Chapter 2

Review of Literature

1. Introduction

This chapter is devoted to review the conceptual literature related to the concepts and traditional theories of capital structure and review on empirical literature consisting of studies made earlier which are similar to the proposed study. The basic outcome of this review will be the knowledge as to what data and other materials are available for operational purpose. The main objectives of this chapter are:

(a) Review of literature works

(b) To find out research gap from the available literature and

(c) Identification of Interacting Variables for the Study

Before undertaking review works, a brief literature commonly available in the Financial Management books is presented in following paragraphs, with a view to familiarize the nitty-gritty of the basic terms that would be used in this treatise.

1.1 Capital Structure: Its significance in business decision

A firm mobilizes funds from both long-term and short term sources to meet its capital requirement. The former consists of equity share capital,
preference share capital, reserve and surplus and term loans raised from public and financial institutions, while the later constitutes current liabilities; bank overdraft, trade creditors, short-term loans and provisions. Financing decisions involve raising funds for the firms. It is concerned with formulation and designing of capital structure or leverage. The investment decisions are related to the assets side of the balance sheet while financing decisions are related to the liabilities side. Capital structure ordinarily implies the proportion of debt and equity in the total capital of a company. The share capital consists of equity share capital, preference share capital, share premium, free reserves, surplus profits, discretionary provisions for contingency, development rebate reserve. Debt capital consists of all borrowings from government and non government agencies, term loans from bank and financial institutions, debentures, all deferred payment liabilities. The total Capital structure of a firm is presented in the following chart:

**Chart-2.1 Capital Structure**

Source: Kishore, R.M:2009
The importance of capital structure is seen from the viewpoint of the relationship between leverage and value of the firm. In theory, capital structure affects the value of the firm either by boosting the pace of expected earnings or minimizing the cost of capital, or both. While it is true that financing-mix has no impact generally on the total operating earnings of a firm, as they are basically determined by the investment decisions, it can, thus, only affect the share of earnings belonging to the ordinary shareholders. The capital structure decision only influences the value of the firm.

1.2 Optimum Capital structure

The optimum capital structure is that capital structure or combination of debt and equity that leads to maximization of the value of the firm. The use of debt funds in capital structure increases the EPS as the interest on debt is tax deductible, which leads to increase in share price. But higher levels of debt funds in capital structure result in greater financial risk and it leads to higher cost of capital and depress the market price of company’s share. Therefore, the firms generally try to achieve and maintain the optimum capital structure keeping in view of attaining value maximization objective of the firm.

2. Traditional Theories of Optimum Capital structure

The basic objective of financial management is to maximize the wealth of shareholders. To achieve the objectives, the company will raise funds basically in two forms (a) equity (b) debt. Generally, a firm starts with equity capital and later
on involves debts capital in its capital structure. This is so because without proven record, it is very difficult to raise debt funds from the market. Moreover, when the firm attains some success and start yielding profits, part of undistributed profits are ploughed back in the firm after meeting its capital requirement. As a result, the firm irrespective of its size and nature attempts to have optimum capital structure. The traditional theories emphasizes on trade off between financing cost and risks. In this respect following analysis are usually followed in case of optimum capital structure.

2.1 EBIT-EPS Analysis

It is one of the business objectives of financial management to design an appropriate capital structure which can provide the highest EPS over the firm’s expected range of EBIT. EPS is a yard stick to evaluate the firm’s performance for the investors. The level of EBIT varies from year to year shows how successful the firm’s operation is. EBIT-EPS approach is an important tool for designing the optimal capital structure framework of the firm. EBIT-EPS analysis is widely used by finance manager because it provides a simple picture of the consequences of alternative financing methods.

2.2 ROI-ROE Analysis

The EBIT-EPS analysis is done with absolute numbers available, where total earning potential is measured by EBIT and the return to shareholder is measured in terms of EPS. Often, the comparison is more convenient in
percentage terms. If EBIT is replaced by ROI and EPS is replaced by ROE, and both are expressed in percentage terms a relationship is obtained between ROI and ROE similar to that between EBIT and EPS. Even the financial decisions made out of the EBIT-EPS analysis would remain the same, and can be summarized as follows:

• As long as ROI is greater than the cost of debt, the excess of ROI over the cost of debt contributes to enhancement of the ROE. Therefore, it is more beneficial to choose a capital structure favouring leverage.

• When ROI is not enough to meet the cost of debt, it is advantageous to have the capital structure oriented towards equity.

• The point where ROI is equal to the cost of debt will be the point of indifference from the viewpoint of the capital structure.

2.3 Financial Break-even

It is the minimum level of EBIT needed to satisfy all fixed financial charges i.e., interest and preference dividend. It denotes the level of EBIT for which the firm’s EPS just equals to zero. If EBIT is less than financial break even point than EPS will be negative. But if the expected level of EBIT exceeds that of break-even point, more fixed costs financing instruments can be inducted in the capital structure. Otherwise, the use of equity would be preferred.
2.4 Financial Indifference Point

When two alternative financial plans do produce the level of EBIT where EPS is the same, this situation is referred to as *indifference point*. In case the expected level of EBIT exceeds the indifference point, the use of debt financing would be advantageous to maximize the EPS. The indifference point may be defined as the level of EBIT beyond which the benefits of financial leverage begins to operate with respect to earning per share. It can be presented in the following diagram.

**Diagram- 2.2 Financial Indifference Point**

Source: Kishore, R.M:2009
The indifference point between the two financing alternatives can be ascertained in the following way:

\[
\frac{\text{EBIT} - I_1(1-t)}{N_1} = \frac{\text{EBIT} - I_2(1-t)}{N_2}
\]

Where,

- EBIT = Earning before interest and tax
- \( t \) = Corporate rate of tax
- \( I_1 \) = Interest charges in Financing alternative 1
- \( N_1 \) = Number of equity shares in Financing alternative 1
- \( I_2 \) = Interest charges in Financing alternative 2
- \( N_2 \) = Number of equity shares in Financing alternative 2

### 2.5 Net Income Approach

This approach is formulated by Durand David. According to this approach, the capital structure decision is relevant to the valuation of the firm. As such, a change in the capital structure causes an overall change in the cost of capital and also in the total value of the firm. A higher debt content in the capital structure indicates a higher degree of financial leverage which causes to decline in overall or weighted average cost of capital. This result tends to increase in the value of the firm and also enhances the value in earning per share. Durand (1952) advocated the average cost of capital will be reduced with greater use of debt and the equity shareholders will not insist for higher return with increased levels of gearing caused by the use of increasing level of debt component. It is also assumed that the lenders will also not insist for higher return with increasing
levels of debt. Hence, the average cost of capital falls until the level of debt is reached since there is no return in the cost either equity or debt. The fact may be presented in the following diagram.

**Diagram -2.3 Durand’s View of Capital Structure**

Source: Kishore, R.M:2009

Assumptions- There is usually three basic assumptions of this approach:

(a) Corporate taxes do not exist

(b) Debt content does not change the risk perception of the investors.

(c) Cost of debt is less than cost of equity i.e. debt capitalization rate is less than the equity capitalization rate.

According to the net income approach, the value of the firm and the value of equity are determined as given below

\[
\text{Value of Firm (V)} = S + B
\]

Where,

\[
S = \text{Market Value of Equity}
\]
\[ B = \text{Market Value of Debt} \]

\[ \text{Market Value of Equity (S)} = \frac{NI}{Ke} \]

Where,

\[ NI = \text{Net income available for equity shareholders} \]

\[ Ke = \text{Equity capitalization rate} \]

### 2.6 Net Operating Income Approach

Another theory of capital structure, suggested by Durand, is the Net Operating Income (NOI) Approach. This approach is diametrically opposite to the NI Approach. The essence of this Approach is that the capital structure decision of a firm is irrelevant. Any change in leverage will not lead to any change in the total value of the firm and the market price of shares as well as the overall cost of capital is independent of the degree of leverage. The NOI is based on the following assumptions:

(a) The investors see the firm as a whole and, thus, capitalize the total earnings of the firm to find the value of the firm as a whole.

(b) The overall cost of capital (\(K_o\)), of the firm is constant and depends upon the business risk which also is assumed to be unchanged.

(c) The cost of debt, (\(K_d\)) is also constant.

(d) There is no tax
(e) The use of more and more debt in the capital structure increases the risk of the shareholders and, thus, results in the increase in the cost of equity capital \( K_e \)

The NOI approach believes that the market value of the firm as a whole, tends to change for a given risk complexion. Thus, for a given value of EBIT, the value of the firm remains the same irrespective of the capital composition, and instead depends on the overall cost of capital.

\[
\text{Value of Firm (V)} = \frac{EBIT}{K_o}
\]

Where,

- EBIT = Earning before interest and Tax,
- \( K_o \) = Overall Cost of Capital

\[
\text{Value of Equity (S)} = V - B
\]

Where,

- \( V \) = Value of Firm,
- \( B \) = Value of debt

Thus, financing mix is irrelevant and does not affect the value of the firm. The value remains same for all types of debt-equity mix. Since there will be change in risk of the shareholders due to change in debt-equity mix, therefore, \( K_e \) will be changing linearly with change in debt proportions. The net income approach is illustrated in the following diagram.
Diagram- 2.4 Net Operating Income Approach

The NOI approaches illustrated in the chart shows that the cost of debt and the overall cost of capital are constant for all levels of leverage. As the debt proportion or the financial leverage increases, the risk of shareholders also increases and, thus, the cost of equity capital also increases. However, the increase in the cost of equity capital does not affect the overall value of the firm and it remains same. It is to be noted that an all equity-firm, the cost of equity capital is just equal to WACC. As the debt proportion increases, the cost of equity also increases. However, the overall cost of capital remains constant because increase in cost of equity is just sufficient to offset the benefit of cheaper debt financing. The NOI approaches believe that leverage has no effect on the WACC and the value of the firm. Hence, every capital structure is optimal.
2.7 *Traditional Approach*

The traditional approach to valuation and leverage assumes that there is an optimal capital structure and that the firm can increase the total value of the firm through the judicious use of leverage. The approach suggests that the firm initially can lower its cost of capital and raise its total value through leverage. Although investors raise the required rate of return on equity, the increase in $k_e$ does not offset entirely the benefit of using “cheaper” debt funds. As more leverage occurs, investors increasingly penalize the firm’s required equity return until eventually this affects more than offsets the use of “cheaper” debt funds.

**Diagram- 2.5 Traditional Approach**

![Diagram- 2.5 Traditional Approach](image)

Source: James C. Van Horne: 2006
In one variation of the traditional approach, $k_e$ is assumed to rise at an increasing rate with leverage, whereas $k_i$ is assumed to rise only after significant leverage has occurred. At first, the weighted average cost of capital declines with leverage because the rise in $k_e$ does not entirely offset the use of cheaper debt funds. As a result, the weighted average cost of capital, $k_o$, declines with moderate use of leverage. After a point, however, the increase in $k_e$ more than offsets the use of cheaper debt funds in the capital structure, and $k_o$ begins to rise. The rise in $k_o$ is supported further once $k_i$ begins to rise. The optimal capital structure is the point at which $k_o$ bottoms out. In this chart the optimal capital structure is point X. Thus, the traditional position implies that the cost of capital is not independent of the capital structure of the firm and that there is an optimal capital structure.

3. Need for Capital Structure Decision

(i) **Control** – The management control over the firm is one of the major determinants of capital structure decisions. The equity shareholders are considered as the real owners of the company, since they can participate in decision making through the elected body of representatives called ‘Board of Directors’. The policy decisions are taken in general meetings of the equity shareholders and the day to day working will be supervised through board of directors. The preference shareholders and debenture holders can not participate in decision making. The financial institutions and banks who provide term loans can participate in management through the nominee directors, by having covenant in the loan agreement. The preference shareholders can exercise voting power in general
meetings if the company fails to pay preference dividends for two consecutive years. When the promoters do not wish to dilute their control, the company will rely more on debt funds. Any fresh issue of shares will dilute the control of the existing shareholders.

(ii) Management attitudes – There are little evidence that capital structure alone will lead to higher stock prices, rather capital structure decision varies with risk appetite of the management of the firm. Some may be conservative and uses less volume of debt than their counterparts, while aggressive management uses comparatively larger volume of debt capital in the quest for higher profits.

(iii) Cost of Capital – Cost of different components of capital will influence the capital structuring decisions. A firm should posses earning power to generate revenues to meet its cost of capital and finance its future growth. Generally, the cost of equity is higher than the cost of debt, since the debt holders are assured of fixed rate of return and repayment of principal amount after the maturity period. Firms that adjust their capital structure in order to keep the riskiness of their debt and equity reasonable should have a lower cost of capital. A firm with high level of gearing, its ability to meet fixed interest payments out of current earnings diminishes. This increases the probability of bankruptcy and as a result, the cost (risk premium) of both debt and equity rises.

(iv) Legal Provisions – Legal provisions in raising capital will also play a significant role in planning capital structure. Rising of equity capital is more complicated than raising debt.
(v) **Profitability** – A company with higher profitability will have low reliance on outside debt and it will meet its additional requirement through internal generation.

(vi) **Growth Rate** – The growing companies will require more and more funds for its expansion schemes, which will be met through raising debt. The fast growing companies will have to rely on debt than on equity or internal earnings.

(vii) **Government Policy** – The government policies and capital market regulation play a major role in determining the capital structure. The increase in lending rates may cause the companies to raise finances from capital market. On the contrary rigid capital market policies may compel to raise finances from banks and financial institutions. Monetary and fiscal policies of the government will also affect the capital structure decisions.

(viii) **Flexibility** - An important criteria in the context of raising debt capital is *flexibility*. As and when the funds required, the debt may be raised and it can be paid off and when desired. But in case of equity, once the fund rose through issue of equity share, it can not ordinarily be reduced except with the permission of the court and compliance with lot of legal provisions. Hence, debt capital has got the characteristics of greater flexibility than equity capital, which will influence the capital structure decision. A firm maintains its borrowings power to enable it raise debt to meet unforeseen contingencies.
(ix) **Lender and rating agency attitude** - Regardless of managers’ own analysis of the proper leverage factors for their firms, lenders’ and rating agencies’ attitudes frequently influence financial structure decision. In the majority of cases, the corporation discusses its capital structure with lenders and rating agencies and gives much weight to their advice.

(x) **Tax Consideration** – Under the provisions of the Income-tax Act, the dividend payable on equity share capital and preference share capital are not deductible, causing the high cost of equity funds. Interest paid on debt is deductible from income and reduces a firm’s tax liabilities. The tax saving on interest charges reduces the cost of debt funds. The debt has tax advantage over equity. By increasing the debt component in the capital structure, a firm can increase its earnings available to shareholders. The flotation costs of debt and equity are deductible over a period of 10 years. Premium on redemption can be deductible during the maturity period.

(xi) **Marketability** – The balancing of debt and equity is possible when the marketability is created for the company’s securities. The company’s ability to market its securities will affect the capital structure decisions.

(xii) **Company Size** – The companies with small capital base will rely more on owner’s funds and internal earnings. But large companies have to depend on capital market and can tap finances by issue of different varieties of securities and instruments.
(xiii) **Financing Purpose** – The capital structure decisions are taken in view of the purpose of financing. The long-term projects are financed through long-term sources and in the form of equity. The short-term projects are financed by issue of debt instruments and by rising of term loans from banks and financial institutions. The projects for productive purpose can be financed from both equity and debt. But the non-productive projects are financed by using the internal generated earnings.

(xiv) **Sales stability** – A firm whose sales are relatively stable can safely take on more debt and incur higher fixed charges than a company with volatile sales. Utility companies, because of their stable demand, have historically been able to use more financial leverage than industrial firms.

(xv) **Asset structure** – Firms whose assets are suitable as security for loans tend to use debt rather heavily. General-purpose assets that can be used by many businesses make good collateral, whereas special-purpose assets do not. Thus, real estate companies are usually highly levered as compared to the companies involved in technological research.

4. Capital Structure Practices in India

An important study conducted by Prasanna Chandra (1984) to ascertain the policy adopted by the chief finance executive of twenty large-sized business undertakings, representing a wide cross-section of industries. Some simple questions were asked and the responses obtained are reproduced below.
### Nature of Industry | Response
---|---
Electrical | “We try to maintain a debt-equity ratio of less than 2:1 because this is the governmental norm.”
Chemicals | “Ours is a very conservative debt policy. We borrowed funds only in recent years for some expansion projects.”
Tea | “We have ample internally generated firms. So we never had to think about debt.”
Fertilizer | “We don’t have a specific debt-equity policy—it depends. Few years ago we relied mostly on internal accruals. Now we are considering some term finance.”
Toothpaste | “Our internal accruals are enough for our modest capital investments. We would depend only on equity resources.”
Aluminum | “Our goal is to maintain the debt-equity ratio within a certain level which, of course, is kept confidential.”
Chemical | “We have good projects. We would like to increase our dependence on debt—how far we will go, time alone will say”.
Automobile | “We don’t have an internal debt-equity norm. Since the government permits a 2:1 ratio, we will remain within it. Of course, we will make a cushion for bad times.”
Shipping | The risk of our business has increased. So, we have deliberately decided to follow a conservative financing plan in relation to shipping industry norms. We try to cover debt service burden by our depreciation charges.”
Leasing | “We will borrow as much debt as we can. After all money is our raw material.”
<table>
<thead>
<tr>
<th>Industry</th>
<th>Quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversified</td>
<td>“We have a very conservative financing policy. We have depended mostly on internally generated funds-expect for two rights issues. We would like to set a limit of 1:1 for our debt-equity ratio.”</td>
</tr>
<tr>
<td>Truck</td>
<td>“The capital structure of the company is carefully planned for optimum financial leverage, while the following corporate objectives for a stable funding pattern are retained: (i) All fixed assets to be funded only by long term funds, i.e. equity plus long term borrowings. (ii) At least 50 percent of working capital to be funded by long term funds, i.e. equity plus long term borrowings. (iii) Total debt to equity not to exceed 1:1.”</td>
</tr>
<tr>
<td>Pharmaceuticals</td>
<td>“Traditionally we had a very conservative capital structure. We are now leveraging ourselves and have set a debt-equity norm of 1.7:1. This will give us some margin, given the governmental norm of 2:1.”</td>
</tr>
<tr>
<td>Textiles</td>
<td>“You see it is like this. We go by the project. If it is good, finances will come—the shareholders will give, the institutions will give. What is the point in talking of a hypothetical capital structure?”</td>
</tr>
<tr>
<td>Storage Batteries</td>
<td>“We have not borrowed funds. We don’t want to borrow. We don’t want external interference in our business.”</td>
</tr>
<tr>
<td>Consume Electronics</td>
<td>“Our focus was on technology and production. Finances didn’t pose much of a problem. We have frankly speaking not thought of a capital structure policy.”</td>
</tr>
</tbody>
</table>
The study revealed those Indian executives are not at all concerned with capital structure decisions. The reasons of such awareness may be attributed to firms’ inability to define their capital structure policy with definite goals because of (i) availability of wide range of the instruments of financing (b) Lack of experience with debt capital (iii) Changing complexion of business risk.

Further, in the same study responses of top executives regarding calculations of cost of capital were found as under.

<table>
<thead>
<tr>
<th>Nature of Industry</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td>“We look at the profitability of investment proposals from the point of view of equity capital. Our equity dividend rate is 10 per cent—this is what the government wants—so our cost of capital is 10 per cent.”</td>
</tr>
<tr>
<td>Chemical</td>
<td>“We do not calculate the cost of capital as it is too academic and impractical.”</td>
</tr>
<tr>
<td>Tea</td>
<td>“There are three sources of capital: equity, reserves and borrowings. The cost of equity is based on the last dividend paid and the profit before tax required to pay the dividend; the cost of reserves is taken as 18 per-cent gross; and the cost of borrowing from various sources is equal to the appropriate rate of interest paid. For capital expenditures for which additional equity is not necessary, we assume the average cost of capital to be 18 per-cents since it is met either from reserves or borrowings which cost more or less the same. For projects required equity issue the cost of capital, of course, is higher.”</td>
</tr>
<tr>
<td>Industry</td>
<td>Response</td>
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</tr>
<tr>
<td>Fertilizer</td>
<td>“Frankly we have not tried to figure out this. And we never felt the need to know it as our investments are carefully considered by an expert board of directors.”</td>
</tr>
<tr>
<td>Toothpaste</td>
<td>“Our rate of return is very high and, thus, it is not necessary to calculate the cost of capital.”</td>
</tr>
<tr>
<td>Aluminum</td>
<td>“We equate cost of capital with the effective rate of interest on incremental borrowing necessary to finance capital expenditures. The specific type of borrowing determines the cost of capital.”</td>
</tr>
<tr>
<td>Chemical</td>
<td>“We depend mainly on retained earnings which have no cost because shareholders are satisfied with dividends.”</td>
</tr>
<tr>
<td>Automobile</td>
<td>“We don’t go by cost of capital. Everything is dependent on investment opportunities. The decision maker will not wait to calculate ratios if he finds the investment opportunities worthwhile based on his business judgment.”</td>
</tr>
<tr>
<td>Shipping</td>
<td>“Our normal debt-equity ratio is 3:1. Since the cost of equity and debt in post-tax terms are 18 per cent and 8 per cent, respectively, our cost of capital is 10.5 per cent. However, for the proposed new ship the cost is less because we plan to borrow up to 90 per cent.”</td>
</tr>
</tbody>
</table>
| Pharmaceuticals | “If by cost of capital you mean the yardstick for evaluating investment projects, it is our average rate of return for the last five years. We define the rate of return as follows:  

\[
\text{Profit after tax} / \text{Total book assets (gross of depreciation but net of current liabilities)}
\]  


<table>
<thead>
<tr>
<th>Industry</th>
<th>Description</th>
</tr>
</thead>
</table>
| Leasing           | “Currently our debt-equity ratio is 5:1. The pre-tax cost of debt is about 18 per cent and the pre-tax cost of equity, given a dividend rate of 20 per cent, is 40 per cent. So our average cost of capital is: \((5/6 \times 18) + (1/6 \times 40) = 21.7 \text{ per cent.}” \]  
| Diversified       | “Our return on investment- net profit to total assets- has varied between 10 per cent and 20 per cent in the last four years. So we take our cost of capital as 15 per cent.” |
| Truck             | “The cost of capital is calculated as the average of the cost of equity and cost of debt. The cost of equity is the total amount of dividend for the year expressed as a percentage of the average shareholders’ fund employed during the year. The cost of debt is the total amount of interest paid/payable during the year on loan term loans expressed as a percentage of average long term funds employed during the year.” |
| Storage Batteries | “All our financing is done with depreciation funds and ploughed back earnings. Depreciation is capital already in the company. Since it does not have to be raised, even in an indirect sense of retained earnings, it clearly has no cost.” |
| Textiles          | “There is a problem in calculating the cost of capital. It is deceptively simple and it can be misleading. Moreover, if our managers know it, they will beat it.” |
| Consumer Electronics | “Our return on equity historically has been around 25 percent. Our cost of debt, adjusting for taxes, is about 10 percent. By averaging the two, you get 17.5 percent.” |
Thus, Indian executives according to the study have had number of misconceptions about calculation as well as *nitty-gritty* of cost of capital. This reveals that cost of capital does not hold prominent position in financial decision making process during the study period.

5. **Review of literature relating to Capital Structure and on its determinants**

Numbers of studies at national and international level were conducted relating to determinants of capital structure. Some of them were presented hereunder.

Overall Growth of the firm is positively related to leverage (Brigham Gapenski, 1988; Kakani and Reddy, 1996 and Garg and Chander Shekhar, 2002).

Size is also positively related to the debt equity ratio (Titman and Wessels, 1988 and Garg and Chander Shekhar, 2002). Return on Asset (ROA) after tax is negatively related to total debt equity ratio (Brigham and Gapenski, 1988; Myers and Majluf, 1984, Ferri and Jones, 1979 and Kakani and Reddy, 1996). Brigham and Gapenski, (1988) observed Dividend payout ratio (DPR) is positively related to total debt ratio, where as Size and profitability is negatively related to debt ratio.

*Gorden (1962)* observed that with the increase of size, return on investment was negatively related to debt-equity ratio and found negative association between operating risk and debt-equity ratio.
*Baxter* (1967) articulated that leverage would depend on the variance of net operating earnings. The business with relatively stable income streams are less vulnerable than that of firms with fluctuating income stream and involve debt capital in its capital structure. The study exhibited a negative association between variance of net operating earnings and the degree of leverage.

*Gupta* (1969) conducted a study on the “Financial structure of American Manufacturing Enterprises”. The aim of the study was to analyse the industry effect and the growth effect on the financial structure of American Manufacturing Enterprises. It was a cross sectional study for the year 1961-62. The study confirmed that total debt equity ratios were positively related to growth and negatively related to size of organization and also found that there is a significant industry effect on debt-equity ratio.

*Toy et al* (1974) found that companies with higher operating risk showed, higher debt-equity ratio. They found that debt-equity ratios were positively related to growth typically measured as growth of sales and return on investment was negatively related to debt-equity ratio. Moreover, they found that there is no evidence to conclude that size of the firm and the class or industry thus belong to one determinants of debt-equity ratio. *Chakroborty* (1977) has also conducted a study to investigate “debt equity ratio in the private corporate sector in India”. He tested the relation of debt equity ratio with age, total assets, retained earnings and profitability and capital intensity. He found that age, retained earnings, and profitability were negatively related while total assets and capital
intensity was positively related to debt-equity ratio. He also provided a glimpse of the regression patterns of debt equity ratio in different industrial cluster in India. He used a very simple methodology for calculating the cost of capital and showed that the cost of capital for 22 firms increased from 7.36 percent to 12.36 percent over years. The average cost of capital for all consumer goods industry firms taken together was the highest while it was lowest for the firms of intermediate goods.

Ferri and Jones (1979) examined the determinants of financial structure. The objective of their study was to investigate the relationship between a firm’s financial structure and its industrial class, size, variability of income and operating leverage. They found that the industry class was linked to the firm’s leverage, Secondly; a firm’s use of debt is related to its size. Finally, operating leverage has influence on the level of debts in a firm’s financial structure.

Bhat (1980) studied the impact of size, growth, business risk, dividend policy, profitability, debt service capacity and the degree of operating leverages on the leverage ratio of the firm by using a sample of 63 companies pertaining to engineering industry. He used multiple regression models to find out the contribution of each characteristic. Business risk (defined as earning instability), profitability, dividend payout and debt service capacity were found to be significant determinants of the leverage ratio.

Venkatesan (1983) investigated on the “determinants of financial leverage” by analysing the relationship between seven different variables and the
financial structure of the firms. The variables included industry categorization, size, operating leverage, debt coverage, cash flow coverage, business risk, and growth ratio. Industry influence has been examined on the grouping of firms in various leverages classes and he found a statistical relationship between industry class and leverage, but the relationship could not be significant and conclusive. The impact of the remaining independent variables on the dependent variable was examined in two sample classifications, viz. Intra-industry and Inter-industry through multiple regression analysis. In conclusion, only debt coverage ratio was found to be an important variable significantly affecting the financial structure of the firm.

*Pandey (1984)* conducted another empirical study examining the industrial pattern; trend and volatility of leverage, the impact of size, profitability and growth on leverage over 743 companies in 18 industrial groups for the period 1973-74 to 1980-81. It was found that about 72 to 80 percent of the assets of sample companies were financed by external debt, including current liabilities. The companies have also employed trade credit as much as bank borrowings. The study also indicated that leverage percentage of industry does not produce any patterns, which may be regarded as systematic and significant.

*Barclay, Smith Jr. and Watt's (1995)* study of 6,700 industrial companies over the past 30 years indicated that the most important determinant of a firm's leverage ratio and dividend yield is the nature of its investment opportunities. The firms with large intangible growth opportunities have significantly lower leverage
ratios and dividend yields, on an average, than the companies whose values are represented primarily by tangible assets. The explanation given for this pattern of financing is that high leverage and dividends can control free cash flow problems in case of mature of firms with limited growth opportunities. The high growth firms witnessed heavy debt financing and resulted in higher flotation cost but pay comparatively higher dividend.

*Carelton and Siberman (1997)* concluded that higher the variability in rate of return on capital was achieved with lower degree of financial leverage of the firm. Hence, it is the variance, not the rate of return that is the ultimate determinant of leverage. They also found return on investment was negatively related to debt-equity ratio.

*Mathew (1997)* has made an attempt to analyse “the relationship between ownership structure and financial structure” with a view to know whether the former has any impact on the later. The analysis was based on three hypothetical relationships that exist between ownership structure on one hand and unsystematic risk, non-manufacturing expenses and profit appropriation policies on the other hand. He concluded that wherever the management stake is high, leverage will be low and vice-versa and there exists a significant relationship between ownership structure and financial structure of firms.

*Fama & French (1998)* analyzing the “relationship among taxes, financing decisions and the firm’s value” and conclude that the debt doesn't concede tax benefits. Besides, the higher degree of leverage generates agency
problems among shareholders and creditors which yield a negative relationship between leverage and profitability. Therefore, the negative information-relating to debt and profitability obscure the tax benefit of the debt capital.

_Booth et al (2001)_ developed a study attempting to relate the capital structure of several companies in countries with extremely different financial markets. They concluded that the variables that affect the choice of the capital structure of the companies are similar, in spite of the great differences presented by the financial markets.

_Bradley, Jarroll and Kim (2002)_ in their paper entitled to “A Review of Research on the practices of corporate finance” found that debt to asset ratio is negatively related to both the volatility of annual operating earnings and advertising and Research and Development expenses.

_Hadlock & James (2002)_ , evaluating the possibility of the banking system to provide a certain financial peace for the companies, affirmed that the choice among equity and debt will be fundamentally determined by the market evaluation of the shares and also confirmed the Pecking-Order Hypothesis. In the study, the authors analyzed the financing decisions of 500 non-financial companies and concluded that the firm favour bank financing because the market interprets the loan as a positive step in connection with attaining higher returns.

_Pandey (2002)_ studied the dimensions of relationship among the capital structure; market power and profitability of the firm. It was concluded that the
initial comparatively higher volume of debt is being reduced later due to the complex interaction among the market conditions, agency problems and bankruptcy costs. Moreover, the capital structure and profitability of the firm are closely associated due to agency costs, cost of internal financing and tax shield of debt financing.

_Bhaduri's (2002)_ study of capital structure choice in developing countries through a case study of Indian corporate sector established that capital structure choice is influenced by the host of factors such as growth, cash flow, size, and product and industry characteristics.

The study conducted by _Pandey, Chotigeat and Ranjeet (2000)_ covering Thai firms showed that Thai managers preferred raising funds from financial institutions and are reluctant to make public offerings of equity or debt. The study also revealed that asset structure, growth, size, profitability and default risk are the significant determinants of leverage in the Thailand

_Mohanty (2003)_ in his paper “_A Review of Research on the practices of corporate finance_” found that leverage is negatively related with profitability and value of the firm both within an industry as well as within the Indian Economy. It has found that least levered companies spend a large sum of money on advertisement and Research and Development expenditure to minimize the wealth of the firm.
Das and Roy (2007) investigated empirically whether inter-industry differences exist in the capital structure of Indian firms. The study also attempted to identify the possible sources of such variations in capital structure. The technique used for the cross sectional analyses were one way analysis of variance. The analysis covers the pre and post liberalization period separately to indicate if there is a clear break in the financing pattern of the Indian firms due to the policy change. The conclusion was that though, the differences in firm’s size contribute to the existing variation in financing leverage ratio across industry classes to some extent but the nature of the industry itself or more precisely the differences in the fund requirement of industry groups based on the technology used is the major source of the existing variation.

Ghosh & Sinha (2007) in their paper entitled to “Can Firm’s Capital Structure Decision Help an Investor?” based on hypothesis that leverage variables can better explain firm’s value maximization in the context of the automobile industry in India revealed that shareholders’ returns vary significantly with significant variation in firm’s debt levels. Firms are more conservative in maintaining of long-term debt to equity ratio than that of total debt to equity ratio. Increase in debt levels does not contain always good news to the investors as the risk averters and risk takers act differently.

Majumdar (2007) contributed to the literature on the strategic implications of capital structure by investigating the relationship between both equity and debt ownership and corporate diversification for an emerging economy such as India.
He found that firms are more likely to diversify when the suppliers of funds are predominantly arms-length lenders such as debenture and fixed deposit holders and less likely to diversify when the debt is held by the lending institutions. The author also found that higher ownership by directors and concentrated ownership does not necessarily lead to less corporate diversification. However, foreign, state owned and group firms are more likely to diversification.

Shanmugasundaram (2008) attempted to explain the variations in the capital structure in the pharmaceuticals companies between process patent period and the transition period on the basis of capital structure theories and also attempted to see if there is any shift in the capital structure in the same period. The intra-industry variations in the capital structure for the Indian pharmaceutical companies could be explained by the existing theories of capital structure. The higher the proportion of fixed assets to total assets and the higher the growth rate of assets, higher is the industry debt equity ratio. The lower the ratio of operating income to total assets and operating income to net sales, higher is the debt equity ratio. This shows that the Indian companies are shifting from high debt to high equity over the period clearly indicating consistency with the static trade off theory. The average growth and size of the companies are positively related. However, in case of foreign pharmaceutical companies only the profits adjusted to total assets and sales are positively related, whereas as the risk measured by the standard deviation of the growth in gross profit is negatively related to leverage. These are just reverse to that of the Indian companies. By considering the pooled pharmaceutical companies, the fixed assets to total assets are positively related to
leverage in the transition period. This is common to both Indian companies and MNCs. None of the variable had given unique contribution to leverage. In all the three analyses, the comparison of the two pairs of regression models between processes to transition periods exposes that there has been significant structural shift in the leverage of the selected pharmaceutical companies in India after change of policy favouring product patent compared to process patent.

Yadav, Iyer & Agarwal (2009) investigated the existence of multiple consideration/ goals and constraints perceived by a decision maker in the Capital Structure Decision (CSD). A conceptual framework was developed, proposed and tested through a survey on top 500 Indian companies. Studies in last six decades indicated that there are 96 considerations before a CFO/CEO who undertakes a CSD. These considerations have been sub grouped as financial objectives, non-financial objectives, long term strategies, access to capital markets, and use of financially innovative products, regulatory framework and the influence of international foreign currency exposure. The survey put on display the practices, expectations and perceptions of CEO/ CFO/ COOS. Results indicated that there exist multiple objectives, which differ across the firms. These objectives were found to be firm specific and time variant. The use of equity was more predominant than debt and the Indian CFO were found to be more conservative.

In the study conducted by Dragota, Semenescu (2009) four explanatory variables were selected for analysis of the capital structure determinants based on linear multiple regression model pertaining to the data covering in the Central and
Eastern European countries. The dependent variable was the leverage and the independent variables were assets structure, firm size, profitability and market to book value ratio. The sample covers 1997-2007 on publicly traded companies, excluding those in heavily regulated financial sectors. Analysis utilizes cross-section OLS. Results indicated that Romanian listed companies financed their assets, through equity, commercial debt and other financial debts. The four variables used in the regression model were found to be significant, but some of them are relevant only for one type of debt, or only for the accounting values and not for the market ones or vice-versa. Packing order theory seems to be more appropriate for the Romanian capital market. The packing order theory has not suggested any particular target or optimum capital structure and firms prefer internal to external financing. If the firms do require external financing they will issue the safest security first in order of term loans, unsecured debentures, secured debentures, convertible debentures, preference shares, convertible preference shares and finally in the form of new equity shares.

6. Review of work on Cost of Capital/ WACC and its relationship with Capital structure and on companies’ performance

Modigliani and Miller (1958) in his first study on cost of capital and capital structure used the works of Allen (1954) and Smith (1958) study in support of their independence hypothesis. Allen’s study related to an analysis of the relation between security yields and financial structure for 43 large electric utilities; while Smith designed his study covering 42 oil companies to test
whether Allen’s striking results would be found in an industry with very different characteristics. Allen study was based on average figures for the years 1947 and 1948, while the Smith study was related to the single year 1953. In the first part of their work, Modigliani and Miller tested their proposition I by correlating after tax cost of capital with leverage. If the traditional view were correct, the correlation would be significantly negative; if Modigliani and Miller view represented a better approximation to reality, the correlation would not be significantly different from zero. They used the linear regression model to test their hypothesis and the result supported their hypothesis of independence as correlation coefficients are statistically insignificant and positive in sign.

In second part of their study Modigliani and Miller tested their proposition II, that the expected yield on common share is a linear function of debt to equity ratio. Both correlation coefficients were found to be significant and positive in both the cases, Electric Utilities and Oil Companies, which is significant at 5% level of confidence. Thus, the Modigliani and Miller view i,e the market value of the firm is independent of its capital structure was confirmed. However, they readily admitted that these findings do not contradict to the traditional propositions. Even the traditionalist assumed the stock yield to increase with leverage. Their argument was that, within a reasonable level of debt, it will not increase enough to offset the advantage of leverage.
Modigliani and Miller (1963) conducted another study taking earlier priorities with incorporating corporate taxes and concluded that cost of capital would decline with increase in the degree of financial leverage.

Weston (1963) contributed a lot to the theory to some extent. He included the firm size and growth as an additional explanatory variable in his model. The regression coefficients of leverage were found to be significant and positive for his sample of 59 utilities in 1959 when Modigliani and Miller, s cost of capital model was used. He found the correlation coefficient and the regression coefficient are significant and the regression coefficient of leverage is negative and significant. When the influence of growth is isolated, leverage is found to be negatively correlated with the cost of capital. The independence hypothesis of Modigliani and Miller, between leverage and cost of capital is due to the negative correlation of financial leverage with earning growth according to Weston. The cost of capital is significantly and negatively correlated with financial leverage and growth of firm.

Wipern (1966) has also conducted a study to test the “relationship between leverage and the cost of capital”, by running regression on the data of 50 firms from seven manufacturing industries covering the years 1956, 1958, 1961, and 1963. His main emphasis was to develop unbiased measure of leverage. The estimates of the regression equation clearly showed that equity yields and leverage are linearly related and concluded that the shareholders wealth can be enhanced through judicious use of debt financing.
Brigham & Gordon (1968) in the panel discussion of annual general meeting of the Financial Management Association, focused on cost of capital. The panelists of such discussion agreed that the task may be difficult, but it is essentially a good decision making especially in the context of capital budgeting area and they further agreed that the overall cost of capital should be viewed only as the first step in the development of divisional and specific project’s cost of capital.

Sarma and Rao (1969) in their paper entitled to “leverage and the value of the firm” employed a two stage least square method on the data pertaining to 30 Indian engineering firms over the three years. In their estimates, it has been found that the leverage variable had a greater coefficient than that of the tax rate. Thus, agreeing with the traditional view, they concluded that the cost of capital is affected by debt apart from its tax advantages.

Davenport (1971) in the paper entitled as “leverage and the cost of capital” tested the cost of capital hypothesis using British data. Regression equation was estimated for Chemicals, Food and Metals manufacturing industries for 1961, 1962, and 1963. The study results supported the traditional view regarding the relationship between leverage and the cost of capital.

Pandey (1981) studied on the relationship between capital structure and cost of capital. The sample of four industries such as cotton, chemicals, engineering and electricity were used. The data of three cross section years of 1968, 1969, and 1970 used in the study. He found one of the major criticisms of
M-M’s empirical work was that their sample did not have observations with little or no debt. In his study, each sample provides a good distribution of observations over the important ranges of capital structure. The study supported the traditional view as the coefficients of the leverage variables were significantly negative for all the industries for the cross-section years as well as for the pooled data. He used a modified model to test the hypothesis whether or not debt financing is advantageous in the absence of its tax effect. The regressions were run for the pooled data of three industries only. Electricity industry was excluded for the lack of sufficient number of observations. The coefficients of both the measures of leverage were significant and negative in sign. Thus, the result of the second model refuted the validity of Modigliani and Miller hypothesis that except tax shield effect, debt financing is not advantageous, and strengthened the traditional view.

Therefore, the main conclusion of his study was that leverage could lower the average cost of capital. The traditional view, which the cost of capital declines with the leverage even in the absence of tax advantageous of debt financing, was also strengthened by the results of the second regression model.

Gefffrey Knott (1991) highlighted the traditional approach of cost of capital and viewed that the weighted average cost of capital of a company will fall with the increased borrowings until a point is reached where the higher cost of share and loan capital force to enhance the average cost of capital. The optimum-
earning ratio is achieved only when the weighted average cost of capital is at the lowest point.

Dhankar & Boora (1996) studied on “Relationship between Cost of Capital, Optimal Capital Structure, and Value of Firm” with the objective to see the impact of capital structure on cost of capital and to identify that whether capital structure of companies differ significantly from each other. In this perspective they selected 26 Indian private companies from different industrial group and concluded that no significant relationship was found between change in capital structure and the value of a firm, at the micro level. This is because of the fact that the value of a firm is affected by a multiplicity of factors and capital structure is just one of them. Many of these factors like the reputation of promoters, management of the company, economic and political conditions, role of bulls and bears, government policies, etc., are not measurable as they are qualitative in nature. Because of this problem, their effect cannot be segregated, and hence, an exact relationship between change in capital structure and value of a firm could not be established. Companies were found to differ significantly in capital structure irrespective of whether they belong to the same industry group or different groups. The reason of such variation is attributed to the fact that the magnitude of the effect of determinants of capital structure vary from company to company. Further, it was also found that Indian companies do not employ a specific model for computing the cost of capital and have no scientific model for determining their target capital structure. Thus, it could be concluded that like perfect capital markets of the west, in India, too, wherein the capital markets are
imperfect, companies have no definite way of determining their optimal capital structure.

Srivastava (1997) from his work entitled to “Financial Management and Policy” observed that the cost of capital must be equal to the rate of return on a project which is necessary to maintain the current market price of the company’s share. The return is to be approximated by the weighted average of the cost of each type of finance. In turn, the proportion of each source of finance will give the weight for each type of finance that the company intends to employ to finance future investment.

Jain, Josette and Yadav (1998) hold that the cost of capital is applicable to investment projects of foreign subsidiaries. The basic principle of finance theory is to determine the cost of capital that may be applied in the case of investment projects undertaken at the level of foreign subsidiaries. In case of investment in the subsidiary with same level of risk as that of the group as a whole and the total finance are provided by the parent company such funds will be treated as equity capital and accordingly the appropriate cost of equity should be taken into account. Alternatively, the cost of parent group may be adapted to commensurate with the level of risk incurred by the industry. The cost increases with increase in the risk level and vice-versa.

The empirical work on cost of capital by Bruner, Harris (1998) is related to the factors affecting the cost of capital. The pecking order theory indicates a preference for internal over external finance i.e., companies prefer to have a
higher portion of equity to debts, thus, profitable firms will resort to debt financing less as compared to with unprofitable firms.

Kotrappa (2000) in his book entitled “Contemporary in Business Finance” articulated that the success of a corporation greatly depends upon sound financing. When the original financing has been sound, a co-operation has less fear for the future, provided it is given by a competent management. In this write-up, the author attempted to sketch the factors responsible for reducing the proportion of debt capital in the total capital employed. However, the choice between debt and equity sources of capital for a corporate borrower is greatly influenced by factors like Taxes on Corporate Incomes, Inflation, Controlling Interest and Capital Market Reforms.

Bhalla. V.K. (2000) observed that the cost of capital is playing significant role for determining the capital structure of multi National Corporation also. The multi national corporation is assumed to finance its foreign subsidiaries in such a way as to minimize its incremental weighted cost of capital. As in the domestic firm, the figure will be assumed to equal the MNC, s marginal cost of capital.

Graham and Harvey (2001) surveyed 392 CFO, s about the cost of capital, capital budgeting and capital structure. They found that firms are mainly concerned about financial flexibility and credit ratings when issuing debt and per share dilution and recent stock appreciation when issuing equity. They found some support for the pecking order and trade- off capital structure hypothesis. Most firms have target debt-equity and issue-equity to maintain a target-debt ratio.
Chadha. R (2003) observed that cost of capital is a central concept in financial management linking both investment and financing decision. The study examines 30 companies ranked by their market capitalization and observed that the Indian companies faced a high relative cost of capital as compared to their international counterparts.

7. Research Gap

In most of the literature we studied, it is seen that, major emphasis was given on

- Components of capital structure
- The effects of capital structure on cost of capital and
- Determinants of capital structure.

However, no serious and systematic efforts have been made by the researcher, so far in regard to identifying the relationship between the cost of capital and companies performance. An in-depth and systematic study in this unexplored area is therefore undertaken in the present treatise.

8. Identification of Interacting Variables for the Study

The discussion pertaining to the variables adopted by several researchers to reveal the determinants of cost of capital may be summarized as EBIT, EPS, and ROE, Corporate tax, value of firm, debt-equity ratio, financial leverage, liquidity, and profitability and so on. However, to abridge the research gap in the appropriate area identified earlier, especially to establish relationship between
profitability Vs WACC, degree of financial leverage Vs WACC, and the nature of interaction of specific cost in the capital structure, etc, we have incorporated size, growth of organization, dividend payout ratio, market capitalization, return on net-worth, besides the variables considered by the previous researchers.
Reference


Chapter 2 Review of Literature

Chapter: 2 Review of Literature


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In this chapter description of some of the important empirical works on the relationship between cost of capital and capital structure and determinants of capital structure is presented. Some of literatures work on determinants of financial performance and on theory regarding designing optimal capital structure is highlighted in the appropriate chapters. From the literature work, it has seen the earlier researcher given importance on cost of capital mainly because of capital structure decision. The M-M first study and the Bargers study provide the basic insight on the question of the effect of capital structure on the cost of capital; but they are not very meaningful as they have failed to hold constant other explanatory variables which includes valuation and leverage, Weston used two addition variables-growth and size- in his model and concluded that his result were in conformity with the traditional view. But he restricted his study to the
regulated electric-utility industry sample and did not hold constant the basic business uncertainty of sample firms. Therefore on the basis of the results of his study, it does not seem reasonable to generalize for unregulated industries with different characteristics and problems. Thus to validate or refute the M-M position, studies dealing with industries other than the public utility industry are needed. Davenport, using the British data, has made a contribution in this direction. He tested the M-M position using multiple regression technique on the data of three unregulated industries such as Chemicals, food, and metal manufacturing and results consistent with traditional view. In their second study, incorporating the tax effect of leverage, M-M concluded that the cost of capital can decline with leverage. Other researcher also expressed their view regarding the effect of cost of capital on capital structure.

Every researcher has given suggestion about the maintenance of optimum capital structure by the firm for achieving the organizational goal. In determining the determinants of optimal capital structure is still remain unsolved. The previous studies include the company covering least number of industrial groups. Further a research gap has been observed in regard to find out the relationship between the cost of capital and companies financial performance. It has also been seen the Indians companies has not been given due importance on cost of capital while taking business decisions.