CHAPTER -1

INTRODUCTION

All type of business organizations (manufacturing, trading or service) must create facilities for carrying on its operations. These facilities are created by acquiring fixed assets and current assets. The decision pertaining to acquisition of these assets is known as investment decision. Once the investment decision is made, there arises a need for determining the appropriate amount of different sources of finance for fulfilling the investment needs. This decision is known as capital structure decision (Chandra, 2011). The corporate capital structure decision is a major area of study in finance. It affects the well beings of the company both in the short run as well as long run. The capital structure decision is important because of the need to maximize returns of the firm and because of the impact, such a decision has on the firm’s ability to deal with its competitive environment (Gill, et al., 2011). Capital structure refers to the mix or proportion of different sources of finance to total capitalization of a firm. It is the proportion existing between various sources of long term capital such as equity capital, preference capital and debentures raised in a firm. A firm should select a financing mix which maximizes its value or minimizes its overall cost of capital (Khan and Jain, 2011).

A company should plan its capital structure on its incorporation and all its subsequent financing decision should be made for accomplishing the same. Thus, capital structure decision is a continuous process and has to be made as and when a firm requires additional finances (Bose, 2012). The importance of capital structure lies in the fact that different sources of capital have different risk return characteristics. Certain sources of capital are more costly but lesser risky whereas others are lesser costlier but more risky. For instance equity is the least risky capital from the company’s point of view. Because it is not to be returned to the shareholders during the life time of the company and it does not involve fixed commitment regarding payment of dividends but it is most costly source of capital. The reason is that the return expected by the equity shareholders is higher than the return expected by other investors. On the other hand debt is more risky capital as it involves fixed commitment for the payment of interest and the creditor can go to the court to recover the principal and interest thereon but least costly. As the rate of interest is usually lower than the rate of dividend and interest is paid out of before tax profits. Preference capital lies between the equity and debt in terms of risk return consideration. Having regard to the differences in
the risk return characteristics of different sources of capital, capital structure is important because it affects the cost of capital and value of the firm.

1.1 EQUITY VERSUS DEBT FINANCING

Two principal sources of finance for a business firm are equity and debt (Chandra, 2011). The firm value can be defined as the aggregate of value of debt and value of equity. Equity capital is the investment made by shareholders in the form of equity shares for which they do not necessarily expect any fixed rate of return every year, on the other hand, debt capital represents that part of capital for which a fixed rate of return in the form of interest is expected by the suppliers of such capital. “The choice of a firm’s capital structure is a marketing problem. It is essentially concerned with how the firm decides to divide its cash flows into two broad components, a fixed component that is earmarked to meet the obligation towards debt capital and a residual component that belongs to equity shareholders” (Chandra, 2011). A company that finances whole of its assets through equity capital may be in a very advantageous position since no fixed return is required to be paid to anybody. Such a company may also be able to manage its finances very efficiently as it does not have to fulfill its commitments of outstanding loans or arrange further financing through loans. But equity capital may not come forward to the full extent in the case of all companies. In the case of highly profitable companies, the difficulty of meeting the financial requirement to the necessary extent will not arise. This is because of investors are assured of a fixed rate of return, they may be prepared to invest to the full extent of funds required for financing the projects. A question may arise as to whether it is desirable that the entire assets of a company are financed by equity capital. This is not desirable because using of long term funds (equity capital) for short term purposes may not be sound form of use of the available savings of the community. Besides due to the total quantum of equity finance available in a country being scarce and some companies following a policy of financing their entire assets through equity capital, certain other companies may not be able to go into production for want of equity capital. Further, a company which is making high profits will not like to increase share capital if other sources of finance are available. The lending institutions may like to invest their funds on short term basis and may be satisfied with a lower rate of return and be prepared to advance loans carrying a lower rate of return than what the equity shareholders are expecting. Therefore, it is in the interest of shareholders and lenders that a company should not use equity capital only to finance their entire assets.
1.1.1 PROS AND CONS OF EQUITY FINANCING

An important long-term source of financing, equity capital, offers a number of advantages to the company as follows:

- “There is no compulsion on companies to pay dividends. If the firm has not sufficient cash, then, company can skip dividend payment without suffering any legal consequences.
- Equity shares provide long term capital to the company. Equity capital has no maturity date, therefore, company has no liability for cash outflow coupled with its redemption.
- Equity capital provides the cushion to lenders, thus, enhances the creditworthiness of the company. Issue of equity shares strengthened the financial base of company to enable it to borrow additional funds when needed.
- Presently, equity dividends are tax-exempt in the hands of investors.
- Equity capital provides the investors with a better hedge against inflation because it increases the value of equity share when the value of asset rises during an inflationary period.

The disadvantages of raising capital through equity shares are as follows:

- Sale of equity shares to outsiders dilutes the control of existing owners.
- The cost of equity capital is high. The rate of return required by equity shareholders is generally higher than the rate of return expected by other investors.
- Equity dividends are paid out of profit after tax whereas interest payments are tax deductible expanse.
- The underwriting commission, brokerage cost and other issue expanses of issuing equity shares is generally higher than the cost of issuing other type of securities.
- Equity shares once issued cannot be redeemed easily, hence, reduces the flexibility in capital structure.
- Equity capital is riskier from investors’ point of view as there is uncertainty regarding dividend and capital gains”. (Chandra, 2012)

It is apparent from the above factors that equity capital appeals to the persons who are venturesome and willing to assume risks for higher returns. Equity shareholders share the prosperity and progress of the company. However, there is danger of losing control to
outsiders if the company decides to raise substantially large amount through equity shares. Controlling position of existing shareholders may be jeopardized. Therefore, the existing shareholders may be averse to raise additional funds through share capital.

1.1.2 PROS AND CONS OF DEBT FINANCING

A company uses the debt financing to magnify the return to its equity shareholders as debt capital is a cheaper source of funds. There are some obvious advantages of debt capital which motivate the companies to use debt capital in its capital structure, these are as follows:

- Interest on debt is a tax deductible expense whereas equity and preference dividends are paid out of profit after tax.
- Debt financing does not result in dilution of control because debt holders are not entitled to vote.
- Debt holders do not share the surplus available for equity shareholders as payments to them are limited to interest and principal amount.
- Floatation costs of debt are significantly lower than equity and preference share capital.
- The burden of servicing debt is generally fixed in nominal terms. Hence, debt provides protection against high anticipated inflation.
- The maturity of a debt instrument can be tailored to the needs of the borrowing firm.
- Debt may make managers more disciplined for utilizing free cash flows. If the managers in firms have substantial free cash flows and no debt, then, they have no incentive to be efficient in either project choice or project management.

Borrowings can expose the firm to default and eventual liquidation, increase the agency problems arising from the conflict between the interest of equity investors and lenders and reduce the flexibility of the firm to take actions now or in the future. The disadvantages of debt financing are as follows:

- Debt financing entails fixed interest and principal repayment obligation. If the firms fail to meet these commitments that may cause great deal of financial embarrassment and even lead to bankruptcy.
- Debt financing increases financial leverage, which according to CAPM, increases the cost of equity of the firm.
Debt covenants reduce the flexibility of firms to make investments, financing or dividend decisions. Debt contracts impose restrictions that limit the borrowing firm’s financial and operating flexibility. The value of firm may be maximized by preserving some flexibility to take on future projects as they arise.

- In the times of deflation, the real cost of debt will be greater than expected.
- Equity investors tend to favour actions that increase the value of their holdings, even at the risk that the bondholders will not receive their promised payments, that conflict creates the agency costs. (Chandra, 2012 and Damodaran, 2012)

By considering the abovementioned factors, companies with stable and huge enough earning to cover fixed interest charges on debt capital may use the debt funds. Companies not sure of future earnings would incur the loss of insolvency by using debt funds. Any factor contributing to instability of income would call for the company to restrict its financing mainly to equity share capital. Thus, a company pursuing a new industrial activity would have to depend upon the issue of equity shares to raise long term funds. A new manufacturing concern requiring large and expensive plants and machines would place relatively less reliance on debt because its earnings are uncertain. Projects with longer gestation period and lower rate of profitability should have strong equity base while keeping the debt funds to the minimum. Above all, it should be remembered that “financial theory has not developed to the point where data relative to these considerations are fed at one end of a computer and an ideal financial structure pops out of the other. Consequently, human judgement must be used to resolve the many conflicting forces in laying plans for the types of funds to be sought” (Khan and Jain, 2011).

Capital structure decisions are likely to affect companies' tax payments, since corporate taxation typically distinguishes between different sources of finance. Interest expenses are tax deductible to the entity paying them and thus, create tax savings whereas dividend payments have to be made out of pre-tax cash flows (Damodaran, 2012). Taxation of capital income at the shareholder level often differentiates between the types of capital as well. Therefore, it can be expected that the relative tax benefits of different sources of finance have an impact on financing decisions. Theory suggests that both corporate profit tax and personal capital income taxes should be considered in order to analyze the tax consequences of capital structure choices more accurately (Graham and Harvey, 2001). The capital structure of a firm is a mix of different securities. The firm can choose a mix of financing options to finance its assets so that its overall value can be maximized (Abor, 2005).
1.2 FACTORS AFFECTING CAPITAL STRUCTURE DECISIONS

Capital structure planning is very significant task to survive the business in long run. The term capital structure refers to the relationship between the various long terms forms 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 firm to earn more from the use of sources then their cost so as to increase the return on owner’s equity. It is true that capital structure cannot affect the total earning of a firm but it can affect the share of earnings available for equity shareholders. Finance manager and top level management decide which source of fund or funds should be selected after scrutinizing the factors affecting capital structures. The right capital structure planning increases the power of company to face the losses and change in financial markets. Every time the funds are needed, the finance manager has to study the pros and cons of the various sources of finance, so as to select the most advantageous capital structure. Therefore, the following major factors should be kept in mind while determining the capital structure of a company:

➢ Trading on Equity

The word “equity” stands for the ownership of the company. Trading on equity means equity is being used to raise borrowed funds on reasonable basis. It refers to additional profits that equity shareholders earn because of issuance of debentures and preference shares. It is based on the thought that if the rate of dividend on preference capital and the rate of interest on borrowed capital is lower than the general rate of company’s earnings, equity shareholders are at advantage, therefore, a company should go for a judicious blend of preference shares, equity shares as well as debentures. Trading on equity becomes more important when expectations of shareholders are high.

➢ Risk of a Company

When the company plans capital structure before getting money from different sources, it can do many adjustments for reducing their overall risk. The finance manager attempts to design the capital structure in such a manner so that risk and cost are the least and control of the existing management is diluted to the least extent (Iyer, 2012). If the company
has arranged funds from three sources of finances i.e., equity share capital, debentures and preference shares, the company have to pay debt at its maturity at any cost and its interest at fixed rate. Therefore, companies try to get minimum debt in new business because in new business, the rate of return will be less than rate of interest and for getting more loan means taking high risk of financial crisis. But, if the business will be succeeded, at that time, companies can increase estimated amount of debt by just changing the value of debt in their capital structure. At that time companies can easily pay the interest because their return on investment may be very high and companies can enjoy the trading on equity.

➢ **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 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. Utilizing the maximum loan capacity to reduce tax expenses is not always the right decision for a company. The company should have the flexibility to borrow when the situation changes due to changes in government policies, recessionary conditions in the market place, disruption in supplies, decline in production caused by power shortage or labour unrest, intensification in competitions and most importantly emergence of profitable investment opportunities (Chandra, 2011). The magnitude and timing of such developments cannot often be forecast easily. Unused debt capacity at such a time could enhance this flexibility. Thus, through maneuverability, companies can mobilize funds from different sources of fund by including maximum alternatives in planned capital structure. Suppose, if RBI increases the interest rate, it means the cost for getting debt will be high, at that time, companies can choose any other cheap source of fund.

➢ **Cost of Capital**

The minimum rate of return expected by the suppliers of finance is called the cost of capital (Bose, 2012). Cost of capital is an important consideration in capital structure decisions. The firms should generate enough revenue to meet its cost of capital and finance its growth. Therefore, along with the risk as a factor, the finance manager has to consider the cost aspect while planning the capital structure. The combination of debt and equity should be in such a manner that the market value per share increases and overall cost of capital decreases.
 ➢ **Level of Control**

The number of equity shares held by an individual shareholder determines his level of control and voting rights in the company. The equity shareholders have got maximum voting rights in a concern as compared to the preference shareholders and debenture holders. Preference shareholders have reasonably less voting rights while debenture holders have no voting rights. If the existing shareholders wish to retain their voting rights in their hands, the capital structure will consist of debentures and bonds rather than equity shares. This is because by funding through equity the control of the existing shareholders will be threatened.

 ➢ **Capital Market Condition**

The capital structure of company depends on the capital market conditions prevalent in that country. The market price of the shares of any company has got an important place in the lifetime of the company. If the stock market is going through the depression period, the company’s capital structure generally consists of debentures and loans, whereas, during boom period, the company’s capital should consist of share capital generally equity shares.

 ➢ **Nature and Size of Company**

All public utility concerns have different capital structure as compared to other manufacturing concerns. Public utility concern may employ more amount 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. The capital structure of small size business firm’s generally consists of loans from banks and retained profits. While on the other hand, big companies having goodwill, stability and an established profit can easily go for issuance of shares and debentures as well as loans and borrowings from financial institutions (Iyer, 2012). Larger firms are generally more diversified, therefore, size can be viewed as an inverse proxy of the probability of default and the costs associated with it and should thus be positively associated with debt (Titman and Wessels, 1988). The bigger the size, the wider is total capitalization.

 ➢ **Growth**

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 the firm. Companies with high growth rate will require more funds for its expansion schemes which
will be met through raising debt. 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.

➢ **Cash Flow Ability to Service Debt**

While making a choice of the capital structure, the future cash flow position should be kept in mind. Debt financing implies burden of fixed charge due to the fixed payment of interest and the principal. Debt capital should be used only if the cash flow position is really good because a lot of cash is needed in order to make payment of interest and refund of principal amount at maturity. A firm which shall be able to generate larger and stable cash inflows can employ more debt in its capital structure as compare to the one which has unstable and lesser ability to generate cash inflows (Bose, 2012). Whenever a firm wants to raise additional funds, it should estimate 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.

➢ **Period of Financing**

The period for which the finances are required is also an important factor to be kept in mind while selecting an approximate capital mix. If the company wants to raise finance for short period, it should go for loans from banks and other institutions while for long period it should go for issue of shares and debentures.

➢ **Stability of Sales**

An established business which has a growing market and high sales turnover, the company is in position to meet fixed commitments. Interest on debts has to be paid regardless of availability of surplus profit. Therefore, when sales are stable and high, thereby the profits are high and company is in better position to meet such fixed commitments like interest on debentures and dividends on preference shares. If company is having unstable sales, then the company will not be in a position to meet fixed obligations. So, equity share capital proves to be safe in such circumstances (Iyer, 2012).

➢ **Regulatory Framework**

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 frame work within
which capital structure decision has to be made. For instance, banking companies can raise funds by issuing share capital alone, not any other kind of security. Similarly, it is compulsory for other companies to maintain a given debt-equity ratio while raising funds. The ideal debt-equity ratios should not exceed 2:1 (for capital intensive projects a higher debt equity ratio may be allowed). The public issue of shares and debentures has to be made under SEBI guidelines. In raising equity capital, a company has to fulfill certain legal terms and conditions which make equity capital funds more complicated than raising debt. A company may opt for debt in an attempt to sideline the cumbersome process.

➢ Choice of Investors

The company’s policy generally is to have different categories of investors for securities. It is necessary to meet the requirement of institutional as well as private investor, when debt financing is used. Therefore, a capital structure should give enough choice to all kind of investors to invest. Investors may be generally classified in two categories i.e., bold investors and cautions investors. Bold and adventurous investors generally go for equity shares and loans and debentures are generally raised keeping into mind conscious investors.

➢ Issue Innovative Securities

Good planning of capital structure will make versatile to finance manager for getting money from new sources. If finance managers have been aware of the new developments in finance field, then, they can generate innovative idea for getting money from public at low risk. A security may add to the value of the firm if it reallocates risk from those who are less inclined to bear it to those who are more willing to assume it or enhances liquidity or diminishes agency costs emanating from the conflict between shareholders, managers and creditors or lowers the combined burden of tax to the issuer and investors or bypasses ingeniously some regulatory restriction (Chandra, 2011). Shareholders or finance managers can do meeting with investors and motivate them to invest in new instruments of finance.

➢ Cost of Floatation

Floatation costs include commission of underwriters, brokerage, stationery expenses, etc. Although not very significant, yet cost of floatation of various kinds of securities should be considered while designing capital structure. The cost of floating a debt is generally less than the cost of floating equity, 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.

- **Personal Considerations**

  The personal consideration and abilities of management will have also influence on the capital structure of a firm. If the top managements are experienced and are very enterprising, they do not hesitate to use more of debt in their financing as compared to the less experienced and conservative management.

- **Assets Structures**

  The liquidity and the composition of the 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.

- **Avail the Tax Advantage of Debt**

  Interest on debt is a tax-deductible expense and hence reduces the tax burden. The advantage of a tax shelter motivates the company to raise more loans from the market. High rate of corporate taxes on profits compel the companies to prefer debt financing, whereas dividend on shares is not allowable expenses for deduction. The market value of the firm would increase with the decreased tax burden. Empirical evidence suggests that a rupee of debt enhances company value by 10 to 15 paise. Thus, it makes sense to avail of the tax advantage of debt (Chandra, 2011).

- **Resort to Timing Judiciously**

  Although it is difficult to predict the proper timing for raising capital in the market, the following thumb rules may be helpful in improving a company’s performance in terms of timing into the market:

  1. Take the best possible opportunity available at present in the market rather than waiting for a more advantageous time in the future. It may or may not materialize.
  2. Follow the trend in the financial market.
  3. Wait till the market captures the full potential of the company and reflects it in the share price. (Chandra, 2011)
Capital Structure of Other Companies

Capital structure is influenced by the industry to which a company is related. All companies related to a given industry produce almost similar products, their costs of production are similar, they depend on identical technology, they have similar profitability and hence, the pattern of their capital structure is almost similar. Because of this fact, there are different debt-equity ratios prevalent in different industries. Hence, at the time of raising funds a company must take into consideration debt-equity ratio prevalent in the related industry.

Finance Proactively Not Reactively

Financing decisions should be decoupled from investment decisions. Adi Godrej says, “Raising money at a time of adversity is infinitely more difficult than in times of prosperity. So, raise money when you can, not when you need it”. Put differently, finance proactively, rather than reactively (Chandra, 2011).

1.3 THEORIES OF CAPITAL STRUCTURE

Capital structure theories have attracted a great attention in the field of financial management and also have its attendant controversies. A financial expert (Pandey, 1999) differentiated between capital structure and financial structure. He affirms that the various means used to raise funds represented the financial structure of the enterprise. He defined capital structure as the proportionate relationship between long-term debt and equity. Equity is also defined to include share capital, share premium, reserves and surplus (retained earnings). Equity is a good source of capital to business, particularly, the fund from the stock market has been a source of capital for the corporate sector. Capital structure is the proportions of debt instruments and preferred and common stock on a company’s balance sheet (Van Horne, 2002). The firm’s mix of different securities is known as its capital structure. The choice of capital structure is fundamentally a marketing problem. The firm can issue dozens of distinct securities in countless combinations, but it attempts to find the particular combination that maximizes its overall market value (Brealey and Myers, 1996). The impact of capital structure on the overall cost of capital in one hand and the value of the firm on the other hand has been a major source of controversy among finance scholars. This has also led to the controversy over the existence of optimum 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 main contributors to the theories are Durand, Ezra Solomon, Modigliani-Miller and Myers. The important theories are discussed below:

1. Net Income Approach
2. Net Operating Income Approach
3. The Traditional Approach
4. Modigliani and Miller Approach
5. Static Trade-off Theory
6. Pecking Order Theory

1.3.1 NET INCOME APPROACH

A decision about capital structure, according to this approach, is relevant to the valuation of the firm (Khan and Jain, 2011). This approach observes that an alteration in the capital structure of a firm causes change in the overall cost of capital (WACC) and also in the total value of the firm. This theory advocates 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 (Bose, 2010)

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. As debt in the capital structure is increased, the weighted average cost of capital (Ko) decreases and approaches the cost of debt since debt is a cheaper source of finance. 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. Thus, with a judicious mixture of debt and equity, a firm can evolve an
optimum capital structure which will be the one at which the value of the firm is the highest and the overall cost of capital is the lowest (Khan and Jain, 2011). The effect of leverage on cost of capital as per the Net Income (NI) approach has been graphically shown in Figure 1.1.

The degree of leverage is plotted on the abscissa and various costs, viz. Ke, Kd and Ko are plotted on the ordinate. From the figure, it is clear that as the leverage increases, overall cost of capital decreases because the proportion of debt, the cheaper source of finance, increase in the capital structure. It can be concluded that firm’s overall cost of capital would be minimum at 100 per cent level of debt, therefore, as per the NI Approach, the firms can employ almost 100 per cent debt to maximize its value. The value of a firm on the basis of Net Income Approach can be ascertained as below:

\[ V = S + D \]

Where,

\( V \) = Total value of firm

\( S \) = Market value of equity shares

\( D \) = Market value of debt.

And, overall cost of capital or weighted average cost of capital can be calculated as:

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

(Source: Khan and Jain, 2011)
1.3.2 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 the Net Operating Income Approach, capital structure changes do not affect the market value of the firm or the overall cost of capital. It implies that the overall cost of capital remains the same irrespective of the capital structure (Iyer, 2012). Thus, there is nothing as an optimal capital structure and every capital structure is the optimum capital structure. This theory presumes that:

(i) The overall cost of capital remains constant for all degrees of leverage.
(ii) The net operating income is capitalized at an overall capitalization rate to find out the total market value of the firm.
(iii) There are no corporate taxes.
(iv) Cost of debt will remain constant for all degrees of leverage.
(v) The use of low cost debt enhances the risk of equity shareholders, this in turn, enhances the equity capitalization rate. Thus, the benefit of debt is nullified by the increase in the equity capitalization rate. The cost of equity will rise in such a way as to keep the WACC constant.
(vi) Under this approach, optimal capital structure does not exist as WACC remains constant. (Bose, 2012)

This approach derives its strength from the assumption that increase in debt capital increases the expected rate of return by the stockholders and the benefit of using relatively cheaper debt funds is offset by the loss arising out of the increase in cost of equity. The reasons propounded for such assumptions are that the increased use of debt increases the financial risk of the equity shareholders and 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.

The value of a firm on the basis of Net Operating Income approach can be determined as below:

\[ V = \frac{\text{EBIT}}{K_o} \]
Where,

\( V = \) Value of firm

\( EBIT = \) Earnings before Interest and Tax

\( K_0 = \) Overall Cost of Capital

In other words, the market evaluates the firm as a whole. The split of capitalization between debt and equity is, therefore, not significant. The market value of equity, according to this approach is the residual value which is determined by deducting the market value of debentures from the total market value of the firm. Symbolically, total market value of equity capital has been ascertained as follows:

\[ S = V - D \]

Where,

\( S = \) Market value of equity shares

\( V = \) Total market value of a firm

\( D = \) Market value of debt (Khan and Jain, 2011)

The relationship between leverage and various costs, viz. \( K_0 \), \( K_d \) and \( K_e \) under Net Operating Income Approach can be portrayed in Fig. 1.2. The Figure shows that an increase in the use of debt funds, which are apparently cheaper, is offset by an increase in the equity capitalization rate. This occurs because the equity investors seek more compensation as they are exposed to higher risk arising from increase in degree of leverage.
1.3.3 THE TRADITIONAL APPROACH

The main propositions of Traditional Approach are:

1. The cost of debt capital, \( K_d \), remains more or less constant up to a certain level of leverage but rises thereafter at an increasing rate.

2. The cost of equity capital, \( K_e \), remains more or less constant or rises only gradually up to a certain level of leverage and rises sharply thereafter.

3. The average cost of capital, \( K_o \), as a consequence of the above behavior of \( K_e \) and \( K_d \) (i) decreases up to a certain point (ii) remains more or less unchanged for moderate increases in leverage thereafter and (iii) rises beyond a certain point. (Chandra, 2011)

The Traditional Approach also known as intermediate approach is regarded as a middle of the road position between the two extremes of Net Income Approach and Net Operating Income Approach. According to this theory, the value of the firm can be increased or the cost of capital reduced through judicious use of leverage. The approach suggests that the value of the firm increases or the cost of capital decreases initially within a reasonable limit of debt after which further increase in leverage reduces the value of the firm or increases the cost of capital. Beyond a particular point, the cost of equity increases because increased debt increases the financial risk of the equity shareholders. 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 advantage of 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 raises beyond a certain point. Even the cost of debt may increase at this stage due to increased financial risk. Thus, in the Traditional Approach, an optimum capital structure can be reached by a proper debt-equity mix and it occurs when the market value of the firm is maximum and the cost of capital is minimum. At the optimum capital structure, the marginal real cost of debt, defined to include both implicit and explicit, will be equal to the real cost of equity. For a debt-equity ratio before that level, the marginal real cost of debt would be less than that of equity capital, while beyond that level of leverage, the marginal real cost of debt would exceed that of equity (Khan and Jain, 2011). The Traditional Approach can be depicted graphically as in Fig. 1.3.
The traditional view of leverage is commonly referred to as one of ‘U’ shaped cost of capital curve. In such a situation, the degree of leverage is optimum at a point at which the rising marginal cost of borrowing is equal to the average overall cost of capital, thus, according to traditional approach, the cost of capital of the firm as also its valuation is dependent upon the capital structure of a firm and there is an optimum capital structure in which the firm’s Ko is minimum and its value (V) is maximum. (Khan and Jain, 2011)

1.3.4 MODIGLIANI AND MILLER THEORY (MM’s THEORY)

MM 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. Modigliani and Miller, 1958 challenged the traditional view as to the effect of leverage on the cost of capital. They developed a behavioral justification support for the Net Operating Income Approach. Without taxes, the cost of capital and market value of the firm remain constant throughout all degrees of leverage (Modigliani and Miller, 1958). By using Arbitrage theory, they supported their argument that capital structure is irrelevant in determining the market value of a company. A change in debt-equity has no influence on the cost of capital and the market value of the firm.

ASSUMPTIONS OF THE M-M THEORY

The M-M approach’s proposition that the weighted average cost of capital is constant irrespective of the type of capital structure is based on the following assumptions:
i) Perfect Capital Market: Information is freely available and there is no problem of asymmetric information; transactions are costless; there are no bankruptcy costs; securities are infinitely divisible.

ii) Rational Investors and Managers: Investors behave in a rational manner to choose a combination of risk and return that is most advantageous to them and managers act in the interest of shareholders.

iii) Homogenous Expectations: Investors have identical expectations regarding future operating earnings.

iv) Equivalent Risk Class: Firms can be grouped into equivalent risk classes on the basis of their business risk.

v) Absence of Taxes: There are no corporate taxes.

vi) Investors can borrow at the same rate as corporations.

vii) EBIT is not affected by the use of debt.” (Chandra, 2011 and Brigham and Ehrhardt, 2012)

By MM Theory, the increase in cost of equity is just enough to offset the benefit of low cost debt when there is increase in the level of debt. Thus, average cost of capital is constant for all levels of leverage. From the assumptions of the M-M theory, two propositions are set out:

**PROPOSITION I**

The basic premise of the MM Approach is that, given the above assumptions, the total value of a firm must be constant irrespective of the degree of leverage. MM theory states that the cost of capital as well as the market price of shares of any firm is independent of its capital structure (Khan and Jain, 2011). Thus, the value of company is determined by the assets in which the company has invested and not how those assets are financed, hence, the following situation must exist:

\[ V_L = V_U = S + D \]

Where,

\( V_L \) = Value of a Levered company,
\[ V_U = \text{Value of Unlevered company}, \]
\[ S = \text{Value of the Levered firm’s stock and} \]
\[ D = \text{Value of Debt (Brigham and Ehrhardt, 2012)} \]

The operational justification for the MM hypothesis is the arbitrage process. The process of buying an asset or security in one market and selling the same in another market to derive benefit from the price differential is referred to as arbitrage. The arbitrage procedure involves that an investor will sell his shares in the company having the higher market value and move to the company having the lower market value lending or borrowing in order to carry out the arbitrage transaction. If two firms with same level of business risk but different levels of gearing sold for different values, then shareholders would move from over-valued firm to undervalued firm to maintain financial risk at the same level. The process of arbitrage would drive the price of the two firms to a common equilibrium total value. “The use of debt by investor for arbitrage is called as ‘home-made’ or ‘personal’ leverage. The essence of arbitrage argument of Modigliani and Miller is that the investors are able to substitute personal leverage or home-made leverage for corporate leverage”. (Khan and Jain, 2011)

**PROPOSITION II**

“The expected return on equity is equal to the expected rate of return on assets, plus a premium. The premium is equal to the debt-equity ratio times the difference between the expected return on assets and the expected return on debt”. (Chandra, 2011) The cost of equity rises exactly in line with any increase in gearing to offset any benefits conferred by the use of cheap debt. Thus, the return on equity of a geared firm is calculated as follows:

\[ r_E = r_A + [(r_A - r_D) \times D/E] \]

Where,
\[ r_E = \text{Expected return on equity} \]
\[ r_A = \text{Expected return on assets} \]
\[ r_D = \text{Expected return on debt} \]
\[ D/E = \text{Debt-equity ratio} \]
The implications of MM’s proposition II have been displayed in Figure 1.4. According to this proposition, at the low levels of debt, the firm’s debt is considered risk-free. This implies that $r_D$ is independent of $D/E$ and hence, $r_E$ increases linearly with $D/E$. But, when the debt of firm crosses the threshold limit, the chances of financial risk increases and thus, increases the expected return on debt also. To compensate for this, the rate of increase in $r_E$ decreases as shown in figure. The benefit of leverage is exactly taken off by the increased cost of equity and consequently the firm’s market value will remains unaffected.

**CRITICISM OF MM APPROACH**

The leverage irrelevance theorem of MM is based on unrealistic assumptions, but in real world, these assumptions are purely theoretical and have no practical relevance:

i) “Firms are liable to pay taxes on their income. In addition, investors who receive returns from their investments in firms are subject to taxes at a personal level.

ii) Bankruptcy costs can be quite high.

iii) Agency costs exist because of the conflict of interest between managers and shareholders and between shareholders and creditors.

iv) Managers seem to have a preference for a certain sequence of financing.

v) Informational asymmetry exists because managers are better informed than investors.

vi) Personal leverage and corporate leverage are not perfect substitutes.” (Chandra, 2011)
The assumption that there is no corporate tax is unrealistic for a corporate firm. From this perspective, MM has modified their theory by considering tax relief available to a geared company when the debt component is existing in the capital structure.

**MM THEORY WITH CORPORATE TAXATION**

Modigliani and Miller, in their article of 1963 have recognized that tax relief on interest payment does lower the Weighted Average Cost of Capital (WACC) and came to a different conclusion that the WACC will always continue to fall, up to a leverage level of 100%. Here, the MM theory demonstrates a situation of a firm where corporate taxation is put under consideration. The tax burden on the company will lessen to the extent of relief available on interest payable on the debt, which makes the cost of debt cheaper and reduces the WACC of the firm to the lower where capital structure of a company has debt component. MM theory admits 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. The increase in the value of the company is the present value of further tax relief referred to as a tax shield. Thus, the optimum capital structure can be achieved by maximizing the debt mix in the equity of a firm. The present value of the tax shield is equal to the corporate tax rate, \( T \), multiplied by the amount of debt, \( D \).

\[
V_L = V_U + TD
\]

It is evident from the equation that greater the leverage, greater the value of the firm, other things being equal. This implies that optimal capital structure is virtually 100 percent debt (Brigham and Ehrhardt, 2012). Value of levered and unleveled firm under the MM Model (assuming that corporate taxes exist) has been shown in the following figure:

**MILLER: THE EFFECT OF CORPORATE AND PERSONAL TAXATION**

MM theory considered only corporate taxes. However, Miller (1977) included the effect of personal as well as corporate taxes in capital structure theory. Now, the objective of firm is no longer to minimize the corporate tax bill, the firm should try to minimize the present value of all taxes paid on corporate income (Brealey, et al., 2012). Miller argued that the existence of tax relief on debt interest but not on equity dividends would make debt capital more attractive than equity capital to companies. But the more favourable tax treatment of income from stock lowers the required rate of return on stock and thus favours the use of equity financing (Brigham and Ehrhardt, 2012). Companies must be ready to offer
a higher return on debt in order to attract greater supply of debt. When the company offers an after-personal-tax return on debt at least equal to the after-personal-tax return on equity, equity supply will switch over to debt supply to the company. This is based on the assumption that interest payments on debt are allowed as a tax deduction whereas dividends on equity capital are not allowed for tax deduction. Miller showed that the net impact of corporate and personal taxes is given by this equation:

\[ V_L = V_U = \left[ 1 - \frac{(1-T_c)(1-T_s)}{(1-T_d)} \right] D \]

(Source: Brigham and Ehrhardt, 2012, p.575)

Where \( T_c \) is the corporate tax rate, \( T_s \) is the personal tax rate on income from stocks and \( T_d \) is the tax rate on income from debt. “Miller argued that the marginal tax rates on stock and debt balance out in such a way that the bracketed term in above equation is zero, so, \( V_L = V_U \) but most observers believe that there is still a tax advantage to debt. Thus, it appears as though the presence of personal taxes reduces but does not completely eliminate the advantage of debt financing”. (Brigham and Ehrhardt, 2012)

1.3.5 THE TRADE-OFF THEORY

The Trade-off theory asserts that there is an optimal capital structure which maximizes the firm value. This view is different from the views of seminal work of Modigliani and Miller (1958) when they assumed that there is no taxation and found the independence of capital structure from the value of firm. However, in later studies,
Modigliani and Miller (1963) introduced the corporate income tax effect into their model. According to the Trade-off theory, financing by debt has certain advantages compared with equity because the debt will be used to help the company reduce tax liability and increased the cash flow after tax. According to this theory, there is an optimal debt ratio which maximizes the value of the firm and it is usually viewed as a trade-off of the costs (consisting of higher interest rates and bankruptcy costs) and benefits of debt financing (interest tax shield) of borrowing, holding the firm’s assets and investment plans constant (Chandra, 2011). Thus, balancing these costs against the benefits of debt is a trade-off and leads to the idea that there is an optimal capital structure for each firm which represents its best trade-off and maximizes firm value (Bond and Scott, 2006). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. However, some empirical evidences are inconsistent with the idea that there is an optimal debt level. The literature has consistently found that profitability is negatively correlated with leverage (Rajan and Zingales, 1995; Fama and French, 2002; Frank and Goyal, 2003). The trade-off model which emphasizes the tax benefits of debt predicts a positive relationship as firms with more profits have more to shield by the use of debt.

A summary of the Trade-off theory can be expressed graphically in figure1.6. Some observations about the figure are as follows:

1. Under the assumptions of the Modigliani-Miller with corporate taxes paper, a firm’s value will be maximized if it uses virtually 100 per cent debt and the line labeled “MM Result Incorporating the Effects of Corporate Taxation” in figure 1.6 expresses the relationship between value and debt under their assumptions.

2. There is some threshold level of debt, labeled $D_1$ in Figure 1.6, below which the probability of bankruptcy is so low as to be immaterial. Beyond $D_1$, however, bankruptcy-related costs become increasingly important and they reduce the tax benefits of debt at an increasing rate. In the range from $D_1$ to $D_2$, bankruptcy-related costs reduce but do not completely offset the tax benefit of debt, so from this point on increasing the debt ratio lowers the value of the stock. Therefore, $D_2$ is the optimal capital structure. Of course, $D_1$ and $D_2$ vary from firm to firm, depending on their business risks and bankruptcy costs.
While theoretical and empirical work supports the general shape of the curve in Figure 1.6, this graph must be taken as an approximation, not as a precisely defined function. (Ehrhardt and Brigham, 2009, p. 490-91)

1.3.6 THE PECKING ORDER THEORY

Myers (1984) and Myers and Majluf’s (1984) Pecking Order model is driven by asymmetric information and signalling problems associated with external financing. The form of debt a firm chooses can act as a signal of its need for external finance. Explaining for this point of view, Myers and Majluf (1984) assumed that there is an information asymmetry between shareholders and managers. Certainly, managers may have better information about the firm’s performance than shareholders, hence, they work for their benefits. Hence, when the firm is performing poorly, managers try to avoid debt because it may cause their job loss. The Pecking Order theory also suggests that equity is a less preferred means to raise capital. This is based on signaling theory (Ross, 1977) which proposes that an equity issue would suggest a firm is overvalued and managers are taking advantage of this over-valuation by issuing shares. As a result, investors will believe that a decision not to issue new shares and
using internal fund or debt is a positive signal (Harris and Raviv, 1991). Myers (1984) argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance. The theory asserts that a company’s capital structure is more dependent on internal cash flows, cash dividend payment and acceptable investment opportunities (NPV > 0) (Nguyen, 2010). The strict interpretation of the model implies that firms do not have any target debt ratio. This theory states that when a company wants to finance its long-term investments, it selects by following a well defined order of preference with respect to the sources of finance it uses. At the initial stage, the firm will prefer to use internally generated funds. If the internal funds are insufficient to meet its investment requirements then it will prefer raising external funds in the form of term loans and then non-convertible debentures and bonds and then convertible debt instruments. The last to be considered is in the form of new equity capital. The attraction of interest tax shield and the threat of financial distress lead to change in debt ratios when there is an imbalance of internal cash flow. Highly profitable firms with few investment opportunities will work down to a low debt ratio. Firms whose investment opportunities outrun internally generated cash flow will end up borrowing more and more (Brealey, et al., 2012). Thus, changes in debt ratios are driven by the need for external funds, not by any attempt to reach an optimal capital structure.

PECKING ORDER ASSUMPTIONS

The Pecking-order theory is based on the following assumptions:

(i) There are no costs involved in using internally generated funds.
(ii) It is expensive to raise external funds.
(iii) Raising of debt is relatively cheaper than raising of equity funds.
(iv) Raising of term loans from banks and financial institutions is cheaper than issuing debt securities for raising finances.
(v) Issue of equity capital involves relatively high issue cost.
(vi) Servicing of debt funds is cheaper than servicing of equity funds (Ravi, 2007).
IMPLICATIONS OF PECKING ORDER THEORY

This theory says therefore that:

(i) Firms prefer internal financing to external financing.
(ii) They adopt their target dividend payout ratios to their investment opportunities.
(iii) Sticky dividend policies, plus unpredictable fluctuations in profitability and investment opportunities mean that internally generated cash flows is sometimes more than capital expenditure and other times less. If it is more, the firm pays off debt or invests in marketable securities. If it is less, the firm draws down its cash balance or sells its marketable securities.
(iv) If external finance is required, firms issue the safest security first. That is, they start with debt then possibly hybrid securities such as convertible bonds, then perhaps equity as a last resort.
(v) As firm sources for external funds, it will follow the pecking order of securities (Brealey, et al., 2012).

The Pecking Order theory cannot be completely right, otherwise, firms would never issue equity when they could have issued investment-grade debt. Nevertheless, it does offer an explanation for some of the observations not explained by the Static Trade-off model (Bond and Scott, 2006). It explains the strong negative association between profitability and leverage found by various studies (Rajan and Zingales, 1995; Fama and French, 2002; Frank and Goyal, 2003; Gaud, et al., 2005). However, evidence exists that contradicts the predictions of Pecking Order behavior (Taub, 1975 and Jenson, 1983).

From the above discussion, it can be stated that there is sharp differences of opinion in the academic literature. NI Approach argues that leverage affects the value of firm and cost of capital, thus, optimum capital structure exists at the maximum level of debt. The NOI Approach is diametrically opposite to the NI Approach, which denies the relevance of leverage in capital structure decision. MM concurs with NOI and provides a behavioural justification for the irrelevance of capital structure. MM also argues that with the corporate taxes, debt has a definite advantage as interest paid on debt is tax deductible and leverage will lower the overall cost of capital. Traditional theory strikes a balance between these extremes and state that a firm can increase its value and reduce its cost of capital through a judicious mix of debt and equity up to a certain point but beyond that point the use of additional debt will increase the overall cost of capital. At such a point, the capital structure is optimum.
Trade-off theory on capital structure trades off the advantages of debt financing against the costs of financial distress. The Pecking Order theory enumerates the preferred order of raising finances. Firms use retained earnings at first hand and if external finances are required, they issue debt and equity is used as a last resort (Khan and Jain, 2011).

1.4 OPTIMUM CAPITAL STRUCTURE

The capital structure is said to be optimum when the marginal real cost (explicit as well as implicit) of each available source of financing is identical. With an optimum debt and equity mix, the cost of capital is minimum and the market price per share (or the total value of the firm) is maximum (Khan and Jain, 2011). The determination of optimum capital structure is difficult task for each company. The determination of exact proportion of debt and equity which minimize the overall cost of capital is just impossible. However, approximate amount of debt can be ascertained to maximize the shareholders wealth. Miller (1977) has argued that there is an optimal debt-equity ratio for the economy as a whole, no single firm can benefit by varying its own debt-equity ratio. There are significant variations among different industries, thus, a fixed proportion of debt-equity cannot serve the purpose of varying needs of all industries. Different firms falling under one industry may have much in common regarding their financial plan, but they still may exhibit different earning trends, accounting methods and practices, general future conditions and predictions about the economy and capital market. The factors affecting capital structure varies widely according to the conditions in the economy, the industry and the company itself. Above all, the freedom of management to adjust the mix of debt and equity in accordance with these criterion is limited by the availability of the various types of debt to have an appropriate capital structure but the debt may not be available to the company because the suppliers of funds may think that it will involve too much financial risk for them (Khan and Jain, 2011). Therefore, a number of quantitative and qualitative factors including subjective judgement of financial managers should be considered for designing optimum capital structure in a given situation. Capital structure should be designed in such a way that the interest of equity shareholders, the ultimate owners, should be the main concern, however, the interest of other interested groups such as government, management, employees, suppliers, customers, etc. should be given due weightage.

A number of theories have been advanced in explaining the capital structure of firms. Despite the theoretical appeal of capital structure, researchers in financial management have
not been able to find the optimal capital structure. The best that academics and practitioners have been able to achieve are prescriptions that satisfy short-term goals. The lack of a consensus about what would qualify as optimal capital structure in the Indian Corporate Sector has motivated the researcher to conduct this research. A better understanding of the issues at hand requires a look at the concept of capital structure and its effect on the cost of capital and firm’s profitability.