Chapter- VIII

SUMMARY, FINDINGS AND CONCLUSION

This chapter summarizes the whole thesis in brief so that the purpose of the study, review of existing literature, methodology and scope of different chapters get clear with a bird’s eye view. The findings of data based chapters are presented in organized way. This chapter ends with scope for future research.

8.1 Introduction

A financial manager has to take three important decisions. These decisions are classified as investment decision, financing decision and dividend decision. Cost of capital is defined as minimum rate of return required on investment projects to satisfy the claims / expectations of suppliers of funds in terms of regular payments. Suppliers of funds can be classified into two categories- lenders and owners / shareholders. From lender’s point of view cost of capital is the effective interest rate at which they have granted loans. From the point of view of shareholders, cost of capital is the earnings / dividend rate required to maintain the present market value per share. Thus ignoring taxes and floatation costs, the cost of capital represents two sides of same coin-the cost to issuers is the return to investors. The cost of capital plays an important role in choice of a project, financing and dividend decisions of a company. For investment decisions, cost of capital serves as a yardstick for measuring the profitability of investments. An important use of cost of capital is in the area of capital budgeting. An inter-relationship exists between capital budgeting and cost of capital. For example, to determine the size of the capital budget, corporate managers need information about both the expected return on investment opportunities and the expected cost of proposed capital. In capital budgeting, it is used as discount rate in the calculation of net present value or as the cut off rate for comparison with internal rate of return of projects. A cut off rate is that rate below which no project involving capital expenditure should be accepted. If the rate of return of a project is expected to be less than cut off rate, it would be better for a concern not to invest its funds in the project (Porwal, 1976). Secondly, it is used in designing capital structure of an enterprise. Capital structure decisions have an effect on the financing mix
of the firm which in turn affects its cost of capital. In building up its capital structure over a period of time, a firm will depend upon that line of financing which involves minimum cost. Thirdly, the cost of capital plays an important role in the field of evaluating financial performance of top management. It helps in allocating capital funds within an enterprise. It serves as yardstick for measuring profitability of investments (Bhattachary, S.K. 1970). Finally, dividend policy decisions influence the amount of earnings distributed to shareholders or retained by the firm to finance future growth. Dividend policy has impact upon the return required by investors and the firm’s cost of capital. Thus it can be said that cost of capital acts as nucleus in the framework for financial management decision making. (Kuchhal, 1986). Thus the main function of cost of capital is to provide a correct and objective criterion by which management can determine whether it should or should not accept available proposals involving capital expenditure. From the above it is implied that the shareholders funds, raised by issuing shares and or by retaining net earnings, should be so utilized that the firm earns return on them, greater the return expected by the shareholders with a view to maximize their wealth. In case an enterprise fails to earn the required rate of return, the market value of shares will fall and overall wealth of shareholders will be reduced.

8.2 Review of Related Literature

Review of literature is done to have in depth idea related to the field of study. It gives us background and research gap in earlier studies. A brief review of empirical studies on various aspects of cost of capital in India and abroad is as follows:

Modigliani and Miller (1958) tested empirical relationship between capital structure and cost of capital. They found out that cut off rate for investment decision making in a given risk class was not affected by the manner by which such investment was financed. They emphasized the point that investment and financing decisions were independent of each other and average cost of capital was not affected by financing decisions of a company.

Modigliani and Miller (1963) in their second study tested whether leverage had tax advantage or not. The M-M’s hypothesis in a world of taxes was in conformity with the view that with growing leverage weighted average cost of capital tend to decline.
They stated that financial risk borne by equity shareholders also increased with increase in leverage ratio. As a result weighted average cost of capital didn’t fall sharply but at a very slow rate.

**Weston (1963)** attempted to test various propositions of capital structure theories related to cost of capital. The regression coefficient of leverage had been observed to be negative and significant. He found out that growth and leverage were negatively correlated. His findings were consistent with traditional theory of capital structure. He didn’t disapprove M-M’s independence hypothesis as his results provided no clue whether the coefficient of leverage in equation would remain insignificantly negative if there were no taxes.

**Pandey (1981)** tried to examine empirical relationship between capital structure and cost of capital. He concluded that results of his study did not support propositions of Modigliani and Miller (M-M) i.e. average cost of capital is not affected by capital structure changes and cost of equity capital (K_e) linearly increases with leverage. The results of his study supported traditional viewpoint and rejected Modigliani and Miller (M-M) hypothesis.

**Babu and Kaur (1992)** conducted a study on determination of cost of capital of selected Indian companies. More than 71 percent out of total companies stated that they determined their cost of capital. In order to compute cost of capital, the method of simple average of the component costs was placed on the top followed by weighted average cost of capital. Overall weighted average cost of capital (WACC) method was used by one fourth of selected companies. They found out that more than 80 percent of respondent companies used cost of capital in evaluating capital investment projects and around 57 percent used it in evaluating financial performance.

**Yesoda (1992)** examined relationship between capital structure and cost of capital and also ascertained the influence of selected ratios on cost of capital. The weighted average cost of capital (WACC) had been found out to be sensitive not only to different sources of financing mix but also to earnings per share, retention ratio as well as market price of the shares. Debt equity ratio had been found out as one of most important ratios that influenced cost of capital.
Ghanbari (1993) attempted to find out the cost of capital of Indian industries and analyzed the relationship between capital structure and cost of capital. He found out empirical evidence on capital structure and its impact on overall cost of capital ($K_o$) and market value of the firm. He concluded that financing pattern of a firm had affect upon its overall cost of capital ($K_o$) to a great extent. The irrelevance theorem of Modigliani and Miller did not seem to be applicable for Indian industries.

Gupta (1994) analyzed the importance of cost of capital in capital budgeting and capital structure decisions. He found out that a firm while deciding proportions of different financing sources tried to minimize its cost of capital and maximize the value of firm. While choosing a particular project to be financed firms used cost of capital as a discount rate to find out feasibility of proposal. Thus the importance of cost of capital in capital budgeting and capital structure decisions could not be ignored.

Kaur and Malhotra (2000) conducted a study with the objective to estimate cost of debt and cost of equity and to analyze the trends in debt equity ratio of Tata Iron and Steel Company Ltd. (TISCO) for a period of 19 years i.e. 1979-80 to 1997-98. The debt equity (D/E) ratio of company remained less than 1:1 in 12 out of 19 years which indicated company’s preference for equity as compared to debt. They concluded that relationship between debt-equity ratio, weighted average cost of capital (WACC) and earnings per share had proved that equity was cheaper source of finance as compared to debt in case of TISCO.

Singh (2002) attempted to examine relationship between capital structure and cost of capital. He found out that large scale companies used more debt financing as compared to medium and small scale companies due to its lower cost and easy availability of credit. The findings of his study supported traditional viewpoint of capital structure theories that overall cost of capital ($K_o$) reduces with use of debt up to reasonable limit.

Aaun and Heshmati (2006) examined causal relationship between capital structure and cost of capital of Information and Communication Technology (ICT) firms in a simultaneous equation framework. The results of study showed that international diversification had negative effect on leverage and overall cost of capital ($K_o$). They found out that ICT firms relied more on equity financing as evident by lower debt to
equity ratios and a higher equity base when compared to non-ICT firms. They found out that ICT firms had higher beta, intangible assets and cost of capital coefficients having preference for equity financing as compared to debt financing. International ICT firms had been subject to higher systematic risk, low leverage ratios and a higher overall cost of capital ($K_o$).

Singh and Kaur (2007) analyzed the impact of liberalization upon overall cost of capital ($K_{o1}$ and $K_{o2}$) of one of the leading top-level Indian companies i.e. Reliance Industries Limited (RIL) for a period of 22 years i.e. 1982-83 to 2004-05. The regression coefficients of profitability, liquidity and size were observed significantly negative indicating that with increase in profitability, liquidity and size overall cost of capital ($K_{o1}$ and $K_{o2}$) had declined over a period of time. The regression coefficients of leverage variables ($L_1$, $L_2$ and $L_3$) had been observed with both negative and positive signs. The significance of leverage variable indicated that MM hypothesis i.e. overall cost of capital ($K_o$) is independent of capital structure is not applicable in case of Reliance Industries Limited (RIL).

Seth (2008) examined the association between corporate disclosure, cost of capital and reputation. A well drafted questionnaire was sent to finance directors of selected companies to collect the required information. The majority of respondents i.e. executives stated that disclosure reduced the cost of equity capital ($K_e$) up to the point at which a good-practice level of communication had been reached after which there was little further effect. Great disclosure to rating agencies and lenders reduced the cost of debt ($K_d$) over a period of time. Attitudes towards more mandatory disclosure were mostly negative. The benefits behind such disclosures were enhanced shareholders confidence and improvement in company’s overall reputation that brings commercial benefits.

Mohina and Phillips (2009) examined the effect of asset liquidity on cost of capital. They found out that asset liquidity had affect upon firm’s cost of capital both in the time series and in the cross section. Firms in industries with high asset liquidity and functioning during industry liquidity booms had lower cost of capital. They also found out that higher asset liquidity reduced the cost of capital by more for firms that operated
in more competitive industries. Their results suggested that asset liquidity had economically significant impact upon a firm’s cost of capital.

**Lara et al. (2010)** in their study empirically tested the association between conditional conservatism and cost of capital. They argued that conservative reporting led to increased information precision, firm value and reduction in cost of equity capital ($K_e$) by reducing (i) uncertainty about the amount and distribution of future cash flows and (ii) the volatility of future stock prices. They found out that conditional conservatism is associated to positive economic outcomes such as lower information asymmetry problems, improved investment efficiency and better governance. Their findings indicated that without properly enforced conservatism in accounting, firm disclosure was less precise. It led to greater uncertainty, volatility of future stock prices, lower market values and increased cost of capital.

### 8.3 Need of the Study

The existing review of literature shows that there is dearth of empirical studies in India on the issue of cost of capital. Much of the research work done in India on this topic defines its relationship with financing pattern of the company. During the 1980s there was a worldwide trend towards financial liberalization and globalization of the stock markets. Due to domestic and international compulsions most of the developing countries liberalized their financial markets during this period. Increased emphasis was put on the development of equity markets. India has also followed this path. Stock markets grew rapidly in India during the late 1980s and early 1990s. Since 1991, India has embarked on a large-scale economic liberalization and structural adjustment programme which includes modernization and internationalization of the financial sector. The Indian financial sector also experienced deregulatory initiatives to encourage the growth of financial markets-for both debt and equity instruments. All these changes have effect on the operating environment and financing patterns of companies functioning in India which in turn affect cost of capital and value of firm. The innovation of matrix of financial instruments after economic liberalization have created the need to study how different companies finance their operations at different times in different national economic environments and how the cost of capital effect their financing patterns. A
detailed and systematic study is required to be conducted on determination of cost of capital, its effect upon capital structure and the effect of size, age and return on Government securities (ROGS) upon cost of capital. Also there is need to find out the trends in the cost of capital after liberalization. Hence the Present study has been planned to fill up the above said research gap.

8.4 **Objectives of the Study**

Every research is conducted to achieve certain objectives. Objectives represent the basic intent or purpose of the research. The main objective of this research study is to have insight into the cost of capital of selected companies in India. A comparative study of pre-liberalization and post-liberalization periods has been made. The **specific objectives** of the study are as follows:

1. To study the trends in the historical cost of capital of selected Indian companies in selected industries (1979-80 to 2005-06);
2. To analyze the effect of liberalization on cost of capital;
3. To test the effect of capital structure upon cost of capital and
4. To determine the effect of size, age and return on Government securities upon cost of capital.

8.5 **Universe and the Sample of Study**

The present research is concerned with the study of cost of capital of selected Indian companies. The various issues of the Bombay Stock Exchange Official Directory from 1979 to December 1999 have been referred to select the companies covered in the study. Depending upon the availability of data, the final sample of the study consists of 100 companies representing selected 8 industries. The study covers time period of 27 years (1979-80 to 2005-06). The industry classification on the basis of the Bombay Stock Exchange Official Directory as given in Volume 2, dated Jan. 4, 1980 is used to divide the sampled companies into various groups. The number of companies in the sample have been 5, 8, 7, 29, 13, 21, 7 and 10 respectively for power, metal, cement, textiles, paper, general engineering, sugar and tea industries.
8.6 Sources of Data Collection

The choice of source of data has been made keeping in view the objectives of the study, consistency and uniformity of information published about the companies. The scope of present study has been confined to listed 100 Indian companies only. Secondary data have been collected for present study. The financial data for the purpose of study have been collected from The Bombay Stock Exchange Official Directory, Prowess database maintained by Centre for Monitoring Indian Economy (CMIE) and annual reports of selected companies. In addition, websites of sampled companies, published financial statements of sampled companies, articles in various journals and other published literature on the subject have been screened to gather the required information for the purpose of study. The collected information have been suitably classified and tabulated in the form of tables with the help of statistical techniques like ratio analysis, trend analysis, compound growth rates, averages, standard deviation and panel data regression analysis. The data have been objectively analyzed and conclusions are drawn on the basis of parametric tests at 1 percent, 5 percent and 10 percent levels of significance respectively. The entire period of study has been segregated into two parts i.e. pre-liberalization period (1979-80 to 1989-90) and post-liberalization period (1990-91 to 2005-06). The sample selection criteria is described below:

1. The company must be listed on the Bombay Stock Exchange (BSE).

2. The data must be available for a period of 27 years i.e. 1979-80 to 2005-06.

The selection criteria indicate that sample size for the present study has been restricted to relatively old companies for the sake of comparability and consistency between pre-liberalization and post-liberalization periods selected for the purpose of study.

8.7 Techniques of Data Analysis

The statistical techniques such as annual growth rate, compound growth rate, arithmetic average, standard deviation, coefficient of variation, trend analysis and panel data regression analysis have been used to analyze the data. To estimate the simple growth rate of various variables, a simple yearly increase has been considered. The
compound growth rate has been used for computing cost of equity capital (K_{e2}). The cost of equity capital (K_{e2}) has been computed by taking into account compound growth rate in earnings per share on five-year basis. On the basis of earnings per share of first five years i.e. 1979-80 to 1983-84, ‘g’ is calculated and its value is used for measurement of cost of equity capital (K_{e2}) for the immediate next year i.e. 1985. In the same way ‘g’ is calculated and used for measuring cost of equity capital (K_{e2}) for next 22 years. In case the value of ‘g’ is negative, it is ignored for measuring cost of equity (K_{e2}) capital. The trends in cost of each specific source of finance (K_{dat}, K_p, K_{e1} and K_{e2}) and overall cost of capital (K_{o1} and K_{o2}) have been computed by using techniques such as index numbers, compound growth rates, t-values, arithmetic average, standard deviation and coefficient of variation respectively. An arithmetic average of data set refers to a measure of the “middle” or “expected” value of the data set. Average of a list is computed by taking into account sum of all the numbers of the list divided by the number of items in the list. The standard deviation measures the spread of the data from the mean value. The standard deviation is usually denoted with the letter σ (lower case sigma). It is defined as the square root of the variance. The technique of backward panel data step-wise regression analysis has been used in order to study the effect of capital structure upon overall cost of capital (K_{o1} and K_{o2}) and to study the effect of size, age and return on Government securities upon overall cost of capital (K_{o1} and K_{o2}). Panel data combine the features of time series and cross-section. It provides information on a number of statistical units for a number of years. Panel data for economic research has several advantages over cross-sectional or time-series sets. Panel data usually provides the researcher a large number of data points, increasing the degrees of freedom and reducing the collinearity among explanatory variables hence improving the efficiency of econometric estimates. The overall cost of capital (K_{o1} and K_{o2}) has been taken as dependent variables for the purpose of study. Independent variables here refers to size (S_1 and S_2), leverage (L_1, L_2, L_3 and L_4), non-debt tax shields (NDTS), reserves and retained earnings to total assets (RTA), liquidity (Liq.), growth (G_1, G_2 and G_3), profitability (P_1 and P_2) and collaterals (Coll.), age and return on Government securities (ROGS) respectively. The panel data analysis has been employed for each sector separately as well as taking all the sectors together. The dummies for N-1 companies
within regression equation for each industrial sector or N-1 industries in the overall regression equation have been introduced. The Fixed Effects Model (FEM) is used to capture the individual company effect on overall cost of capital ($K_{o1}$ and $K_{o2}$) or control for omitted variables that differ among companies but are constant over time. The individuality of each cross section unit is taken into account by letting the intercept vary for each unit but still assume that the slope coefficient are constant across firms. In Random Effect Model (REM), on the other hand, the intercept $\beta_1$ represents the mean value of all the (cross-sectional) intercepts and the error component $\epsilon_i$ represents the (random) deviation of individual intercept from this mean value. If you sum the random effect values given for all the companies, it will be zero and the mean value of the random error component, $\epsilon_i$, is the common intercept value. The coefficient of determination ($R^2$) has been computed to determine the percentage variation in the dependent variable explained by independent variables. The value of $R^2$ lies between 0 and 1. The greater the $R^2$, the greater the percentage of variation of $Y$ explained by the regression model. Restricted F-test has been used to make a choice between the fixed effects and random effects models to find out whether or not the regressors have been correlated with individual effects that have been investigated.

8.8 Structure of the Study

The thesis is organized into eight chapters raising the issue of cost of capital of selected companies in logical sequence. The study is organized as follows:

The first chapter acquaints the reader about the concept of cost of capital, the major factors affecting cost of capital of a firm and computation of cost of each specific source of finance and overall cost of capital.

The second chapter is dedicated to review of literature on the present work in India and abroad. This chapter ends up with major gaps in earlier studies and justification of present research plan.

The third chapter explains the methodology of the study. It deals with objectives of the study, universe of the study, period of the study, measures of cost of each specific source of finance, a brief description of selected variables and sources of data
The selected methods or techniques of data analysis have been explained. It also details the limitations of the study.

The fourth chapter presents trends of historical cost of capital of Indian companies in selected industries over the entire period of study covering 27 years. The trend analysis and other statistical techniques have been used in this chapter in order to derive meaningful results.

The fifth chapter analyzes the impact of liberalization upon overall cost of capital \((K_{o1} \text{ and } K_{o2})\) of Indian companies in selected industries. A classification into pre-liberalization and post-liberalization period has been made and data have been analyzed using trend analysis and other statistical techniques.

The sixth chapter deals with effect of capital structure upon cost of capital. The effect has been studied by using technique of panel data regression analysis.

The seventh chapter deals with effect of size, age and return on Government securities upon cost of capital. The effect has been studied by using technique of panel data regression analysis.

The eighth chapter summarizes the whole thesis and presents findings and conclusions of the study. It gives the gist of the study in few words.

### 8.9 Findings of the Study

The salient findings that have emerged from this study are as follows:

1. The compound growth rate has been observed negative and significant in majority of selected companies in selected industries indicating decline in cost of each specific source of finance \((K_{dat}, K_p, K_{e1} \text{ and } K_{e2})\) and overall cost of capital \((K_{o1} \text{ and } K_{o2})\) during pre-liberalization period, post-liberalization period and over the study period of 27 years.

2. On the basis of company-wise analysis it has been observed that majority of companies have cost of each specific source of finance and overall cost of capital \((K_{o1} \text{ and } K_{o2})\) in the range of 10-20 percent in both pre-liberalization and post-liberalization periods. The cost of equity capital \((K_{e1} \text{ and } K_{e2})\) have been observed
to be higher than cost of debt ($K_{\text{dat}}$) in majority of companies during pre-liberalization and post-liberalization periods.

3. Overall theoretical viewpoint that cost of debt ($K_{\text{dat}}$) is lower than cost of preference share capital ($K_p$) and cost of preference capital ($K_p$) is lower than cost of equity capital ($K_{e1}$ and $K_{e2}$) has been supported by 68 percent out of 100 selected companies during pre-liberalization period. The cost of debt ($K_{\text{dat}}$) has been observed higher than cost of preference capital ($K_p$) in 36 out of total selected (100) companies during the study period. The cost of debt ($K_{\text{dat}}$) has been observed higher than the cost of equity capital ($K_{e1}$) in 19 out of total selected companies over the study period. The cost of debt ($K_{\text{dat}}$) has been observed to be higher than the cost of equity capital ($K_{e2}$) in 10 out of total 100 selected companies during the selected study period. The cost of preference capital ($K_p$) has been observed higher than the cost of equity capital ($K_{e1}$ and $K_{e2}$) in 5 out of total selected companies during pre-liberalization period.

4. Overall theoretical viewpoint that cost of debt ($K_{\text{dat}}$) is lower than cost of preference capital ($K_p$) and cost of preference capital ($K_p$) is lower than cost of equity capital ($K_{e1}$ and $K_{e2}$) has been observed to be supported by 60 out of 100 selected companies during post-liberalization period. The cost of debt ($K_{\text{dat}}$) has been observed higher than cost of preference capital ($K_p$) in 38 out of total selected during the study period. The cost of debt ($K_{\text{dat}}$) has been observed higher than the cost of equity capital ($K_{e1}$) in 21 out of total selected companies over the study period. The cost of debt ($K_{\text{dat}}$) has been observed to be higher than the cost of equity capital ($K_{e2}$) in 14 out of total 100 selected companies during the selected study period. The cost of preference capital ($K_p$) has been observed higher than the cost of equity capital ($K_{e1}$ and $K_{e2}$) in 6 out of total selected companies during post-liberalization period.

5. On the basis of industry-wise analysis, it has been observed that the cost of debt ($K_{\text{dat}}$) exhibits declining trend in almost all industries during post-liberalization period. The cost of preference share capital ($K_p$) has been observed with declining trend in almost all industries except metal industry during post-liberalization period.
period. The cost of equity capital (K_{e1} and K_{e2}) has exhibited increasing trend in power, metal, paper, and general engineering industries. The overall cost of capital (K_{o1}) has exhibited declining trend in metal, cement, textiles, sugar and tea industries during post-liberalization period. It has been observed that the overall cost of capital (K_{o2}) has increased in power, metal, paper, and general engineering industries during post-liberalization period.

6. On the basis of industry average, it has been observed that the basic trend is decline in average cost of each specific source of finance i.e. cost of debt (K_{dt}), cost of preference share capital (K_{p}), cost of equity capital (K_{e1} and K_{e2}) and overall cost of capital (K_{o1} and K_{o2}) in almost all industries during post-liberalization period except metal, paper and general engineering industries.

7. Majority i.e. 72 percent out of total selected companies have cost of debt (K_{dt}) in the range of 10-20 percent followed by 21 percent in the range of 0-10 percent and 7 percent in the range of 20-30 percent. Majority i.e. 58 percent out of total selected companies have cost of preference capital (K_{p}) in the range of 0-10 percent followed by 39 percent in the range of 10-20 percent and 2 percent in the range of 20-30 percent. Only 1 percent of selected companies have cost of preference share capital (K_{p}) in the range of 30-40 percent. Majority i.e. 74 percent out of total selected companies have cost of equity capital (K_{e1}) in the range of 10-20 percent followed by 21 percent in the range of 20-30 percent and 3 percent in the range of 30-40 percent. Only 2 percent companies lie in the range of 0-10 percent over the study period. Majority i.e. 43 percent out of total selected companies have cost of equity capital (K_{e2}) in the range of 20-30 percent followed by 41 percent in the range of 10-20 percent, 11 percent in the range of 30-40 percent and 3 percent in the range of 0-10 percent. Only 2 percent companies have cost of equity capital (K_{e2}) in the range of 40-50 percent over the study period. Majority i.e. 83 percent of total selected companies have overall cost of capital (K_{o1}) in the range of 10-20 percent followed by 15 percent in the range of 20-30 percent. Only 2 percent out of selected companies have overall cost of capital (K_{o1}) in the range of 0-10 percent over the study period. Majority i.e. 70 percent out of total selected companies have overall cost of capital (K_{o2}) in the
range of 10-20 percent followed by 27 percent in the range of 20-30 percent, 2 percent in the range of 0-10 percent and 1 percent in the range of 30-40 percent over the study period.

8. As per theoretical viewpoint, the cost of debt ($K_{dat}$) is expected to be lower than cost of preference share capital ($K_p$). The cost of preference share capital ($K_p$) is expected to be lower than cost of equity capital ($K_{e1}$ and $K_{e2}$). This theoretical proposition has been supported by 78 percent out of total selected companies over the selected study period. The cost of debt ($K_{dat}$) has been observed higher than the cost of equity capital ($K_{e1}$) in 12 out of total selected companies over the study period. These companies have raised fresh debt at higher rate of interest leading to increase in cost of debt ($K_{dat}$) during the study period. The cost of debt ($K_{dat}$) has been observed to be higher than the cost of equity capital ($K_{e2}$) in 4 out of total 100 selected companies during the selected study period. These companies have lowest earnings per share during the study period. The cost of preference capital ($K_p$) has been observed higher than the cost of equity capital ($K_{e1}$ and $K_{e2}$) in 4 out of total selected companies during the study period. These companies have paid preference dividend at higher rate leading to higher cost of preference capital over the study period.

9. On the basis of industry-wise analysis it has been observed that the cost of debt ($K_{dat}$) and cost of preference share capital ($K_p$) has exhibited declining trend in almost all industries except tea industry over the study period of 27 years. The cost of equity capital ($K_{e1}$) has exhibited declining trend in almost all industries except metal, textile and paper industries respectively over the study period. The cost of equity capital ($K_{e2}$) has exhibited declining trend in almost all industries except metal and paper industries respectively over the study period. The overall cost of capital ($K_{o1}$ and $K_{o2}$) has exhibited declining trend in almost all industries over the study period of 27 years.

10. On the basis of average the cost of debt ($K_{dat}$) and cost of preference share capital ($K_p$) have been observed to be lower than cost of equity capital ($K_{e1}$ and $K_{e2}$) in maximum number of years in almost all industries. The overall cost of capital
(K₁⁻ and K₂⁻) has exhibited declining trend in almost all industries the study period of 27 years. This type of trend in selected industries indicates that cost of capital of selected Indian companies has reduced as result of liberalization over a period of time.

11. The stock markets in developing countries grew rapidly in the 1980s and early 1990s. Several domestic and international factors also contributed to rapid growth of the stock markets. Due to large increase in share prices and price-earnings ratios the relative cost of equity capital (Kₑ¹ and Kₑ²) fell significantly during post-liberalization era.

12. Indian primary market really picked up in the early 1990s. The contribution of capital markets peaked during 1993-95. For some industries like textiles the contribution of the capital market was highest in 1993 but for others it peaked in 1994-95. However, from 1995-96 onwards there has been a steep decline in both the number of new issues as well as the amount of money raised through them. For all the industries, the contribution of the capital market has declined after 1995. However, for a few industry groups like metal, the declining trend has been reversed in 1998.

13. The companies namely Torrent Power SEC Ltd., Aurangabad Paper Mills Ltd., Ballarpur Industries Ltd. and Shree Vindhya Paper Mills Ltd. (C10) and Jay Shree Tea Ltd. have been observed with fixed as well as random decline in overall cost of capital (K₁⁻) over the selected study period. There is fixed as well as random increase in overall cost of capital (K₁⁻) in case of Tata Power Company Ltd., Ferro Alloys Corpn. Ltd., GKW Ltd., KEC Infrastructures Ltd., Tinplate Co. of India Ltd., Ruby Mills Ltd., Gabriel India Ltd., Maharashtra Scooters Ltd., Balrampur Chini Mills Ltd. and Kothari Sugars and Chemicals Ltd. during the selected study period. There is fixed increase but random decline in overall cost of capital (K₁⁻) in case of Century Enka Ltd., Escorts Ltd., Premier Ltd. and Texmaco Ltd. over the study period.

14. There is fixed as well as random increase in overall cost of capital (K₂⁻) in case of companies namely Dalmia Cement (Bharat) Ltd., Madras Cement Ltd., Ruby
Mills Ltd., Star Paper Mills Ltd., Hindustan Motors Ltd., Kothari Sugars and Chemicals Ltd. and Sakthi Sugars Ltd. over the study period. The companies namely Jay Shree Tea Ltd. and Moran Tea Co. Ltd. have been observed with fixed as well as random decline during the study period. There is fixed increase but random decline in overall cost of capital in case of Torrent Power SEC Ltd., Electrosteel Castings Ltd., Graham Firth Steel Products (India) Ltd., Mangalam Cement Ltd., Century Enka Ltd. and Ruby Mills Ltd. over the study period.

15. Two variables in order to measure size have been taken. Size (S1) measured in terms of net sales has negative and significant impact upon overall cost of capital (Ko1) in case of power and sugar industries. The same impact has been observed significant with overall cost of capital (Ko2) as dependent variable in case of power industry. This variable has positive and significant impact upon overall cost of capital (Ko1) in case of cement and tea industries. The same impact has been observed significant with overall cost of capital (Ko2) as dependent variable in case of metal, cement and general engineering industries during the study period.

16. Size (S2) measured in terms of total assets has positive and significant impact upon overall cost of capital (Ko1) in case of metal and paper industries. This variable has negative and significant impact upon overall cost of capital (Ko1) in case of cement, sugar and tea industries. The same impact has been observed significant with overall cost of capital (Ko2) as dependent variable in case of cement and sugar industries during the study period.

17. The regression coefficients of size (S1 and S2) appear with both positive and negative signs indifferent industries. The negative coefficients of size (S1 and S2) variables imply that large sized firms have lower overall cost of capital (Ko1) because of their easy accessibility to capital markets and ability of using resources effectively as compared to small firms. The positive coefficients of size (S1 and S2) imply that there is a direct relationship between cost of equity capital (Ke) and size of the firm. It indicates that as the size of a company increases, its cost of
equity capital \( (K_c) \) also increases. These results are more consistent with M- M view.

18. Leverage \( (L_1) \) measured by ratio of funded debt to equity (including preference capital) has positive and significant impact upon overall cost of capital \( (K_{o2}) \) in case of power industry. This variable has negative and significant impact upon overall cost of capital \( (K_{o2}) \) in case of metal and cement industries during the study period.

19. Leverage \( (L_3) \) measured by ratio of interest bearing debt to equity has positive and significant impact upon overall cost of capital \( (K_{o1}) \) in case of metal industry. The same impact has been observed as significant with overall cost of capital \( (K_{o2}) \) as dependent variable in case of metal and cement industries during this period. This variable has negative and significant impact upon overall cost of capital \( (K_{o1}) \) in case of general engineering industry over the study period.

20. Leverage \( (L_4) \) measured by ratio of total debt to equity has negative and significant impact upon overall cost of capital \( (K_{o1}) \) in case of metal industry. This variable has positive and significant impact upon overall cost of capital \( (K_{o1}) \) in case of general engineering industry over the selected study period. The same impact has been observed as significant with overall cost of capital \( (K_{o2}) \) as dependent variable in case of general engineering industry during the study period.

21. The negative coefficients of leverage variables \( (L_1, L_3 \text{ and } L_4) \) imply that overall cost of capital \( (K_{o1} \text{ and } K_{o2}) \) declines with the use of debt financing and positive sign implies that cost of equity capital \( (K_{c1} \text{ and } K_{c2}) \) first declines with use of debt and beyond certain level of debt it increases with leverage. The significance of leverage variables indicate that the M-M hypothesis i.e. overall cost of capital \( (K_o) \) is independent of changes in capital structure is rejected in case of selected Indian companies. The results support traditional viewpoint and reject Modigliani and Miller (M-M) view.

22. Non-debt tax shields (NDTS) as measured by ratio of annual depreciation expense to total assets has negative and significant impact upon overall cost of capital
Summary, Findings and Conclusion

(K_{o1}) in case of power and cement industries. This variable has positive and significant impact upon overall cost of capital (K_{o2}) in case of power industry during the selected study period. The same impact has been observed significant with overall cost of capital (K_{o2}) as dependent variable in case of general engineering industry over the study period. The tax-based model suggests that the major benefit of using debt financing is corporate tax deduction. The negative regression coefficient of non-debt tax shields (NDTS) implies that companies use non-debt tax shields (NDTS) to reduce their tax payments. Higher the non-debt tax shields, lower will be tax liability. It will be increase the profit available with companies and the companies can funds by way of debt and equity at cheaper rates. Accordingly, companies with higher non-debt tax shields (NDTS) have lower overall cost of capital (K_{o1} and K_{o2}).

23. Reserves and retained earnings to total assets (RTA) have positive and significant impact upon overall cost of capital (K_{o1}) in case of power and paper industries. The same impact has been observed significant with overall cost of capital (K_{o2}) as dependent variable in case of power industry over the study period. This variable has negative and significant impact upon overall cost of capital (K_{o2}) in case of sugar industry during the study period. The use of internal funds avoids issue costs and reduces the cost of equity capital (K_e) and in turn overall cost of capital (K_{o1}). The negative coefficient implies that overall cost of capital (K_{o1}) is reduced with use of internal funds. Accordingly, companies with higher ratio of reserves and retained earnings to total assets (RTA) have lower overall cost of capital (K_{o1} and K_{o2}).

24. Liquidity (LIQ.) as measured by ratio of current assets to current liabilities has negative and significant impact upon overall cost of capital (K_{o2}) in case of power industry during the study period. The negative coefficient of liquidity implies that companies with higher current assets and lower risk have lower overall cost of capital (K_{o1} and K_{o2}).

25. Growth (G_1) as measured by annual percentage change in net sales has positive and significant impact upon overall cost of capital (K_{o1}) in case of tea industry
over the study period. Growth ($G_2$) as measured by annual percentage change in total assets has positive and significant impact upon overall cost of capital ($K_{o1}$) textiles industry. The same impact has been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of textiles, paper and in panel data regression analysis applied for selected industries. This variable has negative and significant impact upon overall cost of capital ($K_{o1}$), in case of paper and sugar industries during the study period. The same impact has been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of general engineering industry over the study period. Growth ($G_3$) has positive and significant impact upon overall cost of capital ($K_{o2}$) in case of power industry during the selected study period. The negative regression coefficient of growth variables ($G_1$, $G_2$ and $G_3$) imply that high growth companies can raise funds at lower rate as investors attach greater value to such companies and vice-versa. On the other hand, the constant or static firm raises funds at a higher rate.

26. Profitability ($P_1$) as measured by ratio of earnings before interest and taxes (EBIT) to net sales has positive and significant impact upon overall cost of capital ($K_{o1}$) in case of metal, sugar and tea industries. The same impact has been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of paper industry over the study period. This variable has negative and significant impact upon overall cost of capital ($K_{o1}$) in case of general engineering industry during the study period. The same impact has been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of metal industry. Profitability ($P_2$) as measured by ratio of earnings before interest and taxes (EBIT) to total assets has positive and significant impact upon overall cost of capital ($K_{o1}$) in case of power, general engineering industries and in panel data regression equation applied for selected industries. This variable has negative and significant impact upon overall cost of capital ($K_{o2}$) in case of paper industry over the study period. The negative coefficient of profitability implies that more profitable firms are in better position to raise external finance at reasonable cost and accordingly they have lower overall cost of capital ($K_{o1}$) and vice-versa.
27. Collaterals (COLL.) as measured by ratio of net fixed assets to total assets has positive and significant impact upon overall cost of capital ($K_{o1}$) in case of metal industry. This variable has negative and significant impact upon overall cost of capital ($K_{o1}$) in case of cement industry over the study period. The same impact has been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of power industry over the study period. Collaterals i.e. asset composition affects the cost of capital. The firms having sufficient fixed assets can use them as security for raising more debt and take advantage of cheaper sources. The negative coefficient of collaterals implies that companies having higher ratio of net fixed assets to total assets have lower overall cost of capital ($K_{o1}$ and $K_{o2}$).

28. The dummy ($D_t$) variable appears with negative and significant impact upon overall cost of capital ($K_{o1}$) in case of power metal, paper, general engineering and sugar industries. The same impact has been observed to be significant with overall cost of capital ($K_{o2}$) as dependent variable in case of power, metal, paper, general engineering industries. This variable appears with negative and insignificant impact upon overall cost of capital ($K_{o2}$) in case of panel data regression equation applied for selected industries. The negative coefficient of dummy ($D_t$) variable indicates decline in overall cost of capital ($K_{o2}$) during post-liberalization period as compared to pre-liberalization period. This variable appears with positive and significant impact upon overall cost of capital ($K_{o1}$) in case of cement and textiles industries. This variable appears with positive and insignificant impact upon overall cost of capital ($K_{o1}$) in case of tea industry and in panel data regression equation applied for selected industries. The same impact has been observed significant with overall cost of capital ($K_{o2}$) in case of cement, textiles and tea industries. This variable appears with positive and insignificant impact upon overall cost of capital ($K_{o2}$) in case of sugar industry. The positive coefficient of dummy ($D_t$) variable indicates that overall cost of capital ($K_{o1}$ and $K_{o2}$) of selected companies in selected industries has increased during post-liberalization period as compared to pre-liberalization period.
29. The effect of size ($S_1$ and $S_2$), age and return on Government securities (ROGS) upon overall cost of capital ($K_{o1}$ and $K_{o2}$) has been studied to achieve the fourth objective of the study. The companies namely Dhunseri Tea & Inds. Ltd. and Hasimara Industries Ltd. have been observed with fixed as well as random decline in overall cost of capital ($K_{o1}$) over the study period. There is fixed as well as random increase in overall cost of capital ($K_{o1}$) in case of Reliance Energy Ltd., Tata Power Company Ltd., Electrosteel Castings Ltd., Goetze (India) Ltd. Tinplate Co. of India Ltd., Chettinad Cement Corpn. Ltd., Madras Cement Ltd., Baroda Rayon Corpn. Ltd., Bharat Commerce & Inds. Ltd., Birla Transasia Carpets Ltd., Century Enka Ltd., Futura Polyesters Ltd., Grasim Industries Ltd., Juggilal Kamlapat Cotton Spg. & Wvg. Mills Co. Ltd., Lakshmi Mills Co. Ltd., Malwa Cotton Spg. Mills Ltd. and Morarjee Realties Ltd. during the study period. There is fixed increase but random decline in overall cost of capital ($K_{o1}$) case of Torrent Power AEC Ltd., Century Enka Ltd., Ballarpur Industries Ltd., Assambrook Ltd., Jay Shree Tea & Inds. Ltd. and Tata Tea Ltd. over the study period.

30. There is fixed increase but random decline in overall cost of capital ($K_{o2}$) in case of Tata Power Co. Ltd., Torrent Power SEC Ltd., Chettinad Cement Corpn. Ltd., Mangalam Cement Ltd. and Ruby Mills Ltd. during the study period. The companies namely Graham Firth Steel Products (India) Ltd., Madras Cement Ltd., Ruby Mills Ltd., Kothari Sugars and Chemicals Ltd. Sakthi Sugars Ltd. and 10 companies in general engineering industry termed as C2, C3, C6, C7, C10, C11, C13, C16, C17, and C21 have been observed with fixed as well as random increase during the study period. There is fixed as well as random decline in case of Hindustan Motors Ltd. and Kirloskar Brothers Ltd. during the study period.

31. Size ($S_1$) has negative and significant impact upon overall cost of capital ($K_{o1}$) in case of power and metal industries respectively. This variable has positive and significant impact upon overall cost of capital ($K_{o1}$) in case of cement, paper, general engineering, sugar, tea and in panel data regression equation applied for selected industries. This impact has been observed to be significant with overall cost of capital ($K_{o2}$) as dependent variable in case of cement industry. Size ($S_2$)
has negative and significant impact upon overall cost of capital ($K_{o1}$) in case of cement, paper, general engineering and sugar industries and in panel data regression equation applied for selected industries. The same impact has been observed to be significant with overall cost of capital ($K_{o2}$) as dependent variable in case of cement, general engineering and sugar industries respectively during the study period. The negative coefficients of size variables ($S_1$ and $S_2$) imply that large companies have lower overall cost of capital ($K_{o1}$ and $K_{o2}$). It is easier to raise either debt or equity in case of large companies. In other words, small companies have less goodwill resulting in low market value due to which they face huge problems in raising the required funds in form of debt or equity. These companies experience higher cost of capital due to its higher cost of external finance. These findings support traditional viewpoint of capital structure theories. The positive coefficient of size implies that there is a direct relationship between cost of equity capital ($K_{e1}$ and $K_{e2}$) and size of the firm. It indicates when size of the firm increases, the cost of equity capital ($K_e$) also increases. These results are more consistent with Modigliani and Miller (M-M) view.

32. Age has negative and significant impact upon overall cost of capital ($K_{o1}$) in case of power, cement and tea industries. This variable has positive and significant impact upon overall cost of capital ($K_{o1}$) in case of metal, paper and general engineering industries respectively. The same impact has been observed to be significant with overall cost of capital ($K_{o2}$) as dependent variable in case of power industry during the study period. The negative coefficient of age implies that as the age of a company increases, its overall cost of capital ($K_o$) decreases over a period of time and vice-versa. It is due to reason that a well established firm due to its creditworthiness can raise external finance at reasonable cost leading to lower overall cost of capital ($K_{o1}$ and $K_{o2}$).

33. Return on Government securities (ROG) has negative and significant impact upon overall cost of capital ($K_{o1}$) in case of power industry. This variable has positive and significant impact upon overall cost of capital ($K_{o2}$) in case of textiles and general engineering industries. The same impact has been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of
Summary, Findings and Conclusion

textiles industry and in panel data regression equation applied for selected industries. The negative coefficient implies that return on Government securities (ROGS) has direct impact upon overall cost of capital ($K_{o1}$ and $K_{o2}$). All investors can lend and borrow at risk free rate of interest. The cost of each specific source of finance is composition of risk free rate of return plus risk premium. The investor includes the risk free security with their market portfolio in order to reduce their risk. This has impact upon return expected by investors for holding a particular security which in turn has impact upon overall cost of capital ($K_{o1}$ and $K_{o2}$).

34. The dummy ($D_t$) variable appears with negative and significant impact upon overall cost of capital ($K_{o1}$) in case of general engineering and sugar industries. The same impact has upon been observed significant with overall cost of capital ($K_{o2}$) as dependent variable in case of power, cement and tea industries. The negative coefficient of dummy ($D_t$) variable indicates decline in overall cost of capital ($K_{o1}$) during post-liberalization period as compared to pre-liberalization period. This variable appears with positive and significant impact upon overall cost of capital ($K_{o2}$) in case of cement industry. The positive coefficient of dummy ($D_t$) variable indicates increase in overall cost of capital ($K_{o1}$) during post-liberalization period as compared to pre-liberalization period.

From the above analysis it is interesting to note that there has been wide variations in cost of debt ($K_{dat}$), cost of preference share capital ($K_p$), cost of equity capital ($K_{e1}$ and $K_{e2}$) and overall cost of capital ($K_{o1}$ and $K_{o2}$) over a period of time but the basic trend has been of decline in respective costs during post-liberalization period. The cost of debt ($K_{dat}$) and cost of preference share capital ($K_p$) have been observed to be less than cost of equity capital ($K_{e1}$ and $K_{e2}$) in maximum number of years in all the selected companies and industries. The fundamental reason behind cost of debt ($K_{dat}$) being less than cost of equity capital ($K_e$) is due to lower risk premium and tax advantage of debt. The findings of our study supports the traditional viewpoint of capital structure theories that cost of debt ($K_d$) is less than cost of equity capital ($K_e$) and overall cost of capital ($K_o$) is reduced and with the judicious use of debt. Overall it appears that it is traditional theory of capital structure that seems to be applicable to selected companies in
selected industries. This has important implication for managerial decision making. The companies can no longer depend solely on equity or on extreme leverage as it will lead to increase in cost of capital. A balance in form of optimum financing mix is required to be maintained so that cost of capital is minimum. The importance of other factors i.e. size, leverage, non-debt tax shields, reserves and retained earnings to total assets, liquidity, growth, profitability, collaterals, return on Government securities and age is also required to be considered while deciding an optimum financing mix as they have significant impact upon cost of capital.

### 8.10 Scope for Further Research

Our study throws open wide scope for further research particularly in the following directions:

1. The number of companies and industries can be increased for further study to bring more reliability in results.

2. Our study is based upon the secondary data alone a primary survey cost of capital practices from financial executives of companies can be very helpful while deciding optimum financing mix.

3. Since financial decision making is one of the key decisions to run the firm profitably, determining an optimum financing mix for each company leading to minimization of cost of capital is one of the key areas that needs to be researched to help managers to make efficient financing decision.
BIBLIOGRAPHY


