Chapter 2
Capital Structure
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CAPITAL STRUCTURE

2.0 CAPITAL STRUCTURE

The term ‘Capital structure’ refers to the relationship between the various long-term sources of financing such as debenture, preference share capital and equity share capital. Financing the firm’s assets is a very crucial problem in every business and as a general rule there should be a proper mix of debt and equity capital in financing the firm’s assets. The use of long-term fixed interest bearing debt and preference share capital along with equity share is called financial leverage or trading on equity. The long-term fixed interest bearing debt is employed by a firm to earn more from the use of these sources than their cost so as to increase the return on owner’s equity. Capital structure cannot affect the total earnings of a firm but it can affect the share of earnings available for equity shareholders.

In order to run and manage a company, funds are needed. Right from the promotional stage upto end, finances play an important role in a company’s life. If funds are inadequate, the business suffers and if the funds are not properly managed, the entire organisation suffers. It is, therefore, necessary that correct estimate of the current and future need of capital be made to have an optimum capital structure which shall help the organisation to run its work smoothly and without any stress.
Estimation of capital requirements is necessary, but the formation of a capital structure is important. According to Gerestenbeg, “Capital structure of a company refers to the composition or make-up of its capitalization and it includes all long-term capital resources viz: loans, reserves, shares and bonds.”

The capital structure is made up of debt and equity securities and refers to permanent financing of a firm. It is composed of long-term debt, preference share capital and shareholders’ funds.

2.0-0 CAPITALISATION, CAPITAL STRUCTURE AND FINANCIAL STRUCTURE:

The terms, capitalization, capital structure and financial structure, do not mean the same. While capitalization is a quantitative aspect of the financial planning of an enterprise, capital structure is concerned with the qualitative aspect. Capitalisation refers to the total amount of securities issued by a company while capital structure refers to the kinds of securities and the proportionate amounts that make up capitalization. For raising long-term finances, a company can issue three types of securities viz. Equity shares, Preference Shares and Debentures. A decision about the proportion among these types of securities refers to the capital structure of an enterprise.

Some authors on financial management define capital structure in a broad sense so as to include even the proportion of short-term debt. In fact, they refer to capital structure as financial structure. Financial structure means the entire liabilities side of the balance sheet. In the words of Nemmers and
Grunewald, "Financial structure refers to all the financial by the firm, short as well as long-term, and all forms if debt as well as equity. "Thus financial structure, generally, is composed of a specified percentage of short-term debt and shareholder’s funds.

2.0-1 DEFINITION

According to Gerestenbeg, "Capital structure of a company refers to the composition or make-up of its capitalization and it includes all long-term capital resources viz. loans, reserves, shares and bonds."

According to Nemmers and Grunewald, "Financial structure refers to all the financial resources marshaled by the firm, short as well as long-term, and all forms of debt as well as equity"

2.0-2 OPTIMAL CAPITAL STRUCTURE

The optimum capital structure may be defined as "that capital structure or combination of debt and equity that leads to the maximum value of the firm". Optimal capital structure ‘maximizes the value of a company and hence the wealth of its owners and minimizes the company's cost of capital'. Thus, every firm should aim at achieving the optimal capital structure and then to maintain it.

The following considerations should be kept in mind while maximizing the value of the firm in achieving the goal of optimum capital structure:
i. If the return on investment is higher than the fixed cost of funds, the company should prefer to raise funds having a fixed cost, such as debentures, loans and preference share capital. It will increase earning per share and market value of the firm. Thus, a company should, make maximum possible use of leverage.

ii. When debt is used as a source of finance, the firm saves considerable amount in payment of tax as interest is allowed as a deductible expense in computation of tax. Hence, the effective cost of debt is reduced, called tax leverage. A company should, therefore, take advantage of tax leverage.

iii. The firm should avoid undue financial risk attached with the use of increased debt financing. If the shareholders perceive high risk in using further debt-capital, it will reduce the market price of shares.

iv. The capital structure should be flexible.

2.0-3 THEORIES OF CAPITAL STRUCTURE

Different kinds of theories have been propounded by different authors to explain the relationship between capital structure, cost of capital and value of the firm. The important theories are discussed below:

3. The Traditional Approach
1. **Net Income Approach:**

According to this approach, a firm can minimize the weighted average cost of capital and increase the value of the firm as well as market price of equity shares by using debt financing to the maximum possible extent. The theory propounds that a company can increase its value and reduce the overall cost of capital by increasing the proportion of debt-in its capital structure. This approach is based upon the following assumptions:

i. The cost of debt is less than the cost of equity.

ii. There are no taxes.

iii. The risk perception of investors is not changed by the use of debt.

The line of argument in favour of net income approach is that as the proportion of debt financing in capital structure increase, the proportion of a less expensive source of funds increases. This results in the decrease in overall (weighted average) cost of capital leading to an increase in the value of the firm. The reasons for assuming cost of debt to be less than the cost of equity are that interest rates are usually lower than dividend rates due to element of risk and the benefit of tax as the interest is a deductible expense.

On the other hand, if the proportion of debt financing in the capital structure is reduced or say when the financial leverage is reduced, the weighted average cost of capital of the firm will increase and the total value of the firm will decrease. The Net Income (NI) Approach showing the effect of leverage on overall cost of capital has been presented in the following figure.
The total market value of a firm on the basis of Net Income Approach can be ascertained as below:

\[ V = S + D \]

Where,
- \( V \) = Total market value of a firm
- \( S \) = Market value of equity shares
- \( \frac{\text{Earnings Available to Equity Shareholders (NI)}}{\text{Equity Capitalization}} \) = \( \frac{\text{EBIT}}{V} \)
- \( D \) = Market value of debt.

and, Overall Cost of Capital or Weighted Average Cost of Capital can be calculated as:

\[ \frac{\text{EBIT}}{V} \]

2. Net Operating Income Approach:

This theory as suggested by Durand is another extreme of the effect of leverage on the value of the firm. It is diametrically opposite to the net income approach. According to this approach, change in the capital structure of a company does not affect the market value of the firm and the overall
cost of capital remains constant irrespective of the method of financing. Thus, there is nothing as an, optimal capital structure and every capital structure is the optimum capital structure. This theory presumes that:

I. The market capitalizes the value of the firm as a whole;
II. The business risk remains constant at every level of debt equity mix;
III. There are no corporate taxes.

The reasons propounded for such assumptions are that the increased use of debt increases the financial risk of the equity shareholder-sand hence the cost of equity increases: On the other hand, the cost of debt remains constant with the increasing proportion of debt as the financial risk of the lenders is not affected. Thus, the advantage of using the cheaper source of funds, i.e., debt is exactly offset by the increased cost of equity.

According to the Net Operating Income (NOI) Approach, the financing mix is irrelevant and it does not affect the value of the firm. The NOI approach showing the effect of leverage on the overall cost of capital has been presented in the following
The value of a firm on the basis of Net Operating Income Approach can be determined as below:

\[
V = \frac{EBIT}{K_0}
\]

Where, \(V\) = Value of a firm
\(EBI\) = Net operating income or Earnings before interest and tax.
\(K_0\) = Overall cost of capital

3. The Traditional Approach:

The traditional approach, also known as Intermediate approach, is a compromise between the two extremes of net income approach and net operating income approach. According to this theory, the value of firm can be increased initially or using more debt as the debits as the debt is a cheaper source of funds than equity can decrease the cost of capital. Thus, optimum capital structure can be reached by a proper debt equity mix. Beyond a particular point, the cost of equity increases because increased debt increases the financial risk of the equity share holders. The advantage of cheaper debt at this point of capital structure is offset by increased, cost of equity. After this there comes a stage, when the increased cost of equity cannot be offset by the adamantine low-cost debt. Thus, overall cost of capital, according to this theory, decreases up to a certain point, remains more or less unchanged for moderate increase in debt thereafter and increases or rise beyond a certain, point. Even the cost of debt may increase at this stage due to increased financial risk.
The traditional viewpoint on relationship, between the leverage, cost of capital and the value of firm has been shown the figures below:

The figure above shows that there can be a range of optimal capital structure or a particular level of optimal capital structure.

4. Modigliani and Miller Approach:

M&M hypothesis is identical with the Net operating Income approach if taxes are ignored. However, when corporate taxes are assumed to exist, their hypothesis is similar to the Net Income Approach.

a) In the absence of taxes (Theory of Irrelevance):

The theory proves that the cost of capital is not affected by changes in the capital structure or says that the debt-equity mix is irrelevant in the
determination of the total value of a firm. The reason argued is that though
debt is cheaper to equity, with increased use of debt as a source of finance
the cost of equity increases. This increase in cost of equity offsets the
advantage of the low cost of debt. Thus, although the financial leverage
affects the cost of equity, the overall cost of capital remains constant. The
theory emphasizes the fact that a firm's operating income is a determinant of
its total value. The theory further propounds that beyond a certain limit of
debt, the cost of debt increases (due to increased financial risk) but the cost
of equity falls thereby again balancing the two costs. In the opinion of
Modigliani & Miller, two identical firms in all respects except their capital
structure cannot have different market values or cost of capital because of
arbitrage process. In case two identical firms except for their capital
structure have different market values or cost of capital, arbitrage will take
place and the investors will engage in 'personal leverage' (i.e. they will buy
equity of the other company in preference to the company having lesser
value) as "against the 'corporate leverage'; and this will again render the two
firms to have the same total value.

The M&M approach is based upon the following assumptions:

i. There are no corporate taxes.

ii. There is a prefect market.

iii. Investors act rationally.

iv. The expected earnings of all the firms have identical risk
    characteristics.

v. The cut-off point of investment in a firm is capitalization rate.
vi. Risk to investors depends upon the random fluctuations of expected earnings and the possibility that the actual value of the variables may turnout to be different from their best estimates:

vii. All earnings are distributed to the shareholders.

The MM approach, in the absence of corporate taxes, i.e. the theory of irrelevance of financing mix has been presented in the following figure:

![MM Theory of Irrelevance: Effect of Leverage on cost of debt, equity and overall cost of capital](image)

b) In the presence of corporate taxes (Theory of Relevance):

Modigliani and Miller, in their article of 1963 have recognized that the value of the firm will increase or the cost of capital will decrease with the use of debt on account of deductibility of interest charges for tax purpose. Thus, the optimum capital structure can be achieved by maximizing the debt mix in the equity of a firm.

According to the M & M approach, the value of a firm unleveled can be calculated as:

\[ \text{EBIT} = \text{Earnings Before Interest & Tax} \]
Value of unleveled firm \( (V_u) = \frac{\text{Overall Cost of Capital}}{K_0} \) i.e. \( (1 - t) \)

and, the value of a levered firms is:

\[ V_L = V_u + Td \]

Where, \( V_u \) is value of unleveled firm

and, \( Td \) is the discounted present value of the tax savings resulting from the tax deductibility of the interest charges, \( t \) is the rate of tax and \( D \) the quantum of debt used in the mix.

Value of levered and unlevered firm under the MM model (assuming that corporate taxes exist) has been shown in the following figure:

2.1 CAPITAL STRUCTURE MANAGEMENT OR PLANNING THE CAPITAL STRUCTURE:

Estimation of capital requirements for current and future needs is important for a firm. Equality important is the determining of capital mix. Equity and debt are the two principle sources' of finance of a business. But, what should be the proportion between debt and equity in the capital structure of a firm? How much financial leverage should a firm employ?

This is a very difficult question. To answer this question, the relationship between the financial leverage and the value of the firm or cost of capital has to be studied. Capital structure planning, which aims at the maximization of profits and the wealth of the shareholders, ensures the maximum value of a firm or the minimum cost of capital. It is very
important for the financial manager to determine the proper mix of debt and equity for his firm. In principle, every firm aims at achieving the optimal capital structure but in practice it is very difficult to design the optimal capital structure. The management of a firm should try to reach as near as possible of the optimum point of debt and equity mix.

2.1-1 ESSENTIAL FEATURES OF A SOUND CAPITAL MIX

A sound or an appropriate capital structure should have the following essential features:

(i) Maximum possible use of leverage.
(ii) The capital structure should be flexible.
(iii) To avoid undue financial business risk with the increase of debt.
(iv) The use of debt should be within the capacity of a firm. The firm should be in a position to meet its obligations in paying the loan and interest charges as and when due.
(v) It should involve minimum possible risk of loss of control.
(vi) It must avoid undue restrictions in agreement of debt.

2.1-2 FACTORS DETERMINING THE CAPITAL STRUCTURE:

The capital structure of a concern depends upon a large number of factors such as leverage or trading on equity, growth of the company, nature and size of business, the idea of retaining control, flexibility of capital structure, requirements of investors, costs of floatation of new securities, timing of
issue, corporate tax rate and the legal requirements. It is not possible to rank them because all such factors are of different importance and the influence of individual factors of a firm changes over a period of time. Every time the funds are needed, the financial manager has to study the pros and cons of the various sources of finance so as to select the most advantageous capital structure. The factors influencing the capital structure are discussed as follows:

1. Financial Leverage or Trading on Equity:

The use of long-term fixed interest bearing debt and preference share capital along with equity share capital is called financial leverage or trading on equity. Effects of leverage on the shareholders return or earnings per share have already been discussed in this chapter. The use of long-term debt increases, magnifies the earnings per share if the firm yields a return higher than the cost of debt. The earnings per share also increase with the use of preference share capital but due to the fact that interest is allowed to be deducted while computing tax, the leverage impact of debt is much more. However, leverage can operate adversely also if the rate of interest on long-term loans is more than the expected rate of earnings of the firm. Therefore, it needs caution to plan the capital structure of a firm.

2. Growth and Stability of Sales:

The capital structure of a firm is highly influenced by the growth and stability of its sales. If the sales of a firm are expected to remain fairly stable, it can raise a higher level of debt. Stability of sale ensures that the firm will
not face any difficulty in meeting its fixed commitments of interest payment and repayments of debt. Similarly, the rate of growth in sales, also affects the capital structure decision. Usually greater the rate of growth of sales, greater can be the use of debt in the financing of firm. On the other hand, if the sales of a firm are highly fluctuating or declining, it should not employ, as far as possible, debt financing in its capital structure.

3. Cost of Capital:

Every rupee invested in a firm has a cost. Cost of capital refers to the minimum return expected by its suppliers. The capital structure should provide for the minimum cost of capital. The main sources of finance for a firm are equity, preference share capital and debt capital. The return expected by the suppliers of capital depends upon the risk they have to undertake. Usually, debt is a cheaper source of finance compared to preference and equity capital due to (i) fixed rate of interest on debt (ii) legal obligation to pay interest; (iii) repayment of loan and priority in payment at the time of winding up of the company.

4. Cash Flow Ability to Service Debt:

A firm which shall be able to generate larger and stable cash inflows can employ more debt in its capital structure as compared to the one which has unstable mid lesser ability to generate cash inflows. Debt financing implies burden of fixed charge due to the fixed payment of interest and the principal. Whenever a firm wants to raise additional funds, it should estimate, project its future cash inflows to ensure the coverage of fixed charges. Fixed
Charges Coverage Ratio and Interest Coverage Ratio may be calculated for this purpose.

5. Nature and Size of a Firm:

Nature and size of a firm also influence its capital structure. All public utility concern has different capital structure as compared to other manufacturing concern. Public utility concerns may employ more of debt because of stability and regularity of their earnings. On the other hand, a concern which cannot provide stable earnings due to the nature of its business will have to rely mainly on equity capital; similarly, small companies have to depend mainly upon owned capital as it is very difficult for them to raise long-term loans on reasonable terms and also can not issue equity and preference shares at ease to the public.

6. Control:

Whenever additional funds are required by a firm, the management of the firm wants to raise the funds without any loss of control over the firm. In case the funds are raised through the issue of equity shares, 'the control of the existing shareholders is diluted. Hence, they might raise the additional funds by way of fixed interest bearing debt and preference share capital. Preference shareholders and debenture holders do not have the voting right. Hence, from the point of view of control, debt financing is recommended/But, depending largely upon debt financing create other problems, such as, too much restrictions imposed upon by the lenders or suppliers of finance and ultimate bankruptcy of the firm due to heavy burden
of interest and fixed charges. This may result into even a complete loss of control by way of liquidation of the company.

7. Flexibility:
Capital structure of a firm should be flexible, i.e., it should be such as to be capable of being adjusted according to the needs of the changing condition. It should be possible to raise additional funds, whenever the need be, without much of difficulty and delay. A firm should arrange its capital structure in such a manner that it can substitute one form of financing by another Redeemable preference shares and convertible debentures may be preferred on account of flexibility. Preference shares and debentures that can be redeemed at the discretion of the firm offer the highest flexibility in the capital structure.

8. Capital Market Conditions:
Capital market conditions do not remain the same for ever. Sometimes there may be depression while at other times there may be boom in the market. The choice of the securities is also influenced by the market conditions. If the share market is depressed and there are pessimistic business conditions, the company should not issue equity shares as investors would prefer safety. But in case there is boom period, it would be advisable to issue equity shares

9. Assets Structure:
The liquidity and the composition of assets should also be kept in mind while selecting the capital structure. If fixed assets constitute a major-portion
of the total assets of the company, it may be possible for the company to raise more of long-term debts.

10. Purpose of Financing:

If funds are required for a productive purpose, debt financing is suitable and the company should issue debentures as interest can be paid out of the profits generated from the investment. However, if the funds are required for unproductive purpose or general development on preeminent basis, we should prefer equity capital.

11. Period of Finance:

The period for which the finances are required is also an important factor to be kept in mind while selecting an appropriate capital mix. If the finances are required for a limited period of, say, seven years, debentures should be preferred' to shares. Redeemable preference shares may also be used for a limited period finance, if found suitable otherwise. However, in case funds are needed on permanent basis, equity share capital is more appropriate.

12. Costs of Floatation:

Although not very significant, yet costs of floatation of various kinds of securities should also be considered while raising funds. The cost of floating a debt is generally less than the cost of floating an equity and hence it may persuade the management to raise debt financing. The costs of floating as a percentage of total funds decrease with the increase in size of the issue.
13. Personal Considerations:

The personal considerations and abilities of the management will have the final say on the capital structure of a firm. Managements, which are experienced and are very enterprising, do not hesitate to use more of debt in their financing as compared to the less experienced and conservative management.

14. Corporate Tax Rate:

High rate of corporate taxes on profits compel the companies to prefer debt financing, because interest is allowed to be deducted while computing taxable profits. On the other hand, dividend on shares is not an allowable expense for that purpose.

15. Legal Requirements:

The Government has also issued certain guidelines for the issue of shares and debentures. The legal restrictions are very significant as these lay down a framework within which capital structure decision has to be made. For example, the controller of capital issues, now SEBI grants his consent for capital issue when (i) the debt-equity ratio does not exceed 2:1 (for capital intensive projects a higher debt equity ratio may be allowed), (ii) the ratio of preference capital to equity does not exceed 1:3 and (iii) promoters hold at least 25% of the equity capital.
2.1-3 CHANGES IN CAPITALISATION OR CAPITAL STRUCTURE:

No scheme of capitalization or capital structure can be said to be of permanant character or of static nature in the fast changing world of business. The initial patterns of capitalization however planned; can never fully anticipate the efforts of these changes in the economy. The scheme of capitalization may become outmoded with the changing conditions of the financial markets. Thus, it may become necessary to make changes in the scheme of capitalization to suit the present needs of a company. A sound capital structure 'is one which can be adjusted according to the needs of the changing conditions.

Changes in capitalization may be sought as a means of easing tension and giving corporation a better opportunity to pursue its purpose. Adjustment in capital, structure may also be necessitated to facilitate expansion, growth, revision, recapitalization and re-organisation, etc. The changes in the capitalization scheme may either be voluntary or compulsory and may be implemented either in the form of recapitalization or readjustment of capital structure.

2.1-3-I REASONS FOR CHANGES IN CAPITALIZATION:

The following are the main reasons necessitating change in capitalization:

1. To Restore Balance in the' Financial Plan:
If the financial structure of a company has become top heavy with fixed cost bearing securities resulting into a great strain on the financial position of the company, the company may readjust its capital structure by redeeming the preference shares or debentures out of the proceeds of new issue of equity shares. This will lead to easing out the tension or reduce the strain and restore the balance in the financial plan.

2. To Simplify the Capital Structure:
When a company has issued a variety of securities at different points of time to raise funds at difficult terms, it may need to consolidate such securities to simplify the financial plan as and when the market conditions are favorable.

3. To Suit Investor's Needs:
A company may have to change capitalization to suit the needs of its investors. The companies, often, resort to split up of its shares to make these more attractive especially when the market activity in the company's shares is limited due to high face value and wide fluctuations in its market prices.

4. To fund Current Liabilities:
Sometimes, the companies feel that they need working capital on permanent basis. In such circumstances, the companies would prefer to convert their short-term obligations into long-term by taking advantage of favorable market conditions.

5. To Write off the Deficit:
In case a company has not been doing well and book value of its assets is over-valued as compared to their real worth or when there are accumulated losses, it is better for the company to reorganize its capital by reducing book value of its liabilities and assets to their real values. Such reorganization is also necessitated, because; otherwise the company cannot legally pay dividends to its shareholders even in future when it makes profits without writing off the losses.

6. To Capitalize Retained Earnings.
Changes in capitalization may take place due to capitalization of retained earnings by the issue of bonus shares. To avoid over-capitalization, maintain a balance between preference shares and equity shares, and equity shares and debentures; a company may prefer to issue bonus shares out of its accumulated profits and resources without affecting their Humidity.

7. To Clear Default on Fixed Cost Securities.
When a company is not in a position to pay interest on debentures or repay the debentures on their maturity, it may be forced to offer them certain securities (equity shares, Preference shares or new debentures) to clear the default resulting into a change in the capitalization of the company.

8. To Fund Accumulated Dividend.
If a company has not been able to pay fixed dividends to its preference shareholders - and the same have been accumulating or when preference shares are due for redemption and the company does not have necessary
funds to pay for the same, the company Italy prefer to issue new shares in lieu there of resulting in a change in its capitalization.

9. To Facilitate Merger and Expansion.
In the same manner, to a facilitate merger and expansion. The intending companies may be required to readjust capital structure. Such a change is generally required to equate the shares of different companies.

10. To Meet Legal Requirements.
Changes in capitalization may also be necessitated to meet the changes in various legal requirements as and when those take place.

2.1-4 CAPITAL GEARING:

The term ‘capital gearing’ refers to the relationship between equity capital (equity shares plus reserves and long-term debt. It may be planned or historical, the latter describing a state of affairs where the capital structure has evolved over a period of time, but not necessarily in the most advantageous way. In simple words, capital gearing means the ratio between the various types of securities in the capital structure of the company. A company is said to be in high gear if it has more long-term borrowed resources, whereas low-gear stands for a proportionately higher/large issue of equity shares. The example given below illustrates clearly the terms ‘high gear’ and ‘low gear’:
<table>
<thead>
<tr>
<th>Extracts of Balance Sheets</th>
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<tbody>
<tr>
<td>Liabilities</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Equity Share Capital</td>
</tr>
<tr>
<td>10% Preference Share Capital</td>
</tr>
<tr>
<td>9% Debentures</td>
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</table>

The total capitalisation of the above two companies is the same i.e. Rs.10,00,000 for each company, but the capital structure differs. A Ltd. is high geared as the ratio of equity capital in the total capitalisation of the company is only 40%. But B.Ltd. is low geared as its capital structure comprises of 60% of equity capital and only 40% of the fixed cost bearing securities.

2.1-4-I Significance of Capital Gearing:

The problem of capital gearing is very important in a company. It has a direct bearing on the divisible profits of a company and hence a proper capital gearing is very important for the smooth running of an enterprise. In case of low geared company, the fixed cost of capital by way of fixed dividend on preference shares and interest on debentures is low and the equity shareholders may get a higher rate of dividend. Whereas, in a high geared company the fixed cost of capital is higher leaving lesser divisible profits for the equity shareholders.
The capital gearing in the financial structure of a business has been rightly compared with the gears of an automobile. The gears are used to maintain the desired speed and control. Initially, an automobile starts with a low gear, but as soon as it gets momentum, the low gear is changed to high gear to get better speed. Similarly, a company may be started with high equity state, i.e. low gear but after momentum, it may be changed to high gear by mixing more of fixed interest bearing securities such as preference shares and debentures. It may also be noted that capital gearing affects not only the shareholders but the debentureholders, creditors, financial institutions, the financial mangers and others are also concerned with the capital gearing.

2.1-4-II Capital Gearing and Trade Cycles:
The technique of capital gearing can be successfully emplyed by a company during various phases of trade cycles, i.e. during the conditions of inflation and deflation, to increase the rate of return to its owners (equity shareholders) and thereby increasing the value of their investments. The effect of capital gearing during various phases of trade cycles is discussed below:

1. During Inflation or Boom Period: A company should follow the policy of high gear during inflation or boom period as the profits of the company are higher and it can easily pay fixed costs of debentures and preferences shares. Further, during boom period, the rate of earnings of the company is usually higher than the fixed rate of interest/dividend prevailing on debentures and preferences shares. By adopting the policy of high gear, a company can increase its earnings per share and thereby a higher rate of dividend.
2. **During Deflation or Depression Period:** During depression the rate of earnings of the company is lower than the rate of interest / dividend on fixed interest bearing securities and hence it cannot meet the mixed costs without lowering the divisible profits and rate of dividend. It is, therefore, better for a company to remain in low gear and not to resort to fixed interest bearing securities as source of finance during such period.

2.2 **LEVERAGE**

A general dictionary meaning of the term ‘Leverage’ refers to “an increased means of accomplishing some purpose.” Leverage allows us to accomplish certain things which are otherwise not possible, viz; lifting of heavy objects with the help of leverage. This concept of leverage is valid in business also. In financial management, the term ‘leverage’ is used to describe the firm’s ability to use fixed cost assets or funds to increase the return to its owners; i.e. equity shareholders. James Horne has defined leverage as “the employment of an asset or sources of funds for which the firm has to pay a fixed cost or fixed return.” The fixed cost (also called fixed operating cost) and fixed return (called financial cost) remains constant irrespective of the change in volume of output or sales. Thus, the employment of an asset or source of funds for which the firm has to pay a fixed cost or return has a considerable influence on the earnings available for equity shareholders. The fixed cost/return acts as the fulcrum and the leverage magnifies the influence. It must, however, be noted that higher is the degree of leverage, higher is the risk as well as return to the owners. It should also be
remembered that leverage can have negative or reversible effect also. It may be favourable or unfavourable.

There are basically two types of leverages, (i) operating leverage, and (ii) financial leverage. The leverage associated with the employment of fixed cost asset is referred to as operating leverage, while the leverage resulting from the use of fixed cost/return source is known as financial leverage. In addition to these two kinds of leverages, one could always compute ‘composite leverage’ to determine the combined effect of the leverages. In the present days, the term leverage is also used in relation to working capital so as to measure the sensitivity of return on investment to changes in the level of current asset. All these types of leverages are discussed in the following pages of this chapter.

2.2-1 FINANCIAL LEVERAGE OR TRADING ON EQUITY:

A firm needs funds so run and mange its activities. The funds are first needed to set up an enterprise and then to implement expansion, diversification and other plans. A decision has to be made regarding the composition of funds. The funds may be raised through two sources: owners, called owners equity, and outsiders, called creditor’ equity. When a firm issues capital these are owners’ funds, when it raises, funds by raising long-term loans it is called creditors’ or outsiders’ equity. Various means used to raise funds represent the financial structure of a firm. So the financial structure is represented by the left side of the balance sheet i.e. liabilities side. Traditionally, the short-term financed are excluded from the methods of financing capital budgeting decisions. So, only long term sources are
taken as a part of capital structure. The term capital structure' refers to the relationship between various long-term forms of financing such as debentures, preference share capital, equity share capital, etc. Financing the firm’s assets is a very crucial problem in very business and as a general rule there should be proper mix of debt and equity capital. The use of long-term fixed interest bearing debt and preference share capital along with equity share capital called financial leverage or trading on equity. The long term fixed interest bearing debt is employed by a firm to earn more from the use of these resources than their cost so as to increase the return on owner’s equity. It is true that the capital structure cannot affect the total earnings of a firm but it can affect the share of earnings for equity shareholders.

The fixed funds are employed in such a way that the earnings available for common stockholders (equity shareholders) are increased. A fixed rate of interest is paid on such long-term debts (debentures, etc.). The interest is a liability and must be paid irrespective of revenue earnings. The preference share capital also bears a fixed rate of dividend. But, the dividend is paid only when the company has surplus profits. The equity shareholders are entitled to residual income after paying interest and preference dividend. The aim of financial leverage is to increase the revenue available for equity shareholders using the fixed cost funds. If the revenue earned by employing fixed cost funds is more then their cost (interest and / or preference dividend) then it will be to the benefit of equity shareholders to use such a capital structure. A firm is known to have a favourable leverage if its earnings are more than what debt would cost. On the contrary, if it does not earn as much as the debt costs then it will be known as an unfavourable leverage.

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Every firm has to make its own decision regarding the quantum of funds to be borrowed. When the amount of debt is relatively large in relation to capital stock, a company is said to be trading on their equity. On the other hand if the amount of debt is comparatively low in relation to capital stock, the company is said to be trading on thick equity.

2.2-1-I IMPACT OF FINANCIAL LEVERAGE:

The financial leverage is used to magnify the shareholders' earnings. It is based on the assumption that the fixed charges/ costs funds can be obtained at a cost lower than the firm's rate of return on its assets. When the difference between the earnings from assets financed by fixed cost funds and the costs of these funds are distributed to the equity stockholders, they will get additional earnings without increasing their own investment. Consequently, the earnings per share and the rate of return on equity share capital will go up. On the contrary, if the firm acquires fixed cost funds at a higher cost than the earnings from those assets then the earnings per share and return on equity capital will decrease. The impact of financial leverage can be analysed while looking at earnings per share and return on equity capital.

2.2-1-II DEGREE OF FINANCIAL LEVERAGE:

The degree of financial leverage measures the impact of a change in operating income (EBIT) on change in earning on equity capital or on equity share. Degree of financial leverage DFL can be calculated as:
DFL = Percentage change in EPS
Percentage change in EBIT

or

DFL = EBIT/ EBT (or, EBIT-I)

2.2-1-III SIGNIFICANCE OF FINANCIAL LEVERAGE:

Financial leverage is employed to plan the ratio between debt and equity so that earning per share is improved. Following is the significance of financial leverage:

1. Planning of Capital Structure: The capital structure is concerned with the raising of long-term funds, both from shareholders and long-term creditors. A financial manager has to decide about the ratio between fixed cost funds and equity share capital. The effects of borrowing on cost of capital and financial risk have to be discussed before selecting a final capital structure.

2. Profit Planning: The earning per share is affected by the degree of financial leverage. If the profitability of the concern is increasing then fixed cost funds will help in increasing the availability of profits for equity shareholders. Therefore, financial leverage is important for profit planning. The level of sales and resultant profitability is helpful in profit planning. An important tool of profit planning is break-even analysis.
The concept of break-even analysis is used to understand financial leverage. So, financial leverage is very important for profit planning.

2.2-1-IV LIMITATIONS OF FINANCIAL LEVERAGE/TRADING ON EQUITY:

The financial leverage or trading on equity suffers from the following limitations:

i) **Double-edged weapon:** Trading on equity is a double-edged weapon. It can be successfully employed to increase the earnings of the shareholders only when the rate of earnings of the company is more than the fixed rate of interest/dividend on debentures/preference shares. On the other hand, if it does not earn as much as the cost of interest bearing securities, then it will work adversely and hence cannot be employed.

ii) **Beneficial only to companies having stability of earnings:** Trading on equity is beneficial only to the companies having stable and regular earnings. This is so because interest on debentures is a recurring burden on the company and a company having irregular income cannot pay interest on its borrowings during lean years.

iii) **Increases risk and rate of interest:** Another limitation of trading on equity is on account of the fact that every rupee of extra debt increases the risk and hence the rate of interest on subsequent loans also goes on increasing. It becomes difficult for the company to obtain further debts without offering extra securities and higher rates of interest reducing their earnings.
iv) **Restriction from financial institutions:** The financial institutions also impose restrictions on companies which resort to excessive trading on equity because of the risk factor and to maintain a balance in the capital structure of the company.

### 2.2-2 OPERATING LEVERAGE:

Operating leverage results from the presence of fixed cost that helps in magnifying net operating income fluctuations flowing from small variations in revenue. The fixed cost is treated as fulcrum of leverage. The changes in sales are related to changes in revenue. Operating leverage is concerned with the operation of any firm. The cost structure of any firm gives rise to operating leverage because of the existence of fixed nature of costs. The fixed costs do not change with the change in sales. Any increase in sales, fixed costs remaining the same, will magnify the operating the operating revenue. The operating leverage occurs when a firm has fixed costs which must be recovered irrespective of sales volume. The fixed costs remaining same, the percentage change in operating revenue will be more than the percentage change is sales. The occurrence is known as operating leverage. The degree of operating leverage depends upon the amount of fixed elements in the cost structure.

Operating leverage can be determined by means of a break even or cost volume profit analysis. This leverage relates to the sales and profit variations. Sometimes a small fluctuation in sales would have a great impact on profitability. This is because of the existence of fixed cost element in the cost structure of a product.
Operating Leverage = \frac{\text{Contribution}}{\text{EBIT}} \quad \text{or} \quad \frac{\text{Contribution}}{\text{Operating profit}}

When production and sales move above the break even point, the firm enters highly profitable range of activities. At break even point the fixed costs are fully recovered, any increase in sales beyond this level will increase profits equal to contribution. A firm operating with a high degree of leverage and above break even point earns good amount of profits.

In a firm does not have fixed costs then there will be no operating leverage. The percentage change in sales will be equal to the percentage change in profit. When fixed costs are there, the percentage change in profits will be more than the percentage in sales volume. Thus, degree of operating leverage can be computed as below:

\[
\text{Degree of Operating Leverage} = \frac{\text{Percentage Change in Profits}}{\text{Percentage Change in Sales}}
\]

Operating leverage is the responsiveness of firm’s EBIT of the changes in sales value. If refers to the sensitivity of operating profit before interest and tax to the changes in quantity produced and sold. When there is change of 1% in sales produces a more than 1% change in EBIT, there is presence of operating leverage and this measure is called as ‘degree of operating leverage.'
Degree of Operating Leverage

\[
\text{Degree of Operating Leverage} = \frac{\text{Percentage change in EBIT}}{\text{Percentage change in Sales}} \quad \text{or} \quad \frac{\% \Delta \text{EBIT}}{\% \Delta Q}
\]

The Degree of Operating Leverage can also be expressed as follows:

\[
\text{DOL} = \frac{Q (P - V)}{Q (P - V) - F}
\]

Where,

- DOL = Degree of operating leverage
- Q = Quantity produced and sold
- P = Selling price per unit
- V = Variable cost per unit
- F = Operating fixed costs

There is a presence Operating Leverage in the firm if:

\[
\frac{\% \Delta \text{EBIT}}{\% \Delta Q} > 1
\]

The degree of operating leverage measures the responsiveness of EBIT to change in level of output and it indicates the response in profits with the alteration of output and sales level.

2.2-3 COMPOSITE LEVERAGE:

Both financial and operating leverage magnify the revenue of the firm. Operating leverage affects the income which is the result of production. On the other hand, the financial leverage is the result of financial decisions. The composite leverage focuses attention of the entire income of the concern. The risk factor should be properly assessed by the management before using
the composite leverage. The high financial leverage may be offset against low operating leverage or vice-versa.

The degree of composite leverage can be calculated as follows:

\[
\text{Degree of Composite Leverage (DCL)} = \frac{\text{Percentage Change in EPS}}{\text{Percentage Change in Sales}}
\]

Or, Composite Leverage = Operating Leverage x Financial Leverage

**2.2-4 Risk Factor:**

It is true that a high leveraged situation will magnify the operating profits but it brings in the risk element too. The percentage change in profits will be more in a situation with higher fixed costs as compared to that where fixed costs are lower. The higher degree of leverage brings in more decrease in operating profits.
2.3 Analysis of Capital Structure

Q. What are the sources of capital structure?

<table>
<thead>
<tr>
<th>Sources</th>
<th>No. of Companies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>0</td>
</tr>
<tr>
<td>Equity + Preference</td>
<td>0</td>
</tr>
<tr>
<td>Equity + Debenture</td>
<td>0</td>
</tr>
<tr>
<td>Equity + Debenture + Preference</td>
<td>0</td>
</tr>
<tr>
<td>Equity + Term loan from financial Institutions</td>
<td>47</td>
</tr>
<tr>
<td>Any Other (Capital in case of a firm)</td>
<td>03</td>
</tr>
</tbody>
</table>

47 companies (94%) out of 50 respondents have mix of equity share capital and L.T. Loans from Financial Institutions. No company has preference share capital. 6% (3 out of 50) companies are firms and have capital provided by proprietor/partners.
Q. What is the proportion of capital structure in your business? (Appx.)

<table>
<thead>
<tr>
<th>Capital</th>
<th>Proportions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity/Owner’s Capital (in case of a firm)</td>
<td>60</td>
</tr>
<tr>
<td>Debt</td>
<td>40</td>
</tr>
<tr>
<td>Preference</td>
<td>0</td>
</tr>
</tbody>
</table>

Proportion of Sources of Capital

After taking the average of all the respondents, researcher found that the respondents generally have 60:40 ratio between Equity/Owner’s Capital (in case of a firm) and Debt that shows relatively lesser dependency on external debt.
Q. Does the capital structure affect the value of your company?

<table>
<thead>
<tr>
<th>Percentage of Companies</th>
<th>Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Yes</td>
</tr>
<tr>
<td>84</td>
<td>No</td>
</tr>
</tbody>
</table>

When asked about the effect of Capital Structure on the value of a firm, most of the respondents (84%) were agree on the positive effect and said yes against the response.
Q. Do you restructure your capital time to time (capital restructuring)?

<table>
<thead>
<tr>
<th>Percentage of Companies</th>
<th>Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>36</td>
<td>Yes</td>
</tr>
<tr>
<td>64</td>
<td>No</td>
</tr>
</tbody>
</table>

Though they accept that Capital Structure affects the value of their enterprise but surprisingly only 36% respondents restructure their capital time to time. This shows that probably they have careless attitude regarding restructuring of capital.
Q. Do you use EBIT / EPS analysis for capital restructuring?

<table>
<thead>
<tr>
<th>Percentage of Companies</th>
<th>Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Yes</td>
</tr>
<tr>
<td>88</td>
<td>No</td>
</tr>
</tbody>
</table>

Very few (only 12%) respondents use EBIT/EPS analysis for restructuring i.e. only one third of those respondents who restructure their capital use this method. Rest are doing restructuring probably without any analysis.