

## **CAPITAL BUDGETING**

The total capital (long-term and short term ) of a company is employed in fixed and current assets of the firm. Fixed assets include those assets which are not meant for sale such as land, building, machinery etc. it is a challenging task before the management to take judicious regarding capital expenditures, i.e., investments in fixed assets to that the amount should not unnecessarily be locked up in capital goods which may have far-reaching effects on the success or failure of an enterprise. A capital asset, once acquired, cannot be disposed of without any substantial loss and if it is acquired on long term credit basis, a continuing liability is incurred over a long period of time, and will affect the financial obligations of the company adversely. It, therefore, requires a long-range planning while taking decision regarding investments in fixed assets. Such process of taking decisions regarding capital expenditure is generally known as capital budgeting. In capital budgeting process, due consideration should be given to the following problems-

- (1) Problem of ranking project, i.e., choice of one project over other project.
- (2) Problem of capital rationing, i.e., limited budget resources.
- (3) Limitations imposed by top management decision on the total volume of investments to be made.

Now-a-days, however, some new analytical techniques are developed for evaluating capital expenditure projects and are under study.

### **Demerits or Limitations of Discounted Cash Flow Method**

- (1) It involves a good amount of calculations hence it is difficult and complicated. But the supporters of this method rebut the argument and assert that difficulty of the method is unfamiliarity rather than its complexity.
- (2) It does not correspond to accounting concepts for recording costs and revenues with the consequence that special analysis is necessary for the study of capital investment.
- (3) The selection of cash inflows is based on sales forecasts which is in itself an indeterminable element.
- (4) The economic life of an investment is very difficult to forecast exactly.
- (5) The method considers discount on expected rate of return but the determination of rate of return is in itself a problem.

Despite the above defects, the method provides an opportunity for making valid comparisons between long-term competitive capital projects.

### **Merits of Discounted Cash Flow Method**

- (1) The method takes into account the entire economic life of the project investment and income.
- (2) It gives due weightage to time factor of financing. Hence valuable in long term capital decisions. In the words of Charles Horngren, 'Because the discounted cash flow method

explicitly and routinely weighs the time value of money, it is the best method, to use for long-range decisions.'

(3) it produces a measure which is precisely comparably among projects, regardless of the character and time shape of their receipts and outlays.

(4) This approach provides for uncertainty and risk by recognizing the time factor. It measures the profitability of capital expenditure by reducing the earnings to the present value.

(5) It is the best method of evaluating project where the cash flows are uneven. Cash inflows and outflows are directly considered under this method while they are averaged under other methods.

### **Present Value Method**

The method is also known as 'Time adjusted rate of return' or 'internal rate of Return' Method or Discounted cash-flow method. In recent years, the method has been recognised as the most meaningful technique for financial decisions regarding future commitments and projects.

The method is based on the assumption that future rupee value cannot be taken as equivalent to the rupee value in the present. When we compare the returns or cash inflows with the amount of investment or cash outflows, both must be stated on a present value basis if the time value of money is to be given due importance. The problem of difference in time (when cash outflows and inflows take place) can be resolved by converting the future amounts to their present values to make them comparable.

The discounted cash flow rate of return or internal rate of return of an investment is the rate of interest (discount at which the present value of cash inflows and the present value of cash outflows become equal). The present value of future cash inflows can be calculated with help of following formula:

$$P = \frac{S}{(1 + i)^n}$$

**Here** P = Present value of future cash inflows

S = Future value of a sum of money

i = Rate of Return or required earning rate

n = Number of year

This method can be examined under two heads.

(a) Net Present value method, and (b) Internal rate of return method.

**(a) Net Present Value Method.** The net present value method also known as discounted benefit cost ratio. Excess present value method or Net gain method takes account of all income whenever received. Under this method, a required rate of return is assumed, and a comparison is made between the present value of cash inflows at different times and the original investment in order to determine the prospective profitability. This method is based on the basic principle if the present value of cash inflows discounted at a specified rate of return equals or exceeds the

amount of investment proposal should be accepted. This discounted rate is also known as the 'required earning ratio'. Present value tables are generally used in order to make the calculations prompt and to know the present value of the cash inflows at required earning ratio corresponding to different periods. We can, however, use the following formula to know the present value of Re. 1 to be received after a specified period at a given rate of discount.

$$PV = \frac{S}{(1 + i)^n}$$

Where PV = Present Value  
r = rate of discount

**Example.** Let us suppose an investment proposal requires an initial outlay of Rs. 40000 with an expected cash-inflow of Rs. 1,000 per year for five years. Should the proposal be accepted if the rate of discount is (a) 15 % or (b) 6% ?

We can find the present value of cash inflows with the help of present value tables as follows @ 15 % and 6 % :-

| Year<br>(1) | Cash inflows<br>(2) | Present Value<br>of Re 1<br>@ 15 % (3) | Total Present<br>Value<br>@ 15 % (2) X<br>(3) | Present Value<br>of<br>Re 1 @ 6%<br>(5) | Total<br>Present<br>value<br>@ 6% (2) X<br>(5) |
|-------------|---------------------|----------------------------------------|-----------------------------------------------|-----------------------------------------|------------------------------------------------|
| 1.          | 1,000               | .870                                   | 870                                           | .943                                    | 943                                            |
| 2.          | 1,000               | .756                                   | 756                                           | .890                                    | 890                                            |
| 3.          | 1,000               | .658                                   | 658                                           | .840                                    | 840                                            |
| 4.          | 1,000               | .572                                   | 572                                           | .792                                    | 792                                            |
| 5.          | 1,000               | .497                                   | 497                                           | .747                                    | 747                                            |
|             |                     |                                        | <hr/> 3353 <hr/>                              |                                         | <hr/> 4212 <hr/>                               |

The method is regarded as superior to other methods of investment appraisal in several ways:-

(1) The method takes into account the entire economic life of the project investment and income.

(2) It gives due weight age to time factor of financing. Hence valuable in long term capital decisions. In the words of Charles Horngren, 'Because the discounted cash flow method explicitly and routinely weighs the time value of money, it is the best method, to use for long-range decisions.'

(3) it produces a measure which is precisely comparably among projects, regardless of the character and time shape of their receipts an outlays.

(4) This approach provides for uncertainty and risk by recognizing the time factor. It measures the profitability of capital expenditure by reducing the earnings to the present value.

(5) It is the best method of evaluating project where the cash flows are uneven. Cash inflows and outflows are directly considered under this method while they re averaged under other methods.

As the total present value of Rs. 3353 at a discount rat of 15 % is less than Rs. 4000 (the initial investment) the proposal cannot be accepted, if we ignore the other non-quantitative considerations. But the present value of Rs. 4212 at a discount rate of 6 % exceeds the initial investment of Rs. 4,000, the proposal can be acceptable.

The above example shows an even cash inflows every year. But if cash inflows is uneven, the procedure to calculate the present values is somewhat difficult. For example, if we expect cash flows at - Re. 1 one year after, Rs. 3 two years after. Rs. 4 three years after the present value at 15 % discount tat would be:-

PV of Re. 1 to be received at the end of one year – 1 (.870) = .870

PV of Re. 3 to be received at the end of one year – 2 (.756) = 1.512

PV of Re. 4 to be received at the end of one year – 3 (.658) = 1.974

Present value of series

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4.356

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**(b) Internal Rate of Return Method.** This method is popularly known as 'time adjusted rate of return method', 'discounted cash flow rate of return method', 'yield rate method', 'investor's method', or 'Marginal efficiency of capital' method.

In present value method the required earning rate is selected in advance. But under internal rate of return method, rate of interest or discount is calculated. Internal rate of return is the rate of interest or discount at which the present value of expected cash flows is equal to t total investment outlay. According to the National Association of Accountants, America “Time adjusted rate of Return is the maximum rte of interest that could be paid for the capital employed over the life of an investment without loss on the project. “ This rate is usually found by trial and error method. First we select an arbitrary rate of interest and find the present value of cash flows during the life of investment at tat selected rate. Then we compare present value with the cost of investment. If the present value if higher or lower than the cost of investment, w try another rate

and repeat the process. If present value is higher than the cost, we shall try a higher rate of interest or vice-versa. This procedure continues till the present values and the cost of investment (total outlay in project) are equal or nearly equal. The rate at which present value and cost of investment are equal. The rate is called internal rate of return.

### **Demerits of Return Method**

The method suffers from the following weaknesses

- (1)** It uses accounting profits and not the cash-inflows in appraising the projects.
- (2)** It ignores the time-value of money which is an important factor in capital expenditure decisions. Profits occurring in different periods are valued equally.
- (3)** It considers only the rate of return and not the length of project lives.
- (4)** The method ignores the fact that profits can be reinvested.
- (5)** The method does not determine the fair rate of return on investment. It is left at the discretion of the management. So, use of arbitrary rate of return causes serious distortion in the selection of capital projects.
- (6)** The method has different variants, each of which produces a different rate of return for one proposal due to the diverse version of the concepts of investment and earnings.

It is clear from the above discussion that the system is not much useful except in evaluating the long-term capital proposals.

### **Merits of Accounting Rate of Return Method**

The following are the merits of the accounting rate of Return method

- (1)** It is very simple to understand and use.
- (2)** Rate of return may readily be calculated with the help of accounting data.
- (3)** The system gives due weightage to the profitability of the project if based on average rate of Return. Projects having higher rate of Return will be accepted and are comparable with the returns on similar investment derived by other firms.
- (4)** It takes investments and the total earnings from the project during its life time.

### **Unadjusted Rate of Return Method**

The method is also known as Accounting Rate of Return (ARR) Method because accounting information as revealed by the financial statement is used to measure the profitability of the investment proposals.

Various proposals are ranked in order to rate of earnings on the investment in the projects concerned. The project which shows highest rate of return is selected and others are ruled out.

The Accounting rate of Return is found out by dividing the average income after taxed by the average investment, i.e., average net value after depreciation. The accounting rate of return, thus, is an average rate and can be determined by the following equation.

$$\text{Accounting Rate of Return (ARR)} = \frac{\text{Average income}}{\text{Average investment}}$$

There are two variants of the accounting rate of return (a) Original Investment Method, and 9b) Average Investment Method.

**(a) Original Investment Method.** Under this method average annual earnings or profits over the life of the project are divided by the total outlay of capital project, i.e., the original investment. Thus ARR under this method is the ratio between average annual profits and original investment established. We can express the ARR in the following way.

$$\text{ARR} = \frac{\text{Average annual profits over the life of the project}}{\text{Original Investment}}$$

**(b) Average Investment Method.** Under average investment method, average annual earnings are divided by the average amount of investment. Average investment is calculated, by dividing the original investment by two or by a figure representing the mid-point between the original outlay and the salvage of the investment. Generally accounting rate of return method is represented by the average investment method.

**Rate of return.** Rate of Return, as the term is used in our foregoing discussion, may be calculated by taking (a) income before taxes and depreciation, (b) income before tax and after depreciation, (c) income before depreciation an after tax, and (d) income after tax an depreciation, as the numerator. The use of different concepts of income or earnings as well as of investment is made. Original investment or average investment will give different measures of the accounting rate of return.

### Limitations of Pay-back Method

The pay-back approach suffers from the following limitations

**(1)** It completely ignores the annual cash inflows after the pay-back period.

**(2)** The method considers only the period of a pay back. It does not consider the pattern of cash inflows, i.e., the magnitude and timing of cash inflows. For example,

if two projects involve equal cash outlay and yield equal cash inflows over equal time periods, it means both proposals are equally good. But the proposal with larger cash inflows in earlier years shall be preferred over the proposal which generated larger cash inflows in later years.

**(3)** It overlooks the cost of capital; i.e., interest factor which is a important consideration in making sound investment decisions.

**(4)** The methods is delicate and rigid. A slight change in operation cost will affect the cash inflows and as such pay-back period shall also be affected.

**(5)** It over-emphasises the importance of liquidity as a goal of capital expenditure decisions. The profitability of t project is completely ignored. Undermining the importune of profitability can in no way be justified.

Despite its weaknesses, the method is very popular in American and British industries for selecting investment proposals.

### **Merits of Pay-back Method**

The pay-back method is widely accepted method for .evaluating the various proposals.

The merits of this method are as follows:

**(1)** It is easy to calculate an simple to understand. It is an improvement over the criterion of urgency.

**(2)** It is preferred by executives who like snap answers for the selection of the proposal.

**(3)** It is useful where the firm is suffering from cash deficiency. The management may like to use pay-back method to emphasis those proposals which produce an early return of liquid funds. In other words, it stresses the liquidity objective.

**(4)** Industries which are subject to uncertainty, instability or rapid technological charges may adopt the pay-back method for a simple reason that the future uncertainty does not permit projection of annual cash inflows beyond a limited period. in this way, it reduces teh possibility of loss through obsolescence.

**(5)** It is a handy device for evaluating investment proposals, where precision in estimates of profitability is not important.

### **Computation of Pay-back Method**

If annual net cash-inflows are even or constant, the pay-back period can be computed dividing cash outlay original investment) by the annual cash-inflow.

t can be put as:-

$$\text{Pay-back period} = \frac{\text{Original investment}}{\text{Annual Cash-inflow}}$$

If cash inflows are uneven, the calculation of pay-back period takes a cumulative form. In such case, the pay back period can be found out by adding up the figure of net cash inflows until the total is equal to the total outlay (or original investment).

### **Pay-Back Method**

This method is popularly known as pay-off, pay out or replacement period methods also. It is the most popular and widely recognised traditional method of evaluating capital projects.

It represents the number of years required to recover the original cash outlay invested in a project. It is based on the principle that every capital expenditure pays itself back over a number of years. It attempts to measure the period of time, it takes for the original cost of a project to be recovered from the additional earnings of the project. It means where the total earnings (or net cash inflow) from investment equals the total outlay, that period is the pay-back period. The standard recoupment period is fixed the management taking into account number of considerations. In making a comparison between two or more projects, the project having the lesser number of pay-back years within the standard recoupment limit will be accepted. Suppose, if an investment earns Rs. 5000 cash proceeds in each of the first two years of its use, the pay-back period will be two years.

For this purpose, net cash inflow shall be calculated first in the following manner:-

|                                                |       |
|------------------------------------------------|-------|
| Cash inflow from sales revenue                 | ..... |
| Less operating expenses including depreciation | ..... |
|                                                | _____ |
| Net income (before tax)                        | ..... |
| Less-Income tax                                | ..... |
|                                                | _____ |
| Net income (after tax)                         | ..... |
| Add depreciation                               | ..... |
|                                                | _____ |
| Net cash inflows                               | ..... |
|                                                | _____ |

Note:- As because depreciation does not affect the cash inflow, it shall not be taken into consideration in calculating net cash inflow. But it is an admissible deduction under income tax act. It has been deducted from the gross sale revenue and added in the Net-income (after tax).

### **Degree of Urgency Method**

Virtually it is not a method of evaluation of a project. Sometimes, business operations are manged on an ad-hoc basis ad not as a part of well conceived plan.

Urgency plays an important role under this method. Some projects need immediate attention while others may be postponed for some time in order to avoid disruption in the working. The project that cannot be postponed are undertaken first. For example, if there is a break down

production process due to loss of any component of the machinery which require immediate replacement in order to avoid disruption in production, shall be given first priority over all other projects pending consideration with the management without any delay on the part of the management. In this way, urgency is the sole criterion for investing funds in the project. It may, however, be possible that investment under this method is uneconomic.

**Evaluation.** The method is very simple in principle as well as in practice. No technique is needed. The project that seems urgent may be undertaken first. But the method is not a scientific method for evaluating the economic worth of the project. The main defects under this method may be enumerated as below:-

(1) Under this method, no methodical analysis is applied. The action may be correct but in most cases by coincidence. In case where projected outlay is large and far reaching in effect, urgency cannot be a convincing influence.

(2) What is urgent and what is not is the sole decision of the top management. Each departmental incharge persuades the top management to assign first priority for the department project. The decisions are taken not on economic considerations but on the basis of 'power of persuasion' of the individual concern.

### **Methods of evaluating capital expenditure proposals**

There are number of methods in use for evaluating a capital investment proposal. Different firms may use different methods for evaluating the project proposals.

Which method is appropriate for the particular purpose of the firm will depend upon the circumstances but one thing is very clear that management has to select the most profitable proposal out of the various proposals under consideration with the management. The most commonly used methods are given below:-

**1. Degree of Urgency Method**

**2. Pay back Period Method**

**3. Unadjusted Rate of Return Method**

**4. Present Value Method**

**(a) Time Adjusted Rate of Return Method**

**(b) Net Present Value Method**

### **Significance of Capital Budgeting**

The key function of the financial management is the selection of the most profitable assortment of capital investment and it is the most important area of decision-making of the financial manager because any action taken by the manager in this area affects the working and the profitability of the firm for many years to come.

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The need of capital budgeting can be emphasised taking into consideration the very nature of the capital expenditure such as heavy investment in capital projects, long-term implications for the firm, irreversible decisions and complications of the decision making. Its importance can be illustrated well on the following other grounds:-

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

**(2) Comparative Study of Alternative Projects** Capital budgeting makes a comparative study of the alternative projects for the replacement of assets which are wearing out or are in danger of becoming obsolete so as to make the best possible investment in the replacement of assets. For this purpose, the profitability of each project is estimated.

**(3) Timing of Assets-Acquisition.** Proper capital budgeting leads to proper timing of assets-acquisition and improvement in quality of assets purchased. It is due to the nature of demand and supply of capital goods. The demand of capital goods does not arise until sales impinge on productive capacity and such situation occurs only intermittently. On the other hand, supply of capital goods with their availability is one of the functions of capital budgeting.

**(4) Cash Forecast.** Capital investment requires substantial funds which can only be arranged by making determined efforts to ensure their availability at the right time. Thus it facilitates cash forecast.

**(5) Worth-Maximization of Shareholders.** The impact of long-term capital investment decisions is far reaching. It protects the interests of the shareholders and of the enterprise because it avoids over-investment and under-investment in fixed assets. By selecting the most profitable projects, the management facilitates the wealth maximization of equity shareholders.

**(6) Other Factors.** The following other factors can also be considered for its significance:-

**(a)** It assists in formulating a sound depreciation and assets replacement policy.

**(b)** It may be useful in considering methods of cost reduction. A reduction campaign may necessitate the consideration of purchasing most up-to-date and modern equipment.

**(c)** The feasibility of replacing manual work by machinery may be seen from the capital forecast by comparing the manual cost and the capital cost.

**(d)** The capital cost of improving working conditions or safety can be obtained through capital expenditure forecasting.

**(e)** It facilitates the management in making of the long-term plans and assists in the formulation of general policy.

**(f)** It studies the impact of capital investment on the revenue expenditure of the firm such as depreciation, insure and their fixed assets.

### **Procedure of Capital Budgeting**

Capital investment decision of the firm has a pervasive influence on the entire spectrum of entrepreneurial activities so the careful consideration should be regarded to all aspects of financial management.

In capital budgeting process, main points to be borne in mind how much money will be needed of implementing immediate plans, how much money is available for its completion and how are the available funds going to be assigned to various capital projects under consideration. The financial policy and risk policy of the management should be clear in mind before proceeding to the capital budgeting process. The following procedure may be adopted in preparing capital budget :-

**(1) Organisation of Investment Proposal.** The first step in capital budgeting process is the conception of a profit making idea. The proposals may come from rank and file worker of any department or from any line officer. The department head collects all the investment proposals and reviews them in the light of financial and risk policies of the organisation in order to send them to the capital expenditure planning committee for consideration.

**(2) Screening the Proposals.** In large organisations, a capital expenditure planning committee is established for the screening of various proposals received by it from the heads of various departments and the line officers of the company. The committee screens the various proposals within the long-range policy-frame work of the organisation. It is to be ascertained by the committee whether the proposals are within the selection criterion of the firm, or they do not lead to department imbalances or they are profitable.

**(3) Evaluation of Projects.** The next step in capital budgeting process is to evaluate the different proposals in terms of the cost of capital, the expected returns from alternative investment opportunities and the life of the assets with any of the following evaluation techniques:-

**(a)** Degree of Urgency Method

**(b)** Pay-back Method

**(c)** Return on investment Method

**(d)** Discounted Cash Flow Method.

**(4) Establishing Priorities.** After proper screening of the proposals, uneconomic or unprofitable proposals are dropped. The profitable projects or in other words

accepted projects are then put in priority. It facilitates their acquisition or construction according to the sources available and avoids unnecessary and costly delays and serious cost-overruns. Generally, priority is fixed in the following order.

- (a) Current and incomplete projects are given first priority.
- (b) Safety projects and projects necessary to carry on the legislative requirements.
- (c) Projects of maintaining the present efficiency of the firm.
- (d) Projects for supplementing the income
- (e) Projects for the expansion of new product.

**(5) Final Approval.** Proposals finally recommended by the committee are sent to the top management along with the detailed report, both of the capital expenditure and of sources of funds to meet them. The management affirms its final seal to proposals taking in view the urgency, profitability of the projects and the available financial resources. Projects are then sent to the budget committee for incorporating them in the capital budget.

**(6) Evaluation.** Last but not the least important step in the capital budgeting process is an evaluation of the programme after it has been fully implemented. Budget proposals and the net investment in the projects are compared periodically and on the basis of such evaluation, the budget figures may be reviewed and presented in a more realistic way.

### **Nature of Capital Budgeting**

Nature of capital budgeting can be explained in brief as under

- (a) Capital expenditure plans involve a huge investment in fixed assets.
- (b) Capital expenditure once approved represents long-term investment that cannot be reserved or withdrawn without sustaining a loss.
- (c) Preparation of capital budget plans involve forecasting of several years profits in advance in order to judge the profitability of projects.

It may be asserted here that decision regarding capital investment should be taken very carefully so that the future plans of the company are not affected adversely.

### **Meaning of Capital Budgeting**

Capital expenditure budget or capital budgeting is a process of making decisions regarding investments in fixed assets which are not meant for sale such as land, building, machinery or furniture.

The word investment refers to the expenditure which is required to be made in connection with the acquisition and the development of long-term facilities including fixed assets. It refers to process by which management selects those investment proposals which are worthwhile for investing available funds. For this purpose, management is to decide whether or not to acquire, or add to or replace fixed assets in the light of overall objectives of the firm.

What is capital expenditure, is a very difficult question to answer. The terms capital expenditure are associated with accounting. Normally capital expenditure is one which is intended to benefit future period i.e., in more than one year as opposed to revenue expenditure, the benefit of which is supposed to be exhausted within the year concerned.

## **CAPITAL STRUCTURE**

Capital structure of a company refers to the make up of its capitalisation. A company procures funds by issuing various types of securities, i.e., ordinary shares, preference shares, bonds and debentures. Before issuing any of these securities, a company should decide about the kinds of securities to be issued. In what proportion will the various kinds of securities be issued, should also be considered. However, in broader sense, capital structure includes all the long term capital resources including loans, bonds, share issued, reserves, etc. and the components of the total capital. A company engaged in devising a financial plan will be faced with problem regarding the proportion of funds to be raised by issue of its shares and the amount to be raised through borrowings. There is an important difference between these two methods. Funds raised from shareholders require the payments of dividend only out of profits of the company and the amount will be paid only out of profits, if there is any, a company should maintain a fair balance between these two types of securities-(a) fixed cost bearing securities. (debentures and preference shares), and (b) Variable cost bearing securities (ordinary shares). This security mix affects the financial stability of the company. If a company fails in its efforts in maintaining the security mix, its capital structure will be imbalanced which may affect its profitability.

## **Bonds and Debentures**

A company may not wish to possess itself of the use of more share capital or ownership securities, and yet desire more available money. It may invite persons to lend their money as a loan, instead of contributing it as a part of the capital.

Money so lent must also be recorded and acknowledged. The document which the lender receives is called a debenture. The holder of this debenture is a creditor of the company, while the shareholder is one of the proprietors of the capital of the company and so responsible for its liabilities. The debenture holder is one of the liabilities for which the shareholder is responsible. Thus a company in order to secure long-term finance for initial needs and more often for extensions and developments to supplement its capital may issue debentures or “creditorship securities”. In fact in every country, debenture issue is one of the important methods of raising finance.

The Companies Act does not give a satisfactory definition of a debenture. Section 2 (12) only provides: “Debenture includes debenture stock, bonds and other securities of a company, whether constituting a charge on the assets of the company or not,” which tells us hardly anything about it. But it is usually (not always) issued under common seal, secured by a fixed or floating charge on the assets of the company, and subject to payment of interest on specified dates, a debenture may be defined as an instrument executed by a company under its common seal acknowledging indebtedness to some person or persons to secure the sum advanced. Debentures are usually bonds issued by a company in a series of a fixed denomination, e.g., Rs. 100, Rs. 500, Rs. 1,000 face value and are offered to the public by means of prospectus. The term and conditions on which they are issued are endorsed on the back of the bond which gives different rights to the holders. One of the conditions usually is that the debenture is of a series of a certain number, and

that all the debentures or series rank are passu, i.e., all the debentures of one series are to be paid so that, if there is not enough to go round, they shall all abate proportionally. If the words pair passu are not used, the debentures will be payable according to the date of issue, or if they are all issued on the same day, they will be payable according to their numerical order. The company cannot create new series to rank pari passu with the old series, unless the power to do so is expressly reserved or contained in the dentures of the prior series. A company may have a debenture stock, which is nothing but borrowed money consolidated into one mass for the sake of convenience. Instead of each lender having a separate mortgage, he has a certificate entitling him to a certain sum, being a portion of one large loan. Generally, debenture stock differs from a debenture in form rater than n substance. It is sometimes in the nature of a permanent loan, and is generally secured by a trust deed by which property is mortgaged to the trustee for the holder of debenture stock.

Debentures can be classified into different types on the basis of the terms and conditions of issue. bearer debentures are payable to the bearer and are transferable by mere delivery. They are negotiable instruments. Interest coupons are payable to the bearer and are transferable by mere delivery. They are negotiable instruments. Interest coupons are attached to them and interest is payable to the holder of the coupons. Registered debentures are payable to registered holders and their transfer is to be registered with company. Naked debentures are issued with merely a promise of payment, without any security for payment of interest or capital. Secured debentures are payable to the registered holder or to the registered holder or to the bearer but they are issued with a charge on the undertaking and assets of the company as security. They are sometimes called mortgaged debentures or bonds. The charge on debentures may be fixed or floating. Debentures secured by deposit of title deeds property with a memorandum in writing creating a charge on it are called equitable. Where the legal ownership of the property of the company is transferred by a deed to the debenture-holders a security for loan, the debentures are called legal debentures. Debentures, redeemable when payment of the principal is provided for on a specified date or on notice or on demand, or they are irredeemable or perpetual when no time is fixed within which the comp nay is bound to redeem them, and the debenture holders cannot demand payment as long as the company is a going concern. In India, mainly redeemable debentures are issued, as, contrary to the general belief that Indian investors go in for securities that appreciate in value, they look for security offered. In the case of irredeemable debentures the investor cannot be sure that the financial position of the concern is entirely above suspicion, while in the case of redeemable debentures interests are protected. Redeemable debentures are that subject to depreciation on account of depression or with the changes in the money market. In some cases they can be withdrawn before maturity and provision is generally made for that repayment of debenture loans out of a 'sinking' or 'amortization' fund, specially created for this purpose.

Debentures as the source of capital have many advantages. From the point of view of the investor, they offer greater security than preference shares and other securities. For example, a mortgage debenture-holder knows exactly what his security is, and generally, there are trustees to protect his interests. Form the standpoint of the enterprise, debentures are particularly useful of the development of smaller organized industries. When the security offered is good, debentures are favored by the individual as well as the institutional investors. They are indeed meant for cautious investors, for there is generally a clause in the terms of a debenture issue which prevents the interest of the debenture-holder being jeopardized. But successful issue of debentures by a company depends on the nature of security offered by it. The better the security, the greater will be the chance of successful debenture issue.

## **Ordinary or Equity Shares**

Rank after preference shares for dividend, they are entitled to take the whole of the remaining dividend profit after the fixed preference dividend has been paid. Equities, like cumulative preference, show to the owners not only a dividend yield but a potential capital appreciation.

The rate of dividend on them varies according to the amount of profits available. In India, a majority of companies have been financed through ordinary shares only, e.g., more than half the cotton and sugar mills, cement factories and tea gardens have only ordinary shares. Only iron and steel and to some extent jute industries have preference shares contributing respectively 40 % and 20 % of the total capital.

Deferred shares can now be issued only by private companies and not by public companies. They are, as a rule, of small nominal value and are the complement to preference shares. Only after the preference and ordinary shareholders have been satisfied they receive a dividend. As said above, they are frequently taken by the promoters of a company or the vendors of a business as part payment of price from the new company. They are very often created for a special purpose, which has been well described by Hartly Withers, who calls the category "an ingenious device for keeping for the original promoters or vendors substantial share in the profits, and at the same time preserving for them an air of great modesty and moderation". Deferred shares are sometimes used as founder's or management shares. These two classes, however, are sometimes used as founder's or management shares. These two classes, however, are created with the express object of giving the control of the company to their holders, and do not come on to the market in the normal course of business. These shares have, however, lost much of their attraction, as they cannot be used as a means of acquiring control over public companies.

A company may have either "Registered" or "Bearer" shares or both. A registered share places its holders in precisely the position of a holder of stock. Both are registered in the books of company to whose capital they have subscribed. They receive their dividends by post. They hold certificates notifying their possession of so many shares or so much stock, but this certificate is not itself an absolute title to those shares or to the stock. If it is handed to somebody else even for a consideration, it does not thereby transfer the ownership of the capital. The transfer must be by means of regularly executed document of transfer, and then the transfer registered by the company in the register of members. A bearer share is its own title, and is issued in the form of a Share Warrant. Whosoever possesses it is the owner of the capital it represents. The owner is not enrolled on the books of the company. His dividends are not sent to him by post but have to be collected by means of the presentation of coupons, or cuttings, these being detached from the share warrant and sent to the company, which, after a delay for examination, send them with their bankers, leaving the banks to undertake the task of presenting the necessary coupons. Since the share warrant is its own title, excessive care must be taken to protect it from loss or theft, which is another incentive to the owner to preserve his possession in the strong room of a bank. Against the disadvantages which attach to bearer shares must be set the great advantage that they can be easily transferred to new owners and that money can more readily be borrowed upon them, since no transfer deed is necessary when the ownership changes. These share warrants to bearer can be issued only by a public company with respect to fully paid-up shares, if its articles authorize such issue and after the

approval of the Central Government has been obtained.

The object of issuing several varieties of shares is to induce people with different temperaments to come forward to invest. A very cautious investor who is not willing to take risk will go in for cumulative preference with fixed return. He prefers security to return. The less cautious or venturesome investor goes in for ordinary shares which have no fixed rate of dividend. The rate varies with the divisible profits. The deferred shares are generally taken by the promoters, directors and their relatives and friends who are willing to wait for returns, as when they come, the amount is sufficient to more than compensate for waiting. In the meantime, the holding of these shares of nominal value gives them voice in the management of the company. Investors are prompted to go in for one or other type of shares, because of the possibility of appreciation of share value. A security with greater stability of income, like preference shares, fluctuates less in value and vice versa. Huge profits do not generally affect the value of preference shares. During periods of prosperity they soar high and in slump they sink in value. Equity shares are, therefore, traded in during boom conditions and shunned during depression, when preference shares are in demand. Deferred shares generally lend themselves to speculation. Thus the shares which do not fluctuate much are frequently called investment shares, and those which are susceptible to such fluctuations are known as speculative shares.

### **Preference shares**

Preference share is defined by the new Act as that part of the share capital of the company which fulfills both the following requirements, namely, that it carries preferential right in respect of dividends and also that it carries preferential right in regard to repayment of capital in case of winding up.

The dividend on these shares is fixed. However, prosperous the company, preference shareholders only receive the agreed dividend, say of 5% or 6% , or whatever it may be. The shares themselves are divided into various categories. There are first and second preference shares, that is, groups of preference shares one ranking behind the other in priority or rights. There are cumulative and non-cumulative preference shares. Cumulative preference shares enjoy the right to receive, when profits permit, the dividends missed in years when profits have not permitted payments. Non-cumulative preference shares do not carry this right. Participate fully or to a limited extent in dividend on non-preference shares. Redeemable Preference Shares can also be issued, but they must be fully paid up. The shares can be redeemed out of the profits which would be available for dividend or out of the proceeds of the issue of new shares, so that the redemption does not involve reduction of capital.

Although the dividend yield on preference shares is fixed, these securities are susceptible to capital appreciation. Cumulative preference shares in a company which begins to prosper after lean year of "passed" dividends obviously show a potential return in capital appreciation to the holders, which compensates for a fixed and relatively low rate of dividend yield. Preference shareholders can vote only on resolution directly affecting their rights, unless dividends on their shares have remained unpaid for two years, in which case they are entitled to vote on all matters similarly as equity shareholders. Further, the denomination of preference shares is generally higher than that of ordinary shares, which is really against the

sound investment rules. These shares are meant for people who cannot take risk. To tap the savings of such people it is advisable to reduce the denomination of preference shares.

## **Shares**

The need for money is certainly the root of all industrial and trading activity. Money is needed because it commands services and commodities. The citizens wish to find a profitable use for their money.

That money they may contribute as “capital” to a company, or they may lend it to a company. If they take shares in a company, they are contributing “capital”, which term in its restricted meaning in this connection represents the aggregate ownership interest in the company.

Conversely, this aggregate ownership interest is divided into so many shares which are held by shareholders. Shares therefore represent equal portions into which the capital of a company is divided, each shareholder being entitled to a portion of a company's profits corresponding to the number of shares he holds.

In the past a company could issue various kinds of shares such as preference shares of different types, ordinary shares, deferred shares or founder's shares, possessing different rights. The deferred shares or founder's shares were usually of small nominal value, and were frequently taken by the promoters of the company who ultimately became its managing agents, or by vendors of a business as part payment of price from the new company. They were created with the special purpose of giving the control of the company to their holders with insignificant capital investment.

As they received dividends only after the preference and ordinary shareholdings were satisfied, they were used as “an ingenious device for keeping for the original promoters or vendors a substantial share in the profits, and at the same time preserving for them an air of great modesty and moderation”. To this description of Hartley Withers, admirably true of the English conditions, may be added the control which the managing agents obtained with the help of these shares of nominal value. This high potency device of deferred shares, which combined the trinity of advantages for the managing agents of low paid-up value, high voting power and residuary beneficial rights in the profits of companies, has been removed by the abolition of other two classes of shares—preference and ordinary—in the capital structure of companies. In future, therefore, a public company will be able to issue only preference shares and ordinary or equity shares. Although a private company may still issue any kind of shares and not necessarily preference shares and equity shares.

## **Financing of Extensions and Improvements**

The financing of extensions and improvements is very important in the case of Indian industries, particularly at the present juncture, because of war period arrears and because of the need for development.

The sources of finance for these are:

- (1)** re-investment or “ploughing back” of profits
- (2)** issue of securities, either shares or debentures of both
- (3)** managing agents

**(4)** public deposits

**(5)** the State-loans from the Industrial Finance Corporation of India and State Finance Corporations.

### **Financing of Working Capital**

The working capital of industries may be raised in three ways

**(1)** by resorting to borrowing

**(2)** by issue of additional securities

**(3)** by re-investment of earnings. Indian industries have in the past raised their working capital in India from the

**(4)** managing agents

**(5)** public deposits

**(6)** issue of securities-shares or debentures

**(7)** loans from joint-stock banks

**(8)** loans from indigenous bankers and big financiers.

### **Financing of Fixed Capital**

The finance for fixed capital by our major or large-scale industries is raised at present through

**(1)** Share capital

**(2)** managing agents

**(3)** Public deposits

**(4)** Debentures

**(5)** The State-loans from the Industrial Finance Corporation of India and State Finance Corporations.

### **Methods of raising finance**

The methods of financing should be adjusted to the stage or phase of the trade cycle. The total capital shall be raised by different means, or what is sometimes called “geared”, according to the phase of the cycle.

Different types of securities may be issued in certain proportions, and what ratio will each type bear to the total capital will depend upon the particular phase. For example, in the beginning of an optimistic expansion, debentures may be offered to good advantage. At a later time, when speculative enthusiasm is strong, shares will yield better returns. During depression short time borrowing can be resorted to, if the credit of the company is good. The financing plan may be adjusted to the conditions of the market and the security market by varying the proportion, rate of yield, term denominations and guaranteed rights of the securities issued.

The sources of finance for an enterprise can be many and diverse. In the case of an individualistic concerns, the chief source of finance is the individual proprietor or proprietors as in a partnership or a Joint Hindu family business. This may be supplemented by borrowed money in varying amounts according as the credit of the concern is good or poor. Since the capital requirements are comparatively small, there are hardly any financial problems controlling individual enterprise. But major or large-scale industries, which are mainly run by joint-stock-companies, require vast amounts of capital, and must therefore resort to all sorts of methods for raising the necessary funds. The main sources of finance in India may be classified as:-

1. Individual investment, only in the case of individualistic concerns.
2. Issue of shares of different kinds.
3. Issue of bonds and debentures.
4. Public deposits.
5. Managing agents.
6. Loans from joint-stock banks and indigenous bankers.
7. Gradual development method of using profits to increase capital sometimes called 'ploughing back' of earnings.
8. The State.

### **Necessity of Maintaining balanced debt equity ratio**

A company should always maintain the balanced capital structure that is a proper relation between the amounts raised through various securities. If a company raises funds for most of its capital requirements through various securities.

If a company raises funds for most of its capital requirements through debt securities, fixed cost of the company will increase and it will prove a burden on the financial position of the company though the company can raise the rate of dividend temporarily through trading on equity. It is, therefore very necessary to maintain the balance in debt-equity ratio.

### **Standard Debt Equity Ratio**

It is very difficult to fix a standard for the debt equity ratio. It depends very much on the circumstances. However, a standard of debt equity ratio may be 1 :1 but it does not always hold good. In the present circumstances, the debt equity ratio has been on increase.

It increased from 45.8% to 65.5% in 1975. In a developing country like India, where wealth has concentrated in a few hands, the whole of the capital cannot be raised through risk capital because only few have risk bearing capacity and most of the investors want to invest their funds in fixed income bearing securities such as preference shares or debentures. It has become inevitable in these circumstances that company issues debentures to raise the necessary funds for the expansion and modernisation of its developmental plans. Also, in order to attract the investing people who prefer fixed income rather than uncertain income, company issues debentures or bonds with attractive terms.

The assumption that low debt equity ratio denotes soundness of the company is not

always correct in the present circumstances High debt equity ratio in some companies is not an indication of financial stringency if they are in a position to earn profits at a higher rate than the rate of interest payable on the debt capital. It means they are trading on equity and contributing something towards the funds available for dividend to the equity shareholders. It strengthens the financial position of the company in spite of the fact that company maintains high debt equity ratio.

The nature of the business also affects the standard of debt equity ratio. Financial companies such as banks, insurance companies, and other financial institutions cannot survive without debt capital. Such companies maintain a very high debt-equity ratio. In 1975, the equity ratio of scheduled banks in India was 13000 : 80. Manufacturing companies can maintain a moderate debt equity ratio but a trading company should depend more upon the ownership capital and this should maintain a low debt equity ratio depending upon the nature of fixed capital.

### **Debt equity ratio**

Capitalisation of a company consists of funds raised by issuing various types of securities, i.e., ordinary shares, preference shares, debentures etc.

To decide as to the ratio of various types of securities to total capitalisation is a very difficult task but the decision is important for the business to decide as to the ratio of ownership capital to the creditorship capital or loan capital. The ratio of borrowed capital to the owned capital may be called debt-equity ratio. In other words, debt-equity ratio is the ratio between borrowed capital on the one hand and owned capital on the other.

Debt-equity ratio is positively correlated with the capital gearing. If capital gearing in a company is high, debt-equity ratio would also be high or vice versa. For example, if the total capital of Rs. 1,00,000 in a company consists of Rs. 25,000 equity share capital and 75,000 debentures, the debt equity ratio in that company would be 75000 : 25000 or 3 : 1

### **Trading on equity**

The term 'equity' means stock or ordinary shares of a company and 'trading' means taking an advantage of. Hence trading on equity means taking advantage of ordinary equity share capital to borrow fund on reasonable basis.

It is an additional advantage to equity shares at the expense of other forms of securities. It is based on the basic principle that there is a difference among the rates of return on different types of securities issued by a company.

A company earns its profits at a fixed rate on capital employed by it, whether it is ownership capital, i.e., raised from shareholders or borrowed capital, i.e., debentures, bonds etc. (including preference capital) is fixed cost bearing capital and a fixed rate of interest and dividend is to be paid on such securities. If this fixed rate of interest and dividend is lower than the general rate of company's earnings, the equity shareholders will have an advantage of this situation in the form of additional profit because there is no fixed rate of dividend on equity shares. If company earns higher profits, equity shareholders will have an advantage of this situation in the form of additional profit because there is no fixed rate of dividend on equity shares. If company earns higher profits, equity shareholders will get higher dividend on their

investments or vice versa. This is referred to as 'Trading on Equity'. Thus trading on equity is an arrangement under which company makes use of borrowed capital carrying a fixed rate of interest or dividend in such a way as to increase the rate of return on equity shares. A company can substantially increase the rate of dividend on equity shares by issuing debentures or preference shares. On the other hand, if entire capital of the company is issued in the form of equity shares, the rate of dividend on these shares can in no case exceed the general rate of earnings of the company. This can be illustrated with the help of an example

Suppose, a company likes to have a total investment of Rs. 1,00,00, on which it would earn a profit at the rate of 10%, i.e., Rs. 1,00,000. If the company raises its entire capital by issues of equity shares, the equity shareholders cannot earn a dividend exceeding 10% But, suppose, the company raises the funds in the following manner.

- (a) Rs. 5,00,000 by issue of debentures bearing 6 % interest
- (b) Rs. 2,00,000 by issue of preference shares carrying 8% dividend
- (c) Rs. 3,00,000 by issue of ordinary shares.

In such case, out of the profit of Rs. 1,00,000, company will have to pay Rs. 30,000 as interest to the debenture holders and Rs. 16,000 as dividend to preference shareholders and thus leaving a balance of Rs. 54,000 for paying dividend to equity shareholders. Since the amount of equity capital is only Rs. 3,00,000 the rate of dividend on such shares can be 18% In this way, by issuing debentures and preference shares, the rate of dividend on equity of trading or equity is substantial. This is another advantage that shares pay increased income tax as interest paid on debenture is deductible under Income Tax Act.

### **Significance of Capital Gearing**

A proper capital gearing is very important for the smooth running of the enterprise It affects the profitability of the concern.

In a low geared company, the fixed cost of capital will be lower and the equity shareholders will get a higher profit by way of dividend and in case of high gearing the fixed cost of capital will be higher and the profits to be distributed to the equity shareholders will be lower.

The role of capital gearing in a business is as important as gears in an automobile. In an automobile, gears are used to maintain the desired speed. Initially, an automobile starts with a low gear, and as soon as it gets momentum, the low gear is changed to high gear. Similarly, a business is started with a low gear, i.e, high proportion of equity capital and as soon as, the business gets momentum, it may subsequently issue fixed cost securities, i.e., preference shares and/or debentures. Thus the process of capital gearing deals with the makes up of capitalisation.

The problem of capital gearing is very important from the financial manager's point of view. He must know, in what securities should the funds for the company be raised and in what proportion ? It is very important for the success of the company. All concerning parties, i.e, shareholders, debenture holders, creditors and the concern itself are affected by it. A low geared company can pay more dividend to its shareholders or a high-gear company also can pay higher dividend to its

shareholders in inflationary conditions of the market if proper capital gearing is maintained.

### **Hight and low Gearing**

If the proportion of equity capital to the total capital is small or in other words the ration of other fixed cost capital to total capital is high, it is said to be a state of high gearing of capital. Reverse is the case of low gearing of capital,i.e., low proportion of equity capital or high proportion of fixed cost capital to the total capital is an indication of low gearing of capital.

Below is given balance sheets of two companies A and B.

| <b>Balance-Sheets</b>        |                              |          |
|------------------------------|------------------------------|----------|
|                              | <b>(Liability side only)</b> |          |
|                              | <b>A</b>                     | <b>B</b> |
| Equity share capital         | 3,00,000                     | 2,00,000 |
| 10% Preference share capital | 1,00,000                     | 1,50,000 |
| 7% Debentures                | 1,00,000                     | 1,50,000 |
|                              | 5,00,000                     | 5,00,000 |

It is obvious from the above balance sheets that the total capitalisation of two companies are the same but capital structure differs. Company A is low geared as it secured 60 % of total capital in the form of equity capital an the ration of fixed cost capital is low. Company B is high geared as the ration of equity capital is low, i.e., 40% of total capital. The higher the gear, the more speculative the ordinary shares. It is, therefore, of the utmost importance that a proportion is maintained between the amount raised by ordinary shares and that raised by preference shares and debentures.

### **Capital gearing**

The most important factor which must be taken into account by the promoters while drafting the financial plan of a company is capital gearing.

'Gearing' means the ration of different types of securities to total capitalisation. The term, when applied to the capital of a company, means the ratio of equity share capital to the total capital and is known as 'capital gear ratio' or 'capital gearing'. J. Batty defines the term 'capital gearing' as follows:-

“The relation of ordinary shares (equity shares) to preference share capital and loan capital is described as the capital gearing.”

Thus the term 'capital gearing' is used to indicate the relative proportion of fixed cost bearing securities such as preference shares and debentures to the ordinary share capital in the capital structure. Interest of equity share holders is represented by the amount of share capital plus retained earrings and undistributed profits.

### **Balanced Capital Structure**

Capital structure or financial plan refers to the composition of long-term sources of funds such as debentures, long-term debts, preference and ordinary share capital and retained earnings (reserves and surpluses).

Companies that do not plan their capital structure may prosper in the short run, but ultimately will face serious problems in raising funds to finance their activities in the long-run. Therefore, it is important for a company to take a decision regarding its capital structure. Whenever, financial manager considers the question of capital structure, it is always the question of optimum or balanced capital structure, i.e., to decide the proportion of long term finance to be raised through borrowings and through investments from owners.

Optimum or balanced capital structure means an ideal combination of borrowed and owned capital that may attain the marginal, goal, i.e., maximization of market value per share or minimization of cost of capital. The market value will be maximized or the cost of capital will be minimized when the real cost of each source of funds is the same. It is a formidable task of the financial manager to determine the combination of the various sources of long-term finance.

## **CAPITALISATION**

The term capitalization has been defined in a number of ways. As a result, one finds almost as many definitions of the term as there are writers on the subject. On careful analysis, however, one finds two schools of thought on this concept. One of them assigns a broad interpretation to the term, while the other interprets it in a narrow sense. In the following pages an attempt is made to examine and discuss the views of both these schools.

### **Factors of Working Capital**

The following are the factors which determine a company's requirements of working capital

**(i) The proportion of the cost of materials to total cost.** In those industries where cost of materials is a large proportion of the total cost of the goods produced or where costly material will have to be used, requirements of working capital will be rather large. Large sums are required for this purpose. But if the importance of materials is small, as for example, in an oxygen company, the requirements of working capital will naturally be small.

**(ii) Importance of labour.** This factor operates like the one mentioned above. If goods are manufactured with the help of labour, large sums of money will have to be kept invested as working capital. Industries where there is a great degree of mechanisation, the working capital requirements are correspondingly small. It may be remembered, however, that to some extent the decision to use manual labour or machinery lies with the management. Therefore, it is possible in most cases to reduce the requirements of working capital and increase investment in fixed assets and vice versa.

**(iii) Length of period of manufacture.** The time which elapses between the commencement and the end of the manufacturing process has an important bearing upon the requirements of working capital. If it takes long to manufacture the finished product, a large sum of money will have to be kept invested in the form of work-in progress at all stages. Hence, working capital will be required in large amounts. To give an example a baker requires a night's time to bake his daily quota of bread. His working capital is, therefore, much less than that of a ship-building concern which takes three to five years to build a ship.

**(iv) Stocks.** Manufacturing concerns generally have to carry stocks of raw materials and other stores and also finished goods. In certain cases, manufacture is carried out only against a definite order from a customer and as soon as production is completed the goods are delivered to him. In this case, there will be no finished stocks, and to this extent, the requirements of working capital will be reduced. The larger the stocks, whether of raw materials or finished goods, the larger will be the requirement of working capital. To some extent, the size of stocks to be carried will depend upon the decisions of management. Besides, the stocks to be carried are generally proportionate to the volume of sales.

**(v) Rapidity of turnover.** Turnover represents the speed with which the working capital is recovered by the sale of goods. In certain businesses, sales are made quickly so that stocks are soon exhausted and new purchases have to be made. In this manner, a small sum of money invested in stocks will result in sales of a much larger amount. Considering the volume of sales the amount of working capital requirements will be rather small in such types of businesses. There are other businesses where sales are made infrequently. For instance, in case of jewelers, a piece of jewellery may stay in the show-window for a long time before it catches the fancy of a rich lady. In such cases large sums of money have to be kept invested in stocks. But a baker or a new-hawker may be able to dispose of his stocks quickly, and may, therefore, need much smaller amounts by way of working capital.

**(vi) Terms of Credit.** It goes without saying that if credit is allowed by suppliers, payment can be postponed for some time and can be made out of the sale proceeds of the goods produced. In such a case, the requirements of working capital will be reduced. The requirements will obviously be increased if credit has to be allowed to customer. The period of credit also determines the working capital requirements of a concern. If, for example, a retailer is allowed credit for a longer period than is allowed by him to his own customers, he would not need much working capital because he can pay the supplier after he has collected debts from his debtors.

### **Working Capital of capital requirements**

The working capital is required for the purchase of raw materials, and for meeting the day-to-day expenditure on salaries, wages, rents, advertising etc.

Modern industrial concerns produce an anticipation of demand. Payment has, therefore, to be made for the purchase of raw materials, the storage of finished and semi-finished goods, the work done by the staff and the workers. But, this sum cannot be got back immediately. Some time will pass before the goods are sold out and the amount spent on all these items is recovered. The working capital is needed for this purpose. It may be defined as the capital invested in the working or current assets like stock of raw materials, semi-finished and finished products, debtors, bills receivable, etc. Some writers use the term circulating capital or revolving capital for it. This is because the working capital is invested, recovered and re-invested repeatedly during the life-time of the concern. In other words, it keeps on revolving or circulating from cash to current assets and back. Apparently it would appear that the working capital requirements can be met with short-term funds. But it is forgotten that as long as the business of the concern continues, the working capital would be needed repeatedly. This means that at least a part of the working capital can be called 'regular' or 'fixed' working capital. The remaining part is known as the fluctuating or variable working capital. This is needed to meet the requirements of a rise in the volume of production during the peak periods of the year. It can, of course, be met with short-term capital.

### **Fixed capital of capital requirements**

The fixed capital of an industrial concern is invested in fixed assets like plant and machinery, land, buildings furniture, etc. These assets are not fixed in value; in fact, their value may record an increase or decrease in course of time.

They are fixed in the sense that without them, the business of the concern cannot be carried on. This means that the fixed capital is used for meeting the permanent or long-term needs of the concern. While making an assessment of the fixed capital requirements, a list of the fixed assets needed by the concern will have to be prepared, say, by promoter. Having compiled a list of the fixed assets which will be required, it is not difficult to estimate the amount of funds required for the purpose. The prices of land are generally known, or can be easily ascertained. A contractor can be relied upon to give a proper estimate of the cost of the building to be erected. Those who supply machinery and plant will certainly give quotations for the plant and equipment to be installed. Similarly, the amount to be paid for patents, trade marks, goodwill, etc., will not be difficult to ascertain.

The total of all these items will give the amount to be invested in fixed assets. It goes without saying that such an amount must be raised before the company goes into production. The amount of fixed capital requirements of a concern depends on: (a) nature of the business, and (b) size of the business unit. For instance, a public utility concern (say, an electricity supply company, water supply undertaking or, for that matter, a railway company) would require heavy investment in fixed assets and equipment. On the other hand, a trading concern represents the other extreme. It requires comparatively much less equipment of fixed nature. Its fixed capital requirements would, therefore, be relatively much less. The fixed nature. Its fixed capital requirements would, therefore, be relatively much less. The fixed capital needs of a manufacturing concern would vary with the scale of production, usually, the larger the scale, the heavier would be the investment in fixed assets.

### **Estimation of capital requirements**

It has been indicated above that a company should be properly capitalized so that the actual capital should be neither more nor less than the amount which is needed and which can be gainfully employed.

It is, therefore, necessary for a new concern to estimate its requirements of funds properly. The financial requirements of a new company may be outlined under the following heads:

- 1.** Cost of fixed assets including land and buildings, plant and machinery, furniture, etc. The amount invested in these items is called fixed capital.
- 2.** Cost of current assets including cash, stock of goods (also called inventory of merchandise), book debts, bills, etc.
- 3.** Cost of promotion including the expenses on preliminary investigation, accounting, marketing and legal advice, etc.
- 4.** Cost of setting up the organisation.

5. Cost of establishing the business, i.e., the operating losses which have generally to be sustained in the initial periods of a company.
6. Cost of financing including brokerage on securities, commission on underwriting, etc.
7. Cost of intangible assets like goodwill, patents, etc.

Of the various items of financial requirements listed above, the first two deserve special consideration, as the successes of any concern will depend largely on them.

### **Remedies of under-capitalisation**

If it is desired to remedy under-capitalization, it can be done relatively more easily than in the case of over-capitalization.

The possible corrections for under-capitalisation may be outlined as under:

(i) Splitting-up of shares. The effect of this measure will be more apparent than real because the overall rate of earnings in this case will remain the same though the dividend per share will now be a smaller amount.

(ii) Increase in par value of shares. The values of assets, under this scheme, may be revised upwards and the existing shareholders may be given new shares carrying higher par (face) value. In this way, the rate of earnings will decline though the amount of dividend per share may not be affected. As a further step, the company may offer the shareholders a share split-up and an increase in par-value.

(iii) Issue of bonus shares. The most widely used and effective remedy for under capitalisation is the conversion of reserves into shares. This will affect both dividend per share and the over-all rate of earnings.

### **Disadvantages of under-capitalisation**

Under-capitalisation, too, has its own disadvantages

(i) competition is encouraged and made acute by the higher earnings of such companies

(ii) the high dividend rates given an opportunity to workers to ask for increase in wages

(iii) it may give the consumers a feeling that they are being exploited by the company

(iv) it may tempt the management to manipulate share values

(v) it may limit the marketability of shares due to which the shares may not enjoy so high a market value as is justified by the earnings

(vi) it may attract governmental control and higher taxation. All or some of these factors may act together to reduce the margin of profit earned by the company. In course of time, then, the earnings of the company may come down to the level of other companies' earnings. Under-capitalisation of this type may thus be temporary in character and often gets remedied automatically.

## **Under-capitalisation**

Under-capitalisation is just the reverse of over-capitalisation. Sometimes a company, on the face of it, may have an insufficient capital but it may have large secret reserves.

Thus, in case of well-established companies, there is a very large appreciation in the value of assets specially of buildings, plant and goodwill. Such appreciation is generally not brought into the books. Nevertheless these assets do bring profits and, therefore, the profits in such a company would appear to be much larger than are warranted by the book figures of the capital. In such a case, the dividends will be high and the market quotations of the shares of such companies will be higher than the par value of the shares of other similar companies. It is in this sense that an under-capitalized company pays high rates of dividend and the value of the shares is higher than the par value. A company is under-capitalized when its actual capitalisation (i.e., total long-term resources) is lower than its proper capitalisation as warranted by its earning capacity. Such a company will earn considerably more than the prevailing rate on its outstanding securities.

## **Evils of Over-capitalisation**

Over-capitalisation has evil consequences from the point of view of the company, the society and the shareholders.

Evils of Over-capitalisation

### **From the point of view of the company**

(a) over-capitalisation will result in considerable reduction of the rate of dividend on the equity shares issued. This is because the profits which the company earns have to be distributed over an unnecessarily large number of shares.

(b) With the disappearance of reduction of dividends, the market value of the shares falls, and the investors lose confidence in the company. The credit of the company suffers a setback. Should a company require more funds for the purposes of bringing about any improvement or acquiring new assets, it will find it extremely difficult to raise the necessary fund from the market.

(c) Sometimes the company resorts to questionable practices including 'window dressing' in order to show a respectable figure of profits. Some people are downright dishonest and merely cook up an increase. Others avoid necessary expenditure so that the debit in the profit and loss account is reduced. In the latter case, the efficiency of the company will be still further undermined. For example, if maintenance of machinery and repairs to machinery are postponed, the damage to the machinery will be very heavy and the efficiency would be greatly reduced. This will further reduce profits.

(d) It is often found that an over-capitalized company has to go into liquidation, unless drastic steps are taken to re-organise the share capital. Re-organisation would again mean considerable loss of goodwill.

### **From the point of view of society**

(a) Over-capitalisation is an indication of reduced efficiency. An over-capitalized concern is compelled to raise the prices of its products. With diminished efficiency it is usually not able to

maintain the quality of its products. Thus, the public is a loser both as regards price and quality.

**(b)** An over-capitalized company may try to raise its profits by effecting cuts in wages of workers. This may affect industrial relations.

**(c)** Since an over-capitalized concern is unable to compete with other concerns, it may have to close down. The closure of a few companies in this manner may well become the cause of general panic and alarm. This would affect the interests of the creditors. The workers would also lose their jobs.

**(d)** Over-capitalisation results in misapplication of society's resources. The capital lying idle or being under-utilised by an over-capitalized concern can be better utilised by other concerns which are in need of funds.

The shares of an over-capitalized concern provide scope for gambling on the stock exchange. It is undesirable from the social point of view.

### **From the shareholders' point of view**

**(a)** Over-capitalisation means depreciation of investment. The shares of an over-capitalized company sell below par in the market. Originally the shareholders may have paid much more for them.

**(b)** The shareholders have also to suffer due to a low return on their investment which, too, is not always certain and regular.

**(c)** The shares of an over-capitalized company have relatively small value as security for loans which a shareholder may like to raise.

**(d)** The low-priced shares of an over-capitalized concern are subject to speculative gambling. This harms the interests of the real investors.

**(e)** When an over-capitalized concern tries to set its house in order through reorganisation, the shareholders are the worst sufferers. Re-organisation would usually take the form of reduction of capital for writing off past losses. Such a reeducation has to be borne by the shareholders. In the event of liquidation too, the shareholders have to content themselves with much less than their original investment.

### **Remedies of over-capitalisation**

An over-capitalized concern is like a person who is extremely fat. Sooner or later, he will suffer from various diseases and will come to an untimely end, unless he takes steps to reduce his weight. An over-capitalized company must, likewise, mercilessly cut all its dead weight. An over-capitalized company must, likewise, mercilessly cut all its dead weight. Its dead weight. The following remedial steps may be adopted to this end:

**(i)** Redemption of bonds through outright re-organizations. If bonds are redeemed with cash received through the issue of more shares, it will only make matters worse. An over-capitalized

company must, therefore, go in for complete re-organisation and utilise its accumulated earnings for the purpose.

(ii) Reduction of interest on bonds, if the existing debenture-holders are given new debentures carrying lower rates of interest, it will alleviate the situation created by over-capitalisation. However, this can be done by offering some premium to the debenture-holders. If the said premium is more than the economy in interest payments, the measure will lose its point.

(iii) Reduction of preferred stock. If it carries high dividend rate, this can be tried in cases where the preferred stock is cumulative.

(iv) Reduction in the number of equity shares. This can again be tried with the consent of the shareholders.

All the measures indicated above involve re-organisation. It may, therefore, be suggested in conclusion that the remedy for over-capitalisation lies through re-organisation.

### **Watered Capital**

'Water' is said to be present in the capital when a part of the capital is not represented by assets. It is considered to be as worthless as water. Sometimes the services of the promoters are valued at an unduly high price.

Similarly, the concern may pay too high a price for an asset acquired from a going concern. The capital becomes watered to the extent of the excess price paid for an asset. Thus, if a company pays 1,25,000 on account of goodwill, which if valued correctly is worth Rs. 50,000 only, the capital is watered to the extent of Rs. 75,000. 'Watered capital' must be distinguished from 'over capitalisation'. 'Water enters the capital usually in the initial period-at the time of promotion. Over capitalisation can, however, be found out only after the company has worked for sometime. Although watered capital can be a cause of over-capitalisation, yet it is not exactly the same thing. If the earnings are up to the general expectation, a concern will not be over capitalized even though a part of its capital is watered.

### **Over-Capitalisation**

If a company raises more capital (by the issue of shares and debentures and through long-term loans) than is warranted by the figure of capitalisation of its earning power, the company will be said to be over-capitalized.

In other words, a company is over-capitalized when its actual profits are not sufficient to pay interest and dividends at proper rates. It follows that an over-capitalized company is unable to pay a fair return on its capital investment. Thus if a company earns Rs. 1,50,000 with the general expectation at 10 per cent, capitalisation at Rs. 15,00,000 would be proper. But if the company, somehow, issues shares and debentures to the extent of Rs. 25,00,000, the rate of earning will be

only 6 per cent because with surplus but idle funds profits will still remain Rs. 1,50,000. This company is over-capitalized. However, over-capitalisation is not quite the same thing as excess of capital. A company is over-capitalized only because the existing capital is not effectively utilised with the result that there is a fall in the earning capacity, and consequently in the rate of dividend payable to equity shareholders. This usually leads to a decline in the market value of the shares. The chief sign of over-capitalizations is, therefore, a fall in the rate of dividend over a long-term period. This means that over-capitalisation presents a chronic conditions and is not based on the results of only a few years. To emphasize this point, it may be stated that “when a company has consistently (regularly) been unable to earn the prevailing rate of return on its outstanding securities (considering the earnings of similar companies in the same industry and the degree of risk involved) it is said to be over-capitalized”. Over capitalisation results in the following ways:

**(1)** The enterprise may raise more money by issue of shares and debentures than it can profitably use. In other words, there may be large amounts of idle funds with the company. This may be done intentionally or unintentionally. Some companies, for instance, are tempted by a favourable sentiment in the market, and issue too large a number of shares.

**(2)** If a company borrows a large sum of money and has to pay a rate of interest higher than its rate of earning, the results will be over-capitalisation. A major part of the earnings may be given away to the creditors as interest, leaving little for the shareholders. The rate of dividend is thus lowered and the market value of the shares also declines.

**(3)** Over-capitalisation may often result when an excessive amount is paid for goodwill and for fixed assets acquired from the vendor company or from promoters or other people associated with the company, or when unduly high amounts are spent on establishment. In such cases, the price paid for the requisition of a going concern has no relation to its earning capacity.

**(4)** Sometimes a company acquires assets like plant, machinery and buildings during a boom period. The price paid is naturally high. If the boom disappears and a slump sets in, the real value of such assets will greatly decline and a large part of the company's capital would be lost even though the books will still show the assets and the capital at their previous figures. Such a company is over-capitalized because its real earnings capacity will suffer a setback due to a fall in the value of assets, whereas the capital will stand at its original figures.

**(5)** If a company does not make sufficient provision for depreciation and replacement and distributes higher rates of profit amongst the shareholders, the company will find after some time that, while the book value of assets is high, the real, value is extremely low. The efficiency of the company is adversely affected and its earnings go down thus bringing down the market value of the shares. This is yet another case of over-capitalisation.

**(6)** High rates of taxation may leave little in the hands of the company to provide for depreciation and replacement and dividend to shareholders. This may adversely affect its earnings capacity and lead to over-capitalisation.

**(7)** When the promoters underestimate the capitalisation rate, the capitalisation may not support the expected rate of earnings and over-capitalisation may result. Suppose, a company's regular profit of rs. 50,000 is capitalized at 5% (i.e., capitalisation is Rs. 1,00,000), the rate which the promoters consider sufficient to induce investors to buy the offered securities. If it is later on

found that such companies cannot command capital at less than 10% the correct capitalisation of the profit of 10,000 will work out at

$$50,000 \times \frac{100}{10}, \text{ i.e., Rs. 5,00,000.}$$

## Theories of Capitalization

There are two recognized bases for capitalizing new companies

**(i) Cost Theory:** According to the cost theory of capitalization, the value of a company is arrived at by adding up the cost of fixed assets like plants, machinery patents, etc., the capital regularly required for the continuous operation of the company (working capital), the cost of establishing business and expenses of promotion. The original outlays on all these items become the basis for calculating the capitalization of company. Such calculation of capitalisation is useful in so far as it enables the promoters to know the amount of capital to be raised. But it is not wholly satisfactory. On important objection to it is that it is based on a figure (i.e., cost of establishing and starting business) which will not change with variation in the earning capacity of the company. The true value of an enterprise is judged from its earning capacity rather than from the capital invested in it. If, for example, some assets become obsolete (out of date) and some others remain idle, the earnings and the earning capacity of the concern will naturally fall. But such a fall will not reduce the value of the investment made in the company's business.

**(ii) Earnings Theory:** The earnings theory of Capitalization recognizes the fact that the true value (capitalization) of an enterprise depends upon its earnings and earning capacity. According to it, therefore, the value or Capitalization of a company is equal to the capitalized value of its estimated earnings. For this purpose a new company has to prepare an estimated profit and loss account. For the first few years of its life, the sales are forecasted and the manager has to depend upon his experience for determining the probable cost. The earnings so estimated may be compared with the actual earnings of similar companies in the industry and the necessary adjustments should be made. Then the promoters will study the rate at which other companies in the same industry similarly situated are earning. The rate is then applied to the estimated earnings of the company for finding out the capitalization. To take an example a company may estimate its average profit in the first few years at Rs. 50,000. Other companies of the same type are, let us assume, earning a return of 10 per cent on their capital. The Capitalization of the company will then be

$$\frac{50,000 \times 100}{10} = \text{Rs. 5,00,000.}$$

It will be noted that the earnings basis for Capitalization has the merit of valuing (capitalizing) a company at an amount which is directly related to its earning capacity. A company is worth what it is able to earn. But it cannot, at the same time be denied that new companies will find it difficult, and even risky, to depend merely on estimate of their earnings as the generally expected return is an industry. In case of new companies, therefore, the cost theory provides a better basis for capitalisation than the earning theory.

In established concerns too, the Capitalization can be arrived at either (i) on the basis of the cost of business, or (ii) the average or regular earnings and the rate of return expected in an industry

If cost is adopted as the basis, the Capitalization may fail to reveal the true worth of a company. The assets of a company stand at their original values while its earnings may have declined considerably. In such a situation, it will be risky to believe that the Capitalization of the company is high. Earnings, therefore, provide a better basis of Capitalization in established concerns. The figure will be arrived at in the same manner as above.

**Actual and Proper Capitalization.** The capitalisation of a company as arrived at by totaling up the value of the shares, debentures and non-divisible retained earnings of the company may be called the actual Capitalization of the company. Let us take the relevant items in a company balance sheet for illustration. The actual Capitalization as per balance sheet given below will be Rs. 16,00,000.

**XYZ CO. LTD.**  
**BALANCE SHEET AS ON 31<sup>ST</sup> DECEMBER, 1981**

| Liabilities                                               | Assets        |
|-----------------------------------------------------------|---------------|
| Paid-up capital Rs.                                       | Rs.           |
| 20,000 8 percent preference Shares of Rs.10 each 2,00,000 | Sundry Assets |
| 50,000 Shares of Rs. 8 each 4,00,000                      | 16,00,000     |
| 10,000 Debentures of Rs. 100 each 10,00,000               |               |
| -----                                                     | -----         |
| 16,00,000                                                 | 16,00,000     |
| -----                                                     | -----         |

As against the actual Capitalization the proper, normal or standard Capitalization for a company can be found out by capitalizing the average annual profits at the normal rate of return earned by comparable companies in the same line of business. Thus if a company gets an annual return of Rs. 1,50,000 and the normal rate of return in the industry is 10 per cent, the proper Capitalization will be arrived at as under:

$$1,50,000 \times \frac{100}{10} = \text{Rs. } 15,00,000$$

A comparison between the actual and the proper or normal Capitalization will show whether the company is properly capitalized, over-capitalized or under-capitalized.

### **Capital and Capitalization**

The term Capitalization is used only in relation to companies and not in respect of firms or sole-proprietorships.

It is distinct from share capital which refer only to the paid-up value of shares issued and definitely excludes bonds and other forms of borrowings. Similarly, it should be distinguished from 'capital'. The term capital refers to the total investment of a company in money, tangible assets like goodwill. It is in a way the total wealth of a company. When used in the sense of net capital, it indicates the excess of total assets over liabilities. Here, then, it includes "the gains or profits from the use and investment of the capital that has not been distributed to the stockholders" and excludes losses that have resulted from the use of capital. Capitalization, on the other hand, refers only to the par value (i.e., face value indicated on the security itself) of the long-term securities (shares and debentures) plus by any reserves which are meant to be used for meeting long-term and permanent needs of a company. Thus 'capital' includes all the loans and reserves of the concern but 'Capitalization' includes only longterm loans and retained profits besides the capital.

### **Narrow Interpretation**

In its narrow sense, the term capitalisation is used only in its quantitative aspect and refers to the amount at which a company's business can be valued.

Most of the traditional authors define the term in this sense. Since this interpretation of the term is more specific though restricted, it is in this sense that the term is used here. The decision about the form of capitalisation, i.e., the type of securities to be issued and the relative proportion of each type is discussed under 'Capital Gearing'. Here, we will concentrate mainly on the amount of capitalisation.

Various authors have attempted definition of the term capitalisation. The essence of all that they have stated on the subject is that capitalisation is the sum-total of all longterm securities issued by a company and the surpluses not meant for distribution. Capitalization may be said to be composed of (1) the value of shares of different kinds, (2) the value of surpluses, whether capital surpluses or earned surpluses, and (3) the value of bonds and debentures issued by a company still not redeemed. It may be added for clarification that earned surpluses represent the surplus profits accumulated over a period of time and capital surpluses are those arising from other sources. If, for example, the company sets apart a part of its profits with a view to using such reserves for meeting its long-term financial requirements, such surpluses will be called earned surpluses. On the other hand, if an asset of the company is sold at a profit, the surplus resulting from the deal will be a capital surplus. From the financial angle, such surplus is also meant for long-term use in the concern.

### **Broad Interpretation**

There is a growing number of authors who regard capitalisation as synonymous with financial planning.

The financial plan of company incorporates decisions about the amount of capital to be raised, the securities by the issued of which it is to be raised, and the relative proportions of the various classes of securities to be issued, as also the administration of the capital. Used in a broad sense, therefore, capitalisation refers to the process of determining the plan or patterns of financing. It includes not merely the determination of the quantity (amount) of finance required for a company but

also the decision about the quality of financing (which type of security is to be issued and to what extent).

## **COST OF CAPITAL**

The cost of capital is a very important factor in formulating a firm's capital structure. It is one of the corner-stones of the theory of financial management, yet it is a very controversial topic in finance. In deciding the capital structure of a company, it is very necessary to consider the cost of each source of capital and compare them so as to decide which source of capital is in the interest of owners as well as of the contributors, i.e., creditors etc. Now-a-days, cost of capital is the major deciding factor of the capital structure. Prior to its development, cost of capital was either ignored or by-passed. In modern times, cost of capital is used as the very basis of capital budgeting decisions or long term capital investment decisions and to evaluate the alternative sources of capital. Different costs are used in different times and for different purposes.

## **Management of cash balances**

Cash is the most important factor in financial management. Every activity in an enterprise revolves round the cash.

As because cash is limited in every enterprise and it cannot be raised as and when one likes it, it is, therefore, desirable that available cash must be managed properly.

Every undertaking is desirous of utilizing the available cash most effectively so as to accomplish the goals of the undertaking, i.e., maximization of profits with the minimum of efforts. But management of cash is not as simple as it might appear. In case, the undertaking does not keep sufficient cash in hand, it shall not be in a position to meet the unexpected challenges, which challenges and cash remains unutilised in the business, it will result in losses. If heavy amounts are blocked for unforeseen contingencies the company will not be in a position to carry on its day to day working efficiently. It is where the real problem of cash management comes, i.e., how much cash should be set aside for unexpected challenges and how much for the regular day-to-day working.

It is really not an easy problem to solve. In fact, no hard and fast rules can be suggested for the problem. All the financial management can do in this regard, is to study the past records and take the necessary decision bearing in mind the present economic circumstances and the behaviour and practice of the sister concern.

## **Importance of working capital Management**

The importance of the management of working capital can be judged from the following facts

**(1)** There is a positive correlation between the sale of the product of the firm and the current assets. An increase in the sale of the product requires a corresponding increase in current assets. It is, therefore, indispensable to manage the current assets properly and efficiently.

**(2)** More than half of the total capital of the firm is generally invested in current assets. It means less than half of the capital is blocked in fixed assets. We pay due attention to the management of fixed assets in details through the capital budgeting process. Management of working capital too, therefore, attracts the attention of the management.

**(3)** In emergency (Non availability of funds etc.) fixed assets can be acquired on lease but there is no alternative for current assets. Investment in current assets, i.e., inventory or receivable, can in no way be avoided without sustaining loss.

**(4)** Working capital needs are more often financed through outside sources, so it is necessary to utilise them in the best way possible.

### **Objectives of Working Capital Management**

There are two-fold objectives of the management of working capital.

- (i)** Maintenance of working capital at appropriate level, and
- (ii)** Availability of ample funds as and when they are needed.

In the accomplishment of these two objectives, the management has to consider the composition of current assets pool. The working capital position sets the various policies in the business with respect to general operations like purchasing, financing, expansion and dividend etc,

### **Meaning of Working Capital Management**

Working capital means current assets such as cash, accounts receivables and inventory etc. The management of working capital or current assets is as important as or rather more, important than the management of fixed assets because the fate of most of the businesses very largely depends upon the manner in which their working capital is managed.

The problem of working capital management. Involves the problem of decision making regarding investment in various current assets with an objective of maintaining the liquidity of funds of the firm to meet its obligations promptly and efficiently.

The management of working capital encompasses the following problems:-

- (i)** To decide upon the optimal level of investment in various current assets, i.e., determining the size of working capital.
- (ii)** To decide upon the optimal mix of short term funds in relation to long term capital, and
- (iii)** To locate the appropriate means of short term financing.

The study of working capital management is incomplete unless we have an over-all look on the management of current liabilities. Determining the appropriate levels of current assets and current liabilities of level of working capital involves fundamental decisions regarding firm's liquidity and the composition of firm's debts.

## **Management of working capital**

There are two types of assets in each concern i.e., fixed assets and current assets. Both types of assets are to be managed efficiently so as to earn maximum profit with minimum possible investments because maximization of profits is the prime object of every business.

Decisions regarding investment in fixed assets are taken through the capital budgeting process but decision making regarding management of working capital is a continuous process which involves control of everyday and flow of financial resources circulating in the enterprise in one form or the other. The accomplishment of the prime object-maximization of profits in most businesses depends largely how their working capital is managed. Working capital management is considered to involve the management of current assets, i.e., cash, accounts receivables and inventory. Unlike the management of fixed assets which may be arranged in special cases on long-lease basis, the working capital has no alternative except to arrange them and use them efficiently. There are certain special problems peculiar to the management of working capital requiring operational and financial skills of a high order.

## **Determining the Type of Capital Structure**

The next step or the problem in calculating the weighted average cost is the selection of capital structure from which the weights are obtained.

There may be several possibilities

- (a)** Current capital structure either before or after the projected new financing
- (b)** Marginal capital structure, i.e., proportion of various types of capital in total of additional funds to be raised at a certain time
- (c)** optimal capital structure. All may agree that firms do seek optimum capital structure, i.e., the capital structure that minimizes the average cost of capital.

Unless we have reasons to believe that the current structure deviates substantially from the optimum capital structure, we may assume that the current capital structure is the optimal capital structure and use it in the assignment of weights. The marginal capital structures is irrelevant here.

## **Computation of Weights**

The assignment of weights to specific sources of funds is a difficult task. Several approaches are followed in this regard but two of them are commonly used, i.e., Book-value approach and Market value approach.

As the cost of capital is used as a cut off rate for investment projects, the market value approach is considered better because of the following reasons.

- (i)** it evaluates the profitability as well as the long-term financial position of the firm
- (ii)** the investor always considers the committing his funds to an enterprise and an adequate return on his investment. In such cases, book values are of little significance.
- (iii)** It does not indicate the true economic value of the concern

**(iv)** it considers price level changes.

### **Weighted Average, How to Calculate ?**

Though the concept of weighted average cost of capital is very simple, yet there are so many problems in the way of its calculations.

Its computation requires two steps.

- (i)** Computation of weights to be assigned to each type of funds, and
- (ii)** Assignment of cost to various sources of capital.

Once these values are known, the calculation of weighted average cost becomes very simple. It may be obtained by adding up the products of cost of all types of capital multiplied by their appropriate weights.

### **Meaning of Weighted Average Cost of Capital**

A company has to employ owner's funds as well as creditors' funds to finance its project so as to make the capital structure of the company balanced and to increase the return to the shareholders.

The total cost of capital is the aggregate of costs of specific capitals. In financial decision making, the concept of composite cost is relevant. The composite costs of capital is the weighted average of the cost of various sources of funds, weights being the proportion of each source of funds in the capital structure. It should be remembered, that it is weighted average, and not the simple average, which is relevant in calculating the overall cost of capital. The composite cost of all capital lies between the least and the most expensive funds. This approach enables the maximization of corporate profits and the wealth of the equity shareholders by investing the funds in a project's earnings in excess of the cost of its capital-mix.

Weighted average, as the name implies, is an average of the costs of specific source of Capital employed in a business, properly weighted by the proportion, they hold in the firm's capital structure.

### **Meaning of Cost of Retained Earnings**

The company is not to pay any dividends on retained earnings, it is therefore, observed that this source of finance is cost free.

This view seems to be based on the assumption that the company is a separate entity from its shareholders and it pays nothing to the shareholders to withhold these earnings. But this view is not correct. Retained earnings involve an opportunity cost. The opportunity cost of retained earnings is the dividend foregone by the shareholders by not putting funds elsewhere. Thus cost of Retained earnings is the return expected by the company.

From shareholders' point of view, the opportunity cost of Retained earnings is the rate of return that they can obtain by putting after tax dividend in some other securities of equal qualities, if earnings are paid to them as dividend in cash. And individual pays income tax on dividend hence he would only be able to invest the amount remained after paying individual income tax on such earnings. The value of his shares would also be increased in the market by an amount which after making provisions for any tax on capital gains, is equal to the net dividend he would have received after tax. It shows that necessary adjustments should be made for individual income tax

and capital gain tax on such expected earnings to the shareholders in determining the opportunity cost to them. This can be expressed as follows-

$$K_r = \frac{(1 - T_i) D}{(1 - T_o) P}$$

Here :  **$K_r$  = Cost of retained earnings**

**$T_i$  = Marginal income tax-rate applicable to an individual**

**$T_o$  = Capital gain tax**

**$D$  = Dividends per share**

**$P$  = Price of share.**

### **Mode of Measuring Cost of Capital**

In making investment decisions, cost of different types of capital is measured and compared. The source, which is the cheapest is chosen and capital raised.

Now the problem is how to measure the cost of different sources of capital. In fact, there is no exact procedure for measuring the cost of capital. It is based largely on forecasts and is subject to various margins of error. While computing the cost of capital care should be taken about such factors as the needs of the company, the conditions under which it is raising its capital, corporate policy constraints and level of expectation. In fact, a company raises funds from different sources, and therefore, composite cost of capital can be determined after specific cost of each type of fund has been obtained. It is therefore, necessary to determine the specific cost of each source in order to determine the minimum obligation of a company, i.e., composite cost of raising capital.

In order to determine the composite cost of capital, the specific costs of different sources of raising funds are calculated in the following manner:-

**(1) Cost of Debt.** In measuring cost of capital, the cost of debt should be considered first. In calculating cost of debt, contractual cost as well as imputed cost should be considered. Generally, the cost of debt (Debentures and long-term debts) is defined in terms of the required rate of return that the debt-investment must yield to protect the shareholders' interest. Hence cost of debt is the contractual interest rate adjusted further for the tax-liability of the firm. As per Formula:-

$$K_d = (1 - T) R.$$

**Here:  $K_d$  = Cost of debt capital**

**$T$  = Marginal tax rate applicable to the company.**

**$R$  = Contractual interest rate.**

Suppose, a company issues 9 % debentures. Its marginal tax rate is 50 %. The effective cost of these debentures will be as follows :-

$$K = (1 - .50) \times 9$$

or

$$K = .50 \times 9 = 4.50 \%$$

As because of the tax deductibility of interest, it is customary to compute the cost of borrowed funds as an after tax-rate of interest.

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$$K_p = \frac{R}{P}$$

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$R$  = Rate of preferred dividend.

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For example, suppose a company issues 95 preference shares of Rs. 100 each at a premium of Rs. 5 per share. The issue expenses per share comes to Rs. 3 . The cost of preference capital shall be calculated as under :-

$$K_p = \frac{9}{100 + 5 - 3} \text{ or } \frac{9}{102} = 8.82 \%$$

The cost of preference share capital is not be adjusted for taxes, because dividend on preference capital is paid after taxes as it is not tax deductible. Thus, the cost of preference capital is substantially greater than the cost of debt.

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**(B) Earnings Price (E/P) Ratio Approach.** The E/P ratio assumes tat shareholders capitalize a stream of uncharged earnings by the capitalisation rate of earnings/price ratio in order to evaluate their holdings. The advocates of this approach, however, differ on the earnings figure and market price. Some use the current earnings and current market price for determining the capitalisation rate while others recommend average earnings and average market price over some period in the past. This approach also has three main limitations:- (i) all earnings are not distributed among the shareholders in the form of dividend, (ii) earnings per share cannot be assumed to be constant as this approach emphasizes, and (iii) share price does not remain constant because investments in retained earnings result in increase in market price of share.

**(C) Dividend/Price + Growth Rate of Earning (D/P + g) Approach.** This approach emphasizes what the investor actually receives, i.e., dividend + the rate of growth (g) in dividend. The growth rate in dividend is assumed to be equal to the growth rate in earnings per share. In other words, if the earnings per share increased at a rate of 5 %, of the dividend per share and market price per share should also be increased at a rate of 5 %. This approach is considered to be the best conceptual measure of the cost of new capital that ensures the optimum capital budgeting decisions. It is claimed that it will give an accurate estimate of return which the shareholders will actually realize only if the future prise-earnings ratio and the current price-earnings ratio are the same and the dividend and the earnings grow at the same rate. It may be noted that removal of these assumptions will affect the validity of the approach. The main difficulty in this approach is to determine the rate of growth of price appreciation expected by a shareholders when he is willing to pay a certain price for a current dividend.

**(D) Realized Yield Approach.** In case where future dividend and the sale price are uncertain, it is very difficult to estimate the rate of return on investment. In order to remove this difficulty, it is suggested the cost of capital. Under this approach, the Realized yield is discounted at the present value factor and then compared with the value of investment. For example, suppose an investor purchased one share of ABC Ltd. at Rs. 240/- on January 1, 1970 and after holding it for 5 years, sold the share at Rs. 300. During this period of five years, he received a dividend of Rs. 14, Rs. 14, Rs. 14.50 and Rs. 14.50. respectively. His rate of return on discounted case flow, as computed below comes to nearly 10 %.

| Year | Dividend | Sale Price | Discount factor | Jan. 1970 |
|------|----------|------------|-----------------|-----------|
|      |          |            | @ 10 %          | Value     |

|                  |       |     |      |       |
|------------------|-------|-----|------|-------|
| 1970 (ending)    | 14.00 |     | .909 | 12.7  |
| 1971 ( ending)   | 14.00 |     | .826 | 11.6  |
| 1972 (ending)    | 14.50 |     | .751 | 10.9  |
| 1973 (ending)    | 14.50 |     | .683 | 9.9   |
| 1974 (ending)    | 14.50 |     | .621 | 9.0   |
| 1975 (beginning) | -     | 300 | .621 | 189.3 |
|                  |       |     |      | 240.4 |

Thus @ 10 % it equates initial investment price to dividend and sale price.

The advocates of this approach suggest that the past behaviour will be materialized in future and the historic Realized rate of return would be an appropriate indicator of prospective investor's required future rate of return. We can easily remove the cyclical fluctuations in return by averaging the Realized yield and may determine the central tendency. This approach also suffers from some serious assumptions.

**(4) Cost of Retained Earnings.** Some regard that cost of retained earnings is nil but it is not so. Retained earnings also have opportunity cost which can be computed well. The opportunity cost of retained earnings in a company is the rate of return the shareholder forgoes to determine the cut off point. Opportunity cost of retained earnings to the shareholders is the rate of return which they can get by investing the after tax dividends in the other alternative opportunities. It can be expressed as-

$$K_r = \frac{(1 - T_i) D}{(1 - T_o) P}$$

Here :  $T_i$  = Tax rate applicable to individual

$T_o$  = Capital gain tax

$D$  = Dividend

$P$  = Price of the share.

**(5) Cost of Depreciation Funds.** Depreciation funds though appear to be cost-less but this is not so. Their cost too, like cost of retained earnings, are calculated on the basis of opportunity cost to the shareholder. If an internal projects cannot earn the rate that the equity shareholders can obtain by investing the funds elsewhere, money should be distributed to equity shareholder s liquidating dividend.

Now the problem is how to measure the cost of different sources of capital. In fact, there is no exact procedure for measuring the cost of capital. It is based largely on forecasts and is subject to various margins of error. While computing the cost of capital care should be taken about such factors as the needs of t company, the conditions under which it is raising its capital, corporate policy constraints and level of expectation. In fact, a company raises funds from different sources, and therefore, composite cost of capital can be determined after specific cost of each

type of fund has been obtained. It is therefore, necessary to determine the specific cost of each source in order to determine the minimum obligation of a company, i.e., composite cost of raising capital.

In order to determine the composite cost of capital, the specific costs of different sources of raising funds are calculated in the following manner:-

**(1) Cost of Debt.** In measuring cost of capital, the cost of debt should be considered first. In calculating cost of debt, contractual cost as well as imputed cost should be considered. Generally, the cost of debt (Debentures and long-term debts) is defined in terms of the required rate of return that the debt-investment must yield to protect the share holders' interest. Hence cost of debt is the contractual interest rate adjusted further for the tax-liability of the firm. As per Formula:-

$$K_d = (1 - T) R.$$

**Here:**  $K_d$  = Cost of debt capital

$T$  = Marginal tax rate applicable to the company.

$R$  = Contractual interest rate.

Suppose, a company issues 9 % debentures. Its marginal tax rate is 50 %. The effective cost of these debentures will be as follows :-

$$K = (1 - 50) \times 9$$

**or**  $K = .50 \times 9 = 4.50 \%$

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### Relevant Costs

The following costs are relevant costs, closely associated with the problem of cost of capital

**(1) Marginal Cost of Capital or Explicit Cost.** The current rate of interest on longterm debts or current rate of return is treated as the marginal cost of capital. Marginal cost or explicit cost tends to increase proportionately as the amount of debt increases.

**(2) Implicit Cost or Real Cost.** The explicit cost includes only the cost of capital to be paid and ignores the other factors such as risks involved, flexibility and leverage. Characteristics which are adversely affected with an increase in debt contents in its capital costs may be determined by taking these factors into consideration. The real cost of raising debt is, therefore, a substantially higher than explicit cost.

**(3) Future Cost and Historical Cost.** For decision making purposes, future costs are relevant and the financial decision making is no exception. We always consider the projects, expected internal rate of return and compare it with the expected (future) cost of capital while making capital expenditure decision. Similarly, we plan to minimise the future cost of capital at the time of designing a capital structure-cost incurred in the past (Historical cost) cannot be minimized. Historical costs help in predicting the future costs and provide an evaluation of the past performance when compared with standard costs.

**(4) Specific Cost and Inclusive Cost or Average Cost.** Specific cost, of capital is associated with a specific component of capital structure, e.g., cost of debentures, cost of preference shares etc. In financing decisions involving alternatives which may not affect the capital structure (Selection of two alternative debentures of similar size) specific cost should be used as the criterion for decision making. Inclusive cost or average of various specific cost of different components of various sources at a given time. This cost is relevant in investment decisions of the funds of the firm where firm employs a mix of various sources.

**(5) Spot Costs and Normalized Costs.** Spot costs represent those costs prevailing in the market at a certain time. This cost is considered in financing decisions involving alternative appraisal. Normalized costs indicate an estimate of cost by some averaging process from which cyclical element is removed. These are normally used in taking investment decisions.

**(6) Opportunity Costs.** The opportunity cost is the rate of return the shareholder forgoes by not putting the funds elsewhere. Keeping in mind the shareholders interest, this cost is used while making the investment decisions to determine the cut-off point of the project.

**(7) Combined Cost.** The combined or composite cost of capital is an aggregate of the cost of capital from all sources, i.e., debt, equity and preference capital. In other words, it is weighted cost of capital. This is relevant in capital expenditure decisions as an acceptance criterion. It is the overall mix of financing over time which is important in valuing firm as an ongoing overall entity.

### **Importance of Cost of Capital in Decision Making**

The concept of cost of capital is a very important concept in financial management decision making. The concept, is however, a recent development and has relevance in almost every financial decision making but prior to that development, the problem was ignored or by-passed.

### **Meaning of Cost of Capital**

Cost of capital is a decisive factor in financial decision-making. We measure and compare the cost of capital in deciding the capital structure of the company so as to earn a fair return to the owner and at least a fair return to the contributors.

In recent years, it has received a considerable attention from both theorists and practitioners. Two major schools of thought have emerged having basic differences on the relevance of the concepts but both concepts are based on optimal policy. One school of thought is of the opinion that the cost of capital of a firm is constant and it is quite independent of the method and the level of financing. If we follow this concept, it means that financial planning is no problem. Under this concept, optimal policy is the investment that equates the marginal return on investment with its cost of capital. The opposite view is that cost of capital is not constant and varies with the method and level of financing.



