are divided into three categories—A, B, C.
Category A may include more costly items, while category B may consist of less costly items and category C of the least costly items.
Thus, A, B, C analysis
concentrates on important items and therefore is
also known as control by importance and exception (CIE).
This
approach is also known as proportional value analysis (PVA),
since the items are classified in importance of their relative value.
Though no definite procedure can be laid down for classifying the inventories in A, B
and
C, categories as this will depend upon a large number of factors, such as nature and variety of items, specific requirements of the business, etc.,
yet the following method is generally adopted: (i) The quality of each material expected to be used in a period is estimated. (ii) The value of each of the above items of materials is found out by multiplying the quantity of each item with the price. (iii) The items are then rearranged in descending order of their value, irrespective of their quantities. (iv) A running total of all the values then taken. (v) It will be found that a small number of a few items may amount to a large percentage of the total value of the items. The management will then have to take a decision as to the percentages of total value or the total number of items which have to be covered by A, B and C categories.
Inventory surveys in general have shown the following trends regarding the components of inventories manufacturing organizations: Category Percentage of total value Percentage of total quantity A 70 10 B 25 35 C 5 55 While exercising control over stores, items of category A should be given the utmost attention. Their levels of stock should be strictly controlled. In case of items in category
Working Capital Management NOTES Self-Instructional Material 279 B, ordinary stores routine should be observed, but the rules regarding levels of stock may not be so strictly adhered to as those in category A. Items of category C may be considered as 'free issue' items and even normal accounting procedure may be dispensed with. However, stocks should be kept under some observation so that fresh supplies may be obtained in time. Order for these materials may also be given in bulk to economize on ordering and handling costs. 5.
Inventory Turnover Ratios Inventory turnover ratios are calculated to minimize the investment in inventories. Turnover ratio can be calculated for each item of inventory on the basis of the following formula: Inventory Turnover Ratio Cost of goods consumed/sold during
the period Average inventory held during the period =
For example, if the cost of raw material consumed during January 1990 is Rs 10,000 and the average inventory held during the month is Rs 2.000, the inventory turnover ratio comes to 5. Inventory turnover ratios regarding different items of inventory may be compared with the ratios of the earlier years as well as with each other.
Such a comparison may reveal the following four types of inventories: (i) Slow moving inventories: These are inventories which have a low turnover ratio. An attempt should be made to keep these inventories at the lowest level. (ii) Dormant inventories: Inventories which have at present no demand are classified as dormant inventories. A decision should be taken by the finance manager in consultation with the chief buyer, the storekeeper, the production controller and the cost accountant
whether to retain these inventories because of a good chance of future demand or to cut losses by scrapping them while they have some market value. (

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iii) Obsolete inventories: These are inventories which are no longer in demand because of their becoming out of date. They should be immediately discarded or scrapped. (iv) Fast moving inventories: These are inventories which are very much in demand. Special care should be taken in respect of these items of inventory so that production or sales do not suffer on account of their shortage. 6. Ageing Schedule of Inventory The
classification of inventories according to age also helps in identifying inventories which are moving slowly into production or sales. This requires identifying the date of purchase/manufacture of each item of the inventory and classifying them as shown in the table below: AGEING SCHEDULE OF INVENTORY AS ON 31, DEC. 1998 *
Age classification Date of purchase/ Amount Percentage to total (days) manufacture Rs 0–15 16 Dec. 8,000 20 16–30 12 Dec. 4,000 10 31–45 26 Nov. 2,000 5 46–60 10 Nov. 20,000 50 61 and above 25 Oct. 6,000 15 Total 40,000 100 * All figures are imaginary.
Working Capital Management NOTES Self-Instructional 280 Material
The above table shows that 50 per cent of the inventory is of 46-60 days old, while 15 per cent is older than 60 days. In case steps are not taken to clear the inventories, it is possible that more than 50
per cent of the inventory
may suffer deterioration in its value or may even become obsolete. 7. Just-In-Time (JIT) Inventory
System As discussed in an earlier unit, every manufacturing company has to maintain three classes of inventories—raw materials, work-in-process and finished goods. These inventories are designed to act as buffers so that operations can proceed smoothly even if the suppliers are late with deliveries or the department is unable to operate for a short period because of a breakdown or any other reason. However, carrying of inventories results in costs in terms of storage, blocking of capital investment, insurance, etc. Such costs can be reduced/minimized by keeping the inventories at the lowest possible level. The JIT system basically aims to achieve this objective. Finance manager and inventory management The techniques of inventory management given in the preceding pages help in determining the optimum level of inventory as well as how much should be ordered and when it should be ordered. All these techniques are helpful in the efficient management of inventories and balancing the advantages of holding additional inventory against the cost of carrying inventory. Although the finance manager is not directly concerned with inventory policies, yet he cannot ignore them since they directly affect the financial needs of the firm to a significant extent. It is, therefore, necessary for the finance manager to be familiar with ways to control inventories effectively so that there can be efficient allocation of funds. He should make all-out efforts to reduce lead time, regulate usage and minimize the safety stock. In case he does so, he will be in a position to reduce investment in inventories to the optimum level and leave sufficient funds for more profitable channels which will ultimately result in maximization of the shareholders' wealth. 13.9
MANAGEMENT OF ACCOUNTS RECEIVABLE Accounts receivable (also popularly termed as
receivables) constitute a significant portion of the total current assets of a
business after inventories. They are
a
direct consequence of 'trade credit' which has become an essential marketing tool in modern business.
When
a firm sells goods for cash, payments are received immediately and, therefore, no receivables are created. However, when a firm sells goods or services on credit, the payments are postponed to future dates and receivables are created. Usually, credit sales are made on open account which means that no formal acknowledgements of debt obligations are taken from the buyers. The only documents evidencing the same are a purchase order, shipping invoice or even a billing statement. The policy of open account sales facilitates business transactions and reduces to a great extent the paperwork required in connection with credit sales.
Meaning
of
receivables Receivables are asset accounts representing
amounts owed to the firm as a result of the sale of goods/services in the ordinary course of business. 3
Check Your Progress 4. What are the two basic objectives of cash management? 5. What is a cash budget? 6. What are inventories? 3 Hampton, John J., Financial Decision Making, 1977, p. 154.
Working Capital Management NOTES Self-Instructional Material 281 They, therefore, represent the claims of a firm against its customers and are
carried to the 'assets side' of the balance sheet under titles such as accounts receivable, trade receivables, customer receivables
or book debts. They are, as stated earlier, a result of the extension of credit facility to customers. The objective of such a facility is to
allow the customers
a reasonable period of time in which they can pay for the goods
purchased by them.

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Meaning of receivables management Receivables are a direct result of credit sales. A credit sale is resorted to by a firm to push up its sales which ultimately results in pushing up the profits earned by the firm. At the same time, selling goods on credit results in blocking of funds in the accounts receivable. Additional funds are, therefore, required for the operational needs of the business which involve extra costs in terms of interest. Moreover, increase in receivables also increases the chances of bad debts. Thus, the creation of accounts receivable is beneficial as well as dangerous. The finance manager has to follow a policy which uses cash funds as economically as possible in extending receivables without adversely affecting the chances of increasing sales and making more profits. The management of accounts receivable may, therefore, be
defined as the process of making decisions relating to
the investment of funds in this asset which will result in maximizing the overall return on the investment of the firm. Thus, '
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 (
i.e., cost of capital)'. 4
Costs of maintaining receivables The costs with respect to the
maintenance of receivables can be identified as follows: 1. Capital costs:
The
maintenance of accounts receivable results in blocking of the firm's financial resources in them. This is because there is a time lag between the sale of goods to
customers and the payments by them.
The firm has, therefore, to
arrange for additional funds to meet
its own obligations, such as payment to employees, suppliers of raw materials etc., while waiting for payments from its customers. Additional funds may either be raised from outside or out of profits retained in the business.
In both cases, the firm
incurs a cost.
In the former case,
the firm has to pay interest to the outsider while in the latter case, there is an opportunity cost to the firm, i.e., the money which the firm could have earned otherwise by investing the funds elsewhere. 2. Administrative costs: The firm has to incur additional administrative costs for maintaining
the
accounts
receivable in the form
of salaries to the staff kept for maintaining accounting records relating to customers, cost of
conducting investigation regarding potential credit customers to determine their credit-worthiness, etc. 3. Collection costs: The firm has to incur costs for collecting the payments from its credit customers. Sometimes, additional steps may have to be taken to recover money from defaulting customers. 4. Defaulting costs: Sometimes after making all serious efforts to collect money from defaulting customers,
the
firm may not be able to recover the
overdues because 4
Bolten. S.E., Management Finance, Boston: Houghton. Miffin, Co., 1976, p. 446.

of the inability of the customer to pay.
Such debts are treated as bad debts and have to be written off since they cannot be
realized.
Factors affecting the size of receivables The size of the accounts receivable is determined by a number of factors. Some of the important factors are as follows: (1) Level of sales: This is the most important factor in determining the size
of
the
accounts receivable.
Generally, in the same industry, a firm with a large volume of sales will be having a higher level of receivables as compared to a firm with a smaller volume of sales.
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sales level can also be used for forecasting change in
the
accounts receivable. For example, if a firm predicts that there will be an increase of 20
per cent
in its credit sales for the next period, it can be expected that there will also be a 20
per cent
increase in the level
of receivables. (2) Credit policies: The term credit policy refers to those decision variables that influence the amount of trade credit, i.e., the investment in receivables.
These variables include the quantity of trade accounts to be accepted, the credit period to be offered, the cash discount to be given and any special terms to be offered depending upon particular circumstances of the firm and the customer.
A firm's credit policy, as a matter of fact, determines the amount of risk the firm is willing to undertake in its sales activities. If a firm has a lenient or a relatively liberal credit policy, it will have
a higher level of receivables as compared to a firm with a
more rigid or stringent credit policy. This is because of the
following
two reasons: (i) A lenient credit policy encourages even the financially strong customers to make delays in payment resulting in increasing the size of the accounts receivable. (ii)
A
lenient credit policy will result in greater default in payments by financially weak customers thus resulting in increasing the size of receivables. (3)
Terms of trade: The size of the receivables is also affected by the terms of trade (
or credit terms) offered by the firm. The two important components of the credit terms are (i) credit period and (ii) cash discount. Credit
period The term credit period refers to the duration of
time for which credit is extended to the customers. It is generally expressed
in terms of 'net days'.
For example, if a firm's credit terms are 'net 15', it means the customers are expected to
pay within 15 days from the date of credit sale. Cash discount Most firms offer cash discount to their customers for encourageing them to pay their dues before the expiry of the credit period. The terms of cash discount indicate the rate of discount as well as the period for which the discount has been offered. For example, if the terms of cash discount are changed from 'net 30' to '2/10 net 30', it means the credit period is of 30 days, but in case customer pays in 10 days, he would get 2
per cent
discount on the amount due. Of course, allowing cash discount results in a loss to the firm because of recovery of less amount than what is due from the customer, but it reduces the volume of receivables and puts extra funds at the disposal of the firm for alternative profitable investment. The amount of loss thus suffered is compensated by the income otherwise earned by the firm.

Optimum size
of receivables The optimum investment in receivables will be at a level where there is a trade-off between
costs and profitability. When
a
firm resorts to a liberal credit policy, the profitability of the firm increases on account of higher sales. However, such a policy results in increased investment in receivables, increased chances of bad debts and more collection costs. The total investment in receivables increases and, thus, the problem of liquidity is created. On the other hand, a stringent credit policy reduces the profitability but
increases the liquidity of the firm. Thus, an optimum credit policy
occurs at a point where there is a 'trade-off' between
liquidity and
profitability.
Study of
credit policy The
credit policy adopted by a firm should be optimum—neither too liberal nor too stringent. In order to determine the nature of credit policy followed by a firm, the following techniques may be adopted: (i) Computation of average age of receivables: Computation of the average age of receivable involves computation of the average collection period.

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The period so computed should be compared with the period for the industry as a whole or with that prevailing in similar firms. An increase in the average age of receivables or debt collection period is an indication of lenient credit policy or inefficiency in collection and vice versa. Limitation The technique of calculating the average age of receivables should be used with caution. It may give misleading results in case there are fluctuations in the sales pattern. The following illustration will make this point clear: (ii) Ageing Schedule of Receivables: On the pattern of ageing schedule of inventories, as discussed in the preceding pages, the ageing schedule of receivables can also be prepared. The objective of preparing such an ageing schedule is to have a closer look at the quality of individual accounts. This requires ascertaining the sales made to and payments received from each customer by checking the receivables ledger. The schedule may be prepared in the following form: AGEING SCHEDULE OF RECEIVABLES * As on 31 December 1998 As on 31 December 1999 Age Classes Month of Balance of Percentage Balance of Percentage (days) Sale Receivables to total Receivables to total 1-30 December 25,000 22.7 10,350 11.9 31-60 November 62,500 56.8 18,550 21.4 61-90 October 12,000 10.9 46,400 53.4 91-120 September 10,000 9.1 8,825 10.2 121 and more Earlier 500 1.5 2,700 3.1 Total: 1,10,000 100 86,825 100 The above schedule indicates as compared to 1998, there is slackness in the debt collection machinery in 1999. In 1998, 56.8 per cent of the total accounts receivable were in the age group of 31 to 60 days. In 1999, this percentage has gone down to 21.4. Similarly, in 1998 only 10.9 per cent of the total receivables were in the age group of 61 to 90 days. In 1999, this percentage has gone up to 53.4 indicating that more than 50 per cent of the accounts receivable are in this age group. *All figures are imaginary.

Working Capital Management NOTES Self-Instructional 284 Material The finance manager may get such schedules prepared at shorter intervals or say a quarter or six months instead of a year. An inter-firm comparison of the ageing schedule of debtors can also be made if the data on competitors is available. Policies for manageing receivables A firm put in place establish receivables policies after carefully considering both the

benefits and costs of different policies. These policies relate to: (i) Credit standards (ii) Credit terms and (iii) Collection procedures.

Each of these is explained below: (i)

Credit Standards: The term

credit standards represents the basic criteria for extension of credit to customers. The

levels of

sales and receivables are likely to be high if the credit standards are relatively

loose, as compared to a situation when they are relatively tight. The firm's credit standards are generally derermined by the five 'Cs': Character, Capacity, Capital, Collateral and Conditions.

Character denotes the integrity of the customer, i.e., his willingness to pay for the goods purchased. Capacity denotes his ability to manage the business. Capital denotes his financial soundness. Collateral refers to the assets which the customer can offer by way of security. Conditions refer to the impact of general economic trends on the firm or to special developments in certain areas of

the

economy that may affect the customer's ability to meet his obligations.

An individual firm can translate its credit information into risk classes or groups according to the probability of loss associated with each class. On the basis of this information, the firm can decide whether it will be advisable for it to extend credit to a particular class of customers.

Illustration 13.3: A firm is considering extending its credit facilities to the following categories of customers: (a) Customers with a 10 per cent risk of non-payment (b) Customers with a 30 per cent risk of non-payment The incremental sales expected in case of category (a) is Rs 40.000 while in case of category (b) Rs 50,000. The costs of production and selling are 60 per cent of sales while the collection costs amount to 5 per cent of sales in case of category (a) and 10 per cent of sales in case of category (b). You are required to advise the firm about extending credit facilities to each of the above categories of customers. Solution : (a) EXTENDING CREDIT FACILITIES WITH 10 % RISK OF NON-PAYMENT Incremental sales Rs 40,000 Less: Loss in Collection (10 per cent) 4,000 Net sales realized 36.000 Less: Production and Selling costs (60 per cent of sales) 24,000 Collection Costs 2,000 26,000 Incremental Income 10,000 Thus, the firm can have an extra income of Rs 10,000 by accepting the 10 per cent risk group. It may, therefore, lower its credit standards in favour of this category of customers.

Working Capital Management NOTES Self-Instructional Material 285 (b) EXTENDING CREDIT FACILITIES WITH 30% RISK OF NON-PAYMENT Sales by accepting 30 per cent risk group Rs. 50,000 Less: Loss in Collection (30 per cent) 15,000 Net sales realized 35.000 Less: Production and Selling Costs (60 per cent of sales) 30,000 Collection Costs (10 per cent) 5,000 35,000 Incremental Income Nil Thus, the firm does not stand to gain or lose on account of extending credit to customers with 30 per cent risk of non-payment. The firm should not, therefore, extend credit to such customers unless it is beneficial for the firm in the long run because of having a wider market for its products.

Credit terms This

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refers to the terms under which a firm sells goods on credit to its customers. As stated earlier, the two components of credit terms are (a) Credit period and (b) Cash discount.

The approach to be adopted by firm in respect of each of these components is discussed below. (

a) Credit period: Extending the credit period stimulates sales but increases the cost on account of tying up of more funds in receivables.

Similarly, shortening the credit period reduces the profit on account of reduced sales, but also reduces the cost of tying up of funds in receivables. Determining the optimal credit period, therefore, involves locating the period where the marginal profits on increased sales are exactly offset by the cost of carrying the higher amount of accounts receivable. 5 Illustration 13.4: The following are the details of the operations of a firm during a period of twelve

months. Sales Rs 12,00,000 Selling price per unit Rs 10 Variable cost price per unit Rs 7 Total cost per unit Rs 9 Credit period allowed to customers One month The firm is considering a proposal for a more liberal extension of credit which will result in increasing the average collection period from one month to two months. This relaxation is expected to increase the sales by 25

per cent

from its existing level. You are required to advise the firm regarding adoption of the new credit policy, presuming that the firm's required return on investment is 25

per cent. Solution: COMPUTATION OF NEW SALES Present sales 1,20,00 units × Rs 10 = Rs 12,00,000 Additional sales 30,000 units × Rs 10 = Rs 3,00,000 Total = Rs 15,00,000 5 Weston and Brigham, Managerial Finance, 5th ed., p. 163.

Working Capital Management NOTES Self-Instructional 286 Material COMPUTATION OF NEW TOTAL COST Present sales = 1,20,000 × Rs 9 = Rs 10,80,000 Cost of additional sales = 30,000 × Rs 7 = Rs 2,10,000 Total = Rs 12,90,000 *10,80,000 12 = * (Only variable costs to be considered) New Average cost per unit New total costs New total output = 12,90,000 1,50,000 = = Rs 8.60 per unit AVERAGE INVESTMENT IN RECEIVABLES UNDER NEW SALES PATTERN Total annual sales in units 1,50,000 units Cost of sales (1,50,000 × 8.6) Rs 12,90,000 Average collection period 2 Months Amount invested in receivables: 2 12,90,000 Rs 2,15,000 12 × = Additional investment in receivables = New investment – Existing investment = 2,15,000 – 90,000 = Rs 1,25,000. Profitability of additional sales = Additional units sold × Contribution per unit = 30,000 × 3 = Rs 90,000 Return on additional investment in receivables 90,000 72 1,25,000 = = per cent The required return on investment is only 25 per cent while the actual return on additional investment in receivables is 72 per cent. The proposal should, therefore, be accepted. (

b) Cash discount The effect of allowing cash discount can also be analysed on the same pattern as that of the credit period. Attractive cash discount terms reduce the average collection period resulting in reduced investment in accounts receivable.

Thus, there is a saving in capital costs. On the other hand, cash discount itself is a loss to the firm. Optimal discount is established at the point where the cost and benefit are exactly

offset. Illustration 13.5: A firm has annual credit sales of Rs 15,00,000. It grants two months credit to its customers with no cash discount facility. It intends to offer a discount of '2/10 net 60'. It is expected that this will reduce the average collection period to one month and 50 per cent of the customers (in value) will take advantage of this benefit. The selling price

is Rs 50 per unit, while the average cost per unit

comes to Rs 8.60.

You are required to advise the firm regarding this new scheme presuming that the required return on invetment is 25 per cent and one month is of thirty days.

Working Capital Management NOTES Self-Instructional Material 287 Solution : Annual credit sales Rs 15,00,000 Cash discount allowed (15,00,000 × 50/100 × 2/100) 15,000 Present investment in receivables (15,00,000 × 2/12 × 8.6/10) 2,15,000 Decrease in investment in receivables (15,00,000 × 1/12 × 8.6/10) 1,07, 500 Savings in capital costs (1,07,500 × 25/100) 26,875 New savings (Rs 26,875 – Rs. 15,000) 11,875 Since the new credit terms will result in a net saving of Rs 11,875, the firm may adopt them. (

iii) Collection procedures: A stringent collection procedure is expensive for the firm because of high out-of-pocket costs and loss of goodwill of the firm among its customers. However, it minimizes losses on account of bad debts and increases savings in terms of lower capital costs on account of reduction in the size of receivables. A balance has therefore to be struck between the costs and benefits of different collection procedures or policies. 13.10

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FACTORING INSTITUTIONS Concept Factoring may be defined as a financial service designed to help firms to manage their receivables better. It basically involves an outright sale of receivables of a firm to a financial institution, called factor, which specializes in the management of credit. This service has gained momentum in advanced countries of the West. Initially, factoring was considered to be a financial service under which the factor, usually a bank, undertook collection of its client's debts and financed the client on the basis of his accounts receivable. However, the scope of factoring today has increased considerably. It is a continued service arrangement under which a financial institution undertakes the task of recording, collecting, controlling and protecting the book debts for its clients including the purchase of his bills receivable. Thus, as a result of factoring services, the manufacturer, seller or dealer in goods can concentrate on the manufacturing, advertising and selling functions alone, the record-keeping functions of sales, book debts, bills receivable and their utilization are completely vested with the factoring agency. This results in the following major benefits to the client: (i) Reduction in the cost of maintenance and collection of book debts (ii) Saving in time, manpower, etc. needed for collecion (iii) Monitoring of book debts and prevention of bad debts since the debtors would not like to make a bad impression on the factoring credit institution. Functions The functions of a factoring credit institution can be grouped into the following categories: (i) Credit recording. It involves maintenance of debtors' ledger, collection schedules, discount allowed schedule, ascertainment of balance due, etc.
Working Capital Management NOTES Self-Instructional 288 Material (ii) Credit administration. It includes the work of collecting the book debts. The factoring institution receives service charges by way of discount or rebate deducted from the bill or bills. (iii) Credit protection. The factoring institution eliminates the risk of loss of the client by taking over the responsibility of book debts due to the client. (iv) Credit financing. The factoring institution advances money to the client immediately as per the value of book debts and collects the money on maturity of book debts. This improves the client's liquidity position in the sense that the book debts have been substituted by cash. (v) Finance and business information. A factoring institution also advises the client on the prevailing business trend, financial and fiscal policy, impending development in the commercial and industrial sectors, potential for foreign collaboration, transfer of technology, export and import potential, identification and selection of potential trade debtors, etc. Thus, factoring service is more than simply a method of business finance. The Reserve Bank of India has initiated several measures to develop factoring service. It appointed a working group, popularly known as, the Vaghul Committee, to explore the possibility of encourageing the factoring service for collection of dues and book debts on behalf of suppliers. In its report in 1987, the committee recommended introduction of factoring service in the country. It advised banks as well as private non-banking financial institutions to develop factoring services. As a follow-up measure, the RBI constituted a study group on 19 January 1988 under the chairmanship of Shri Kalyan Sundram to examine the feasibility and mechanism of starting factoring services. As a result of the recommendations of the above group, the Government of India notified factoring as an eligible activity for banking companies. Types of Factoring Arrangement Factoring arrangement can be of the following types: 1. Recourse Factoring. In the case of recourse factoring, the firm bears the credit risks inherent in the receivables assigned to the factor. In other words, the firm is liable for any bad debts incurred. 2. Non-recourse Factoring. In the case of non-recourse factoring, the factor, besides providing assistance for collection, also assumes the risk of bad debts. However, under non-recourse factoring also, an enterprise retains the right of recourse if the customer fails to pay for any reason other than financial distress. 3. Advance Factoring. In the case of advance factoring, the factor provides an immediate advance against the receivables assigned to it. 4. Maturity Factoring. In the case of maturity factoring, the factor provides only assistance in collection and possible insurance against bad debts. 5. Bank Participation Factoring. In the case of an ordinary factoring arrangement, a certain percentage of the face value of the receivables is set aside by the factor as reserve to protect against sales returns or cash discount. For instance, if the receivables are Rs 100, the factor will keep a reserve of about 10 per cent and advance only the balance receivables. In other words, the banker will advance only Rs 90 to the firm. In case of participation factoring, the firm creates a floating charge in favour of a commercial bank and borrows against such reserve. For example, if

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Working Capital Management NOTES Self-Instructional Material 289 in the above case the firm borrows to the extent of 75 per cent of the reserve of 10 per cent, the firm brings down its investment to a meagre 2.5 per cent of the receivables. 6. Supplier Guarantee Factoring. In the case of supplier guarantee factoring, the factor provides a guarantee to the supplier against the invoice raised by the supplier on the firm. The firm raises the bills on the final customers and assigns them to the factor. This arrangement is advantageous to both the supplier and the firm since the factor takes care of the collection of bills of both the parties. 7. International Factoring. It refers to the factoring of export sales. An international factoring house, in addition to the usual services of a factor, also undertakes the responsibility of completing of all legal and procedural formalities connected with export sales. The firm is, therefore, saved from the trouble of getting itself involved in the intricacies associated with international trade. At present there are two factoring companies operating in India—SBI Factors and Commercial Services Ltd., a subsidiary of State Bank of India and Canbank Factors Ltd., a subsidiary of Canara Bank. While SBI Factors with its corporate office at Mumbai has jurisdiction over Maharashtra, Gujarat, Madhya Pradesh and Goa and the Union Territory of Daman and Diu, Canbank Factors with its corporate office at Bangalore has jurisdiction over the southern states. We explain will now detail in the factoring services offered by SBI. Factoring services by State Bank of India. The first factoring service in India was launched on 1 September 1991 by State Bank of India, in collaboration with the Small Scale Industries Development Bank of India (SIDBI) and some other commercial banks. These institutions together launched a new company called SBI Factors and Commercial Services Ltd. A brief description of the institution and its functioning is given below: 1. Share Capital. The company has a subscribed share capital of Rs 25 crore. The share capital is held in the following manner: State Bank of India 54 per cent. SIDBI 20 per cent; State Bank of Saurashtra 10 per cent; Union Bank of India 10 per cent and State Bank of Indore 6 per cent. 2. Working Procedure. The working procedure involved in the factoring services can be summarized as follows: (i) The supplier invoices his customers in the usual way only adding the notification that the debt due on
the invoice is assigned to and must be paid to
SBI Factors. (ii) The supplier offers the assigned invoices to SBI Factors with a schedule of offer accompanied by the receipted delivery challans. (iii) SBI Factors provides pre-payment to the supplier up to 80 per cent of the invoice value. It also performs the accounting function of sales ledger maintenance and collection of invoices purchased. (iv) SBI Factors sends an official notification and personalized statement of accounts to all the customers of the supplier. (v) On receipt of payment from the customers, SBI Factors pays the remaining 20 per cent of the invoice value to the supplier. (vi) In order to keep the supplier informed of the factored invoices, SBI Factors sends monthly statements of accounts to the supplier.

Working Capital Management NOTES Self-Instructional 290 Material The greatest benefit of the factoring services to the supplier is that he can convert his invoice into instant cash up to 80 per cent of the value without having to wait for the usual 30 or more credit days. Service Fee A service fee is levied for the work involved in maintaining the sales ledger and collecting is the debts due on the invoices. It calculated as a percentage of the gross value of the invoices factored, based on (a) the gross sales volume, (b) the number of customers, (c) the number of invoices and credit notes, and (d) the work involved in the collection. The service fee range usually between 2 and 5 per cent of the gross value of the invoices.

Illustration 13.6:

The turnover of R Ltd. is Rs 60 lakh of which 80 per cent is on credit.
Debtors are allowed one month to clear the dues. A factor is willing to advance 90
per cent
of the bills raised on credit for a fee of 2 per cent per month plus a commission of 4
per cent
of the total amount of debts. R Ltd., as a result of this arrangement, is likely to save Rs 21,600 annually in management costs and avoid bad debts at 1
per cent
on the credit sales. A
scheduled
bank has come forward to make an advance equal to 90
per cent of the debts at an interest rate of 18 per cent
per annum. However, its processing fee will be 2 per cent of
the debts. Would you accept factoring or the offer from the bank?

Solution:

Presuming that the turnover given in the question represents turnover, the evaluation can be done as follows:
EVALUATION OF FACTORING SERVICE Cost of Factoring: Rs Fee = 4,00,000* × 90/100 × 2/100 = 7,200 *(60,00,000 × 80/100 × 1/12) Commission at 4 per cent on Rs 4,00,000 16,000 23,200 Less: Savings in Cost Saving in monthly management cost = Rs 21,600/12 = Rs 1,800 1 per cent saving of bad debts on Rs 4,00,000 = 4,00,000 × 1/100 = Rs 4,000 Net Cost of Factoring 5,800 17,400 Cost of Bank Advance: Interest

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at 18 per cent per annum for one month: 4,00,000 × 90/100 × 18/100 = 5,400 Processing Fee: Rs 4,00,000 × 2/100 = 8,000 Unavailable bad debts loss that cannot be avoided = 4,000 Total = 17,400 Since costs of both alternatives are equal, it is immaterial whether R Ltd. goes in for factoring or bank loan. 13.11 MANAGEMENT OF ACCOUNTS PAYABLE The management of accounts payable is as important as the management of accounts receivable. Of course, there is a basic difference between the approach to be adopted Check Your Progress 7. What are 'accounts receivable'? 8. State two functions of a factoring credit institution. 9. What is 'advance factoring'?

Working Capital Management NOTES Self-Instructional Material 291 by the finance manager in the two cases. Whereas the underlying objective in the case of accounts receivable is to maximize acceleration of the collection process, the objective in case of accounts payable is to slow down the payment process as much as possible. But it should be noted that

delay in payment of accounts payable may result in the saving of some interest cost but it can prove very costly to the firm in the form of

loss of credit in the market. The finance manager has, therefore, to ensure that payments to creditors are made at the stipulated time after obtaining the best credit terms possible. 13.12

WORKING CAPITAL FINANCE The requirements of working capital are generally met from short-term sources of finance. These include: Short-term loan from Commercial Banks, Retained Earnings, Trade Credits, Public Deposits, Accrual Accounts, Business Finance Companies, Advances from customers, etc. All these sources of finance have already been discussed in Unit 9, Financing: Long-term and Short-term. 13.13 SUMMARY z Working capital management is concerned with various aspects of manageing

current assets, current liabilities and the relationship between them. z The basic components of working capital are cash or near-cash assets, accounts receivable, inventories and accounts payable. z Working capital management is therefore concerned with manageing all the above factors. z Cash management involves manageing levels of inflation, development of cash and the investment of surplus cash. z Receivables management involves setting and implementing appropriate policies regarding credit standards, credit terms, credit procedures, etc. z Inventories consist

of raw materials, work-in-process and finished goods. z The objective of inventory management is to

maintain a minimum investment inventory without slowing down of the production process. The techniques of inventory management include fixing of the Economic Ordering Quantity, ABC Analysis, Inventory Turnover Ratio, Ageing Schedule of Inventories, etc. 13.14 KEY TERMS z

Gross Working Capital: It refers to the firm's investment in total current

or circulating assets.

z Net Working Capital:

It refers to

that portion of a firm's current assets which has been financed by long-term funds.

It may also be

defined as the excess of current assets over current liabilities.

It

is

generally referred to as 'working capital'. z Operating Cycle: The time gap between sales and their actual realization in cash. z Permanent Working Capital: It

refers to

the

minimum amount of investment in current assets which is required at all times to carry

on a minimum level of business activities.

This is also referred to as 'Core Current Assets'.

Working Capital Management NOTES Self-Instructional 292 Material z Temporary Working Capital: This refers to such working capital which

keeps on fluctuating

from time to time on the basis of business activities.

z Working Capital

Management: This refers to all aspects concerning the administration of both current assets and current liabilities. z Just-in-Time Approach: The approach which emphasizes that items should be received at the correct time. z Concentration Banking: The system of decentralizing collection of accounts receivable by establishing a large number of collection centres in different areas. z Float: It

refers to

the amount tied up in cheques that have been drawn but

not yet

presented for payment. z

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Credit Period: This refers to the duration of time for which credit is extended to customers.
z Credit Policy: It
refers to those decision variables that influence the amount of trade credit, i.e., investment in receivables.
z
Credit
Standards: The basic criteria for extension of credit to
customers.
z
Credit Terms: It refers to the terms under which a firm sells goods on credit to its customers.
z ABC Analysis: The technique of exercising selective control over inventory items. z
Economic Order Quantity: The size of the order which yields maximum economy when purchasing any item of inventory. 13.15 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Working capital is required because of the time gap between the sales and their actual realization in cash. 2.
Inadequate working capital means the firm does not have sufficient funds for running its operations which ultimately results in production interruptions and lowering
of profitability. 3.
The basic objective
of working capital management is to manage the firm's
current assets and
current liabilities in such a way that
the
satisfactory level of working capital is maintained, i.e., it is neither inadequate nor excessive. 4.
There are two basic objectives of cash management: (i) To meet the cash disbursement needs as per the payment schedule (ii) To minimize the amount locked up as cash
balances 5. A
cash budget or cash forecast is the most significant device for planning and controlling the use of cash. 6.
Inventories are goods held for eventual sale by a firm. 7. Accounts receivable (also popularly termed as receivables) constitute a significant portion of the total current assets of a
business after inventories. They are
a
direct consequence of 'trade credit' which has become an essential marketing tool in modern business. 8.
The functions of a factoring credit institution can be grouped into the following categories: (i) Credit recording. It involves maintenance of debtors' ledger, collection schedules, discount allowed schedule, ascertainment of balance due, etc.
Working Capital Management NOTES Self-Instructional Material 293 (ii) Credit administration. It includes the work of collecting the book debts. The factoring institution receives service charges by way of discount or rebate deducted from the bill or bills. 9. In the case of advance factoring, the factor provides an immediate advance against the receivables assigned to it. 13.16 QUESTIONS AND EXERCISES
Short-Answer Questions 1. What is working capital management? Discuss the role of the various constituents of working capital. 2. What are the determinants of working capital
needs of an enterprise? 3. Explain the concept of Hard Core Working Capital. How should it be determined and financed? 4. 'Efficient inventory management is reflected in the liquidity and profitability of the firm.' Explain. 5. What are the constraints in the management of working capital? Long-Answer Questions 1. (a) Define working capital. Distinguish between permanent and temporary working capital. (b) Explain how working capital management policies affect the profitability, liquidity and structural health of companies. 2. What are
the objectives of a credit policy? What is an optimum credit policy? Discuss. 3. Explain the
importance of working capital in attaining the profit objective of an organization. Explain how working capital needs are assessed. 4. How do you go about projecting the short-term financial requirements of a business firm? 5. Explain the various methods by which working capital requirements can be reasonably forecasted. 6. How would you assess the working capital requirements for a seasonal industry? Illustrate with an example. 13.17 PRACTICAL PROBLEMS Inventory management 1.
Calculate the Economic Order Quantity from the following information. Also state the number of orders to be placed in a year. Consumption of materials per annum 10,000 kg Order placing costs per order Rs 50 Cost per kg of raw material Rs 2 Storage costs 8
per cent of average inventory [Ans. EOQ = 2,500 kg; No of orders = 4]
Working Capital Management NOTES Self-Instructional 294 Material 2. A firm is able to obtain

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quantity discounts on its orders of material as follows: Price per tonne (Rs) Tonnes 6.00 Less than 250 5.90 250 and less than 800 5.80 800 and less than 2,000 5.70 2,000 and less than 4,000 5.70 4,000 and over The annual demand for the material is 4,000 tonnes.

Stock holding costs are 20 per cent of material cost per annum. The delivery cost per order is Rs 6.00. You are required to calculate the optimum quantity to order. [Ans. 4,000 units, if delivery can be staggered in lots of 207 tonnes. If delivery cannot be staggered EOQ is 800 units where total cost is the least i.e., Rs 23,694] Receivables Management 3.

The present credit terms of P Company are 1/10 net 30. Its annual sales

is Rs 80 lakh;

average collection period is 20 days; variable costs and average total costs to sales are 0.85 and 0.95, respectively and its cost of capital is 10 per cent.

The proportion of sales on which customers currently take discount is 0.5. P Company is considering relaxing its discount terms to 2/10 net 30. Such relaxation is expected to increase sales by

Rs 5 lakh, reduce the average collection period to 14 days and increase the proportion of discount sales to 0.8. What will be the effect of relaxing the discount policy on

the company's profits? Take a year as 360 days. [Ans. Net decrease in profit Rs 9,986 (i.e., Rs 96,000 – Rs 86,014). It is not advisable to relax the present discount policy] 4. ABC Ltd. is presently selling a product @ Rs 10 per unit. The pre-sales are 30,000 units, and

the variable cost per unit is Rs 6 and the fixed costs amount to Rs 60,000. The average collection period is 30 days. The company

proposes to relax its credit standard resulting in a 15 per cent increase in unit sales. The average collection period is expected increase to 45 days. However, there is to be no change in bad debts and collection expenses. The company expects return on investment at 15 per cent. You are required to advise whether the company should relax its standard. [Ans. Increased profit on account of relaxation in credit standard Rs 18,000 Increased investment in accounts receivables Rs 13,375 Cost of increased investment in receivables Rs 2,006.25 [It would be profitable for the company to relax the credit standards] 13.18 FURTHER READING Maheshwari, S.N., S.K. Maheshwari. An Introduction to Accountancy. New Delhi: Vikas Publishing House, 2003. Maheshwari, S.N., S.K. Maheshwari, Sharad K., A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 295 UNIT 14 CORPORATE RESTRUCTU- RING: DERIVATIVES AND CORPORATE GOVERNANCE Structure 14.0 Introduction 14.1 Unit Objectives 14.2 Corporate Restructuring: Mergers, Amalgamations and Acquisitions 14.3 The Meaning

of Corporate Restructuring 14.4 Forms of Corporate Restructuring 14.5 Mergers, Amalgamations and Acquisitions 14.6 Reasons for Mergers or Acquisitions 14.7 Types of Mergers 14.8

The Synergy of Mergers and Acquisitions 14.9 The Dangers of Mergers 14.10 Amalgamations, Mergers and Acquisitions in India 14.11 Corporate Governance 14.12 Summary 14.13 Key Terms 14.14 Answers to 'Check Your Progress' 14.15 Questions and Exercises 14.16 Further Reading 14.0 INTRODUCTION Earlier we have already explained the relationship between risk and return. Generally, risk and return have a positive co-relation.

The higher the risk, the higher is the return, and vice versa.

The value of the business depends upon the return that the business is getting on the capital employed. The higher the return, greater is the value of the business, and vice versa. Thus 'Risk' and 'Value' also have a positive co-relation. Greater the risk, higher the return and greater the value of the business and vice versa. A finance manager knows that there is no way to run away from risk while carrying on any business. He has to sometimes restructure his business, merge with the competitor or acquire the competitor's business to stay in the business. In order to mitigate financial risk, he may opt for instruments like derivatives. He has to opt for good corporate governance practices in order to achieve corporate excellence. The present unit deals with all these concepts and techniques which help in managing both internal and external risks and also risks in domestic as well as international business. 14.1 UNIT OBJECTIVES z Meaning, objectives and forms of corporate restructuring z Concept and reasons for mergers, amalgamations and acquisitions z Different types of mergers z Synergy and dangers of mergers and acquisitions

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 296 Material z Mergers, amalgamations and acquisitions in India z Concept and types of derivates z Need and importance of corporate governance z Steps taken by SEBI for corporate governance in India 14.2 CORPORATE RESTRUCTURING: MERGERS, AMALGAMATIONS AND ACQUISITIONS Corporate restructuring has gained considerable importance all over the world because of intense competition, globalization and technological changes. The structural reforms initiated in the early 1990s have compelled the Indian industry also to adopt focused strategies like corporate restructuring by shedding non-core activities like mergers and amalgamations. The process will accelerate with the opening up of the economy to attract foreign investment. However, in India, corporate restructuring is still in the adolescent stage. The status of the regulatory framework is also being revised. In the years to come, the role of different institutions involved in corporate restructuring, viz., the Securities Exchange Board of India, the Company Law Board, stock exchanges, shareholders' bodies, etc., will crystallize. 14.3 THE MEANING OF CORPORATE RESTRUCTURING The term corporate restructuring may simply be defined as a comprehensive process by which a company can consolidate its business operations and strengthen its position for achieving the desired objectives, namely staying synergetic, slim, competitive and successful. It involves significant reorientation, reorganization or realignment of assets and liabilities of the organization through conscious management actions with the objective of drastically altering the quality and quantity of future cash flow streams. The underlying objective of corporate restructuring is to conduct business operations in an efficient, effective and competitive manner so as to increase the organization's market share, brand power and synergies. In the emerging scenario, joint ventures, alliances, mergers, amalgamations and takeovers are becoming the easiest and quickest way to expand capacities and acquire dominance over the market. Objectives of Corporate Restructuring An organization may go for corporate restructuring for achieving any one or more of the following objectives: 1. Growth. In order to survive, an organization must grow over a period of time. Growth is measured in terms of sales, profits and assets. Increase in sales is a direct indicator of the growth in a firm's operations since increase in sales volume indicates that the firm has been able to maintain its competitive edge and enlarge its market. Similarly, increase in profits means higher returns for the shareholders. This becomes a major incentive for shareholders to contribute liberally for the organization's growth. An increase in the value of assets is another significant parameter to measure growth. All these criteria of increased sales, increased profits and increased assets should be used in conjunction with each other to get a realistic picture of the growth of an organization. 2. Technology. The fast pace of technological change makes it obligatory for technologically weaker firms to enter into technical collaborations with the firms having Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 297 superior technology in order to survive. As a matter of fact, this has resulted in international restructuring and acquisitions to take advantage of improved and latest technology. 3. Government Policy. In order to adapt itself to a changed environment because of change in government policies, firms may be required to go for corporate restructuring. 4. Exchange Rate Fluctuations. The movement in the prices of international currencies has an impact on the effective price paid for acquisitions. Firms can decide the profitability or otherwise of domestic operations as compared to carrying out off-shore operations. 5. Economic Stability. The economic cycles and conditions may force firms to consolidate and/or diversify their business operations. It has generally been observed that during economic recession, industries try to restructure to be more effective through consolidation and spin-offs themselves while in, prosperous situations there are a number of takeovers and acquisitions. 6. To Reduce Dependence. In order to reduce dependence and ensure continuous and reliable supply of raw materials, the firms may go for restructuring in the form of mergers and acquistions. It may be noted these are the most common reasons for corporate restructuring. The restructuring strategy to be adopted by a company depends on its individual situations and on the perception of the management. 14.4 FORMS OF CORPORATE RESTRUCTURING Corporate restructuring may take any of the following forms: 1. Expansion. This is the most common and convenient form of restructuring as it involves only increasing the existing capacity of the business and does not involve any additional technical expertise.

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The expansion of business capacity brings in additional funds through debt and/or equity, acquisition of modern machinery and value addition to the product segments and ultimately increases firm's profitability. 2. Diversification. This involves entering into a line of business or product different from the existing line of activity which can be conveniently and economically combined with the existing activites of the business. This is a very common form of restructuring and carried out with the objective of widening the risk base. However, diversification into areas which are totally unrelated may bring more problems to the business than possible benefits. A firm may grow internally or externally. A firm is said to grow internally when it expands its area of operation. A firm may expand its activities in the same product or different lines of products. A firm may grow externally through combining or joining with other firms, or acquiring other firms. A combination of firms is probably the fastest way to grow. There are various forms of business combinations which can result in external growth. Three forms of combination which are usually applied with the objective of expansion are: (i) Mergers (ii) Amalgamations or Consolidations and (iii) Acquisitions or Takeovers. These have been described in detail later in the unit. 3. Collaboration. It refers to the process where an organization joins hands with another organization which is technically or financially superior and resourceful. This form of restructuring has becoming quite popular in developing countries since collaboration brings bolli funds and advanced technology.

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 298 Material 1 (1969) CLJ 1961 4. Spinning Off/Demergers. It refers to the process where a business division or a product line of a company is separately reorganized into a different entity. The entity so formed may either be in the form of a subsidiary company or altogether a separate company.

This becomes particularly necessary when a multiproduct company enters into a collaboration with a foreign company or a company having a brand equity. The separate entity so formed ensures that the rights and obligations of the partners of the joint venture company remain independent of those of the parent company. 5. Hive-off. It refers to the sale of a loss-making division or a product line by a multi- product company. This serves a dual purpose. The buyer is benefitted because of the low acquisition cost of a completely established product line which he can conveniently combine with his existing business and thus increase his profit and market share.

On the other, the seller is benefitted since it enables him to get rid of an ailing operation from its business structure and concentrate more on profitable segments and consolidate its business activities. The recent example of such a restructuring is hiving off its share in Excel Industries by Tata Chemicals. 6. Mergers, Amalgamations and Acquisitions. As stated earlier, mergers, amalgamations and acquistions help in achieving faster growth of the firm. As a matter of fact, Indian industrialists today feel that a merger is now the best route to achieve a size for their company which is comparable with global companies for giving effective competition to them.

This is because in the present era of LPG (liberalization, privatization and globalization) the old theory 'small is beautiful' has been replaced by the new theory 'big is bountiful.' The terms mergers, amalgamations and acquisitions are often used interchangeably. However, technically they differ from each other as explained in the following pages. 14.5 MERGERS, AMALGAMATIONS AND ACQUISITIONS Meaning of Merger: The term merger refers to a situation where a company acquires all the assets and liabilities or a part thereof constituting an undertaking of another company (or companies) and the latter is (are) dissolved. The acquired company pays the shareholders of the merged company (or companies) cash or securities and continues to operate with the resources of the merged company (or companies) together with its own resources. It is thus, synonymous with the term 'absorption'. Meaning of Amalgamation. The term 'amalgamation' or 'consolidation' refers to a situation where two or more existing companies are combined into a new company formed for the purpose. The old companies cease to exist and their shareholders are paid by the new company in cash, shares or debentures.

Thus, technically, there is difference between a merger and an amalgamation. In case of a merger, one existing company takes over the business of another existing company or companies, while in case of amalgamation, a new company takes over the business of two or more existing companies. However, in practice, no such distinction is observed. As a matter of fact, the term amalgamation includes merger also. In the case of Sonmayazulu vs. Hob Purdhommee & Co. Ltd., 1 the learned Judge observed that

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 299 the term amalgamation is a 'state of things under which two companies are joined so as to form a third entity or one company is absorbed into or blended with another'.

According to Section 2 (1A) of the Income Tax Act 1961, the term amalgamation
means the
merger of one or more companies with another company or merger of two or more companies to form one company
in such a manner that– (i) all the property of the amalgamating company or companies immediately before the amalgamation becomes the property of the amalgamated company by virtue of the amalgamation, (ii)
all the liabilities of the amalgamating company or companies immediately before the amalgamation become the liabilities of the amalgamated company by virtue of the amalgamation, (
iii) shareholders holding not less than nine-tenths in value of the shares in the amalgamating company or companies (other than shares already held therein immediately before the amalgamation or by a nominee for, the amalgamated company
or its subsidiary)
become shareholders of
the amalgamated company by virtue of the
amalgamation.

The above definition is applicable only to companies and not other forms of business organizations. The company or companies which go in for a merger or an amalgamation are known as amalgamating companies or transferor companies and the company which is formed as a result of merger is
known as amalgamated or transferee company. The definition given in the Income Tax Act requires the fulfillment of three conditions for a valid amalgamation. These three conditions can be understood by taking the case of A Ltd. and B Ltd. which decided to merge into one company B Ltd. The amalgamation of these companies will be valid as required by the Income Tax Act when all the following conditions are satisfied: (i) The entire property of A Ltd. must become the property of B Ltd. Here, the property of A Ltd. implies all assets or right to assets of A Ltd. immediately before amalgamation. (ii) All the liabilities of A Ltd. must become the liabilities of B Ltd. Here, the liabilities of A Ltd. imply all items of liabilities immediately before amalgamation. (iii) Suppose, immediately before the amalgamation, B Ltd. held 20 per cent shares in A Ltd., then for a valid
amalgamation, shareholders holding not less than nine-tenth in value of the
remaining 80 per cent shares in A Ltd., i.e., at least 72 per cent (80 × 9/10) shares in A Ltd. should become shareholders of B Ltd., by virtue of the amalgamation. However, if say, all the share capital of A Ltd. was held by B Ltd., then the merger of A Ltd. into B Ltd. would qualify as amalgamation under Section 2 (1A) of the Income Tax Act, if all the other conditions are fulfilled.

Meaning of Acquisition. The term 'acquisition' or 'takeover' refers to acquiring of effective working control by one company
of another.

The control may be acquired either through purchase of majority of shares carrying voting rights exercisable at a general meeting, or controlling the composition of the Board of Directors of the other company. The company acquiring the controlling shares or voting power is termed as the holding company, while the company shares are acquired as the holding company, while the company whose shares are acquired is termed as the subsidiary company. It may be noted that for acquiring effective control over another company it is not
necessary
Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 300 Material
to own 51 per cent of the share capital of another company. For a widely held company, ownership of 20 per cent or as little as 10 per cent of the share capital outstanding may constitute effective working control. The advantage of acquisition is that it allows a company to acquire control over another company by investing much less than what would be necessary for a merger.

According to the Monopolies and Restrictive Trade Practices Act, 1969 the term 'takeover' means: (a) in relation to an undertaking owned by a body corporate, the acquisition of not less than 25 per cent of the voting power in relation to such a body corporate; (b) in relation to any undertaking, includes the acquisition or control of management thereof, whether by the acquisition of ownership of the undertaking or under any mortgage, lease or licence or under any agreement or other arrangement. In an acquisition or takeover, the shares may be purchased either for cash or in exchange of shares of the acquiring company. The acquired company continues to exist but its shareholders change without any change in its constitution. Of course its operational control passes the hands of a new management. Takeovers can be friendly or hostile. Friendly takeovers are arranged between companies through bargaining. Hostile takeovers are unfriendly acqusitions of shares in a way as to hold controlling interests in the company. 14.6

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REASONS FOR MERGERS OR ACQUISITIONS The following are the important reasons for mergers, amalgamations or acquisitions of firms. 1. Increase in Effective Value The principal reason for these external combinations is that the value of the company so formed by combining resources is greater than the sum of the independent values of the merged companies. For example, if A Ltd. and B Ltd. merge and form a company C Ltd., the effective value of C Ltd. is expected to be greater than the sum of the independent values of A Ltd. and B Ltd.

Symbolically this can be put as follows: V (C) < V (A) + V(B) where, V (C) = Value of the merged company V (A) = Value of A Ltd. V (B) = Value of

B Ltd. Similar is the case with acquistions. By acquiring the assets of Larsen and Turbo, Reliance Industries now has highest value of assets under its umbrella. This takeover changed the Indian corporate scene to a great extent. 2. Operating Economics

The

combination of two or more companies results in a number of operating economics. Duplicate facilities can be eliminated.

Generally, non-operations functions like marketing, accounting, purchasing, computer resources and other similar operations can be consolidated and shared, leading Check Your Progress 1. What is the underlying objective of corporate restructuring? 2. What is 'hive-off'?

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 301 to a reduction in overheads. This would lead to the combining of strengths of individual companies for optimized operations. 3. Economies of Scale The amalgamated company can have a

larger volume of operations as compared to the individual operations of the amalgamating companies. It can, thus, have economies of scale by having intensive utilization of production plants, distribution networks, engineering services, research and development facilities, etc. However, such an advantage accrues only when

the

companies in the same line of business are combined, i.e., there is a horizontal merger.

It may be noted that the amalgamated company can have economies of operations only upto a point. Beyond this point, any increase in volume may cause more problems than remedies. The average cost per unit may start increasing rather than decreasing beyond this point, as shown in Figure 14.1. Figure 14.1 Economies of Operation of an Amalgamated Company 4.

Tax Implications In several amalgamation schemes, tax implications play a crucial role. A company with heavy cumulative losses may have little prospects of taking advantage of carrying forward the losses and meeting them out of future profits and thus taking advantage of tax benefits.

However, in case this company is merged with another profit making company, its losses can be set off against the profits of the profit making company resulting in substantial tax benefits to the amalgamated company. 5. Elimination of Competition The combining of two or more companies under the same name, would result in

the

elimination of competition between them. They would save in terms of advertising cost. This may probably benefit the consumer in terms of goods being available at

a lower price. 6. Better Financial Planning A

merger results in better financial planning and control. For example, a company having a long gestation period may merge itself with another company having

a

short gestation period. As a result of this merger, the profits coming from the company with the shorter gestation period can be used to improve the financial requirements of the company with a long gestation period. Later, when the company with

a long gestation period starts earning profits, it

will benefit the amalgamated company as a whole. Simialrly, the surplus funds of acquiring

a company may be more effectively utilized in the acquired company.

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 302 Material 7. Growth As mentioned earlier, the desired rate of growth may not be achieved through internal expansion. A company may find that through external combination, faster and balanced growth can be achieved.

Growth by acquisition will also be cheaper and simpler in terms of the cost and efforts involved as compared to internal expansion. This is because the need to introduce new product lines, develop new markets, acquire new production facilities and setting up a totally new administration is altogether avoided. 8. Stabilization through Diversification External combinations like mergers, amalgamations

or acquisitions, help a company in achieving stabilization in its earnings by diversifying its scope of operations. A company experiencing wide economic fluctuations and cyclical phases in its earning due to

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nature of its product or business, may merge with another company whose business cycle is different from its own. This merger of companies with different business cycles will bring consistent earnings to the business as a whole. 9. Dilution under FEMA A foreign company operating in India may merge with an Indian company in order to meet the requirements of the Foreign Exchange Management Act for diluting its foreign shareholdings. 10. Backward and Forward Integration A company which assembles the products manufactured by some other company may merge with that company for manufacturing and assembling the entire range of products under the same roof. It may also merge with its main consumers. This would bring better interaction between different functional areas, resulting in improved efficiency, reduced costs, effective control and reduction in prices of the company's products. 11. Personal Reasons The shareholders of a closely held company may desire that their company be acquired by another company that has an established market for it shares. This will also facilitate the valuation of their shareholders' holdings for wealth tax purposes.

Moreover, shareholders of such a company can also improve their liquidity position by selling some of their shares and diversifying their investments. 12.

Economic Necessity The government may direct the merger of two or more sick units into a single unit to make them financially viable.

Similarly, it may also require the merger of a sick unit with a healthy unit to ensure better utilization of resources, improving returns and better management. Rehabilitation of sick units may also become a social necessity since its closure may result in unemployment and other consequential problems. The reasons just explained is not an exhaustive list of reasons for seeking external growth. Other factors like socio-economic conditions, economic, fiscal and trade policies of the government, or statutes governing the company may induce the merger or acquisition of companies for achieving long-term benefits to the company and its shareholders.

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 303 14.7

TYPES OF MERGERS Mergers can be of the following types: 1. Horizontal Merger This is the joining of two or more companies in the same area of business. Thus, in case of this merger, two or more companies which are producing essentially the same products or providing the same services or which are in direct competition with each other join together. For example, two booksellers or two manufacturers of motorcycles may merge with each other. Such a merger would be a horizontal merger.

A horizontal merger leads to economies of scale, operating economies and elimination of duplication of facilities. A horizontal merger reduces competition and the number of companies in an industry. However, it also leads to concentration of economic power. 2.

Vertical Merger This is the joining of two or more companies involved in different stages of the production or distribution of the same product or service. Thus, in case of this type of merger, two or more companies which are engaged in the production of the same goods or services but at different stages of production or service routes, join together. For example, a coal mining company and a railway company which carries coal to different industrial units may merge. Such a merger will be termed as a vertical merger.

The essential objective of such a merger is to ensure a source of supply required for the production of goods or services or ensure a ready market for the goods or services produced. However, this type merger may also lead to increased concentration of economic power and consequential legal and social problems. 3. Conglomerate Merger This is the joining of two or more companies whose businesses are not related with each other either vertically or horizontally. The companies involved in such a merger may be manufacturing totally different products. Of course, there may be some common features between them such as the same channel of distribution or technological area. For example, a company engaged in manufacturing activities may merge with a company engaged in

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the insurance business. The two businesses are totally different and, therefore, such a merger is termed as conglomerate merger. The basic objective behind such a merger is the diversification of activities. Such a merger may also lead to concentration of economic power by virtue of controlling different fields of business activities by the merged corporation. 4.
Reverse Merger In case of an ordinary merger, a profit making
company
takes over another company which may or may not be making a profit.
The
objective is to expand or diversify the business. However, in case of a reverse merger, a healthy company merges with a financially weak company and the former company is dissolved. The basic philosophy
of
reverse merger is to take advantage of the provisions of the Income Tax Act, 1961 which permits a company to carry forward its losses to set off against its future profits.
Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 304 Material Reverse merger is carried out through the legal route, but where one of the merging companies is a sick industrial company under SICA, such a merger must take place through BIFR. Reserve merger automatically entitles the transferee company for the benefit of
carry forward and set-off of losses and unabsorbed depreciation of the transferor company.
There is no need to comply with section 72A of the Income Tax Act. It may be noted that in the context of the Companies Act, there is no difference between a regular and a reverse merger. It is like any other amalgamation or merger. 5.
Cross-Border Merger and Acquisitions The term cross-border merger and acquisitions involves mergers and acquisitions of firms belonging to different
countries. In
recent years, there has been a substantial increase in the quantum of such acquisitions and takeovers in Europe and USA. The UK has been the most important foreign investor in USA in recent years with British companies making
large acquisitions. Business houses from France, Germany, Holland and Japan have also been very active recently in the acquisition of companies in different parts of the world. Such acquisitions/mergers have been basically due to economic forces, viz. globalization of the market place for many products, increasing competition which has assumed a global character, explosion of technology based on massive investments in R&D and privatization of state enterprises, as in the case of former East Germany. 14.8 THE
SYNERGY OF MERGERS AND ACQUISITIONS The term ‘synergy’ refers to
the
benefits resulting from mergers and acquisitions because of coordinated action. Synergy may be
of
three types: 1. Operating synergy: It is mostly in the form of cost reductions which are the result of economies of scale or economies of scope. Economies of scale decrease the average cost through technological economies which affect the minimum size of the plant in an industry, or managerial economies which result in lower production and distribution costs. Economies of scope result from an increase in the number of products offered. A company will be able to utilize one set of inputs to provide a broader range of products and services. Operating synergy is most likely to accrue from the horizontal merger of two companies in the same line of business. In a vertical merger (either backward with integration towards raw materials or forward with integration towards finished products), synergistic gains result when the merging firms are technologically or spatially proximate. The merger of group companies or acquiring those that were engaged in related business would enhance the product scope/ brands /geographical reach. 2.
Financial synergy: It refers to the impact of a merger on the cost of capital for the merging entities. One of the financial benefits of diversification is the ‘coinsurance effect’. The acquisition of a company which is less responsive to fluctuations in the economy would give the acquiring company a steady stream of earnings.
Another reason could be the acquiring company’s belief that it can manage the target company’s resources better. Furthermore, a target company having transferable tax losses would be of interest to an acquiring company which could offset its profits. 3.
Managerial synergy: This is in the form of availability of highly trained managerial personnel at the least cost and the benefit of latest technology.

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 305 Merger and amalgamation activities help to reduce the gestation period for launching new production facilities and promoting new brands, strengthening porduct protfolios, minimizing duplication in basic research and development expenditure and expanding marketing and distribution networks. In general, they enhance the shareholders value. Thus, M&A are perceived as prudent corporate strategies. 2 Operating synergy has a direct relationship with horizontal merger, while financial synergy can be availed of because of vertical and reverse merger. Managerial synergy may be achieved through both conglomerate and cross border mergers. 14.9 THE DANGERS OF MERGERS Mergers involve the following dangers: l. Elimination of Healthy Competition Mergers may involve the absorption of small, efficient and growing units into a larger unit. Thus, it eliminates individual undertakings which are competent to offer stiff competition necessary for the healthy growth of industrial units. 2. Concentration of Economic Power It has already been explained that all types of mergers have the inherent tendency of concentration of economic power. Monopolistic conditions may be created which are ultimately to the disadvantage of the consumers. 3. Adverse Effects on National Economy Concentration of economic power, elimination of competition, etc., may ultimately result in deterioration in the performance of the merged undertakings. This is going to adversely affect the national economy.

However, mergers are essential for the growth of organizations. Mergers lead to economies of scale, maximum utilization of capacity, operating economies, mobilization of financial resources, rehabilitation of sick units, reduction in costs, etc. The dangers of mergers are, therefore, more than off-set by the advantages of mergers. However, every scheme of amalgamation or merger should be examined, keeping in view its advantages and the dangers it would impose on the economy. The scheme should be taken up only when it is to the advantage of the economy in general and is in public interest. 14.10 AMALGAMATIONS, MERGERS AND ACQUISITIONS IN INDIA The overall corporate scenario regarding amalgamations and acquisitions prevalent in India till recently was very dull. However, the process of economic liberalization and globalization which has swept the Indian economy since the 1990s has created a business environment which is highly competitive. This competitive environment has forced many 2 RBI Report Currency and Finance 1998–99, IV–4. Check Your Progress 3. What is vertical merger? 4. What is 'synergy'?

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 306 Material 3 RBI, Report on Currency and Finance, 1998-99. companies to restructure their strategies leading to an unprecedented rise in mergers, takeovers and strategic alliances. The Government of India has also realized the necessity of restructuring the Indian corporate sector. It has considerably liberalized the policies and procedures for amalgamations, mergers and acquisitions. However, in order to prevent any unhealthy and hostile acquisitions and takeovers, the Securities and Exchange Board of India (SEBI) has laid down a code of conduct for acquisitions and takeovers. The takeover code was first formed in 1994. Later on it was simplified by SEBI in 1997 on the basis of the recommendations of Bhagwati Committee. The major thrusts of the code are greater transparency, firmness and equality of treatment to all investors, timeliness and accuracy of disclosure of information, prevention of frivolous offers and enforcement against violations. The takeover code is currently undergoing further revision to make it more investor-friendly. The financial institutions (FIs) have proposed to formulate a comprehensive policy for funding and encouraging mergers and acquisitions in the Indian industry. Since FIs have large exposures both in terms of loans and equity holdings in many companies, a uniform policy would facilitate smooth mergers and takeovers. The Union Budget of 1999-2000 proposed changes to facilitate merger and amalgamation activities by defining the tax treatment in respect of amalgamations, demergers and slump sales. In the case of amalgamations, the Bill proposed to relax the conditions required to be fulfilled by an amalgamated company to avail the benefits of set-off and the carry-forward of accumulated losses and unabsorbed depreciation. Demerger is defined as the transfer pursuant to a scheme of arrangement by a company of one or more of its undertakings to any resulting company.

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The company whose undertaking is transferred is the demerged company and the company to which the undertaking is transferred is defined as the resulting company. In case of a slump sale, one or more undertakings are transferred for a lump sum consideration, without values being assigned to the individual assets and liabilities. The budget seeks to ensure that the gains arising out of such sales should be treated as capital gains and taxed accordingly. The proposed changes are likely to benefit major business groups which are undergoing restructuring activity. The restructuring dynamics of the Indian corporate sector have been boosted by conducive industrial policies. However, the exit policy needs to be reviewed in the light of the liberalization of the industrial sector. Restructuring of the corporate sector would be much more growth-friendly with the help of proper corporate governance and a conducive exit policy. During the financial year, 1998-99, M&A deals worth Rs 151 billion were reported with nearly half of these deals reported in the last quarter. There were 66 open offer documents filed with the SEBI as against 37 offers in the previous year. M&A activity was prominent in sectors like cement, steel, computer software, finance, pharmaceuticals, consumer durables, food products, agro-chemicals and textiles. During the first half of 1999–2000, M&A deals worth Rs 103.68 billion were transacted. Mergers have generally taken place among group companies for consolidation of the business activity. Holding companies have acquireal their losing subsidiaries to protect their investments. Losing companies were merged with profitable companies for enjoying the benefit of efficient management. The common directors of the companies play key roles in effecting mergers among group companies. Multinational corporations have been involved in acquiring existing companies or existing capacities, instead of setting up new companies. Nearly 400 companies have undertaken equity restructuring in the past two and a half years. 3

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 307 In the area on acquisitions and mergers, certain interesting changes have taken place on the Indian corporate scene in the last few years. Acquisitions and mergers as a method of growth has been increasing. Some successful takeovers go to the credit of the Goenka group of industries. Similarly, in the last eight years, the Chhabrias have acquired eleven major companies accounting for sale of Rs 1,100 crore. This has given the Chhabria brothers a place in top ten business houses. The acquired companies include many reputed one like Shaw Wallace, Dunlop, Orson Electronics, Shalimar Paints, Falcon Tyres, etc. This is an example where only through acquisitions a fast growth has been successfully achieved. Reliance Industries' takeover of Larson & Toubro is another success story. Similarly, the Modi Group has taken over Genelec Ltd. from General Electric Ltd. by acquiring just under 25 per cent of the capital of that former company at a negotiated price. Other business houses like Oswal, Hindujas and Bajaj are continuously looking out in the market of some good buys. Apart from the above, the 1993 acquisition of the Rs 400 crore TOMCO brought together five soap and four detergent brands as well as manufacturing capacities and a distribution network. The buying up of the Rs 60 crore Kissan Products from Vijay Mallya in 1993 added a strong menu of sauces, fruit juices and squashes to Brooke Bond Lipton India Ltd.'s food business. The mega merger in 1996 between Hindustan Lever Ltd. (HLL) and Brooke Bond Lipton India Ltd. (BBLIL) and later on HLL with Ponds (India) Ltd. have given tremendous advantage in terms of competition to HLL in the retail market for food as well as cosmetics items. In the banking sector, the mergers of Shipping Credit and Investment Corporation of India (SCICI) with Industrial Credit Investment Corporation of India (ICICI) in 1996 and The Times Bank with HDFC Bank in 2000 have been primarily done with the object of avoiding significant overlapping in business activities and faster growth with the advantage of large economies of scale. The mergers during the last few years have been of ICICI Ltd. with ICICI Bank Ltd., IDBI Ltd. with IDBI Bank Ltd., Hind Lever Chemicals with Tata Chemicals and the mega merger of Reliance Petroleum Ltd. (RPL) with the Reliance Industries Ltd. (RIL). The amalgamation of RIL and RPL has created India's largest company in terms of market capitalization. In June 2005, the Central government gave the approval for the merger of Indian Iron & Steel Company (IISCO) with SAIL. The case of IISCO is with the BIFR and SAIL is implementing a revival plan for IISCO. While finalizing the merger with the Department of Company Affairs and BIFR, SAIL also drew a corporate growth plan. The merger will provide greater synergy for capacity expansion and upgradation of the merged plant. Having transcended the national economic frontiers some time in the past, the Indian growth story is now aggressively going global, thanks particularly to Indian companies on the acquisition spree across the world. They are aggressively using the M&A route to acquire foreign companies. The M&A route has a multiplier effect, enabling the acquiring company to leap- frog into the much bigger global league. The year 2007 is expected to be the best in terms of M&A, which would touch an all-time high of US$ l00 billion as against US$ 50 billion in 2006 and US$ 25 billion in 2005. It is truly the phase of Indian globalization as evident from the following acquisitions:

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 308 Material Table 14.1 Indian Acquisitions between 2005–2007 Period Acquiring Company Company Acquired Deal Worth US$ Feb 2007 Hindalco Novelis 6.0 billion Jan 2007 Tata Steel Corus Group 12.1 billion Jan 2007 Indian Hotels Ritz-Carlton Boston 170 million Sept 2006 M&M Jeco Holding AG 180 million July 2006 Mittal Steel Arcelor 30.0 billion June 2006 Tata Tea Eight O'Clock Coffee 220 million June 2006 BILT Sabah Forest Ind 261 million March 2006 Suzlon Energy Hansen 565 million March 2006 Ranbaxy Terapia 324 million Feb 2006 Dr. Reddy's Betapharm 570 million July 2005 VSNL Teleplobe 239 million Thus, on the whole, it seems that in the near future, many more mergers and acquisitions will be the favourite method for achieving growth and meeting tough competition due to growing liberalization and globalization. Derivatives The continuous liberalization and globalization of the Indian economy has brought with it a number of opportunities with a host of difficulties also. Liberalization means volatility and volatility means risk. A corporate finance manager has been displaced from a cosy regime of administrative prices into a rapidly changing environment where price, interest rates and exchange rates are constantly changing. Risk management in all these areas has become a challenging task for the finance manager. In normal circumstances, when demand, supply and spot prices are expected to remain unchanged, still there may be uncertainty in the minds of the traders regarding these issues. Hence, the future price, say, a month later, is bound to be lower than the spot price. As a result, to protect themselves from price risk fluctuations, inventory holders, will be willing to sell goods or securities in future to speculators at a price lower than the present spot price. The excess of the present spot price over the future selling price is the net premium which the inventory holder has agreed to pay to the speculator for taking the risk. Example. A, maker of gold jewellery, has accepted an export order to be executed over the next three months. If in the meanwhile the cash price of gold (the raw material) rises, the jewellery maker's manufacturing and exporting activity can become economically unviable. The availability of gold futures alleviates the manufacturer's/ exporter's problem as he can buy gold futures. Any loss caused by a rise in the cash price of gold purchased for the export order will then be offset by the profit on the futures contract. Any extra profit due to a fall in gold price will also be offset as there will be loss on the futures contract. Thus, hedging is the equivalent of insurance facility against risk from market price variation. A world without hedging facility is like a world without insurance with respect to a particular kind of risk. The manufacturer-exporter in the above case could have bought all the raw material required in advance but that would have entailed heavy interest, insurance and storage Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 309 cost. Thus, the facility of futures trading offers a cost efficient and convenient way for hedging against price risk. Apart from the risk of variation of raw material prices, the manufacturer-exporter, in the above example, also faces another risk from variation of exchange rate. If the rupee depreciates before he is able to bring the export receipts into India, his rupee receipts would be reduced. He may hedge against this risk also. Thus, in this case, hedger A protects himself against loss by transferring his risk to a speculator who agrees to sell gold to him in future. Selling futures is called a 'short hedge' while buying futures is called a 'long hedge.' Hedging is also common in the case of securities and foreign exchange currencies. Derivatives offset protection from adverse market movements and help the firm to manage or offset the exposures by hedging or shifting risks during the period of heavy price fluctuations. Derivative markets thrive on volatility. In case the government places artificial constraints to control volatility, there will be less development of the derivatives market. Concept The term derivative means an asset which has no independent value. Its value is determined from the value of some underlying asset. The underlying asset may be equity, commodity or currency. The derivatives are meant essentially to facilitate termporary hedging of price risk of inventory holding or financial/commercial transactions over a period of time. In practice, every derivative contract has a fixed expiration date mostly in the range of 3-12 months from the date of commencement of the contract. In market terminology, they are risk management tools. The International Monetary Fund (IMF) defines derivatives as 'financial instruments that are linked to a specific financial instrument or indicator or commodity and through which specific financial risks can be traded in financial markets in their own right. The value of a financial derivative derives from the price of an underlying item, such as an asset or index. Unlike debt securities, no principal is advanced to be repaid and no investment income accrues'. In other words, they are used to transfer risk from those who do not want to take the risk to those who are willing to undertake the risk. Derivatives are used to enhance the system of information transmission by floating a greater liquidity with low transaction costs. Types. Derivatives or hedging instruments include the following types 4 : 1. Swap Swap is a contractual agreement for exchanging a stream of payments with opposite and matching receipts to reap the benefits arising due to the market discrepancies. It is basically of two types: (a) Interest Rate Swap. This swap is arranged to lower the cost of borrowing since the interest rate differs across markets due to the relative creditworthiness of the borrowers. In case of a swap, two parties agree to exchange the interest payments on a notional principal over a specified period as per pre-determined rules without exchange of a principal amount. Thus, in an interest swap one borrower exchanges his advantage with the advantage enjoyed by the other borrower. 4 PNB Monthly Review, October 1996.

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 310 Material Example. Company X has issued fixed rate bonds. However, due to changes in the economic situation, it feels the view that the interest rate will decline in the future. In order to achieve this benefit, one alternative is to substitute the fixed rate interest bonds by floating rate bonds which is very difficult. The other option is to enter into a swap agreement in which it will receive a fixed rate of interest and pay floating rate interest. It will match the fixed interest outgoing on bonds by fixed interest received from the counterparty as depicted in the following diagram: Fixed Interest Rate (Bonds) Fixed Interest Floating Rate Interest Counter Party X Figure 14.2 Interest Rate Swap Thus, through an Interest Rate Swap the company has effectively converted a fixed interest rate liability into a floating interest rate liability. (b) Currency Swap. In case of this swap, the two parties exchange principal amounts of different currencies at the prevailing spot rate and pay each other the interest costs. Cross currency interest rate swap is a combination of interest rate swap and currency swap. 2. Option An option is a contract which provides
the right to buy or sell a particular asset at a specified price on a future date. There is no obligation to
buy or sell, but if the holder of the option wants, he can exercise this right. Thus, the holder of an option can go ahead with the option if it suits him or cancel it if it does not suit him. In case he cancels the contract, the holder loses the option premium only and saves himself from loss. The premium, the maturity period and the exercise or
strike price (the price at which the holder of the option
exercises his right)
are settled at the time of making the option contract. Options may be classified as (i) Put option, (ii) Call option, and (iii) Put or Call option. The right to buy is called put option while the right to sell is called call option. In case of put or call option, the option holder can exercise the right to buy or sell, whatever is advantageous to him. 3. Forward It is a contract in which a seller agrees to deliver an asset to a buyer at a pre-determined price at some future date. Forward contracts, in contrast to futures contracts, are privately negotiated and are not exchange traded or standardized. They are settled through payment of price differentials without physical delivery of goods or financial assets. Forward contracts are the oldest of all derivatives, and the badla system is also a type of forward contract. Commodity forwards are more common in the Indian context and gradually becoming popular in financial markets as well. 4. Future It is a contract covering the purchase and sale of physical commodities or financial instruments for future delivery on a future exchange. These contracts are standardized according to the quality, quantity delivery time and location for each commodity or financial asset. The only variable is the price which is decided on an exchange trading floor. The exchange or clearing house guarantees the performance of such contracts. They are legally binding.

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 311 The development of hedging instruments or derivatives and their applications represent one of the financial innovatives in the risk management system. These instruments are well developed in advanced countries like USA, UK, Japan, etc. However, in India the derivatives market is yet to gain momentum. The introduction of hedging instruments will make the trading system in India more versatile and upgrade to it international standards. However, these instruments are to be handled carefully in the derivatives market. 14.11 CORPORATE GOVERNANCE Concept of Corporate Governance Good governance is the expectation of a stakeholder in every walk of life. This expectation has lately come to be recognized as a right in the corporate world also. Corporate governance is, therefore, the new buzzword in corporate jargon. This concept has emerged over the last two decades. It requires, of corporations, timely and accurate disclosures on all materials and matters relating to them, viz., financial position, performance, ownership, and governance of the corporation, etc. The objective of corporate governance is compliance with corporate laws and rules on the legislative side and proper accountability to the stakeholders, legally and morally. Corporate governance is a compulsion of long-term corporate existence. Its importance and significance has greatly increased in the present era of liberalization, privatization and globalization. The concept of corporate governance has been well spelt out by Sir Adrian Cadbury, in the following words : 'Corporate governance is considered with holding the balance between economic and social goals and between individual and community goals. The governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society.' Shareholder Value and Corporate Governance Initially, the dominant objective of business was to make profit and maximize the wealth of the owners. But business history is full of examples where mindless obsession with profit maximization at any cost, has lead to business failures and ultimately brought ruin to the shareholders. The examples of corporates like Enron, World.com and Union Carbide are still fresh in people's memories. On the other hand there are examples of corporates like Johnson & Johnson, Maruti, Reliance, Tata Steel, etc., which have successfully blended their concern for profits with humane concern, and continue to stay, survive and thrive. Besides making their shareholders wealthy, they have also taken excellent care of the interests of the other stakeholders. Thus, corporate governance aims at the enhancement of long-term shareholder value while, at the same time, protecting the interests of other stakeholders, viz., the suppliers, customers, creditors, bankers, employees, government and the society at large. Good corporate governance is essential not only for gaining credibility and trust, but also as a strategy for survival, consolidation and growth. The main constituents of corporate governance are the shareholders, the Board of Directors, and the management. The need and importance of corporate governance can best be conveyed from the following statement of Benjamin Franklin :

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Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 312 Material 'A little neglect may breed great mischief – for the want of a nail, the shoe was lost; for the want of a shoe, the horse was lost; for the want of a horse, the rider was lost; and for the want of a rider, the battle was lost.' Emergence of Corporate Governance The concept of corporate governance gained prominence in academic and professional literature towards the end of the twentieth century, particularly in the year 1980 and onwards. In UK, many corporations collapsed in the late 1980s and the early 1990s. Notable cases were BCCI, Polly Peck and pension funds of the Maxwell Communication Group. The impact of the failures of these corporations was quite severe on the society as a whole resulting in the debate on corporate, governance. The resultant focus on the issue of corporate governance culminated in the Cadbury Report on the financial aspect of corporate governance in 1992, the Green Bury Report on Directors' Remuneration in 1995, the Preliminary and Final Hampel Report on Corporate Governance in 1997 and 1998. The Stock Exchange Listing rules were also amended in UK w.e.f. July 1993 in compliance with the Cadbury Committee's Report. In the US, intensive debate on the corporate governance system was initiated in the 1980s during a period of widespread corporate restructuring and takeover. The Tread Way Commission Report was published in the US in October 1987. The report was essentially in respect of fraudulent financial reporting. The Securities and Exchange Commission of the US updated the listing requirements for corporations in 1988 following the above reporting. Later on, the collapse of Enron, large scale misreporting of World.com, Quest and action against a leading auditing company KPMG, and the resultant public outcry, all made the US Government take appropriate legislative measures. Consequently, the Sarbanes-Oxley Act was passed by the US Congress in June 2002. This is by far the most sweeping reform of corporate governance in USA since the great depression of the 1930s. The most outstanding aspect of the Act is the better regulation of auditors and restrictions on what they can and cannot do. In India, the history of corporate governance dates back to 1998 with the implementation of a corporate governance code developed by the Confederation of Indian Industries (CII). The initiative gained momentum by the constitution of the Corporate Governance committee by SEBI under the chairmanship of Shri Kumar Mangalam Birla. The recommendations of the Committee were accepted by SEBI on 21 February 2000 as a result of which Clause 49 on corporate governance was incorporated in the Listing Agreements of the stock exchanges. Simultaneously, the Central Government came forward with the Companies (Amendment) Act, 2000 which introduced many provisions relating to corporate governance, viz., additional ground for disqualification of directors in certain cases, setting up of audit committees, directors' responsibility statement as a part of the Directors' Report, etc. The Enron debacle of 2001, the scam involving the fall of corporate gaints in the US like World.com, Quest, Global Crossing and the enactment of the stringent Sarbanes- Oxley Act in the US, referred earlier, were some important factors which led the Indian government to wake up and appoint the Naresh Chandra Committee in 2002. The Committee was asked to examine and recommend drastic amendments to the law involving auditor—client relationships and the role of individual auditors. The Committee, in its report, made several recommendations regarding audit company relationship, independence of auditors, disqualification for audit assignments, prohibition of non-audit services by auditors, rotation of audit firms, disclosure by auditors, appointment and remuneration of auditors, etc. Meanwhile, in 2002, SEBI itself constituted a Committee

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 313 under the chairmanship of Shri Narayan Murthy, Chairman of Infosys Technologies Limited, to review the performance of corporate governance in India and make appropriate recommendations. The Committee submitted its report to SEBI on 8th February 2003. The government accepted many of the recommendations of the Naresh Chandra Committee and agreed in principle to incorporate them into the corporate laws. On 1 July 1949, under an Act of Parliament, The Institute of Chartered Accountants of India (ICAI) was established as a statutory and autonomous body for regulating the profession of chartered accountants in India. The ICAI is basically responsible, through its members, for transparency in accounting and financial reporting. It is now accepted all over the globe that there is a close nexus between the accounting profession and good corporate governance. Realizing this responsibility, the Institute has reviewed and is constantly reviewing many fundamental standards and practices of the accounting and audit profession. It has, therefore, come out with appropriate accounting and audit standards from time to time which are bound to promote excellence in corporate governance. Securities Exchange Board of India (SEBI) and Corporate Governance SEBI has tried to make corporate governance effective by incorporating Clause 49 on corporate governance in the Listing Agreements of each stock exchange. This clause is as good as any global standard on corporate governance. It has provided for the following: 1.

Board of Directors: The Board of Directors of a company shall have an optimum combination of executive and non-executive directors with not less than 50 per cent of the Board comprising of non-executive

directors. While the Board with a non-executive chairman is to have at least one-third as independent directors, Board with an executive chairman is to have at least half of the Board as independent directors. 2. Audit Committee: Every company is required to set up a qualified and independent Audit Committee consisting of at least three members, all being non-executive directors and a majority of them being independent. At least one of them should have financial and accounting knowledge. The Chairman of the Committee shall be an independent director.

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The Finance Director, Head of Internal Audit and when required, a representative of the External Auditor are to be present as invitees for the meetings of the Audit Committee. The Audit Committee shall meet at least thrice a year and once in every six months. The clause also defines the powers and role of the Committee fairly extensively. 3. Remuneration of Directors: The remuneration of non-executive directors is to be decided by the Board of Directors and there is a requirement for adequate disclosure of the same in the annual report. This is bound to act as a deterrent to many promoters in remunerating its directors disproportionately. 4. Board Meetings: There has to be at least four meetings of the Board of Directors every year. The clause requires some minimum information to be made available to the Board as per an exhaustive Annexure. Some of the information which is to be made available by the Board relates to the following: annual operating plans, capital rxpenditure, budgets and updates, joint venture or collaboration agreements, investments, show-cause notices, demand, non-compliances, accidents, effluent and pollution problems, labour problems, etc. The board is, therefore, expected to be better informed and effective as a result of this requirement. 5. Directors' Report:

As part of the Directors' Report or as an addition thereto, there is a need for a Management Discussion and Analysis Report which should discuss the industry structure and developments, opportunities and Threats, segmentwise or product

Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 314 Material wise performance, outlook and such other matters.

All pecuniary relationships or transactions of the non-executive directors vis-à-vis the company should be disclosed in the Directors' Report. 6.

Disclosure to Shareholders: In case of appointment of a new director or reappointment of a director, the shareholders must be provided with a brief resumé of the director providing information like expertise in specific functional areas, names of companies in which he holds directorships and committee memberships etc. 7. Shareholders'/Investors' Grievances Committee: A Board Committee designated as 'Shareholders/Investors Grievance Committee' should be constituted under the chairmanship of a non-executive eirector to look into the redressal of shareholders' and investors' complaints like transfer of shares, non-receipt of dividend, warrants, etc. 8. Report on Corporate Governance: Every listed company shall now have a separate section on corporate governance in its annual report with a detailed compliance report on corporate governance.

The suggested list of items to be included in the report is quite exhaustive to make it really meaningful and informative to the shareholders. 9. Compliance Certificate: The company is required to obtain a certificate from the auditors of the company regarding compliance of the conditions of corporate governance as stipulated in the clause. This certificate is required to be not only annexed to the directors' report, but also sent to the stock exchanges along with the annual returns of the company. 14.12 SUMMARY 'Risk' and 'Value' have a positive co-relation. Greater the risk, higher is the return and greater is the value of the business, and vice-versa. A finance manager knows that there is no way to run away from risk while conducting any business. He has to sometimes restructure his business, merge with the competitor or acquire the competitor's business to stay in the business. In order to mitigate financial risk, he may opt for instruments like derivatives. He has to opt for good corporate governance practices in order to achieve corporate excellence. Corporate restructuring has gained considerable importance all over the world because of intense competition, globalization and technological changes.

Meaning of Corporate Restructuring The term corporate restructuring may simply be defined as a comprehensive process by which a company can consolidate its business operations and strengthen its position for achieving the desired objectives: staying synergetic, slim, competitive and successful.

Objectives of Corporate Restructuring An organization may decide to restructure for any one or more of the following objectives: (i) Growth (ii) Technology (iii) Government policy (iv) Exchange rate fluctuations (v) Economic stability (vi) To reduce dependence Check Your Progress 5. What is 'demerger'? 6. What is an 'option'?

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Forms of Corporate Restructuring Corporate restructuring may take any of the following forms: (i) Expansion (ii) Diversification (iii) Collaboration (iv) Spinning Off/Demergers (v) Hive-off (vi) Mergers, Amalgamations and Acquisitions

Mergers, Amalgamations and Acquisitions Meaning of Merger: The term merger refers to a situation where a company acquires the whole of the assets and liabilities or a part thereof constituting an undertaking of another company (or companies) and

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the latter is (are) dissolved.
Meaning of Amalgamation: The term 'amalgamation' or 'consolidation' refers to a situation where two or more existing companies are combined into a new company formed for the purpose.
Thus, technically, there is difference between merger and amalgamation. However, in practice, no such distinction is observed. As a matter of fact, the term amalgamation includes merger also.
Meaning of Acquisition: The term 'acquisition' or 'takeover' refers to
the acquiring of effective working control of one company by another. Reasons for Mergers or Acquisitions (i) Increase in effective value (ii) Operating economies (iii) Economies of scale (iv) Tax implications (v) Elimination of competition (vi) Better financial planning (vii) Growth (viii) Stabilization through diversification (ix) Dilution under FEMA (x) Backward and forward integration (xi) Personal reasons (xii) Economic necessity
Types of Mergers Mergers can be of the following types: (i) Horizontal merger (
ii) Vertical merger (iii) Conglomerate merger (iv) Reverse merger (v) Cross-Border merger and
acquisitions Synergy of Mergers and Acquisitions The term synergy refers to
the
benefits resulting from mergers and acquisitions because of coordinated action. Synergy may be
of three types:
Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 316 Material (i) Operating synergy (ii) Financial synergy (iii) Managerial synergy Operating synergy has a direct relationship with horizontal merger, while financial synergy can be availed of because of vertical and reverse merger. Managerial synergy may be available because of both conglomerate and cross-border mergers.
Dangers of Mergers Mergers involve the following dangers: (i) Elimination of healthy competition (
ii) Concentration of economic power (iii) Adverse effects on national economy Amalgamations, Mergers and Acquisitions in India The process of economic liberalization and globalization which has swept the Indian economy since the 1990s has created a business environment which is highly competitive. This competitive environment has forced many companies to restructure their strategies leading to an unprecedented rise in mergers, takeovers and strategic alliances. The most significant mergers in recent years have been of ICICI Ltd. with ICICI Bank Ltd., IDBI Ltd. with IDBI Bank Ltd., Hind Lever Chemicals with Tata Chemicals and the mega merger of Reliance Petroleum Ltd. (RPL) with the Reliance Industries Ltd. (RIL). The amalgamation of RIL and RPL has created India's largest company in terms of market capitalization. The notable takeovers during 2007 have been of Novelis by Hindalco, Corus Group by Tata Steel and the Ritz-Carlton Boston by Indian Hotels. In the near future, many more mergers and acquisitions will be the favourite method for achieving growth and meeting tough competition due to growing liberalization and globalization. Derivatives Concept. The term derivative means an asset which has no independent value. Its value is determined from the value of some underlying asset. The underlying asset may be equity, commodity or currency. The derivatives are meant essentially to facilitate temporary hedging of the price risk of inventory holding or financial/ commercial transactions over a period of time. Types. Derivatives or hedging instruments include the following types: (i) Swap (ii) Option (iii) Forward (iv) Future The development of hedging instruments or derivatives and their applications represents one of the financial innovatives in the risk management system. Corporate Governance Concept. Corporate governance requires, by corporations, timely and accurate disclosures on all materials and matters and relating to them, viz., financial position, performance, ownership and governance of the corporation. The objective of corporate governance is compliance with corporate laws and rules on the legislative side and proper accountability to the stakeholders, legally and morally. Thus, corporate governance aims at enhancement of long-term shareholder
Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional Material 317 value, while at the same time protecting the interests of other stake-holders, viz, the suppliers, customers, creditors, bankers, employees, government and the society at large. Securities Exchange Board of India (SEBI) and Corporate Governance: SEBI has tried to make corporate governance effective by incorporating Clause 49 on corporate governance in the Listing Agreement of each stock exchange. This clause is as good as any global standard on corporate governance. 14.13 KEY TERMS z Acquisition: It is the act of acquiring effective working control of one company by another. • Amalgamation: It is
a situation where two or more existing companies are combined into a new company formed for the purpose.
z Corporate Governance: It refers to compliance by corporations with corporate laws and rules on the legislative side and proper accountability to the stakeholders, legally and morally. z
Corporate Restructuring: It is a comprehensive process by which a company can consolidate its business operations and strengthen its position for achieving the desired objectives—staying synergetic, slim, competitive and successful.
z Derivatives: It is an asset which has no independent value. Its value is determined from the value of some underlying asset. z Forward: It is a contract in which a seller agrees to deliver an asset to a buyer at a predetermined price at some future date. z Futures: It is a contract covering the purchase and sale of physical commodities or financial instruments for future delivery on a future exchange. z Merger: It is

a situation where a company acquires the whole of the assets and liabilities or a part thereof, constituting an undertaking, of another company (or companies) and
the latter is (are) dissolved. z Swap: It is a contractual agreement for exchanging a stream of payments with opposite and matching receipts to reap the benefits arising due to market discrepancies. 14.14 ANSWERS TO 'CHECK YOUR PROGRESS' 1.
The underlying objective of corporate restructuring is to conduct business operations in an efficient, effective and competitive manner so as to increase the organization's market share, brand power and synergies. 2. '
Hive-off' refers to the
sale of a loss-making division or a product line by a multi- product company. 3.
Vertical merger the joining of two or more companies involved in different stages of the production or distribution of the same product or
service. 4. The term 'synergy' refers to the
benefits resulting from mergers and acquisitions because of coordinated action. 5. '
Demerger' is defined as the transfer pursuant to a scheme of arrangement by a
company of one or more of its undertakings to any resulting company.
Corporate Restructuring: Derivatives and Corporate Governance NOTES Self-Instructional 318 Material 6. An 'option' is a contract which provides
the right to buy or sell a particular asset at a specified price on a future date. 14.15
QUESTIONS AND
EXERCISES Short-Answer Questions 1.
Explain the terms 'amalgamation', 'merger', and 'acquisition'. 2. Explain the reasons for merger or amalgamation of companies. 3. Can amalgamation be dangerous to the national economy? Long-Answer Questions 1. Explain the differences between managerial synergy, operating synergy and financial synergy and their relationship to different types of mergers. 2. Define a derivative. Explain the different types of derivatives used for hedging risk. 3. Explain the concept of corporate governance. Trace its emergence. 4. Discuss the role of different authorities involved in corporate governance in India. 5. State the main provisions of Clause 49 relating to corporate governance. 14.16 FURTHER READING
Maheshwari, S.N. Elements of Financial Management. New Delhi: Sultan Chand & Sons, 2008. Maheshwari, S.N., S.K. Maheshwari, Sharad K. A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.
International Financial Management NOTES Self-Instructional Material 319 UNIT 15 INTERNATIONAL FINANCIAL MANAGEMENT Structure 15.0 Introduction 15.1 Unit Objectives 15.2 Reasons for Investing Abroad 15.3 Basic Problems in Financial Management 15.4 Foreign Currency Management 15.5 Financing Multinational Organizations 15.6 Summary 15.7 Key Terms 15.8 Answers to 'Check Your Progress' 15.9 Questions and Exercises 15.10 Practical Problems 15.11 Further Reading 15.0 INTRODUCTION In recent years, rapid industrialization, advancement in communication facilities and availability of rapid means of transportation have increased the volume of trade across the continents. In many organizations, international transactions account for 50 per cent of their profits, e.g., IBM, Pfizer, Gillette, etc. These organizations are also known as multinational organizations. A multinational organization may be defined as an organization which has investment and sales in two or more countries. However, it will not be appropriate to consider organizations which derive a small portion of their total revenue from international operations as multinational organizations. Most experts are of the view that an organization having at least 50 per cent of its business outside its home country and which derives 50 per cent of it total profits from international operations is a multinational organization. Multinational organizations do require efficient and effective utilization of their financial resources. This forms the subject matter of this unit. The problems of financial management of the multinational organizations are slightly more complex than those of domestic organizations. Of course, the basic concepts of efficient allocation of funds among assets and the raising of funds on most favourable terms are the same for both domestic firms and multinational enterprises. The difference lies in the environment in which these firms operate. The environment relates to political risks, government tax and investment policies, foreign exchange risks, sources of finance, etc. These are generally some of the crucial factors which affect the activities of a multinational enterprise and govern its investment decisions. 15.1 UNIT OBJECTIVES z Reasons for setting up a multinational organization z Basic problems in the financial management of a multinational organization

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International Financial Management NOTES Self-Instructional 320 Material z Various techniques used for foreign currency management z Resources for financing a multinational organization 15.2 REASONS FOR INVESTING ABROAD The decision to invest capital in a project abroad is based upon considerations of expected risk and return, as is true for any other investment decision. However, quantifying these parameters for a project abroad is more complicated because of disparities in currency exchange rates, tax structures, accounting practices and factors affecting risk. But once this quantification is achieved, the viability of the project becomes apparent. It will be useful here to study the various reasons which encourage a company to invest abroad. (a) Reducing Risk As mentioned earlier, a multinational organization has to operate in different environments. This implies that the degree of risk is different in different countries. It has been observed that international diversification is often more effective than domestic diversification in reducing a company's risk in relation to its expected return because the economic cycles of different countries do not tend to be completely synchronized. For example, if a company in a particular line of business, say soft drinks, invests in another domestic plant, the return from the new plant is likely to be highly correlated with the return from the existing assets i.e., the new plant will be exposed to same threats as the old plant had been. Consequently there would be little reduction in risk. If the same money is invested in a soft drinks plant in another country whose economy is not highly correlated with that of the domestic economy, the return from the new plant will not be correlated with that from existing one. This will probably lead to the dilution of risk at any given point of time. (b) Higher Returns Another major reason of investing abroad is the expectation of higher returns for a given level of risk. There may be gaps in the international market which are, within the scope of firm's line of specialization. Tapping of these gaps can yield higher returns to the firm. The other reason may be that a firm can efficiently produce a particular product in another country. The labour and other associated costs may be less in a foreign country and therefore the company may seek foreign collaboration simply to operate at lower costs. This will increase its margin of profit. For example, labour costs are lower in India than in many developed nations. Beside this, the investment climate in India is also favourable and hence many foreign companies are willing to invest in India. Sometimes companies invest abroad simply to secure a regular supply of necessary raw materials. All these operations are carried out with the objective of earning a higher return which may not be possible domestic operations alone. (c) Tax Benefits A multinational enterprise is exposed to various tax laws due to its operations in different countries. The types and rates of tax vary from country to country. Underdeveloped countries generally have lower tax rates and even offer incentives for attracting foreign investment, whereas the tax rates in advanced industrial countries are high. A multinational organization, by diversifying its investment in different countries, can get the best tax benefits. International Financial Management NOTES Self-Instructional Material 321 (d) Seeking Political Stability Government policies are the biggest threat to the existence of a multinational organization. The very existence of a multinational is susceptible to the whims and fancies of a government. Political risk may range from regular interference to a complete confiscation of a company's assets. Between these two extremes, a company may face discriminatory practices such as higher taxes, higher utility charges, etc. Some extra controls and obligations may be imposed upon them any time. It is evident that political instability or an unfavourable attitude by a government can seriously impair the functioning of these organizations. It is therefore important that political risk is assessed realistically. This basically requires forecasting political instability. This can be done by assessing the degree of stability of the existing government, its attitude towards foreign investment, incentives and efficiency of the government in processing investment requests, etc. If the assessment reveals that political risk is high, the company may decide not to invest even if very high returns are expected. 15.3 BASIC PROBLEMS IN FINANCIAL MANAGEMENT The finance manager of a multinational has to devote his attention to two basic problems besides the problems which the finance manager of a domestic company has to face. These basic problems are as follows: (i) Foreign Exchange Fluctuations When an organization trades in many countries, the transactions necessarily involve the currencies of those countries. Foregin exchange fluctuation is the risk caused by the relative rise or fall of value of one currency with respect to another. The fall in value or devaluation may affect future sales, costs and remittances. Thus, international trade involves foreign exchange rate risk, i.e., the risk related to the uncertainty attached to the exchange rates between two countries. For instance, if the foreign currency becomes stronger than the Indian rupee, the Indian buyer/borrower has to repay an amount which is more than the loan he took. This extra payment is not due to any increase in the interest rate but because of an unfavourable exchange rate. Conversely, the Indian buyer will stand to gain if the Indian rupee becomes stronger. Hence, in a multinational company, the management of foreign exchange rate risk becomes an important area to be managed by the finance manager. (ii) Financing Facilities Another major area of concern for the finance manager is raising funds on as favourable a term as possible. The funds can be raised either from an internal source or from an external source. Normally both sources are tapped. There are a number of lending agencies which provide finance at reasonable rates to multinationals. Each of these aspects is discussed in detail in the following pages.

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International Financial Management NOTES Self-Instructional 322 Material 15.4 FOREIGN CURRENCY MANAGEMENT Exchange Risk Every external transaction involves the problem of payment and pricing. The price payable to a foreign buyer can be in the seller's or buyer's currency or an international currency such as the US dollar. If the seller is dealing in his own currency, he knows exactly how much he is going to receive. However, the seller may prefer another currency in the following cases: (i) if his own currency is depreciating rapidly in value; or (ii) his government prefers to have some other currency; or (iii) the seller himself wishes to make payment abroad where another currency is more acceptable. The buyer will also have to purchase the necessary foreign exchange in order to make the payments. In most cases the rate of exchange between his currency and the foreign currency is not fixed. An exchange rate represents the number of currency units of one currency that can be exchanged for another country's currency units. For example, Rs 100 = US dollar 3 (approx.). This means that for every Rs 100, $ 3 can be purchased or the exchange rate prevailing is Rs 35 per US dollar. The currencies of the major countries are traded in an active open market and rates are determined by the prevailing demand and supply forces. The two types of transactions that are generated from the demand and supply of currencies are as follows: (i) Spot exchange transactions (ii) Forward exchange transactions (i) Spot Exchange Transactions They occur when currencies are traded for immediate delivery. For instance, an American importer needs francs for paying a French exporter for a shipment of perfume received. The importer shall exchange dollars for francs at the spot rate, i.e., the rate prevailing at that point in time. (ii) Forward Exchange Transactions They occur when purchasers and sellers contract to buy and sell currencies for delivery at a future date. In case of such a transaction, the contract is for a specific amount of currency at a specific rate of exchange and at a specific future date. The forward rate is agreed upon by the parties at the time of making the contract and remains fixed irrespective of future exchange rate fluctuations. Foreign exchange risk or exposure is involved whenever some of the assets of an enterprise are not denominated in the currency of its home country. The loss due to foreign exchange rate fluctuation arises due to a fall in the value of domestic currency in relation to the currency of the country with which business is proposed to be done. For instance, an Indian entrepreneur agrees to buy machinery from an American company for setting up a plant in India. The agreement is made on l December 1998, when the prevailing exchange rate for one US $ was Rs 45. The An Indian manufacturer agreed to pay US$ 45,000 for the machine on 1 January 1999, the rupee value declines and US $ is available for Rs 45.50 only; the Indian manufacturer will incur a loss of Re. 0.50 per US dollar he buys. If we extrapolate this example on a large volume of business for multinational organizations, they may be put to a tremendous loss. The other type of Check Your Progress 1. Which is the biggest threat to the existence of a multinational organization? 2. Which is the risk caused by the relative rise or fall of value of one currency with respect to another? 3. What are the two types of transactions that are generated from the demand and supply of currencies?

International Financial Management NOTES Self-Instructional Material 323 exchange risk is that a country may block its currency so that it cannot be converted into other currencies. Currency Exposures It may be pertinent here to identify the various exchange or currency exposures or risks before dealing with the management of such risks. Currency Exposures or Currency Risks can broadly be divided into two categories: (i) Accounting Exposures:–They are also known as Translation or Balance Sheet Exposures. (ii) Cash Flow Exposures:–They include: (a) Transaction Exposures (b) Economic Exposures A brief detail of each of these exposures is given below: (i) Accounting Exposure. These exposures arise because of conversion or transactions in the foreign currency in the home currency for reporting and consolidation purposes. If the exchange rates between the two countries have changed in the reporting period from that in the previous period, there may be foreign exchange gains or losses depending on whether the change has been favourable or unfavourable. The Accounting Standard 11 (revised 2003): The Effects of Changes in the Foreign Exchange Rates, issued by the Institute of Chartered Accountants of India (ICAI)

deals with the accounting of transactions in foreign currencies and translation of the financial statements of foreign operations. It has provisions on dealing with monetary items, non-monetary items, exchange differences, etc. It may be emphasized here that translation of foreign currency transactions into home currency transactions does not involve cash flows but only paper gains and losses. (ii) Cash Flow Exposures. These include the following: (a) Transaction Exposures. These exposures arise in cases where an enterprise is committed to a foreign currency denominated transaction. In case of these transactions, since there is a commitment to receive or pay a specified amount in foreign currency, any appreciation or depreciation in the foreign exchange rate will result in a cash loss or gain. For instance, an Indian merchant has agreed to buy an asset from a US supplier for US$ 30,000 when the current exchange rate is US$ 1 = Rs 40.00. The payment is to be made three months after the transaction date. In case, after three months, the exchange rate is US$ 1 = Rs 50.00, the dollar has appreciated as compared to the rupee and there will be an extra cash outflow of Rs 3,00,000 for the Indian buyer. In the reverse case, when the dollar depreciates, there will be cash gain for the Indian purchaser. (b) Economic Exposures. These relate to the effect of exchange rate changes on the international competitiveness of a company. For instance, a UK company might use raw materials which are priced in US dollars. It exports its products mainly to European countries. In case the UK sterling depreciates against the US dollar or the sterling appreciates against other European currencies, in both cases, the company will lose its competitiveness. This type of risk can be minimized if the supplier and customer bases are in different countries.

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International Financial Management NOTES Self-Instructional 324 Material Exchange Risk Management There are various ways in which a company can protect itself from possible loss due to exchange rate fluctuations. These measures are discussed below : (a) Forward Market A company can protect itself against exchange rate fluctuations with the use of the forward or future market. In this market, one locks in the rate of exchange by entering into contract to buy specific currency at specific time and at a specific exchange rate. This eliminates any risk likely to arise from changes in the spot market exchange rate between two currencies. A future contract is a guarantee to obtain 'conversion' at a specified exchange rate. Example. An Indian exporter sells a machine to an American importer for $ 20,000 to be paid in 90 days. In order to eliminate the exchange risk, the exporter sold $ 20,000 for future delivery at Rs 40 per dollar. After 20 days the importer would make a payment of $ 20,000. The exporter would deliver $20,000 against the forward exchange transaction and receive Rs 8,00,000 irrespective of the spot rate. In the absence of the forward exchange transaction, the exporter would have converted the dollars at prevalent spot rate. For instance, if the spot rate after 90 days was only Rs 39.5 per dollar, he would have got only Rs 7,90,000 against Rs 8,00,000 which he is getting now. Forward exchange contracts are made through the international departments of large commercial banks. The bank itself may enter into the contract or it may be entered into by the bank on behalf of some professional money speculator. The bank charges a small percentage as fees for agreeing to buy or sell the currency. If the bank is willing to buy the currency, the price quoted is termed as a 'bid price'. In case the bank is willing to sell the currency, the price quoted is termed as an 'ask price'. If the bank is willing to execute a forward contract for either buy or sell, it will give both 'bid' and 'ask' prices. When the bank is not willing to provide both bid and ask prices, it may have other reasons. Probably, the currency is weak and a bank would not risk buying a weak currency in future. It is also possible that the bank's position in that country is exposed. That means the bank has greater obligations in a currency to pay, than what it is holding. The difference between what it owes and what it holds is termed as 'exposure'. The future exchange rate is dependent upon the best estimate of the rate that will prevail in the spot market on the date of maturity of a contract. Factors such as inflation, economic problems and, balance of payments deficit are important in this best estimated analysis. It also depends upon the yield that is available from debt securities in the capital markets of the two nations in question. Illustration 15.1:
X Ltd., an Indian company, has an export exposure of 10 million (100 lakh) yen, value at September end. The yen is not directly quoted against the rupee. The current spot rates are USD/INR = 41.79 and USD/JPY = 129.75. It is estimated that the yen will depreciate to 144 level and the rupee to depreciate against the dollar to 43. Forward rate for September 1998 USD/Yen = 137.35 and USD/INR = 42.39. You are required: (i) to calculate the expected loss if hedging is not done. How will the position change with company taking forward cover?
International Financial Management NOTES Self-Instructional Material 325 (
ii) if the spot rate on 30 September 1998 was eventually USD/Yen = 137.85 and USD/INR = 42.78, is the decision to take forward cover justified? Solution: (
i) Computation of the Expected Loss in the absence of Hedging Rs Exposure of Yen 100 lakh at current spot rate of Rs 31.21 per 100 Yen (WN 1) 32,21,000 Exposure of Yen 100 lakh at estimated rate of Rs 29.86 per 100 Yen (WN 2) 29,86,000 Expected loss without forward cover 2,35,000 (ii) Computation of Expected Loss if the Company takes forward cover Exposure of Yen 100 lakh at forward rate of Rs. 31.23 per 100 Yen (WN 3) 31,23,000 If the company takes forward cover the company's loss is (Rs 31,23,000 – Rs 32,21,000) 98,000 (iii)Computation of Exposure at the spot rate of 30 September 1998 Exposure of Yen 100 lakh at the spot rate of Rs. 31.03 per 100 Yen (WN 4) 31,03,000 If the company takes forward cover the loss would have been of Rs 31,03,000 – Rs 32,21,000 = Rs 1,18,000 Hence, decision of the company to take forward cover is justified. Working Notes: 1. Spot (current) USD/INR = 41.79 and spot USD/JPY = 129.75 Hence, Spot (current) JPY/INR = 41.79/129.75 = Re 0.3221 per Yen or Rs 32.21 per 100 Yen 2. Expected USD/INR = 43 and USD/JPY = 144 Hence, Expected JPY/INR = 43/144 = Re 0.2986 per Yen or Re 29.86 per 100 Yen 3. Forward USD/JPY = 137.35 and USD/INR = 42.89 Hence, Forward JPY/INR = 42.89/137.35 = Re 0.3123 per Yen or Rs 0.3123 per 100 Yen 4. Spot (30 September, 1998) USD/INR = 42.78 and USD/JPY = 137.85
International Financial Management NOTES Self-Instructional 326 Material Hence, Spot (30 September, 1998) = 42.78/137.85 = Re 0.313 per Yen or Rs. 31.03 per 100 Yen. Illustration 15.2: A customer with whom a bank has entered into three
months' forward purchase contract for Swiss Francs 10,000 at the rate of Rs 27.25 comes to the bank after two months and request cancellation of the contract. On this date, the rates prevailing are: Spot CHF 1 = Rs 27.30 27.35

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One month forward Rs 27.45 27.52 What is the loss/gain to the customer on cancellation? (C.A. Final May 2002) Solution: The contract would be cancelled at the one month forward sale rate of Rs 27.52 Francs bought from customer under original forward contract at: Rs 27.25 It is sold to him on cancellation at: Rs 27.52 Net amount payable by customer per Franc Rs 0.27 At Rs. 0.27 per Franc, exchange difference for CHF 10,000 is Rs 2,700 Loss to the Customer: Exchange Difference (Loss) Rs 2,700 Note: The exchange commission and other service charges have been ignored. (b) Foreign Currency Swap Foreign currency swap is another method of hedging against foreign exchange risk. This is an agreement between two parties to exchange one currency for another at a specified future date and at a specified exchange ratio. Thus, swap is a simultaneous spot and forward transaction, with the forward transaction reversing the original swap transaction. 1 In a swap deal, buying and selling involves the same currency of the same value at different maturities. It may be any of the following types: (i) Simultaneous purchase of currency on spot and its forward sale or vice versa. (ii) Simultaneous purchase and sale, both forward for different maturities. For instance a bank may buy one month forward and sell three months forward. This is also termed as Forward to Forward Swap. In an ordinary Foreign Exchange deal, two factors prevail: (i) The difference between buying and selling rates (ii) The forward margin, i.e., the premium or discount as the case may be. A foreign currency is said to be at a premium if that currency is costlier under the forward rate than under the spot rate. In the reverse case when the foreign currency is cheaper in the forward market than in the spot market, it is said to be at a 'discount'. Since the buying and selling rates are predetermined in a swap deal, only the forward margin enters into the deal as the swap difference. The operation of a swap deal will be clear from the following example. 1. Home, James C., Financial Management and Policy, Sixth edition, p. 610.

International Financial Management NOTES Self-Instructional Material 327 Example. On 1 January 1999, a bank agrees to sell US $ 10,000 to Mr X, to be delivered on 1 March 1999. Theoretically, the bank would make a forward purchase of US $ 10,000 due on 1 March 1999. Due to some reasons, Mr X wants to acquire the currency on 1 February, 1999 itself. In such a case the bank will spot buy US$ 10,000 on 1 February 1999 and sell it to Mr X (any loss incurred by the bank will be charged separately to Mr X). The bank is, however, obliged to purchase US$ 10,000 on 1 March 1999, as per its previous commitment. Therefore, on 1 February 1999, the bank will enter into another forward sale contract due on 1 March 1999. This will neutralize the forward purchase contract entered into on 1 January 1999. Thus, on 1 February 1999, the bank made a simultaneous spot purchase and a forward sale of US$ 10,000. This is known as a swap deal. A swap deal may have other variations, but the basic nature of the deal remains the same. (c) Arbitrage Arbitrage, in its true sense, cannot be termed as a method of hedging against foreign exchange risk. It is more a method of making profits from foreign exchange dealings. Arbitrage is a situation where a guaranteed profit can be made by purchasing and selling a currency simultaneously in one or more foreign exchange markets. In general, an arbitrage deal will be executed in more than one foreign exchange market/centre. Arbitrage profits arise because (i) the difference in exchange rates at two different exchange centres and (ii) the difference, due to interest yield which can be earned at different exchanges. Thus, depending upon the nature of the deal, the arbitrage may be termed as space arbitrage or time arbitrage. (i) Space Arbitrage. It is highly probable that when two markets are separated by physical distance, the exchange rates may vary. Space arbitrage is a situation when a speculator excutes two or more simultaneous contracts to buy and sell currencies in two or more capital markets for delivery on the same day. The contract may be executed either in the spot market or forward market, but it must ensure that delivery is the same for all contracts. Here the speculator will see on a given date, in which country he can buy for less and sell for more. The difference in prices on that day will be his profit. Illustration 15.3: In the international monetary market (IMM), an international forward bid for 15 December on pound sterling is $ 1.2816. At the same time the price of IMM

sterling future for delivery on 15 December is $ 1.2806. The contract size is £ 62,500. How can the dealer use arbitrage to profit from this situation and how much profit is earned? Solution: Buy £ 62,500 × 1.2806 = $ 80,037.50 Sell £ 62,500 × 1.2816 = $ 80,100.00 Profit $ 62.50 Alternatively, if the market comes back together before 15 December the dealer could unwind his position (by simultaneously buying £ 62,500 forward and selling a futures contract both for delivery on 15 December) and earn the same profit of $ 62.50. (ii) Time Arbitrage: In time arbitrage, an investor benefits by executing a spot and a forward contract to buy and sell a currency. The profits is due to the fact that the investor earns interest on purchased currency at a higher rate than what would have been available on the currency which he sells initially.

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International Financial Management NOTES Self-Instructional 328 Material Illustration 15.4: A dealer can borrow or invest in Deutsch mark or US dollars at an interest rate of 8 per cent per annum for 90 days. London market quotes the following exchange rates: Dollar/Mark Spot Rate $. 3897/1 DM Dollar/Mark 30 days delivery $.3904/1 DM Dollar/Mark 90 days delivery $.4061/1 DM The dealer executes the following two contracts: (i) to buy $ 1,00,000 worth of DM in spot market (ii) to sell 2,61,740 DM delivery after 90 days Show the effect of the above transaction. Solution: The effect of the transactions given in the question will be as follows: The dealer buys Deutsch Mark worth $ 1,00,000 in the spot market at the rate of $.3897/1 DM. The amount realized in DM is 1,00,000 ÷ 3,897 = 2,56,608 DM Interest at 8 per cent for three months 8 3 2,56,608 100 12 = 5,132 DM Total amount available at the end of three months = 2,61,740 DM The dealer sells 2,61,740 DM in the market after 90 days which equals $ 1,06,293, i.e., (2,61,740 × 0.4061 = $1,06,293). Total loan amount including interest to be repaid after 90 days is: 8 90 $1,00,000 1,00,000 $1,02,000 100 360 This transaction will give a net yield of $ 4,293 (i.e., 1,06,293 – 1,02,000) The arbitrage profit is a result of disequilibrium in the forward market and existence of interest differentials in two countries. (d) Long-term Rollover Cover The major risk faced by a borrower of foreign currency is that of adverse spot exchange rate fluctuation, from the time of borrowing to the time of repayment. It is common to have an 'Exchange Risk' clause in the agreement for borrowing foreign exchange. This clause states that the exchange risk lies with the borrower: The amount due at the time of returning the loan is made payable in equivalent Indian currency calculated in accordance with the rate of exchange prevaling at the time of payment of such loan or advance. Thus, if the foreign currency appreciates against the rupee, then the borrower's liability (measured in rupees) is correspondingly greater than anticipated, at the time of borrowing. Besides the principal amount, the liability on account of interest will also increase correspondingly if borrowing and repayment are according to the market rate. A majority of the foreign exchange loans are taken for procuring capital equipment, and their repayment is spread over a number of years. There is no forward market

International Financial Management NOTES Self-Instructional Material 329 which provides forward cover for such a long term. Thus, banks have come up with the idea of long-term rollover cover. Under this scheme the bank adopts the foreign exchange risk on behalf of the borrower. A rate is negotiated and as far the borrower is concerned, he is required to make repayments at a particular rate for the entire repayment period. Thus, the borrower is saved from the risk of any adverse exchange rate fluctuation. Taking a long-term rollover cover helps a firm in freezing its effective rupee liability at an exchange rate close to what it used in its costing exercise. The exchange rate on booking a rollover cover is the rate that will apply for all repayments during the amortization period. Once the company has decided in favour of a rollover cover, it should wait for a good spot level, when foreign currency is temporarily at a weak point against the local currency. At this point, the company should contact the bank and book a forward rollover cover. This will fix the company's liability to the minimum possible amount over the repayment period. Banks usually charge half-yearly some fee for providing this cover. (e) Exposure Netting It refers to offsetting exposures in one currency with exposures in the same or another currency. In such a situation, exchange rates are expected to move in such a manner that losses or gains in the first currency exposure are capable of being offset by gains or losses in the second currency exposure. This is a type of hedging of foreign exchange exposures and different from forward and option contracts. It is, as a matter of fact, similar to the portfolio approach in handling systematic risk. The concept of exposure netting can be understood with the following example. A company has an export receivables of US$ 10,000 due three months hence. In case no forward contract is taken, the company is exposed to a currency exposure to the extent of US$ 10,000. The same company may import goods worth US$ 10,000. Thus, it has built up a reverse exposure of US$ 10,000 for imports accounts payable. The company may adopt the strategy not to cover it by a forward contract since the first currency exposure is covered by the second currency exposure. This exercise is termed as 'Exposure Netting'. Thus, exposure netting occurs where outstanding positions are netted against one another in the event of counter-party default. (f) Managing Investment in High Economy We have seen in the preceding paragraphs how foreign exchange risks can be minimized in various ways. A multinational organization invests its assets in many countries. The loss in value of these assets will mean monetary loss to the organization. If, unfortunately, a multinational organization has its assets in an economy where the currency is continuously declining, it would like to take some measures to check the loss. The origanization can, in general, adopt the following rules: (i) Borrow a weak currency which is going to decline in future and hold on to strong currencies. The advantage of having debt in a weak currency is that the firm will pay back at lower future value than the present value. Due to inflation, strong currencies are not likely to devalue. (ii) It is advisable to hold inventories, rather than cash, as its value will be eroded by inflation, whereas inventories will appreciate in value. (iii) A corollary of the above logic is to invest available cash in fixed assets. The fixed asset may facilitate the firm to earn strong foreign currency at the required time.

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International Financial Management NOTES Self-Instructional 330 Material 15.5 FINANCING MULTINATIONAL ORGANIZATIONS Raising of funds on favourable terms is an important aspect of financial management. This also holds good for procurement of funds in the international market in any currency. Funds for a multinational may be raised either through internal or external sources. Internal funds comprise share capital, loans from patent company, and retained earnings. External funds can be raised from a number of sources as discussed below. External Financing Funds from external sources can be raised from commercial banks, trade bills, development banks, eurocurrency markets, eurobond markets and international agencies. (i)
Commercial Banks Commercial banks all over the world provide foreign currency loans for international operations as they do for domestic operations. These banks also provide facility to overdraw over and above the loan amount. Interest is also charged on the overdrawn amount. (ii) Discounting of Trade Bills
Discounting of trade bills is used as a short-term financing method.
This method is widely used in Europe and Asia to finance both domestic and international trade. In this case, companies holding bills of exchange, gets the bills encashed before their scheduled maturity through a bank. The bills are encashed at a discount, i.e., at an amount less than the amount of the bill. The discount represents the interest charged by the bank for the relevant period. (iii) Eurocurrency Market When the currency is deposited outside the country of origin, it is termed as eurocurrency. For example, Indian money deposited outside India will be termed as Euro rupee; similarly, US dollars deposited outside the United States is termed as Eurodollar. These deposits are largely outside the control of national banking activities, i.e., they are not subject to the banking regulations of that country. Thus, they are not subject to reserve requirements and interest-rate restrictions, that apply to domestic banks. This freedom allows Eurobanks to offer better terms both to the lenders and the borrowers. Thus, eurocurrency market is another attractive source for borrowing foreign currency. (iv) Eurobond Markets Like eurocurrency market, eurobond market has emerged as another significant source of capital. As it applies for eurocurrency, eurobonds are also primarily sold in countries other than that of the country in whose currency the bond is denominated. Thus, bonds denominated in yen but sold in US, Britain etc., are known as eurobonds. This method of financing is generally adopted by government agencies, reputed international banks, etc. (v) Development Banks Many countries have development banks which offer long and medium-term loans. Many agencies at the national level offer incentives for firms to invest within their country or to finance exports. For example; EXIM Bank in United States offers loans to buyers outside United States for purchase of US made goods. Similar function is performed by EXIM Bank in India besides providing a number of facilities for exports. Check Your Progress 4. When do spot exchange transactions occur? 5. What are transaction exposures? 6. When is a foreign currency said to be at a premium?
International Financial Management NOTES Self-Instructional Material 331 (vi) International Agencies Many international agencies have come into being for financing specific category of projects. For example, International Finance Corporation and Word Bank assist developing countries by financing projects in private and public sectors. Regional Development Banks such as the European Investment Bank, the Asian Development Bank, etc., provide finance for priority projects for economic development of the countries of their finance for priority projects for economic development of the countries of their regions. 15.6 SUMMARY A multinational organization may be defined as an organization which has investment and sales in two or more countries. The problems of financial management of the multinational organizations are slightly more complex than those of domestic organizations. The difference lies in the environment in which these firms operate. The environment relates to political risk. Government tax and investment policy, foreign exchange risks, sources of finance, etc. These are generally some of the crucial factors which affect the activities of a multinational enterprise and govern its investment decisions. Basic problems in Financial Management A finance manager of a multinational has to devote his attention to two basic problems besides the problems which a finance manager of a domestic company has to face. These basic problems are as follows: (i) Foreign Exchange Fluctuations (ii) Financing Facilities Foreign Currency Management Exchange Risk Every external transaction involves problem of payment and pricing. The price payable to a foreign buyer can be in seller's or buyer's currency or an international currency such as US $. From the interaction of those who supply and demand currencies exchange rates are established for two types of transactions: (i) Spot Exchange Transactions: They occur when currencies are traded for immediate delivery. (ii) Forward Exchange Transactions: They occur when purchasers and sellers contract to buy and sell currencies for delivery at a future date. Exchange Risk Management There are various ways through which a company may protect itself from possible loss due to exchange rate fluctuations. (i) Forward Market: A company can protect itself against exchange rate fluctuations by use of Forward or Future Market. In this market, one locks in the rate of exchange by entering into contract to buy specific currency at specific time and at a specific exchange ratio. (ii) Foreign Currency Swap: Foreign currency swap is another method of hedging against foreign exchange risk. This is an agreement between two parties to exchange one currency for another at a specified future date and at a specified exchange ratio.

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International Financial Management NOTES Self-Instructional 332 Material (iii) Arbitrage: Arbitrage is a situation where a guaranteed profit can be made by purchasing and selling a currency simultaneously in one or more foreign exchange markets. (iv) Long-term Rollover Cover: Under this scheme the bank adopts the foreign exchange risk on behalf of the borrower. A rate is negotiated and as far the borrower is concerned he will be required to make repayment at that particular rate, for the entire repayment period. Thus, the borrower is saved from the risk of any adverse exchange rate fluctuation. (v) Exposure Netting: It refers to offsetting exposures in one currency with gexposures in the same or another currency. This is a type of hedging foreign exchange exposures though different from forward and option contracts. It is, as a matter of fact, similar to portfolio approach in handling systematic risk. Financing Multinational Organizations Funds for a multinational may be raised either through internal or external sources. Internal funds comprise share capital, loans from patent company, and retained earnings. External funds can be raised from a number of sources as discussed below: (i) Commercial Banks (ii) Discounting of Trade Bills (iii) Eurocurrency Market (iv) Eurobond Markets (v) Development Banks (vi) International Agencies 15.7 KEY TERMS z Arbitrage: It is a situation where a guaranteed profit can be made by purchasing and selling a currency simultaneously in one or more foreign exchange markets. z Exposure Netting: It refers to offsetting exposures in one currency with exposures in the same or another currency. z Forward Market: It is a market, in which one locks in the rate of exchange by entering into contract to buy specific currency at specific time at a specific exchange ratio. z Foreign Currency Swap: It is an agreement between two parties to exchange one currency for another at a specified future date and at a specified exchange ratio. z Multinational Organization: It is an organization which has investment and sales in two or more countries. 15.8 ANSWERS TO 'CHECK YOUR PROGRESS' 1. Government policies are the biggest threat to the existence of a multinational organization. 2. Foregin exchange fluctuation is the risk caused by the relative rise or fall of value of one currency with respect to another.

International Financial Management NOTES Self-Instructional Material 333 3. The two types of transactions that are generated from the demand and supply of currencies are as follows: (i) Spot exchange transactions (ii) Forward exchange transactions 4. Spot exchange transactions occur when currencies are traded for immediate delivery. 5. Transaction exposures arise in cases where an enterprise is committed to a foreign currency denominated transaction. 6. A foreign currency is said to be at a premium if that currency is costlier under the forward rate than under the spot rate. 15.9 QUESTIONS AND EXERCISES Short-Answer Questions 1. What factors contributed to the growth of International Financial Management? Explain the circumstances under which an organization may finds it attractive to invest abroad. 2. How is International Financial Management linked with Foreign Exchange Management? 3. Explain the types of risks in foreign exchange dealings. How can risk arising from exchange fluctuations be minimized? Long-Answer Questions 1. Discuss the methods of financing adopted by multinational organizations. 2. Give a brief account of the key documents used in foreign exchange transactions. 3. (a) Explain the term 'Foreign Exchange Rate Risk'. (b) Mention any four of the tools available to cover Exchange Rate Risk. 4. What do you understand by purchase and sale of foreign exchange? What are the different types of credit instruments used in effecting foreign remittances? 5. Explain the term 'Exposure Netting' with an example. 6. Describe the major types of currency exposures. 15.10 PRACTICAL PROBLEMS 1. ABC Co. has taken a six month loan from their foreign collaborators for US Dollars 2 million. Interest payable on maturity is at LIBOR plus 1.0 per cent. Current six month LIBOR is 2 per cent. Enquiries regarding exchange rates with their bank elicit the following information: Spot USD 1 Rs 48.5275 Six months forward Rs 48.4575 (i) What would be their total commitment in Rupees, if they enter into a forward contract? (ii) Will you advise them to do so? Explain giving reasons. [Ans. (i) Rs 9,83,68,725 (ii) Given the interest rate differentials and inflation rates between India and USA, it would be unwise to expect continuous depreciation of the dollar. The US Dollar is a stronger currency than the Indian Rupee based on past trends and it would be advisable to cover the exposure.]

International Financial Management NOTES Self-Instructional 334 Material 2. The United States Dollar is selling in India at Rs 45.50. If the interest rate for a six months' borrowing in India is 8 per cent per annum and the corresponding rate in USA is 2 per cent: (i) Do you expect United States Dollar to be at a premium or at discount in the Indian forward market? (ii) What is the expected six months' forward rates for United States Dollar in India? (iii) What is the rate of forward premium or discount? [Ans. (i) USD is expected to be quoted at a premium in India since the interest rate is higher in India. (ii) Forward Rate Rs 46.85. (iii) Rate of Premium 46.85 45.50 12 100 5.93 45.50 6 – = × × = per cent.] 3. A customer with whom the Bank had entered into three
months forward purchase contract for Swiss Franks 1,00,000 at the rate of Rs 36.25 comes to the bank after two months and requests cancellation of the contract. On this date, the rates are: Spot CHF 1 = Rs 36.30 36.35
One month forward 36.45 36.52 Determine the amount of Profit or Loss to the customer due to cancellation of the contract. [Ans. Swap profit/loss to the customer: Rs 36.52 Payable by the customer Rs 36.25 Receivable by the customer Re 0.27 Net payable by the customer, i.e., loss Therefore, total loss to the customer is: Swiss Francs 1,00,000 × Re 0.27 = Rs 27,000.] 15.11 FURTHER READING Maheshwari, S.N. Elements of Financial Management. New Delhi: Sultan Chand & Sons, 2008. Maheshwari, S.N., S.K. Maheshwari, Sharad K., A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 335 UNIT 16 FINANCIAL MANAGEMENT IN PUBLIC SECTOR GOVERNMENT ENTERPRISES Structure 16.0 Introduction 16.1 Unit Objectives 16.2 Meaning of Public Sector Enterprise 16.3 Characteristics of Public Sector Enterprises 16.4 Objectives of Public Sector Enterprises 16.5 Rationale of Public Sector Enterprises 16.6 Forms of Public Sector Enterprises 16.7 Distinctive Features of Financial Management 16.8 Agenda for the Public Sector 16.9 Summary 16.10 Key Terms 16.11 Answers to 'Check Your Progress' 16.12 Questions and Exercises 16.13 Further Reading 16.0 INTRODUCTION We have already discussed earlier about the principles of financial management which are applicable or common to all business firms in both the the public sector and the private sector. However, business enterprises in the public sector have their special financial management features mainly due to government ownership and control. In the present unit, we will discuss the distinctive features of financial management concerning the public sector enterprises. 16.1 UNIT OBJECTIVES • The public enterprise and its characteristics • Objectives and rationale of the public sector enterprises • Different forms of public sector enterprises • Distinctive features of financial management of public sector enterprises • Agenda for the public sector 16.2 MEANING OF PUBLIC SECTOR ENTERPRISE Public sector enterprises or public enterprises have come to enjoy a unique position in the Indian economy in the post-independence era. These enterprises produce diverse products such as steel, coal, aluminium, fertilizers, basic chemicals, minerals, locomotives, aricrafts, ships, etc. They have been responsible for forming a strong industrial base and providing the basic infrastructure for development in the country.

Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 336 Material The significant growth of the public sector form of business organizations has been due to several factors, viz., our philosophy of the socialistic pattern of society, the strategy of heavy industrialization, the need to prevent the concentration of economic power in a few hands, the development of backward areas, etc. This sector has assumed such importance that no student of commerce or management can afford to ignore its study. A public enterprise may be defined as a business undertaking which is owned, managed and controlled by the State, on behalf of the public at large. According to Hansen, public enterprises means 'state ownership and operation of industrial, commercial or financial or agricultural undertakings'. 16.3 CHARACTERISTICS OF PUBLIC SECTOR ENTERPRISES 1. State Ownership A public enterprise is owned by the Central and/or State Government 2. Service Motive The primary objective of public enterprises is to serve the nation, while they may earn profits. In fact, there are multiple objectives like the provision of essential goods and services, the creation of gainful employment, filling gaps in industrial structure, etc. Public enterprises work for public welfare. 3. Public Accountability In the establishment and operation of public enterprises, financial resources are provided from the State exchequer. Therefore, public enterprises are accountable or responsible to the public. Such accountability is carried out through parliamentary control on the working of these enterprises. 4. Government Control The management of public enterprises rests in the hands of officers who are appointed by the government directly or indirectly. Even in the case of autonomous enterprises, the concerned ministry excercises a great deal of control over their functioning. Thus, public enterprises differ from private enterprises in terms of their ownership, management, objectives, financing, freedom of management and flexibility of operations. 16.4 OBJECTIVES OF PUBLIC SECTOR ENTERPRISES

The objectives of public sector enterprises may be divided into three categories: 1. Economic objectives 2. Social objectives 3. Political objectives 1.

Economic Objectives (i) Economic development Public enterprises are established to accelerate the rate of economic growth by setting up key and basic industries like iron and steel, petroleum, power generation, chemicals, machine building, etc. The public sector provides an essential base for faster economic

Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 337 growth of the country.

The expansion of capital goods industries leads to the development of other industries. (ii) Planned growth The private sector neglects industries with long gestation periods and low rates of returns. Public enterprises step in to fill up gaps in the industrial structure by setting up industries which are economically unattractive, but nationally essential. Public sector provides infrastructural facilities for diversified and balanced growth. (iii) Balanced regional development Public sector concerns are designed to facilitate the growth of backward regions so as to reduce regional disparities in industrial growth. (iv) Generation of surplus Public enterprises are expected to generate and distribute surplus for financing five-year plans and other schemes of public welfare. (v) Provide employment One of the important objectives of public enterprises is to reduce unemployment by creating employment opportunities. 2. Social Objectives (i) Control monopoly Sometimes, public enterprises seek to check private monopoly and restrictive practices and the resulting evils like exploitation. (ii) Equitable distribution of wealth Public enterprises are expected to reduce disparities in the distribution of income and wealth.

The

reduction of economic disparities is one of the objectives of our Constitution and public enterprises are helpful in checking

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the
concentration of economic power. (iii) Provision of essential goods and services An important objective of public undertakings is to provide essential goods and services for consumption at reasonable prices. This helps in improving the standard of living of people. Social control over industry ensures equitable distribution of commodities and helps to protect the consumer from exploitation by greedy businessmen. (iv) Takeover of sick units Closure of sick units may result in loss of employment to a large number of people and wastage of national resources. Public enterprises like the National
Textile Corporation was set up to nationalize such units and to make them healthy and profitable. Public enterprises also facilitate small-scale industries. 3. Political Objectives (i) Public interest Public enterprises are established in the interest of the country as a whole. India has become an industrial power because of the development of public sector concerns. They facilitate self-reliance in strategic sectors. (ii) National defence Public enterprises are set up for the manufacture of arms, ammunition, telecommunications, oil, etc., which are essential for the safety and security of the country. (iii) Socialism Public enterprises are required to further the political ideology of the government as well as to serve the constitutional objectives of socialistic pattern of society.
Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 338 Material 16.5 RATIONALE OF PUBLIC SECTOR ENTERPRISES Public sector enterprises occupy an important place in almost all countries irrespective of their political orientation. The emergence and popularity of these enterprises in India can be attributed to the following reasons : Arguments in favour of Public Enterprise (i) Rapid industrialization: Public enterprises are essential for developing basic and heavy industries which require heavy investment and have low profit margins. Private enterprise are, therefore, reluctant to enter them. Such industries, viz. iron and steel, coal, oil, and telecommunications, provide infrastructural facilities for the rapid industrialization of the country. (ii) Optimum utilization of national resources: Left to the private sector, some industries suffer from excess capacity while others have insufficient capacity. Public enterprises help in correcting such imbalances as they are not guided solely by the profit motive. In this way, they are instrumental in the best possible utilization of the country's natural resources. (iii) Balanced regional growth: Backward regions lack infrastructural facilities and therefore private industrialists are not keen to set up industries in such regions. This leads to the concentration of industries in certain regions. By locating plants in backward areas, public sector concerns help to remove regional disparities in industrialization. (iv) Mobilization of surplus: Public enterprises are not under pressure to distribute dividends. They can fully plough back their earnings for future growth and to promote socio-economic objectives. (v) Creation of employments: Public enterprises are required to generate employment for the teeming millions. They help to provide employment by taking over sick and closed units in the private sector. (vi) Control over monopoly and concentration of economic power: Private monopolies lead to the exploitation of weaker sections. Public enterprises are a countervailing power to check private monopolies and undue concentration of economic power in a few hands. They facilitate the development of an egalitarian society. (vii) Elimination of wasteful competition: Public enterprises help to produce socially useful goods which are in short supply. By balancing demand and supply, they eliminate wasteful competition and provide economies of large-scale operations. (viii) Instrument of social change Public enterprises serve as an important instrument of social change. They are helpful in ushering a social order free from expolitation. They can be used to further the welfare of consumers and workers. Such enterprises can serve as a model employer. 16.6 FORMS OF PUBLIC SECTOR ENTERPRISES Public Sector Enterprises may be organized in any of the following forms: 1. Departmental Undertakings 2. Public Corporations

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 339 3. Government Companies 4. Holding Companies The above can be shown in the form of the following chart : Table 16.1 Organization of Public Sector Enterprises PUBLIC SECTOR ENTERPRISES Departmental Public Government Holding Undertakings Corporations Companies Companies (a) Posts and (a) Damodar Valley (a) Hindustan (a) Steel Telegraphs Corporation Steel Ltd Authority of (SAIL) India Ltd (SAIL) (b) Railways (b) Reserve (b) Hindustan (b) Coal Bank of India Machine Authority Tools Ltd of India Ltd (CAIL) (c) Broad- (c) Life Insurance (c) Hindustan (c) International casting Corporation Shipyard Ltd Airports Services of India Authority of India (IAAI), etc. (d) Defence Establish (d) Industrial (d) Bharat Heavy ments Development Electricals Bank of India, etc. Ltd, etc. (e) Atomic Power Projects None of these forms is suitable for all types of public enterprises and in all situations. While selecting the form of organization for a particular public enterprise, the nature of the enterprise, the scale of its operations, its operational and financial requirements, the degree of competition, effect of the enterprise on the life of the community, and its contribution to the national economy should be considered. 1. Departmental Undertakings Departmental undertaking is the oldest and the most traditional form of public sector enterprises. Under this form, an enterprise is organized as a wing of the normal government machinery. The enterprise is managed by government officials as one of the government departments. The enterprise is under the charge of the secretary and the minister concerned who is responsible to the parliament. Characteristics of departmental undertakings (i) The undertaking is established as a department or a ministry of the government. It is not a separate entity from the government. (ii) The enterprise is financed by annual appropriations from the government budget and practically all its earnings are paid into the government treasury. (iii) The undertaking is subject to budget, accounting and audit control applicable to other government departments.

Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 340 Material (iv) The permanent staff of the enterprise consists of civil servants and their terms and conditions of the employment are determined by the government. They are all government servants subject to civil service rules. (v) The undertaking is under the control of the minister concerned. The minister in charge of that department has direct control over the enterprise. (vi) Being a part of the government, a departmental undertaking cannot be sued without the consent of the government. Certain departmental undertakings are so diversified in operations that they affect several areas of the government machinery. Such undertakings are managed and controlled by an interdepartmental committee or board consisting of representatives of various ministries or departments of the governments. Sometimes, the representatives of the concerned State Governments are also included in the Committee or the Board. The main examples of board-type management are river valley projects like the Bhakra Nangal Control Board, Hirakud Control Board, All India Handloom Board, and undertakings concerned with national defence, atomic energy development. 2. Public Corporations A public corporation or statutory corporation is a corporate body set up under a special statute. It is financially independent, its power and functions are well defined and it has a clear-cut jurisdiction over a specific field of industrial or commercial activity. The capital of a public corporation is subscribed wholly by the government. According to Herbert Morrison, 'a public corporation is a combination of public ownership, accountability and business management for public ends'. Characteristics of public corporations: (i) Formation. A public corporation is established under a special Act of the parliament or state legislature. The Act defines the objects, powers and functions of the corporation as also its relationship with the government. (ii) Separate legal entity. A statutory corporation has a separate legal existence, independent of the government. It can acquire property, make contracts, sue and be sued in its own name. It is a body corporate. (iii) Government ownership. The entire share capital of a public corporation is provided by the government or by agencies controlled by the government. It is wholly owned by the State. (iv) Public service. Generally, the main motive of a public corporation is to work for public welfare. However, it is expected to at least break-even or make reasonable profits. (v) Management. It is managed by a board of directors nominated by the government. The control is vested in the legislature, and the corporation is accountable to the parliament. It has its own staff and their the appointment, remuneration and service conditions are decided by the corporation itself. Employees of the corporation are not government servants and they are not subject to civil service rules. (vi) Financial independence. The corporation can borrow money on its own. It is not subject to government rules and regulations in the matter of accounting, budgeting and audit. (vii) Public accountability. A public corporation is accountable to the parliament or the state legislature. It has to submit an annual report on its working and its accounts are audited by the Comptroller and Auditor General of India.

Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 341 3. Government Company Government company is that
in which not less than 51 per cent
of the paid-up share capital is held by the
Central and/or State Government.

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It is a company registered or incorporated under the Companies Act. Characteristics of government companies: (i) Incorporation. A government company is registered under the Companies Act. It is formed by an executive rather than a legislative decision. (ii) Separate legal entity. It has a separate legal existence independent of the government. (iii) Ownership. A government company is wholly or partly owned by the government. But in all cases, the government is the major shareholder. (iv) Management. It is managed by a board of directors nominated by the government. It has its own staff and its employees are not government servants. They are not subject to the civil service rules. (v) Accountability. A government company is accountable to the ministry or the department concerned. Its report is placed every year in the parliament or state legislature. (vi) Financial Autonomy. It is free from the accounting, audit and budgetary controls applicable to government departments. It can also borrow on its own. 4. Holding Companies In the case of holding companies, a single parent or apex company exercises control over all public enterprises belonging to one particular industry. The parent or holding company is registered under the Companies Act and the government companies controlled by it are called subsidiary companies. The subsidiaries enjoy the freedom of day-to-day administration, but their overall policies are laid down by the holding company. The holding company is free from government interference and normal rules and procedures of government departments. Holding company organizations facilitate centralized planning and unified control. It is able to adopt an integrated and balanced approach towards all units operating in one field of industrial or commercial activity. Each subsidiary has decentralized management and obtains the benefits of professional management by the holding company. The holding company enables the government to formulate a uniform policy for the promotion of a particular industry. It can be held for the promotion and growth of new units. However, a holding company organization involves dangers of top heavy administration, excessive centralization of authority and conflict of interests. 16.7 DISTINCTIVE FEATURES OF FINANCIAL MANAGEMENT The following are some of the distinctive features concerning the financial management of public sector enterprises: 1. Role of the Financial Adviser The financial adviser occupies an important position in all public sector undertakings. He functions as the principal adviser to the chief executive of the enterprises on all financial matters. His concurrence is required regarding all financial implications of the proposals Check Your Progress 1. Who provides the financial resources for the establishment and operation of public enterprises? 2. What are the objectives of public sector enterprises?
Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 342 Material put forward before the Board of Directors. In some public sector undertakings he is designated as Financial Adviser and Chief Accounts Officer (FA & CAO), while others have expanded the role of the financial adviser and elevated his position by designating him as Director (Finance). The Committee on Public Sector Undertakings has specified the following functions and responsibilities of a financial adviser: (1) To determine the financial needs of the firm and the way these needs are to be met (2) To formulate a programme to provide the most effective cost-profit volume relationship (3) To analyse the financial results of all operations costs so as to improve future operations (4) To conduct special studies with a view to reduce costs and improve efficiency and profitability (5) To examine feasibility studies and detailed project reports from the point of view of the overall economic viability of the project (6) Performing routine operating functions as given below: (i) Coordination of the preparation and operation of budgets (ii) Determination of suitable purchasing procedures to ensure adequate control (iii) Advice to the CEO on pricing policies, interdepartmental issues, etc. (iv) Advice on all service matters, such as scale of pay, dearness allowance, bonus, gratuity, etc. (v) Maintenance of accounts, including cost and stores accounts, and internal audit (vi) Preparation of annual accounts, in accordance with the provisions of law and attending to external audit (vii) Control over cash and disbursements (viii) Handling of tax matters 2. Capital Budgeting Decision In order to ensure the proper evaluation and implementation of the capital budgeting decision, the following points are to be given due consideration : (1) Guidelines provided by the government (2) Delegation of investment decision-making power (3) Approval of public investment proposals (1) Guidelines Provided by the Government Major capital expenditure decisions are to be taken only after an extensive study. Projects are generally formulated by the concerned ministries when five year plans are being drawn up. Besides, the administrative ministry which takes initiative, the Planning Commission and the Finance Ministry are also vitally concerned with the project details supported by feasibility reports. In this connection, the Project Proposal Appraisal Division of the Planning Commission issued in 1975 is a detailed manual entitled ‘Guidelines for Preparation of Feasibility Reports for Industrial Projects.’ According to the guidelines, every project should be appraised from the technical, commercial, financial and economic angles. The project report has to cover the following major points :

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 343 (i) General information. This covers the demand during the description of the project and alternatives available. (ii) Market analysis. This covers the demand during the five-year plan period, present and anticipated production, present imports and exports potentials and time phasing of demand. (iii) Technical features of the project. This includes the selection of the production process, size of the plant, raw materials, product mix, etc. (iv) Location of the plant. This has to be studied in relation to availability of raw materials, market, water, infrastructure facilities and alternative locations available. (v) Capital cost estimates. This includes construction cost, installation cost of the plant and the details of foreign exchange components involved in the capital cost. (vi) Operating estimates. This includes details of the operating costs and working capital requirements. (vii) Financial analysis. This covers preparation of cash flow and funds flow analysis, cost, benefit analysis, etc. The guidelines suggest the adoption of the Internal Rate of Return (IRR) method for evaluating the capital investment proposal. In order to incorporate the risk factor, the technique of sensitivity is also being recommended particularly for the following variations: (a)
Increase in capital cost by 30 per cent (b) Decrease in labour cost by 30 per cent (c) Reduction in raw material input cost by 10 per cent (2) Delegation of Investment Decision-
making Power The Bureau of Public Enterprises issues circulars from time to time authorizing the board of directors of public sector undertakings to take a decision with respect to individual capital expenditure items based on the total capital investment in the concerned enterprise. (3) Approval of Public Investment Proposal The Government of India set up a high-powered Public Investment Board (PIB) in 1972 to approve speedily public sector projects which are beyond the authority of the boards of public sector undertakings as given above. The Board consists of following members: z Secretary, Department of Economic Affairs z Secretary, Department of Industrial Development z Secretary, Planning Commission z Secretary to the Prime Minister z Secretary of the Administrative Ministry concerned with the public investment proposal. z Director General of Bureau of Public Enterprises who is the permanent invitee Secretary, Department of Economic Affairs, who is the chairman of the Public Investment Board. The Public Investment Board appraises and recommends all projects which come under the purview of the Central Government other than those relating to departmental
Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 344 Material undertakings, viz., Railways, Ordnance factories, etc., which have their own procedures. The Board takes into consideration the following criteria in appraising and recommending the projects : (i) The contribution of the project to economic and social objectives and adherence to the concerned policies of the government (ii) The advisability of undertaking the project in the public sector, in the joint sector or leaving it to the private sector (iii) Availability of plan funds, desirability of diversion of plan funds to the new projects from those already in hands (iv) The plant capacity and the timing of the investment in the light of supply and demand balance including export possibilities of the product/service to be provided (v) The economic benefits of the project as distinct from financial returns. (vi) Crucial assumptions in the feasibility report which are likely to affect the performance of the commissioned project in relation to the claims made thereon in the feasibility report (vii) The adequacy or otherwise of the internal rate of returns from the project (viii) Contribution of the project to foreign exchange earnings (ix) Logical sequencing of the project schedule (x) Adequacy of safety and anti-pollution measures (xi) Soundness of marketing strategy The Public Investment Board is assisted by the following agencies in this work: (i) The Plan Finance Division of the Ministry of Finance, which scrutinizes the proposal particularly with reference to budgetary and plan provisions. It also works as the secretariat of PIB (ii) The Bureau of Public Enterprises, which examines capital costs, technical and other financial aspects (iii) Project Appraisal Division of Planning Commission, which makes a social cost benefit analysis and critically examines assumptions underlying the projects (iv) The concerned administrative ministry, which provides all additional information required by the Public Investment Board In case the project is recommended by the Public Investment Board, it goes to the Cabinet through the Ministry of Finance for its approval. In case the project is approved, a detailed project report is prepared providing sufficient details regarding project costs, project schedule and other information necessary for implementing the project. 3. Capital Structure Decision The term capital structure decision refers to the detetrmination of the debt-equity mix. In other words, it involves the identification of different sources of long-term finances, viz., equity shares, preference shares, debentures,
bonds, etc. and the quantum of finances to be raised from each such sources of finance. The following are the special features regarding capital structure decision in the case of public sector enterprises: (1) Role
of cost of capital In case of a private enterprise the cost of capital plays an important role
while determining the capital structure. However, in a public sector enterprise a large portion of the funds is provided either by the government or by the insitutions controlled by the government.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 345 Hence, the cost of capital does not play an important role in determining the capital structure of a public sector enterprise. (2) Debt-equity mix A private enterprise is required to maintain a proper debt-equity mix. It is ideal if it is 1 : 1. Financial institutions consider debt-equity mix as satisfactory for a firm even if it is 1 : 2. As regards public sector enterprises, the first government guidelines regarding debt-equity mix was issued in June, 1961, providing a debt equity mix of 1 : 1. This can be made out from the circular issued by Bureau of Public Enterprises. It stated as follows: 'Normally, when making provision for the projects in the public sector, unless there are exceptional reasons to the contrary each project will be financed on the basis of half of its capital being in the shape of equity and the rest in the shape of loans.' However, it will not be appropriate to have uniform debt-equity ratio for all types of public sector undertakings. The Administrative Reforms Commission and the Committee on Public Undertakings also urged the government to allow variations in the debt-equity ratio from one public sector undertaking to another depending upon whether it is a capital-intensive unit or a trading unit. According to the Committee on Public Sector Undertakings, the firms which have a long gestation period, serve a basic developmental from those undertakings which do not have these features. Hence, the debt-equity mix in case of public sector enterprises, undertakings should be based on the following parameters. (i) Gestation period (ii) Degree of Business Risk (iii) Capital Intensity of the Project (iv) Availability of Freedom as to the Pricing (3) Sources of Finance The main sources of finance of a public sector undertaking are as under: (a) Equity Shares. Traditionally this has been a major source of finance of public sector undertakings. The equity share capital of public sector undertakings is either wholly held by the government itself or by the government with other institutions owned or controlled by the government. There have been some minor deviations in this respect. Some public sector undertakings have offered in the past a small part of their equity share capital to the public at large. Scooters India Limited was the first public sector undertaking to offer in 1975 a part of its equity shares to public at large. This practice of raising funds from public by offering equity shares has gained momentum after the onset of liberalization process in 1991. For instance, the State Bank of India and some of the nationalized banks have also raised funds by issue of equity shares to the general public. (b) Loans. Public sector undertakings have also been getting substantial loans from the government to meet their requirements of long-term funds. The financial institutions have also been very liberal in granting loans to public sector undertakings because of minimum risk. It may be recalled that as back as 1961, the Government of India fixed the debt-equity ratio for this purpose as 50 : 50 in case of public sector undertakings. (c) Bonds. Raising of funds through bonds or debentures by public sector undertakings is of recent origin. As a matter of fact, a number of public sector undertakings have in recent years raised funds by offering debentures or bonds to the general public. These include Steel Authority of India Ltd. (SAIL), National Thermal Power Corporation (NTPC), Industrial Development Bank of India (IDBI), Mahanagar Telephone Nigam Limited (MTNL), Bharat Petroleum Limited (BPL), etc. The debt equity ratio normally

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 346 Material applicable to such issues has been fixed at 4 : 1. The bonds have generally a maturity period of seven to ten years. Some of these bond issues also enjoy income tax and wealth tax benefits. (d) Retained Earnings. This has not been a major source of long-term finance of public sector undertakings, since the performance of most of the public sector undertakings in terms of profitablitiy has been extemely poor. The return on capital employed in the public sector undertakings has been abnormally poor at 3 per cent. Moreover, a large share of the profits made by the public sector undertakings come only from a few undertakings such as ONGC, BHEL, MTNL, NTPC, etc. As a matter of fact, petroleum sector alone accounts for nineteen per cent of the total gross profits by all public sector undertakings. It has been estimated that around sixty-four per cent of the total capital employed has failed to yield a reasonable return. (e) Disinvestment. The term 'disinvestment' implies sale of the shareholdings to the extent required. The motivation for disinvestment may range from the ownership, control and management of an enterprise to introducing new partners to improve the operations or for moving into another line of business activity. In India, the disinvestment in public sector enterprises has been undertaken to correct the budgetary imbalances and achieve the objectives of economic restructuring. The onset of liberalization process in 1991 brought a revolutionary change in the Government's policy towards the public sector enterprises. It is taking effective steps for reducing its involvement in providing funds to the public sector enterprises through disinvestment of its holdings in the public sector enterprises. The disinvestment policy, after coming into power of UPA Government in 2004 has undergone certain changes. The basic features of the new policy are as under: (1) Organization Structure: The Department of Disinvestment, set up in December 1999 was renamed as Ministry of Disinvestment in September 2001. The Ministry of Disinvestment has now been converted into Department of Disinvestment under the Ministry of Finance since May 2004. The Department has been assigned the following work: (i) All matters relating to disinvestment of Central Government equity in Central Public Sector Undertakings. (ii) Decisions on the recommendations of Disinvestment Commission on the modalities of disinvestment, including restructuring. (iii) Implementation of disinvestment decisions, including appointment of advisers, pricing of shares and other terms and conditions of disinvestment. (iv) Disinvestment Commission. (v) Central Public Sector Undertakings for purpose of disinvestment of government equity only. Consequent upon change in the policy of the government, the term of Disinvestment Commission was not extended further and it was wound up with effect from 31 October, 2004. The Secretary (Disinvestment) is assisted by three Joint Secretaries. The Department functions on the Desk Officer Pattern and the disinvestment work is handled at the minimum level of Under Secretary. (2) Policy on Disinvestment: Government has decided, in principle, to list large, profitable Public Sector Enterprises (PSEs) as domestic stock exchanges and to selectively sell a minority stake in listed profitable PSEs while retaining at least fifty-one per cent of the Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 347 shares along with full management control so as not to disturb the public sector character of the companies. The basic features of the policy are as under: (i) Profit making companies not to be privatised: The government is committed to a strong and effective public sector whose social objectives are met by its commercial functioning. But for this, there is need for selectivity and a strategic focus. The UPA is pledged to devolve full managerial and commercial autonomy to successful, profit-making companies operating in a competitive environment. Generally profit making companies will not be privatised. (ii) Restructuring of sick companies: All privatisations will be considered on a transparent and consultative case-by-case basis. The government will retain existing 'navaratna' companies in the public sector while these companies raise resources from the capital market. Every effort will be made to modernize and restructure sick public sector companies and revive sick industry. Chronically loss-making companies will either be sold-off, or closed, after all workers have got their legitimate dues and compensation. The government will induct private industry to turn-around companies that have potential for revival. (iii) Raising resources from capital market: The government believes that privatisation should increase competition, not decrease it. It will not support the emergence of any monopoly that restricts competition. It also believes that there must be a direct link between privatisation and social needs viz., the use of privatisation revenues for designated social sector schemes. Public sector companies and nationalized banks will be encouraged to enter the capital market to raise resources and offer new investment avenues to retail investors. (3) Proceeds from Disinvestment: The amount of funds targeted and realized on account of disinvestment in public sector undertakings have been given in the following table: Table 16.2 Year-wise Distribution of Disinvestment Receipts (in Rs Crore) Year Target Achievement 1991-92 2,500 3,038 1992-93 2,500 1,913 1993-94 3,500 - 1994-95 4,000 4,843 1995-96 7,000 362 1996-97 5,000 380 1997-98 4,800 902 1998-99 5,000 5,371 1999-00 10,000 1,860 2000-01 10,000 1,871 2001-02 12,000 5,632 2002-03 12,000 3,348 2003-04 14,500 15,547 2004-05 4,000 2,765 Source: Department of Disinvestment, Ministry of Finance.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 348 Material During the year 2004-05, the government realized a sum of Rs 2,765 crore, out of which the major receipt of Rs 2,684 crore was from the sale of 43.29 crore equity shares of Rs 10 each of National Thermal Power Corporation Ltd. (NTPC) out of Government of India holding. A sum of Rs 64.81 crore was realized from the sale of shares to employees of IPCL. During the year 2005-06, the Central Government hopes to mop up about Rs 500 crore via share sale in five companies including BHEL, Maruti and BALCO. The government is also toying with the idea of disinvestment in Power Grid Corporation of India. (4) Disinvestment Fund: Government decided on 27 January 2005 to constitute a fund into which the realization from sale of minority and shareholding of the government in profitable PSEs would be channelized. The fund would be marnisained outside the Consolidated Fund of India and would be professionally managed by selected Public Sector Financial entities, which have the requisite experience to provide sustainable returns to the government without affecting the corpus. This fund would be called 'National Investment Fund" to denote the permanent nature of the corpus and the objectives to which its income is to be applied. The broad objectives of the National Investment Fund will be: (i) Investment in social sector projects which promote education, health care and employment; (ii) Capital investment in selected profitable and revivable Public Sector Enterprises that yield adequate returns, in order to enlarge their capital base to finance expansion /diversification. The fund has come into effect from April 1, 2005. (f) Working Capital Management. The following are some important aspects concerning working capital management in public sector undertakings : (i) Financing of current assets. The current assets in case of public sector undertakings are mostly financed from short-term sources since often no provision is made for working capital requirements while estimating the project cost. (ii) Liberal bank credit. The public sector undertakings get liberal credit facilities for meeting their working capital requirements from various public sector banks. (iii) Current assets to fixed assets ratio. Most of the public sector undertakings are involved in capital-intensive industries, like steel, heavy engineering, oil refining, etc. As a result the ratio of current assets to fixed assets is rather low. (iv) Low inventory turnover ratio. Most of the public sector undertakings have low inventory turnover ratio due to the following reasons : (a) Manufacturing cycle is often much longer than what is desired because of lack of coordination and inordinate delays. (b) The procedure for purchasing materials is elaborate and time-consuming. Hence, there is a tendency on the part of the management to maintain inventory at very optimistic levels of capacity utilization. (c) The policy of playing 'very safe' is particularly followed in case of materials which are to be imported. Hence, the level of inventory of the imported items is generally on the higher side. (d) Uncertainty about the availability of raw materials particularly in case of foreign collaborations, make the public sector undertakings to maintain high levels of inventory to prevent any stoppage of the production process.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 349 (e) The management of public sector undertakings in general has not much exposure to financial management. The executives have a strong engineering orientation. As a result, they are not in a position to appreciate the principle of idle resources. The study conducted by the Committee on Public Sector. Undertakings from time to time indicate that the inventory constitutes a major portion of the working capital of public sector undertakings. Even a marginal reduction brought about in the holding will repay the cost and efforts of such investigation. Hence, proper inventory management should be given top priority by public sector undertakings. Techniques like ABC Analysis and Value Analysis and Just in Time (JIT) can play a useful role in this direction. The Bureau of Public Enterprises can also provide necessary consultancy assistance in this respect. (v) Receivables policy. Most of the public sector undertakings are not in a position to have an optimum receivables policy by manipulating the various variables like discount rate, credit period, credit standards, etc. This is because either they sell bulk of their output to the government or their output is always in short supply. 16.8 AGENDA FOR THE PUBLIC SECTOR The public sector enterprises are subject to severe criticisms from all quarters. They were expected to be a model for industry in technology, efficiency, innovation and serving public interests. However, they are now considered to be a drain on the national resouces and are placed at top in corruption and inefficiency. It will be therefore of interest to the readers to identify the causes of their such a sorry state of affairs and see if there can be a case for their improvement. Causes. The following can be identified as the causes which have landed the public sector enterprises in the present difficulties : (i) Profit as not the sale motive The public sector undertakings have not been set up with profit as the main consideration. As a matter of fact, a large number of public sector undertakings with huge manufacturing capacities have been set up in the core sector, like power, steel, aluminium, copper, heavy machinery, etc. to make India a self-reliant economy. There were also industries involving large investment, long gestation periods in project implementation and consequently long periods of waiting for securing returns on investment made. For instance, the decision to go ahead with the setting up of Bharat Heavy. Electricals Limited at Bhopal was taken even when the feasibility report estimated that the rate of return on the project could be as low as two per cent on capital employed. (ii) Price Controls Many of the products made by the public sector undertakings like steel, paper, power, coal, fertilizers, were subject to price controls to meet the social objectives of making the above products available at reasonable prices to the general public. As a result, conditions never existed for the public sector undertakings to become vibrant and self-sustaining organizations. (iii) Non-economic consideration Decisions regarding setting up of new projects or diversification of the existing projects in the public sector have been on considerations other than economic. If this would have Check Your Progress 3. When was the high-powered Public Investment Board (PIB) set up? 4. What was renamed as Ministry of Disinvestment in September, 2001?

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 350 Material been done on economic considerations, this would have ensured their viability and competivity in the overseas market. For instance, a few units especially relating to products like heavy machinery based on Russian technology, turned out products which were not efficient either in the use of energy or other inputs. Similarly locational decisions regarding setting up plants of Cement Corporation of India were made without keeping in mind the economic viability of the proposals. (iv) Time and cost over-runs Red tapism, bureaucratic hurdles, etc. have resulted in time and cost over-runs of unbelievable magnitude in case of a number of public sector projects. This has damaged their viability to an extent that they have become prematurely sick. (v) Social objectives The government in its unrestricted enthusiasm to meet social objectives, viz., maintaining employment, helping poor and the downtrodden, etc., nationalized many loss making units without bothering about the enormous burden both in the managerial and financial terms involved in such an action. The large number of sick mills in the fold of National Textile Corporation (NTC) bear eloquent testimony to this fact. (vi) Lack of adequate autonomy The public sector undertakings lack adequate autonomy in planning both their current and future operations. They are subject to a number of government restrictions which is a hindrance for their top management to take proper steps for initiating radical measures to put public sector undertakings on a viable footing. (vii) Lack of funds The public sector undertakings are suffering from lack of funds because of two reasons: (i) most public sector undertakings are making losses and hence do not have sufficient funds for ploughing back; and (ii) the budgetary support from the government is declining year after year. As a result, many public sector undertakings do not have sufficient funds needed for modernization and upgradation of technology, to improve their efficiency and also meet the competition from the private sector enterprises. Thus, problems of public sector undertakings are not of their making only. The government is also responsible to a great extent for their dismal performance. However, it has been accepted by all that the public sector undertakings exist and will continue, to exist for several more years to come. They cannot be dismantled or sold off instantly. Hence, there is no option except to improve the performance of the public sector undertakings. Suggestions for Improvement It will not be out of place here to state the expectations from the public sector undertakings at this juncture before suggesting measures for improving their performance. The expectations from the public sector undertakings are: (i) They should add to government revenues by substantial profits. (ii) They should not add to the internal financial deficits in the form of losses and subsidies. (iii) They should reduce foreign exchange outflow by indigenisation and import substitution. (iv) They should help in improving the balance of payments position. (v) They should provide quality goods and services at reasonable price and serve as a model for private enterprises.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 351 The above objectives can be gainfully achieved if the following aspects are taken care of. 1. Objectives The objectives of the public sector undertakings have to be redefined. They have been so far taken as an instrument for fire-fighting operations of a diverse nature. The government has so far used for achieving certain social objectives which have resulted in heavy financial losses to them. As a matter of fact, it is difficult to believe how a social objective is achieved by a public sector undertakings if it becomes a drain on social resources. An undertaking with increasing losses can hardly serve anyone—the consumer, the State, or the society. Economic objective should, therefore, be the main objective of public sector undertakings. The social functions should be the responsibility of the Central Government, State Government, local authorities and the community at large. 2. Structure The public sector undertakings have inherited a wrong structure which is unsuitable for a business undertaking. This is largely because the structure was established by the government bureaucrats in the ministries or the government departments. The procedural delays, redtapism, non-specialized and under-worked staff, have all resulted in inefficiency and corruption at different levels of the public sector undertakings. The structure of the public sector undertakings needs thorough overhauling and given a business—like outlook and approach. 3. Capital, control and management In a private sector enterprise the ownership is divorced from management. The shareholders are mere rentiers of capital. The overall control vests in the Board of Directors. However, day-to-day decision-making is with the professional executives who have complete freedom regarding their operations. In a public sector undertaking, capital, control and management all vest in the government. As a result the business of the public sector undertakings is not conducted in a professional manner. There is government interference at all levels of their functioning. It is suggested that the government should invest in a public sector undertaking only during early gestation stage of the enterprise. It should later on dis-invest its shareholding. This will be beneficial in two respects: (i) it will relase funds for establishment of a new public sector undertaking; and (ii) it will make the public sector undertakings more responsive to the general public. Mr. Prakash Tandon, distinguished and noted professional manager, suggested as back as in 1984, the reorganization of the shareholding of a public sector undertaking as follows: Government 25 per cent; Employees 5 per cent; Financial Institutions 10 per cent; Consumer Organizations 20%; and General Public 40 per cent. A small beginning in this direction has already been made with the government's decision to disinvest a part of its shareholding, as discussed earlier in the chapter. At present public sector undertakings are largely governed by the Companies Act which is not of much relevance to them. It may be proper to enact a separate legislation applicable to public sector undertakings in general. 4. Board of management A public sector undertaking may have a two-tier Board system: (i) Supervisory Board. This may consist of eminent public personalities, experts from relevant field of science and technology, members of parliament, persons from consumer organizations and industry, Financial institutions and the head of concerned public sector undertaking.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 352 Material (ii) Managing Board. This may consist of professionals who are fulltime officials of the concerned undertaking. Staff union representatives may also be made members of this board to develop a sense of responsibility and involvement in them. Such a system would abolish the need for the present multi-farious control in the form of Bureau of Public Enterprises, the Public Undertakings Committee, the Public Estimates Committee. the Comptroller and Auditor General, etc. The supervisory board may conduct an appraisal review once in two years to examine and satisfy whether public sector undertaking is moving in the desired direction. 5. Culture The public sector undertakings today are largely enjoying some or other type of protection from the government. Their capacity to innovate and work on competitive basis has got daunted because of almost complete absence of competition from the private sector. The consumer has been pushed to a position of complete helplessness since he has no choice to make. He has to accept the lowest quality of the product or services at the highest price. This culture has to change. The public sector undertakings should know where they stand and what is expected from them. It may be noted that the persons managing the public sector and the private sector both are of Indian origin but their performance in the two sectors is different. This is perhaps the Indian work culture is impediment to better efficiency. Government move for strengthening of Public Sector. The Government has taken the following two steps for strengthening and reforming the public sector enterprises (PSEs). 1. Board for Reconstruction of Public Sector Enterprises (BRPSE). The government has decided to establish a Board for Reconstruction of Public Sector Enterprises (BRPSE) to advise the government on ways and means for stengthening public sector enterprises (PSEs) in general and to make them more autonomous and professional. The Board would consider reconstructing financial organizational and business - of central PSEs and suggest ways and means for funding such schemes. The Board would also advise the government on disinvestment/closure/sale in respect of chronically sick/loss making companies, which cannot be revived. 2. Listing of unlisted proftable PSEs. The government has also given 'in principle' approval for listing of currently unlisted profitable PSEs each with a net worth in excess of Rs 200 crore through an initial public offer (IP0), either in conjunction with a fresh equity issued by the PSE concerned or independently by the Government on a case by case basis, subject to the residual equity of the government remaining at least 51 per cent and the Government retaining management control of the PSE. 3. Green Field Privatization. This term is used for the process of reducing involvement of the State or the public sector in the nation's economy. Private sector is encouraged to play a more prominent and larger role in the industrial development of the country. The process of liberalization, which started with the introduction of the new economic policy in 1991 has given a considerable push to the policy of green field privatization. The following steps taken by the government are worth mentioning in this regard: (i) The number of industries which do not require licensing is constantly on the increase. (ii) The budget allocation for the public sector enterprises is constantly on the decline.

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 353 (iii) Indian economy is being constantly opened up for foreign direct investment and external aid. (iv) Both the public and the private sectors are being given level playing field in respect of duty structure and providing of basic inputs. (v) Decision-making system in public sector is being made more expedient and on commercial lines. As mentioned earlier, the government has set up a separate Department for Disinvestment under the Ministry of Finance. A number of public sector companies have already been disinvested. They include: Maruti Udyog, Hindustan Zinc, NEPA Ltd., Jessop & Company Ltd., Hotel Corporation of India Ltd. Many more companies are on the list of disinvestment including two government airlines - Air India and Indian Airlines. Moreover, a large part of the public sector which may be termed as 'Commercial Component' is being converted from statutory companies to companies registered under the Companies Act. They include companies in the power sector, telecommunications, financial institutions, etc. There is no denying the fact that the privatization of public sector enterprises holds the key to get out of the fiscal deficit mess. However, green field privatization will depend on the political will and support from all major political parties. From the above discussion, it is apparent that restructuring and reforming of public sector undertakings involve a number of dimensions, viz., economic, social, managerial, financial, etc. The task is really stupendous. However, it can now no longer be delayed since this will make the matters more complex and irreversible. There has to be a national consensus on this issue involving all politicians, labour unions and the general public. The public sector has to be given a new shape, design and role, keeping in mind the fact that our economy has to be integrated with the global economy. Past errors of omission and commission should not work as deterrents, but rather guide us to make the public sector enterprises innovative and well prepared to face the challenges of the 21st century. This was also well stated in the Industrial Policy Resolution of 1956. It pointed out: 'Speedy decision and a willingness to assume responsibility are essential if these enterprises are to succeed. For this, wherever possible, there should be decentralization of authority and their management should be along businessline. It is to be expected that public enterprises will augment the revenues of the State and provide resources for further development in fresh fields. 16.9 SUMMARY Meaning of Public Sector Enterprise A public enterprise may be defined as a business undertaking which is owned, managed and controlled by the State, on behalf of the public at large. Characteristics of Public Sector Enterprises (i) State ownership (ii) Service motive (iii) Public accountability (iv) Government control Check Your Progress 5. State the reasons for the lack of funds in public sector undertakings? 6. Why has the Government decided to establish a Board for Reconstruction of Public Sector Enterprises (BRPSE)?
Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 354 Material Objectives of Public Sector Enterprises
The objectives of public sector enterprises may be divided into three categories: (i) Economic objectives (
ii) Social objectives (iii) Political objectives Forms of Public Sector Enterprises Public sector enterprises may be organized in to any of the following forms: (i) Departmental Undertakings: Under this form, an enterprise is organized as a wing of the normal government machinery. The enterprise is managed by government officials as one of the government departments. (ii) Public Corporations: A public corporation or statutory corporation is a corporate body set up under a special statute. (iii) Government Company: A government company is that in which not less than fifty-one per cent of the paid-up share capital is held by the Central and/or State Government. (
iv) Holding Company: Under holding company form of organisation, a single parent or apex company exercise control over all public enterprises belonging to one particular industry. Distinctive features of Financial Management The following are some of the distinctive features concerning the financial management of public sector enterprises: 1. Role of Financial Adviser: The financial adviser occupies an important position in all public sector undertakings. He functions as the principal adviser to the chief executive of the enterprises on all financial matters. His concurrence is required regarding all financial implications of the proposals put forward before the board of directors. 2. Capital Budgeting Decision: In order to ensure proper evaluation and implementation of the capital budgeting decision, the following points are to be given due consideration: (a) Guidelines provided by the government (b) Delegation of investment decision-making power (c) Approval of public investment proposals 3. Capital Structure Decision: The following are the special features regarding capital structure decision in case of public sector enterprises: (i) Role of cost of capital: In a public sector enterprise a large portion of the funds is provided either by the government or by the institutions controlled by the government. The cost of capital does not play an important role in determining the capital structure of a public sector enterprise. (ii) Debt-equity mix: The first government guidelines regarding debt-equity mix was issued in June, 1961, providing a debt equity mix of 1: 1. However, the debt-equity mix in case of public sector enterprises/ undertakings should be based on the following parameters: (a) Gestation period (b) Degree of Business Risk (c) Capital Intensity of the Project (d) Availability of Freedom as to Pricing

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Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 355 (iii) Sources of Finance: The main sources of finance of a public sector undertaking are as under: (a) Equity Shares: Traditionally this has been a major source of finance of public sector undertakings. (b) Loans: Public sector undertakings have also been getting substantial loans from the government to meet their requirements of long-term funds. (c) Bonds: The raising of funds through bonds or debentures by public sector undertakings is of recent origin. (d) Retained Earnings: This has not been a major source of long-term finance of public sector undertakings, since the performance of most of the public sector undertakings in terms of profitability has been extremely poor. (e) Disinvestment: The term 'disinvestment' implies sale of the shareholdings to the extent required. The onset of liberalization process in 1991 brought a revolutionary change in the government's policy towards the public sector enterprises. It is taking effective steps for reducing its involvement in providing funds to the public sector enterprises through disinvestment of its holdings in the public sector enterprises. Agenda for Public Sector The public sector enterprises are subject to severe criticisms from all quarters. They were expected to be a model for industry in technology, efficiency, innovation and serving public interests. However, they are now considered to be a drain on the national resources and are placed at top in corruption and inefficiency. Causes: The following can be identified as the causes which have landed the public sector enterprises in the present difficulties: (i) Profit as not the sole motive (ii) Price Controls (iii) Non-economic consideration (iv) Time and cost over-runs (v) Social objectives (vi) Lack of adequate autonomy (vii) Lack of funds Suggestions for Improvement The following measures are being suggested for improving the performance of public sector undertakings: (i) Objectives: Economic objective should be the main objective of public sector undertakings. The social functions should be the responsibility of the Central Government, State Government, local authorities and the community at large. (ii) Structure: The structure of the public sector undertakings needs thorough overhauling and given a business-like outlook and approach. (iii) Capital, control and management: It is suggested that the government should invest in a public sector undertaking only during early gestation stage of the enterprise. It should later on disinvest its shareholding. At present, public sector undertakings are largely governed by the Companies Act which is not of much relevance to them. It may be proper to enact a separate legislation applicable to public sector undertakings in general.

Financial Management in Public Sector Government Enterprises NOTES Self-Instructional 356 Material (iv) Board of management: A public sector undertakings may have a two-tier Board system: (a) Supervisory Board: This may consist of eminent public personalities, experts from relevant field of science and technology. (b) Managing Board: This may consist of professionals who are full time officials of the concerned undertaking. The Supervisory Board may conduct an appraisal review once in two years to examine and satisfy whether public sector undertaking is moving in the desired direction. (v) Culture: The public sector undertakings today are largely enjoying some or other type of protection from the government. This culture has to change. The public sector undertakings should know where they stand and what is expected from them. From the above discussion, it is apparent that restructuring and reforming of public sector undertakings involve a number of dimensions, viz., economic, social, managerial, financial, etc. The task is really stupendous. However, it can now no longer be delayed since this will make the matters more complex and irreversible. The public sector has to be given a new shape, design and role, keeping in mind the fact that our economy has to be integrated with the global economy. 16.10 KEY TERMS z Public Sector Enterprise: It is a public enterprise may be defined as a business undertaking which is owned, managed and controlled by the State, on behalf of the public at large. z Public Corporation: It is a corporate body set up under a special statute. z Government Company: It is a company in which not less than fifty one per cent

of the paid-up share capital is held by the Central and/or State Government.

z Disinvestment: It is a 'term' that implies sale of the shareholdings to the extent required. 16.11 ANSWERS TO 'CHECK YOUR PROGRESS' 1. In the establishment and operation of public enterprises, financial resources are provided from the State exchequer. 2.

The objectives of public sector enterprises may be divided into three categories: (i) Economic objectives (

ii) Social objectives (iii) Political objectives 3. The Government of India set up a high-powered Public Investment Board (PIB) in 1972. 4. The Department of Disinvestment, set up in December 1999 was renamed as Ministry of Disinvestment in September 2001. 5. The public sector undertakings are suffering from lack of funds because of two reasons: (i) most public sector undertakings are making losses and hence do not

Financial Management in Public Sector Government Enterprises NOTES Self-Instructional Material 357 have sufficient funds for ploughing back; and (ii) the budgetary support from the government is declining year after year. 6. The government has decided to establish a Board for Reconstruction of Public Sector Enterprises (BRPSE) to advise the government on ways and means for stengthening public sector enterprises (PSEs) in general and to make them more autonomous and professional. 16.12 QUESTIONS AND EXERCISES Short-Answer Questions 1. Explain the IRR method of evaluating a public sector undertaking. 2. Define Government Company. 3. What are the various objections of Public sector interprises? Long-Answer Questions 1. Define a public sector undertaking. What are its characteristics and objectives? 2. Explain the different forms of public sector enterprises. 3. Discuss the special features of financial management in public sector enterprises with reference to (a) capital budgeting decision and (b) capital structure decision. 4. Explain the role and functions of financial adviser in the financial management of public sector enterprises. 5. Write short notes on strategic financial planning in the public sector. 16.13 FURTHER READING Maheshwari, S.N. Elements of Financial Management. New Delhi: Sultan Chand & Sons, 2008. Maheshwari, S.N., S.K. Maheshwari, Sharad K., A Textbook of Accounting for Management. New Delhi: Vikas Publishing House, 2010.
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NOTES Self-Instructional 360 Material

Hit and source - focused comparison, Side by Side

Submitted text	As student entered the text in the submitted document.
Matching text	As the text appears in the source.