CHAPTER – II

SURVEY
OF
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INTRODUCTION:

Financial structure and especially capital structure decision being one of the fundamental decisions of financial management substantial research work has been carried in this area. Hence before proceeding to further research work, it was considered essential to take the survey of literature in the relevant field. Financial and capital structure decision being at micro level i.e. at the firm level, it is determined by the consideration at the firm level. However, the firm belonging to an industry, the nature of industry is one of the important determining factors for capital structure. However, the overall capital structure of firm and industries is also affected by the Government policy. Taking this into account the studies carried out in India and abroad is separately discussed.

To begin with studies carried out with reference to foreign countries are discussed.

Arditti and Pinkerton[1] (1978) have conducted the study on "The Valuation and Cost of Capital of The Levered Firm With Growth Opportunities". The authors have presented a growth firm's valuation of Modigliani and Miller. They also demonstrate the MM valuation equation and their version, which provide different valuations for a firm's income growth component.

The conclusions of the study are:

1. A correct expression for the total market value of a growth firm is obtained by explicitly recognizing that future projects affect the existing value of

the firm not only through their expected rate of return but also through the increase in the firm's debt capacity that those projects are expected to provide.

2. The MM valuation expression places too high a value on growth opportunities.

Baxter[2] (1967) has carried out the study on "Leverage, Risk of Ruin and Cost of Capital". The Main objective of this study is to explain how excessive leverage can raise the cost of capital to the firm.

Accordingly when the debt equity ratio of the levered firm rises the interest rate on debt also rises, the cost of capital is the weighted average of the cost of debt and equity, the overall cost of capital can remain constant while the cost of debt and equity are rising. This will assure a constant overall cost of capital. This is profitable as long as the interest rate on debt is less than the rate at which the equity of the unleveled firm is capitalized.

The author concluded that,

a. When there is considerable debt in the capital structure, any increase in leverage is likely to have a much greater effect on the cost of capital. The risk of ruin thus becomes increasingly important as the degree of financial leverage increases.

b. The interest rate on debt will rise only very slowly, if at all, with leverage when reliance on debt is low but the interest rate may begin to rise very sharply as the capital structure becomes more risky.

c. Firms with risky income streams are less able to assume fixed charges in the form of debt interest and may well find that the average cost of capital begins to increase with leverage even when reliance on debt is moderate.

d. When the restrictive assumption of Modigliani and Miller are relaxed in accordance with existing institution, the result is the traditional cost of capital curve, declining at low amount of debt but rising where leverage becomes substantial.

Blazenko[3] (1987) has carried out the study on "Managerial Preference, Asymetric Information and Financial Structure". The main objective of this study is: To study firm's capital structure decisions as signalling phenomena. The author has used simple model of a manager's financing decision, and studied the relationship between financing and various firm characteristics, viz, collateral value decreases debt use, risk aversion, higher interest rates increase debt use and capital intensity. The author has illustrated for comparision the MM capital structure irrelevant proposition in an environment in which information between insiders and investors is symmetric and managerial preference has no influence on financial policy.

The author concluded that:

a. With symmetric information, managers always use equity. Even in an MM world where preference shareholders' are indifferent to capital structure, manager prefer equity over debt.

b. An increase in fixed assets reduces equity under pricing at the margin, which alternatively can lead to reduce debt use.
c. The higher the ratio of investment to fixed assets, the greater the possibility of debt use.
d. Short-term debt financing is a relatively more encouraging signal of firm quality than is long-term debt financing.

Bradley, Jarrell and Kim[4] (1984) have conducted a study on "On the Existence of an Optimal Capital Structure: Theory and Evidence". The main objectives of this study are:

a. To examine the effects of leverage ratios on firm's earnings.
b. To check the relationship between firm leverage and the relative amount of non-debt tax-shields.

They have developed a theoretical model that synthesizes the recent advances in the theory of optimal capital structure, by using comparative statics and a simulation of the model and the cross sectional regressions of firm leverage ratios.

They concluded that,

a. The permanent or average firm leverage ratios are strongly related to industry classification.
b. The firm leverage ratios are related inversely to earnings volatility. These results are consistent with the theory of optimal capital structure.
c. They have found the strong direct relation between firm leverage and the relative amount of non-debt tax shields. This contradicts the theory that focuses on the substitutability between non-debt and debt tax shields. (A possible explanation is

that non-debt tax shields are an instrumental variable for the securability of the firm's assets with more securable assets leading to higher leverage ratios).

Castanias[5] (1983) has carried out the study on "Bankruptcy Risk and Optimal Capital Structure". The main objectives of this study are:

a. To measure the effect of changes in capital structure on firm's value.
b. To examine a cross sectional prediction of the TS-BC hypothesis.

Here the author has used the previous empirical test of the capital structure hypothesis, prescription of the theory, data and test, empirical results, cross sectional test of 1977 data.

The author concluded that,

a. The empirical results reported here were consistent with a variant of the Tax Shelter-Bankruptcy Cost model, in those firms in lines of business that tend to have "high" failure rates also tend to have less debt in their capital structures.
b. The results are consistent with the thesis that ex ante default costs are large enough to induce the typical firm to hold an optimum mix of debt and equity.
c. Ex ante default costs are large enough to have a substantial impact on the leverage policy of the firm seems to be inconsistent with much of the empirical research.

Chang[6] (1992) has carried out a study on "Capital Structure as an Optimal Contract Between Employees and

Investors". The main objectives of this study are to examine:

a. how stock prices react to exchange offers ?
b. how earnings can be diluted by a decrease in leverage? and
c. why employees' claims are generally senior to those of investors?

For this study the author used the model which has three dates: 0, 1 and 2. The optimal contract between the investors and employees, debt and equity as optimal contract, comparative static implications of the model for exchange offers as a recontracting exchange offers and earnings dilution. Some extensions of the model have also been used. The author concluded that

a. Leverage increasing exchange offers lead to significant stock price increases while leverage decreasing offers lead to significant stock price decreases. An equity for debt exchange can indeed dilute earnings even when the exchange is fair.
b. The optimal contract between the investors and the employees can be achieved by a debt-equity combination and a compensation schedule. Also the optimal debt level is generally lower than the level that maximizes the value of the firm when there is restructuring related non-monetary loss to the employees.
c. The employees and the investors may prefer different ways to finance new projects, the firm's governance and ownership structure may play a role in how financing decisions are made.

Chatrath et al.[7] (1977) have conducted the study on "Cost of Capital, Capital Structure and Dividend

Policy: Theory and Evidence". The main objective of this study is to investigate the relationship between the cost of capital, financial leverage and dividend policy for a sample of NYSE firms over the 1973-1990 period.

They have discussed the potential significance of cost of capital in both dividend and capital structure policies. Using COMPUSTAT data for the sample period they discussed some equations with simultaneously estimated hypothesised relationship between weighted average cost of capital, dividend yield and leverage. They concluded that: the significance of the cost of capital on financial and distribution policies, there is little evidence of temporarily stable parabolic relationship between cost of capital and degree of financial leverage. The evidence is inconsistent with the theories that predict unique interior solutions to optimizing gains from leverage. The evidence of an unstable but significant relationship between leverage and cost of capital indicate that arbitrary financing behavior is not costless.

Chen[8] (1978) has conducted the study on "Recent Development in the Cost of Debt Capital." The main purpose of this study is to review some recent developments in the theory of pricing risky debt and to examine more systematically the determinants of the cost of debt capital.

In order to understand more fully the determinants of the cost of debt capital and the effects of financial leverage on the values of debt and equity of a levered firm subject to bankruptcy risk, the author has analysed the cost of debt capital using a simple

static two-parameter model of asset valuation under uncertainty.

The author concluded that:

a. The market value of a levered firm is the same as an otherwise identical unlevered firm in an unsegmented perfect capital market.
b. It is possible for a firm to go bankrupt prior to the maturity of its balloon payment of debt, consequently alternative processes for the value of a firm allowing positive probability of bankruptcy prior to the maturity of the bond are needed to derive a more general theory of pricing risk debt and the risk premium.
c. The cost of equity capital for an all equity zero growth firm is a function of its systematic business risk, its default premium and the risk free interest rate.
d. The value of a zero growth firm's equity is simply the risk adjusted expected net income available for the shareholder's divided by the sum of the risk free interest rate and the default premium.
e. In multiperiod context the value of a non coupon-bearing bond depends on the firm's probability of survival prior to the maturity of its debt.

Diamond and Verrechia[9] (1991) have conducted the study on "Disclosure, Liquidity and the Cost of Capital". The main objective of this study is to study the causes and consequences of a security's liquidity, especially the effect of future liquidity on the security's current price equivalently the effect on its required expected rate of return and its cost of capital.

The authors have developed a model of trade in an illiquid market with limited risk bearing capacity of risk-averse market makers and examine the effects of private information on the incentives of market makers to provide risk-bearing capacity. They have shown how limited risk bearing capacity of market makers interacts with the effects of private information in the determination of security prices. They analysed the effect of disclosure on price and welfare, other effects on the Rate of Entry and the Role of Competitive Traders.

They concluded that:

a. The reduced information asymmetry increases the competition with market makers and reduced the volatility of future order imbalances, leading to exit of market makers. This exit of market makers increase the temporary component of future security returns.

b. If the firm is large enough, then to have a low cost of capital it must attract large positions from institutional investors.

c. The cost of capital for smaller firms were not as dependent on large positions by large traders, so they disclose less information.

d. A large firm can increase its current stock price by revealing some low precision information only to large institutional investors and can make the timing of the release of this private information known to the public.

e. Revealing public information to reduce information asymmetry can reduce a firm's cost of capital by attracting increased demand from large investors due to increased liquidity of its securities.

f. Large firms will disclose more information since they benefit most.

Ferri and Jones[10] (1979) have conducted the study on "Determinants of Financial Structure: A New Methodological Approach". The main purpose of this study is to investigate the relationships between a firm's financial structure and its industrial class, size, variability of income and operating leverage.

They have used four specific hypothesis for this study. The first hypothesis is concerned with the relationship between industrial classification and financial leverage. The second hypothesis concerned with the connection between size of the firm and leverage. The third hypothesis concerned with the impact of business risk on the firm's use of fixed payment funding. The fourth hypothesis pertains to the suspected influence of operating leverage financial structure. They have used the data from the COMPUSTAT data tapes.

a. They investigated possible linkages between a firm's financial structure and its industry class, size, variability in income and operating leverage.
b. They also found out that industry and financial structure are not totally independent of each other, the dependence is, at best, modest and indirect.
c. Firms with a high proportion of fixed to total assets are concentrated in the low leverage classes. The ratio of average fixed assets to average total assets, generally falls from the lower leverage classes to the higher leverage classes.

d. Variation in income, measured in several ways could not be shown to be associated with a firm's leverage.

Ghosh and Cai[11] (1999) have carried out the study on "Capital Structure: New Evidence of Optimality and Pecking Order Theory". The main objective of their study is to analyse empirically whether the firms do converge towards the optimal capital structure over time or follow the pecking order theory.

They have applied, the nonparametric Fisher Exact Probability test and later applied the Goodman Kruskal gamma measures to analyze the data. They have used three ratios as a measurement of capital structure: Long-term Debt to Total Assets (LTD/TA), Total Debt to Total Assets (TD/TA) and Total Equity to Total Assets (TE/TA).

Their conclusions are as follows:

a. The overwhelming number of firms had convergence towards their respective industry, by all the measures of capital structure thus confirming the optimal capital structure anew. The same tendency had also been observed in the case of asymmetric convergence.
b. They also concluded that both the Optimal Capital Structure hypothesis and the Pecking Order hypothesis coexist.
c. They also concluded that Optimal Capital Structure and Pecking Order theorem are not mutually exclusive. But the pecking order hypothesis is more pronounced than the optimal capital structure hypothesis as the former was significant for all the industries and for all the years. While the

latter was significant for the majority of the industries and for the majority of the years covered by their study.

Glickman[12] (1997-98) has conducted the study on "A Post Keynesian Refutation of Modigliani-Miller on Capital Structure".

The main objectives of this study are:

a. To establish the theoretical case for the existence of the postulated upper bound to the gearing ratio.
b. To trace the origins of this conception of bankruptcy to the MM application of the stochastic paradigm that dominates finance theory and the way it enables them to portray risk as a phenomenon stemming from imperfections that may contigently arise within the economic world the firm inhabits, rather than from the uncertain nature of that world itself.
c. To explore the concept of risk of irrecoverable loss, which offers the key to understanding the determination of maximum gearing levels as well as the causes of bankruptcy.

The author concluded that:

a. His study seeks to reject the conventional wisdom that the decisions that determine firms' capital structure depend on factors that are in some sense superficial in relation to the economy in which they operate.
b. The gearing matters not because of imperfections that prevent the operation of pure market forces but because of essential features of their operation.

c. The firm can raise its gearing level but within those limits, tend to make higher rather than lower gearing a desirable option. The firm attempts to resolve the conflicts inherent in this situation not by searching for an optimal capital structure but by setting itself a target debt ratio that seems likely to produce a workable compromise.
d. The author found out that macro-shifts in liquidity preference are likely to impact on gearing levels in the economy as a whole and impart an instability to investment that is purely financial in origin.

Gupta[13] (1969) have carried out the study on "The Effect of Size, Growth and Industry on the Financial Structue of Manufacturing companies". The main objectives of the study are:

a. To determine the patterns in the inter-industry variations in the financial ratios which systematically relate to features characteristic of different industries.
b. To reveal the pattern, if any, in the variations of such corporate attributes as asset utilization, leverage, liquidity and profitability between manufacturing enterprises operating at different size levels.
c. To explore and explain the effects of differential growth rates on the financial structure of the enterprise.
d. To offer theoritical justifications and economic explanations of the findings.

The author used various financial ratios for the study of corporate financial structure.

The author's conclusions regarding capital structure are as follows:

a. The profitable industries, because of the greater availability of internally generated funds related to their high profitability tend to have lower debt in their financial structure.
b. Industries which have high fixed asset turnover also tend to have high debt in their financial structure.
c. Leverage is a function of multivariates that have varying significance in different industries.
d. Leverage ratio decreases with an increase in the size of the corporation, but they increase with the growth of the corporation.

Homaifair et al.[14] (1994) have carried out a study on "An Empirical Model Of Capital Structure: Some New Evidence". The main objective of the study is to present a more comprehensive model of capital structure by including a proxy for the corporate tax rate which has been omitted from the models of both BJK (Bradley, Jarrell and Kim, 1984) and TW (Titman and Wessels, 1988).

They discussed the theoretical determinants of the firm's capital structure, data and empirical methodology i.e. Econometric Technique, Estimation results. A general autoregressive distributed lag model (ADL) have been used.

They concluded that:

a. In the long run, the leverage ratio is indeed positively related to corporate tax rates. The relationship between leverage and non-debt tax

shelter ratio is also positive but statistically insignificant.

b. On the short-run contemporaneous year by year basis there is no statistically significant relationship between leverage and corporate tax rates.

c. Firm size and future growth opportunities appear to be important determinants of the capital structure. According to them there is a positive association between leverage and firm size and there is a strong negative relationship between future growth opportunities and leverages.

Haugen and Senbet[15] (1978) have carried out the study on "Insignificance of Bankruptcy Costs to The Theory of Optimal Capital Structure".

The main objective of this study is:

a. To check that bankruptcy penalties related to capital structure decisions cannot be of sufficient magnitude to act as an offset to the tax subsidy and hence provide a reconciliation between the MM theorem and observed firm behaviour. In this study the authors have used theoretical approach of bankruptcy and liquidation.

They have concluded that:

a. If rationality prevails, the expected value of future bankruptcy costs must be attributable to the more efficient means of reorganizing the firm and therefore this value was limited to the lesser of the expected cost of bankruptcy and the expected cost of transacting informal reorganization in the capital markets.

b. In the presence of rationality and in the absence of systematic errors in pricing by the capital

market, the liquidation decision was best considered as being independent of the state of the firm or the nature of it's capital structure.

c. There was no basis for such an assumption because the liquidation decision was independent from the event of bankruptcy.

Jones et al.[16] (1984) have carried out a study entitled: "Contingent Claims Analysis of Corporate Capital Structures: An Empirical Investigation". The main objective of this study is: to test the predictive power of a contingent claims analysis model of typical capital structure. A distinction is made between the model's performance vis-a-vis investment grade and bonds. The second important objective is to establish the empirical validity of the contingent claims analysis model.

The authors have used the theoretical basis of Contingent Claims Analysis. Data are collected for 27 firms on a monthly basis. They used indenture data, standard deviation data and interest rate data. They concluded that:

The expected capital loss on the quality bonds is larger in absolute terms than the expected capital loss on the high quality bonds. Hence the low quality bonds will have a higher coupon rate than the high quality bonds. In short, since Government par bonds are perfectly safe, any tax effect will cause corporate par bonds to be overpriced in general. They also concluded that the Contingent Claims Analysis Model is not an improvement over a risk-less model for investment grade bonds.

Kim[17] (1978) has carried out a study on "A Mean-Variance Theory of Optimal Capital Structure and Corporate Debt Capacity". The main purpose of this study is:

To examine the issues of debt capacity and optimal capital structure when firms are subject to stochastic bankruptcy costs and corporate income taxes in the context of the Capital Asset Pricing Model. They analysed the effects of bankruptcy costs and corporate income taxation on firm valuation. They also analysed the corporate debt capacity.

The author concluded that:

a. In a perfect capital market where firms are subject to income taxes and costly bankruptcies, debt capacity occurs at less than one hundred percent debt financing and firms do have optimal capital structures which involve less debt financing than their debt capacities.
b. The market value of the firm increase for low levels of debt and decrease as financial leverage becomes extreme.
c. The market value of the firm is a strictly concave function of its total end-of-period debt obligations with a unique global maximum.
d. They also concluded that the traditionalist's argument follows from the MM logic by allowing for the existence of corporate income taxes and bankruptcy cost.

Kim[18] (1982) has carried out the study on "Miller's Equilibrium, Shareholder Leverage Clienteles and Optimal Capital Structure".

The main objectives of this study are:

a. To examine the individual portfolio decisions when income from stocks and bonds is taxed at different rates.
b. To examine a rationale for the existence of risky debt in the presence of leverage-related costs and differential personal income taxation is provided.

The author has used the portfolio risk consideration and the possibility of loosing personal and corporate interest tax shields. This enables us to provide a rationale for shareholder leverage clientele phenomenon within a mean-variance framework. They also demonstrate a non-corner solution for the optimal corporate capital structure in a tax environment. They have also used risky debt, attendant costs and reexamine the synthesis recent studies on the theory of optimal capital structure.

The author concluded that:

When the results from the analysis on the demand and the supply side are combined, it appears that shareholders' leverage clienteles may reduce both the magnitude of the tax advantages and the agency costs associated with corporate debt financing. The demand for the equity of firms with either high or low leverage arising from differences in personal tax rates across investors may be just as important a determinant of corporate capital structure as are the tax advantages and leverage related costs.

Leland[19] (1994) has carried out a study on "Corporate Debt, Bond Covenants, and Optimal Capital Structure". The main objectives of the study are:

a. How do yield spreads on corporate debt depend on leverage, firm risk, taxes, payouts, protective covenants and Bankruptcy costs?
b. Do high risk bond values behave in qualitatively different ways than investment-grade bond values?
c. What is the optimal amount of leverage and how does this depend on risk free interest rates, firm risk, taxes, protective covenants and bankruptcy costs?
d. How does a positive net-worth covenants affect the potential for agency problems between bondholders and stockholders?

The author used the methodology of simple dynamic model of a levered firm, a model of time independent security values, Debt with no protective covenants, optimal leverage with unprotected debt, positive net worth covenants and the value of protected debt, optimal leverage with protected debt, protected versus unprotected debt, debt renegotiation.

The author concluded that:

a. A rise in the risk-free interest rate (increasing the cost of debt financing) leads to a greater optimal debt level. Higher interest rates generates greater tax benefits, which in turn dictate more debt despite its higher cost.
b. The optimal debt for firms with higher bankruptcy costs may carry a lower interest rate than for firms with lower bankruptcy costs. This is because firms will choose significantly lower optimal leverage when bankruptcy costs are substantial, making debt less risky.
c. It may be desirable for shareholders to wait until the brink of bankruptcy before renegotiating. When bankruptcy is neared, a reduction in coupon

payments to the optimal level may benefit both stockholders and bondholders, without additional side payments.

Masulis[20] (1983) has made a study on "The Impact of Capital Structure Change on Firm Value: Some Estimates". The study develops a model based on current corporate finance theories which explains stock returns associated with the announcements of issuer exchange offers. The main objective of the study is to examine the impact of a change in debt-level on firm values. Issuer exchange offers and recapitalizations have been examined.

The author has made an Economic Model of Exchange Offers on the values of firms' common stock. The model is estimated and tested using testing of hypothesis.

The author concluded that:

a. Changes in stock prices are positively related to leverage changes.
b. Changes in nonconvertible senior security prices are negatively related to leverage changes.
c. The magnitude of leverage induced nonconvertible senior security price changes is substantially greater when leverage changes involve senior securities of equal or greater seniority to those outstanding.
d. Changes in firm values are positively related to changes in firm debt level.

Myers[21] (1984) has conducted a study entitled "The Capital Structure Puzzle". The main objectives of this study are:

a. To make a helpful suggestion on capital structure and try to push research in some new directions.

b. To make this theory as well as the static trade-off theory in explaining what we know about actual financing choices and their average impacts on stock prices.

In this study the author has explained Managerial and Neutral Mutation Hypothesis. But he has done sidestep for Miller's idea of 'neutral mutation'. The author did not agree with this idea and therefore he also explained 'The Static Trade-off and Pecking Order Hypothesis'.

The author concluded that:

a. Firms have good reasons to avoid having to finance real investment by issuing common stock or other risky securities. They do not want to run the risk of falling into the dilemma of either passing by positive NPV projects or issuing stock at a price they think is too low.
b. They set target dividend payout ratios so that normal rates of equity investment can be met by internally generated funds.
c. The firm may also plan to cover part of normal investment outlays with new borrowing, but it tries to restrain itself enough to keep the debt that is reasonably close to default-risk free. It restrains itself for two reasons:
   (i) to avoid any material costs of financial distress, and,
   (ii) to maintain financial slack in the form of reserve borrowing power.
d. Since target dividend payout ratios are sticky and investment opportunities fluctuate relative to internal cash flow, the firm will from time to time exhaust its ability to issue safe debt. When this

happens, the firm turns to less risky securities first.

The modified Pecking Order Theory recognises both asymmetric information and costs of financial distress. The finanacial stack is valuable and the firm may rationally issue stock to acquire it.

Paster and Stambaugh[22] (1999) have conducted the study on "Cost of Equity Capital and Model Mispricing". The main objectives of their study are:

a. To quantify various sources of uncertainty and gauge the relative importance of each source in estimating a firm's cost of equity.
b. To investigate factor based model with a focus on the estimates they produced rather than on their asset-pricing abilities versus each other or versus non-factor based approaches.

They have used the general form of the prior used in their Bayesian approach. They have explained how to obtain the resulting posterior distributions of the stock's expected excess return and its components and also describe the empirical Bayes procedure used to obtain parameters in the prior distribution. They have also used reports and analysed posterior moments of the expected excess return and its components for individual stocks and model uncertainty and overall uncertainty about the cost of equity for utilities.

They concluded that:

a. The additional information in those series produces posterior means for the factors and thus for stock's expected excess return, that differ substantially from those based on the factors histories alone.

b. Even after incorporating the additional information in series beginning in 1926, uncertainty about factor premiums still makes the largest contribution to overall uncertainty about the expected excess return, although uncertainty about betas is nearly as important for the typical individual stock.

Riddiough and Thompson[23] (1996) have carried out the study on "Valuing debt in a Complex Capital Structure". The main objective of this study is:

To develop a model of debt valuation that relaxes the full endogeneity assumptions found in many bond valuation models, that recognises the costs which accompany financial distress and that allows for a variety of conditions governing the payoff in the event of financial distress.

They have used the debt valuation model, Discount bond valuation with no assets value recovery, discount bond valuation with partial value recovery. They have used regression to estimate an odds ratio equation and estimated coefficients.

They concluded that:

a. A debt instrument at potentially any position in the priority structure, default occurring stochastically at any time before maturity and payoff on the debt as a fraction of book value.
b. The bond default probability rate is characterized as a function of the total long-term liability structure of the firm by explicitly positing a simple inverse relationship between firm value and the credit event likelihood rate.

c. Because of default risky bonds are contigent claims on firm asset values, bond pricing must incorporate a discount rate that reflects the systematic risk of the firm's assets.

d. Because significant default risk is present in junk bonds, one would naturally expect high-risk premiums to be present in the bond yield as compared to those required in an environment where market asset risk is not priced.

Schall[24] (1971) have carried out the study on "Firm Financial Structure and Investment". The main objectives of this study are:

a. To show that, under certain conditions, investment diversification is also irrelevant with imperfect capital markets.

b. To examine the market valuation of the firm and its relationship to firm investment policy under the assumption that markets may be imperfect in the sense that their firm value may depend upon how the firm's income is divided into debt and equity claims.

To examine the market valuation of the firm and its relationship to firm investment policy, the author has found that investment diversification is irrelevant to firm investment planning and that projects should be judged individually. Therefore, the author has analysed both without and with corporate income taxes.

The author has concluded that: even if the firm value depend upon how its earnings are divided into debt and equity, maximization of firm value implies that investment diversification by the firm has no place in the capital budgeting strategy. The gain to

the firm from a new project is entirely independent of the stochastic properties of the other earnings of the firm. This was shown to imply that any advantage of firm merger be based upon real economies. The author has also concluded that it have been established under the assumptions that are at best are rough approximation of reality and were reached under the constraints that all firm debt is riskless. Without this constraint, the findings might hold only as approximations.

Scott[25] (1977) has carried out the study on "Bankruptcy, Secured Debt and Optimal Capital Structure". The main objective of this study is to examine the effect of issuance of secured debt on the total value of a firm, in the absence of corporate taxes. Here the author has tried to set the results by assuming the following:

a. Securities are completely divisible and there are no flotation costs, transfer taxes, costs of bankruptcy or other transactions costs.
b. The default free rate of interest is given and is expected to remain constant in the future.
c. All investors have the same marginal tax rate so that the tax rate can be assumed equal to zero with no loss of generality.
d. In each period, investors are assumed to maximize their expected end of period wealth.
e. It can be assumed that the firm's assets are non-depreciating or that depreciation charges are just sufficient to maintain a fixed capital stock.

f. Debt is assumed to be sold at its par or redemption value. The author also utilized a mathematically tractible multi-period firm valuation model.

The author concluded that,

a. The multi-period valuation model, where it was possible not only for the firm to go bankrupt but also to raise funds in the capital market in an attempt to avoid bankruptcy.
b. A firm following an optimal policy should issue as much secured debt as possible.
c. The maximum amount of secured interest payments was shown to be an increasing function of the size of the firm and of both the mean and variance of its earnings stream.
d. Increases in the default free rate of interest decreased the maximum amount of secured interest payments.
e. Finally the author concluded that in some respects the financial lease provides better security than a secured bond.

The above paper is commented by Smith and Warner[26] (1979). The main objective of this study is to examine why the issuance of secured debt will not alter the value of the firm.

Here the authors have argued against the Scotts's result that the firm should issue as much secured debt as possible. In this context they have explained some examples, i.e.

Scott claims that an individual did business prior to an increase in the firm's level of secured debt, the prices originally paid reflect the probability of a change in the level of secured debt. Securing debt will

not increase the wealth of the firm's owners except in the special case where the affected claim holder has no contractual relationship with the firm. Smith and Warner have argued against above statement and said that for example, the firm's delivery truck injures a pedestrian. Even most companies carry insurance against liability for personal injuries and property damage to others and it is not unusual for their indentures to include specific provision with respect to the maintenance of such insurance. Therefore, more possibility of third party lawsuits is not a sufficient condition to explain why firm's issue secured debt. They gave an alternate explanation of secured debt also.

They concluded that the firm will not necessarily "Go to the limit". It depends upon the relative magnitudes of the costs and benefits of the firm.

In their reply to Smith and Warner, Scott[27] argued that firm's with high probabilities of bankruptcy will find the benefit of secured debt greater and are more likely to issue it. While firms' with very low probabilities of bankruptcy will find that the benefits of secured debt are small. The author has also concluded that the benefits of secured debt depends on the types of assets the firm can offer a security, transaction costs are relatively low for real estate, but relatively high for accounts receivables. Therefore, the author concluded that an optimizing firm with no chance of default will issue unsecured rather than secured debt.

Shahar[28] (1968) has carried out the study on "The Capital Structure and the Cost of Capital: A Suggested

Exposition". The main purpose of the study is to present the capital structure theorem within the framework of the theory of investors behaviour towards return and risk.

In this study the author has made the assumption of a constant interest rate. By this assumption the author presented the technical aspects of the model. The author developed the application under the condition of variable interest rates, define the term efficient capital structure, formulate the cost of capital theorem and discussed its implications for the cost of capital curve in a free of tax and under income tax. The author concluded that:

a. In a perfect capital market where the interest rate was constant, any capital structure was efficient and the cost of capital was therefore constant.
b. When the firm's borrowing rate rises and the investors rate is constant, the range of efficient capital structure is limited.
c. The highest efficient financial leverage was determined where the firm's marginal borrowing rate equals the investor's rate.
d. The cost of capital was therefore constant along the range of efficient capital structure.

One of the very fundamental work is carried out by Soloman[29] (1963) in the area of leverage and cost of capital.

The main purposes of this study are:

a. To isolate the effect of leverage alone from the many other factors that may be involved in using debt wisely.

b. To check the effect of debt that a change in financial leverage has or can be assumed to have, on a companies cost of capital.

Here the author has simplified the models for getting such results.

In general practice k_i, the average rate of interest paid on debt must rise as leverage increases. For extreme leverage positions, i.e. as the company approaches an all-debt situation, it is clear that k_i will be at least equal to k_o (average cost of capital). According to general attitude of bondholders and bond-rating agencies, k_i will be above k_o, for positions of extreme leverage. Now as k_i, the average cost of debt rises the marginal cost of borrowing, pretax marginal cost of borrowings (m) must be above k_i.

Therefore, there is some point of leverage at which company finds that m, the marginal cost of more debt, is higher than its average cost of capital k_o. That means the point at which a company finds that $m \geq k_o$ represents the maximum use of leverage, it can be argued that no rational company will finance with more pure debt, it can do so more cheaply by using a mixture of debt and equity similar to that outstanding in its existing structure. If this fact is accepted then the argument between MM and the traditional position completely disappears.

The author concluded that:

a. There is no legitimate basis for assuming that k_e will fall as leverage is increased and hence no basis for assuming that k_o can remain constant as leverage is increased through the use of debt issues which involve a marginal cost higher than k_o.

b. The argument that a company's cost of capital is independent of its financial structure is not valid. As far as the leverage effect alone is concerned, there does exist a clearly definable optimum position the point at which the marginal cost of more debt equal to or greater than a company's average cost of capital.

Titman and Wessels[30] (1991) have carried out the study on "The Determinants of Capital Structure Choice". The paper analyses the explanatory power of some of the theories of optimal capital structure in three ways.

a. It examines a much broader set of capital structure theories.
b. The theories have different empirical implications in regard to different types of debt instruments, the authors analyse measures of short-term, long-term and convertible debt rather than an aggregate measures of total debt.

They concluded that:

Debt levels are negatively related to the "uniqueness" of a firm's line of business. They also concluded that transaction costs may be an important determinant of capital structure choice. Short-term debt ratios were shown to be negatively related to firm size, possibly reflecting the relatively high transaction cost small firms face when issuing long-term financial instruments.

From the survey of above literature, in the context of foreign countries, it can be concluded that the studies have contributed to both theoretical

development of the subject, as well as empirical testing of the same. However, following things are worth noting:

In above studies as a measure of capital structure, it is D/E or LTD/TA or TD/TA or TE/TA or combination thereof is taken but in none of them all 4 are taken together.

In majority of the studies it is observed that as debt rises the increasing debt is available at increasing cost. The studies are also made with reference to the relationship of leverage with size, asset structure, etc. According to some size and leverage are positively related whereas according to others they are negatively related.

The following para discusses studies carried out in the Indian context.

Bandopadhyay[31] (1997) has carried out the study on "Capital Structure Policy and Allied Issues".

The main objective of this study is: to examine how capital structure is decided by the business strategy and corporate policies? To examine his aim the author has used different components of debt, composition of equity, foreign capital raised by RIL, business strategy and other policies. The author has also used D/E, Interest Coverage and Debt Service Coverage ratios. The author concluded that: Capital structure of RIL is conservative. The D/E ratio of RIL is low. It is the policy of RIL to maintain D/E at a low level. But present D/E ratio is inconsistent with its target growth rate. So, either it should tend to increase D/E ratio or it should change its target growth rate.

Bansal[32] (1994) has carried out a discussion on "The Earning Before Interest and Taxes Earning Per Share Approach to Capital Structure". The main objective of this discussion is designing the best capital structure which can provide the highest EPS over the firms' expected range of EBIT. For this discussion the author has discussed investment decision, financial decision, financial structure/capital structure, the optimal capital structure, financial leverage, EBIT-EPS analysis, financial breakeven point, indifference point, maximizing EPS and maximizing value.

The author concluded that:

a. The firm's financial manager must invest enough in real assets, but not too much and therefore financial decision should be shaped to support the firm's investment strategy, not vice-versa.
b. Those companies who do not design their capital structure in a preplanned way have to face difficulties in raising funds on favourable terms in the long run to finance its plan development.
c. In the absence of financial leverage a percentage change in EBIT causes the same percentage change in net income and EPS. If the firm uses financial leverage, the percentage change in net income and EPS would be greater than the percentage change in EBIT.
d. EBIT-EPS is frequently used to analyse alternative capital structure under various alternative financial plans.
e. If EBIT is less than financial break-even point, then EPS will be negative. But if the expected level of EBIT exceeds that of break-even point, more fixed cost financing instruments can be

inducted in the capital structure. Otherwise the use of equity would be preferred.

f. The expected level of EBIT exceeds the indifference point, i.e. the use of debt financing would be advantageous to maximize the earning per share.

Batra[33] (1981) conducted a study on D/E ratio in Indian Corporate Sector during the period between 1970-71 to 1977-78. The main object of the study is: to examine the trends in D/E in various industries e.g. Aluminium, Cement, Chemicals, Engineering, etc. The author compared the D/E ratio of the sample industries with the norms set by the Controller of Capital Issues in this regard and identified the factors responsible for the differences between them. The author found that the D/E norms of 2:1 was far and away from the companies under study and it was well below 1:1. There was much scope for the companies to increase the volume of debt in relation to equity in their capital structure. The following factors were responsible for the low D/E ratio in the Indian Corporate Sector.

a. The Indian industries met part of their long-term financial requirements through borrowings from banks for short-term and got it rolled over a number of years. In this way, they were able to keep the level of long-term debt as low as possible.

b. During the period under study, the response of public to the issue of shares both by the new and existing companies were encouraging as a result of this, the management had preferred to raise funds by the issue of shares and therefore it led to the lowering of D/E ratio.

c. The inclusion of convertibility clause in the loan agreement was the main factor responsible for the lesser use of institutional loans. Inordinate delay in the disposal of loan applications by the financial institution e.g. IDBI, ICICI, IFCI, was also responsible for the lower share of debt in the capital structure of the companies.

The author concluded that:

The operational efficiency of the financial institutions could play an important role in proportion of loan.

Malhotra[34] (1987) has carried out a study on "Financial Structure, Policies and Economic Growth".

The main findings of this study are:

a. Primarily any financial structure is to act as a conduct for the transfer of financial resources from net savers to net borrowers i.e. from those who spend less than they earn to those who earn less than they spend.
b. In India concrete policy efforts have been made to use the financial structure as a vehicle for serving the twin objectives of both growth and equity.
c. Financial structure provide the vital infra-structural link between saving and investment activities.
d. Financial structure can raise the productivity of aggregate investment by improving its allocative efficiency through the process of sorting out and ranking of alternative investment proposals.
e. The financial structure allows various types of intervention through which the authorities can

affect the volume and price of financial claims which may help in stabilizing economic activities in the face of cyclic fluctuations.

Saradhi[35] (1968) studied the corporate capital structure trends in India during the first three plan periods. It revealed that the depreciation provision and bank finance maintained an increasing trend in the contribution of gross capital formation. Also it found that due to the low profitability and increased burden of tax provision, the net savings recorded a declining trend. Corporate management maintained a low capital gearing ratio in view of declining profitability and recessionary tendencies in the economy. They mainly depended on internal finance due to the low or no cost sources of funds. In fact, equity varied between 3.1 and 5.6 times the debt capital throughout the three plan periods.

Sarkar[36] (1980) made an important research study on the capital structure of the central Government Companies during 1960-61 to 1969-70. The study dealt with particular reference to the share capital, borrowed capital and internal funds as broad categories in total capital structure. The major findings of the study are:

a. Initially equity played significant role in the central Government companies but over the years the position had been shifted in favour of the debt capital. The D/E ratio was 0.26:0.74 in 1960-61 changed to 0.60:0.40 in 1969-70.
b. Retention played a negative role in the capital structure during the period 1962-63 to 1969-70.

c. The proportion of share capital declined from 74% in 1960-61 to 40% in 1969-70.
d. As a result of negative role of retention and declining trend in share capital, external sources which were in high proportion in the capital mix in the capital structure of the command of the same from the year 1962-63.
e. The higher proportion of the external funds came from the borrowings from the Government and semi Government agencies either in the form of secured loans or unsecured loans.

Sharma and Sharma[37] (1997) have carried out the study on "Financial Decision Making With Reference to Capital Structure Analysis". The main object of this study is:

To test the empirical relationship between Capital Structure and Cost of Capital, Financial Leverage, Earning Before Interest and Taxes (EBIT) and risk.

They used weighted average cost of capital and financial leverage. They have used the Balance Sheet of the year 1989-90 of nine different companies for calculation and have used Goal Programming. They concluded that:

The first priority, minimization of (funds/EBIT) ratio and second priority, minimization of cost of capital are achieved but the third priority, the maximization of shareholders funds is underachieved.

Sharma[38] (1988) carried out a study on Corporate Financial Structure from 1975-1981. The main object of the study is:

To obtain a deep insight into and full familiarity with the financial position of the Automobile

Industries in India. Based on published annual reports of the sample automobile companies, the financial analysis such as ratio analysis, trend analysis, funds-flow analysis, common size statement analysis is carried out.

Some of the findings that carried significance for the present study are as follow:

a. The proportion of debt was always more than two times the equity during 1977-1981. In 1976 the proportion of debt exceeded three times the equity.
b. The proportion of share capital in total funds marked a decreasing trend except for the period 1976, when it had slightly increased as compared to 1975.
c. The proportion of reserves and surplus in total funds marked an increasing trend during the period except in 1980, when it had marginally decreased as compared to 1979. The share of reserves and surplus exceeded the share paid up capital throughout the period under study except in 1975.
d. The proportion of long-term borrowing in total funds fluctuated from year to year throughout the period under study, but it was very high during the entire period of study. The automobile companies have tried to justify the high proportion of long-term borrowings by maintaining a good return on equity capital.
e. Among current liabilities and provisions, the proportion of current liabilities in total funds marked an increased trend except in 1977. The increase in proportion of current liabilities was mainly due to continuous increase in the proportion of sundry creditors.

f. The proportion of fixed assets always exceeded the amount of net worth. The excess share of assets over the net worth was financed by the borrowed funds.

The author concluded that:

On the whole, the financial position of the automobile industry was satisfactory.

Sharma[39] (1986) conducted a study on the "Corporate Financial Policy and Dividend Decisions". The author selected six major industries viz, General Engineerings, Electrical Equipments, Cotton Textiles, Paper and Paper Products, Sugar and Chemical including Drugs and Pharmaceutical Companies. The data were obtained from The Stock Exchange Official Directory of Bombay for the period 1967-68 to 1980-81. The author found that the managements of the pharmaceutical companies depended largely on external sources of funds. The managements were maintaining sufficiently high dividend per share in order to keep the shareholders happy and also to keep prices of shares steady. There were no significant investment in the fixed assets of the companies. The companies were making attempts to strengthen their net worth through building up of reserves.

Suresh Babu and Jain[40] (1998) have carried out the study on "Empirical Testing of Pecking Order Hypothesis: With Reference to Capital Structure Practices in India". The main objectives of this study are:

a. To understand the reality among the corporate finance managers of the private corporate sector in

India and to look close at each factor to measure its influence over capital structure decisions.

b. To know from corporate firms whether their dependence on capital market has changed or not in the wake of opening up of the Indian economy with liberalisation.

They concluded that: there exists a Pecking Order Hypothesis in the Indian context in that corporate firms prefer internal to external financing. They have also concluded that there are various practices among corporate firms in India as far as computation of specific costs and overall cost of capital is concerned. Some seem to confirm to sound financial management principles while some other completely disregard them.

The RBI[41] (1987) studies on Finances of non-financial, non-Government, medium and large public limited companies in the private corporate sector are useful to know the pattern of financing in the private sector companies. The structure based on the analysis of the Balance Sheet and Income Statements of the companies for the period from 1975-1979 and 1980-1984. The main findings on the basis of sources and uses of funds of medium and large public limited companies are:

a. The proportion between internal sources (paid up capital reserves and surplus provisions) and the external sources (new capital issues borrowings and trend dues) was 43:57 during 1975-79 and was 35:65 during 1980-84.

b. In general sources, the share of borrowings, viz, bank borrowings was the highest throughout the period under study followed by trade dues and

current liabilities, debentures and public deposits. The share of new capital issues was the lowest among all the sources of external finance.

c. In internal sources the share of depreciation was highest followed by reserves and surplus and paid up share capital.

d. The fixed assets were mainly financed by internal sources. The share of term loans in financing the fixed assets was less than net worth.

The Tariff Commission[42] (1969) made a comparative study of the profitability ratios and the assets structure of the pharmaceutical industries with other chemical products manufacturing industries in India. The major conclusions of the study are as follows:

a. The ratio of gross profit to sales and gross profit to capital employed in the pharmaceutical industry were higher than basic chemical and other chemical products manufacturing industries in India.

b. The ratio of PAT to net worth in the pharmaceutical industry was also higher than other industries included in the study during the period 1960-61 to 1965-66.

c. The ratio of profit retained by the pharmaceutical industry was higher and therefore it enabled the management of the pharmaceutical industry to pay dividends at higher rates than other industries in the study.

d. The pharmaceutical industry is less fixed capital intensive than the basic industrial chemicals but it is slightly more capital intensive than the chemical products industry.

On survey of literature in the Indian context following observations are worth noting:

1. In some of the studies only one company is studied over a period of time. This may be a case of an exceptional company and it is not proper to generalize the findings.
2. Some studies are based on primary data collection, where the findings are based on views, rather than figures and it may be possible that the views differ from group to group.
3. So far as period under study is concerned, for majority of studies period under consideration is 10 to 15 years.
4. As a measure of capital structure, generally only D/E ratio is considered.

In the light of above limitations, the present study attempts to take into its span more number of companies, more number of years and more measures of capital structure.

The next chapter examines the theories of financial and capital structure.

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