CHAPTER I

INTRODUCTION
CHAPTER-I

FRAMEWORK OF THE STUDY

In this chapter, the overall scheme of the study is elaborated. The introduction of the topic, purpose and importance of the study, objectives, hypotheses, scope and methodology of the study have been duly dealt with in ongoing chapter.

1-1) INTRODUCTION

Finance touches every aspect of our life and holds the key to all activities. It has been described as the lifeblood of any business. The blood in our body needs to be regulated to ensure smooth circulation for healthy survival. Thus the finance flow needs to be regulated to ensure smooth flow through the veins of the organization so as to ensure its survival and growth. It is only the efficiently managed finance that can generate funds. Management of finance in optimal manner is inevitable for success of any business.

Financing decisions involve deciding on the most cost effective method of financing the chosen investments. Financing decisions relate to the financing pattern of the firm. It involves in deciding as to when, where and how to acquire the funds to meet the firm’s investment needs. Different sources of finance have different advantages with different degree of risks. Hence it becomes imperative to decide as to how much finance is to be raised and from which sources.

The prime objective is to keep the cost of finance at the minimum with maximum utilization of funds; In other words, maximizing the profits with minimum of cost of funds. Primarily, there are two main sources of finance; one is the owned funds and second is the borrowed funds. Owned funds are the shareholders’ monies on
which dividend are paid. Dividend payment depends upon the profitability of the company and is not binding. There is no commitment involved in the shareholders funds. On the other hand, borrowed funds involve fixed commitments; their repayments are secured by a charge created on the assets and interest payments are obligatory irrespective of the profits or losses of the company. Hence, it increases the financial risk of the company. The borrowed funds are relatively cheaper, but entail a certain degree of risk, therefore due prudence must be exercised while determining the mix of owned and borrowed funds.

Capital Finance decision is a major decision in any organization. On the basis of financial decision capital structure is formed. The capital structure of a company consists of debt and equity securities, which contribute, in financing of its assets. In other words, a firm’s capital fund is composed of debt (e.g. debentures, short term and long term loans) as well as share capital (i.e. equity, preference capital as well as revenue and capital reserves). It is therefore equal to debt plus preferred stock plus net worth.

The main objective of financial management is maximization of shareholders’ wealth, which means to maximize the market value per equity share. Hence it is necessary to maintain the mix of debt and equity at a level, which would result in maximization of market share price. Such a mix of capital structure is known as “optimal capital structure”.

Optimal capital structure is defined as that mix or relationship of debt and equity capital, which helps to maximize the value of a company’s share in the market. An optimal capital structure can be considered as that particular combination of debt, preference and equity capitals at which the company’s cost of capital is at its minimum or alternatively, the value of the company is at its maximum.
Hence the objective is to determine a debt-equity mix, which would lead to maximum market price of equity share. This would mean minimization of the cost of capital. Therefore, the optimal capital structure is obtained when the real-marginal cost of debt is equal to the real-marginal cost of equity. Before this point is reached, the real-marginal cost of debt is less than the real-marginal cost of equity. Beyond the optimal level, the real-marginal cost of debt exceeds the real-marginal cost of equity.

The proper balance of share capital and debt capital will tend to be determined by different factors. It means that decisions on capital structure formulation or long term financing is influenced by multiple factors. Financial economics has a significant progress in explaining the incentives that make companies to choose particular financing policies. In the last two decades a number of theories have been proposed to explain the variations in the debt-to-equity ratio among firms. Increasingly, the financial profession is moving beyond an examination of the basic leverage choice to more detailed aspects of the financing decisions.

Ever since the appearance of the paper of Modigliani and Miller (1958) on capital structure, there has been a controversy in the financial literature as to whether the proportion of debt and equity in a firm’s capital structure affects its value. The debate on optimal capital structure that leads to maximum market valuation and minimum cost of capital is enduring. There are two extreme thoughts on the subject; one school of thought propounded by Modigliani and Miller contends that the capital structure decisions are irrelevant, given certain set of assumptions (like, no corporate taxes, perfect capital markets, etc.). The other school associated

with Ezra Solomon (1963) holds the view that the capital structure decisions are relevant decisions and that optimal capital structure can help the firm to reduce overall cost of capital, thereby increasing its total value.

After an intense debate for a period of over three decades, it has generally been accepted that the capital structure decision is a significant managerial decision. The crucial problem facing companies while raising funds is whether to raise debt or equity. There has been an inconclusive debate on the issue of the association between financing decision and the Firm's valuation. Both the theories and empirical studies conducted so far have given contrary results. The theories suggest that firms select capital structures depending on characteristics that determine various costs and benefits associated with debt and equity financing.

The empirical work in this area has lagged behind the theoretical work, as the relevant firm characteristics are expressed in fairly abstract concepts and are rarely directly observable. However, the theories made in the developed countries need to be tested for their adaptability in developing countries like India. Clearly, more empirical work needs to be done before any financial theory or any behavioural theory on capital structure can be fully recognized.

In the wake of liberalization and globalization of economic policies the world over, the business scenario in developing countries is undergoing a dramatic metamorphosis. Investment opportunities have expanded, financing options have widened and, above all, dependence on capital market has increased. The scenario is becoming more competitive in view of multinational entry and foreign capital inflow into developing nations. Since 1990, from

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time to time, Indian government has announced various liberalization policies which are aimed at making the Indian corporate sector competitive internally as well as internationally. These changes might have influenced the capital structure/financial structure practices of the corporate firms in India.

1-2) PURPOSE OF THE STUDY

Capital structure decisions, related to an appropriate blend of debt and equity, are significant decisions of corporate firms, because they influence both the return and risk of Shareholders. Excessive use of debt may endanger the very survival of a corporate firm. In contrast, the conservative policy may deprive its equity holders of the advantages of debt as a cheaper source of finance to magnify their rate of return. The importance of an appropriate and sound (optimal) capital structure is, thus very obvious from the perspective of corporate enterprises and their owners and other stockholders.

A great deal of intellectual exercise has taken place all over the world to study the numerous issues pertaining to capital structure. While the determinants of capital structure are very much important in financing decisions, studies on capital structure have been concentrated in developed countries. The issue of capital structure choice in developing countries has received little attention. Only in recent years, a few studies have emphasized these issues. The theories that have been made in the developed countries need to be tested for their adaptability in developing countries for the firms are financing different environments. The prevailing view in this context is that financial decisions in developing countries are somehow different from the issue of capital structure choice in developed economies.
A rapidly changing economic scenario in developing countries, in the recent years, has also provided a substantial need to address the issue of the determination of the capital structure choice in these countries. Developing countries, such as India, have been introducing many market-oriented reforms in their financial sectors since the mid-eighties and early nineties.

This has led to a substantial transformation of the institutional setup within which firms have operated, giving more flexibility to the Indian financial manager in choosing the capital structure of the firm. The move toward the free market, coupled with the widening and deepening of various financial markets, including the capital market, has provided the scope for the corporate sectors to optimally determine their capital structure.

Such an environment has also encouraged more meaningful research on the capital structure issue. In this thesis an attempt is made to study the capital structure issue in India in the context of the country’s ongoing economic reforms.

1-3) OBJECTIVES OF THE STUDY

The specific objectives of the study are as follow:

a) To study the capital structure trends of Indian Automobile Industry firms.

b) To study whether globalization and economic liberalization have influenced the capital structure practices of these firms.

c) To identify the factors affecting the firms capital structure.

d) To compare the determinants of capital structure between pre and post-liberalization periods of the Indian economy.

1-4) THEORETICAL FRAMEWORK OF THE STUDY

In this section the researcher present a brief discussion of the attributes that different theories of capital structure suggest and
may affect the firm’s debt-equity choice. These attribute are
denoted as "profitability", "firm size", "firm growth", "capital
intensity", "earning risk", "non-debt tax shields", "net exports",
collateral value of assets", "debt service capacity" and "life of
firm". The attributes, their relation to the capital structure choice,
and their observable indicators are discussed as below:

1-4-1) Profitability

Neither financial theory nor research has been able to provide
satisfactory agreement as to how profitability affects the capital
structure of the firm. Myers (1984)\(^3\) suggested that firms prefer
retained earnings to debt and they prefer debt to new equity.
Classical finance theory suggests that profitable firms should have
higher debt levels than less profitable firms (Titman and Wessels,
1988)\(^4\). While, Barton and Gordon (1988)\(^5\) argued that "a firm with
high earnings rate would maintain a relatively lower debt level
because of its ability to finance itself from internally generated
funds. This is consistent with the proposition that the management
of firms desires flexibility and freedom from excessive often
associated with debt covenants."

Hence, the hypothesis is that profitability of a firm will be
negatively associated to all the debt levels. The specific profit
measures used were average return on assets (ROA) and average
return on capital employed (ROCE) over the periods of study.
These measures use earnings before debt charges. Therefore,
return is not confounded with the firm’s leverage and the states
taxation policy.

\(^3\) S. Myers, "The capital structure puzzle", Journal of Finance, Vol.39, July 1984,
PP. 575-592.

\(^4\) S. Titman and R.Wessels, "The determinants of capital structure choice",

\(^5\) S. L. Barton and P.J.Gordon, "Corporate Strategy and Capital Structure"
1-4-2) Size

Weston and Brigham (1981)\(^6\) have suggested that management of large firms may choose to use equity financing, since sale of additional stock has little influence on the control of the large firm. Smith (1977)\(^7\) argued that the cost of issuing debt and equity securities is also related to firm size. In particular, small firms pay much more than the large firms to issue new equity and also somewhat more to issue long-term debt. This suggests that small firms maybe more leveraged than large firms do and may prefer to borrow short-term (through private loans or bank loans) rather than issue long-term debt because of lower fixed costs associated with this alternative. Thus, an inverse relationship is expected between size and total debt; and between size and long-term debt. No prediction is made regarding the effect of size on short-term debt. The size measures selected were average total sales (SALE), average total assets (ASSETS), the natural logarithm of average assets (LNASSETS) and the natural logarithm of total sales (LNASALE). The logarithmic transformation of assets reflects our view that a size effect if it exists, affects mainly the small firms.

1-4-3) Growth

On growth, Barton and Gordon (1988)\(^8\) mentioned that “financial empiricists have historically agreed upon the positive relationship between firm growth and debt”. Gupta (1969)\(^9\) proposed that the rapid ability to acquire and dispose of debt provided the desired...

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1-4-5) Earning Risk

Barclay and Smith (1995), and other authors had argued in the past literature that a firm’s optimal debt level is a decreasing function of the volatility in its earnings. The logic being that, higher the earnings variation implies higher bankruptcy risk, especially to creditors.

Thus, we hypothesize that firm’s earning risk will have negative relationship to all debt levels. The coefficient of variation of return on capital employed (VARROCE) and the coefficient of variation of return on assets (VARROA) are the two indicators to measure the earning risk. Also, use of coefficients has the advantage of de-coupling income variation from firm size.

1-4-6) Non-Debt Tax Shields

DeAangelo and Masulis (1980) suggested a model of optimal capital structure that incorporates the impact of corporate taxes, personal taxes, and non-debt related corporate tax shields. They argued that tax deductions for depreciation and investment tax credits are substitutes for the tax benefits of debt financing. As a result, firms with large non-debt tax shields relative to their expected cash flow include less debt in their capital structures.

Indicator for the non-debt tax shields is a direct estimate of non-debt tax shields over total assets (NDTAXSH). The measure is calculated from the tax payment (T), operating income (EBDIT), interest payments (I), total assets (TA) and the approximate

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corporate tax rate during the period of study, using the following equation:

\[
\text{Non-Debt Tax Shields (NDTAXSH)} = \frac{EBDIT - I - T}{TA}/\text{tax rate}
\]

Which becomes the equality: tax rate \((PBDIT - I - \text{Non Debt Tax Shields})\)

As pointed out by Titman and Wessels (1988), this measure does not represent tax deductions net of true economic depreciation and expenses, which is the correct economic attribute suggested by theory. Unfortunately, this preferred attribute would be very difficult to measure.

1-4-7) **Net exports**

In developing countries, such as India, firms which are net exporters have been given credit benefits such as EXIM credit facility, and forward letter of credit. This implies that firms which are net exporters may have lesser need of debt in their capital structure. So, firms with foreign markets are likely to get all these benefits. Hence, in India, particularly after liberalization as firms are being given more sops than before, net export level could be a determinant of the capital structure of a firm.

Thus we hypothesize that net exports will have a negative relationship to long-term and total debt levels. No clear hypothesis can be made with respect to short-term loans. Average of net exports to sales ratio over the period of study \((\text{NXTOSALE})\) has been taken as the indicator to measure the net export level of the firm.

1-4-8) **Collateral Value of Assets**

Most capital structure theories argue that the type of assets owned by a firm in some way affects its capital structure choice.
Scott (1977) suggested that, by selling secured debt, firms increase the value of their equity by expropriating wealth from their existing unsecured debtors. Issuing debt secured by assets with known values also avoids higher interest costs. For this reason, firms with assets that can be used as collateral may be expected to issue more long-term debt and hence, total debt to take benefit of this opportunity. So, we hypothesize that collateral value of assets is positively related to total debt and long-term debt. For collateral’s effect on short-term debt, the available literature does not indicate a clear outcome for the relationship.

The estimated model incorporates one indicator for the collateral value attribute. It is the average ratio of accounts receivable, inventory plus net fixed assets to total assets over the period of study (ARINFATA). This indicator is positively related to collateral value of assets.

1-4-9) Debt Service Capacity

The debt worthiness of a firm should also be viewed in term of its ability to meet with its cash obligations, because the capacity of a firm to resort to debt capital is directly proportional to its ability to discharge the fixed payment obligations. In other words, the higher the debt coverage, it is likely that the firm has a higher debt component in its financial structure.

More over a high interest coverage ratio means that the firm can easily meet its interest burden, thus for financing it is expected that the firm with high interest coverage ratio has more chance to access debt capital through lenders. So, we hypothesis debt service capacity is positively related to total debt and long-term debt. For interest coverage ratio’s effect on short-term debt, the

available literature doesn’t indicate a clear outcome for the relationship. The indicator for debt service capacity (DSC) is interest coverage ratio that is the ratio of profit before depreciation, interest and tax to debt interest.

1-4-10) Life

Myers (1984) suggested that firms prefer retained earnings to debt and prefer debt to new equity. It is likely that aged firms have more retained earnings in their capital. Thus for new investment they use retained earnings. As a result aged firms with large amount of retained earning include less debt in their capital structure. In other hand because of increasing credit transaction in aged firms, short-term debt will be increased in these firms. Hence the hypothesis is that life of firm will be negatively associated to total debt and long-term debt; and positively related to short-term debt. The measure of life of firm is number of years since establishment of the firm (LIFE).

1-5) HYPOTHESES

Keeping in view the results of the various related research studies on capital structure and corresponding to the objectives of the present study, the following hypotheses have been formulated and would be tested:

1. There has been a significant variation in the capital structure practices of the firms, between pre and post-liberalization periods.

2. Profitability of a firm is negatively related to short-term, long-term and total debt.

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3. Firm size has a negative relationship with long-term and total debt.

4. Firm growth rate has a positive relationship with short-term, long-term and total debt.

5. Capital intensity is positively related to long-term debt and negatively related to total debt and short-term debt.

6. Firm’s earning risk has a negative relationship with short-term, long-term and total debt.

7. Non-debt tax shields are negatively related to the short-term, long-term and total debt.

8. Net exports has a negative relationship with long-term and total debt.

9. Collateral value of assets is positively related to total debt and long-term debt.

10. Debt service capacity is positively related to long-term and total debt.

11. Life of a firm is negatively related to long-term and total debt; and positively related to short-term debt-equity ratio.

1-6) SCOPE OF THE STUDY

In this part population and period under study are explained. Further the reasons of selecting Automobile Industry as population of the study also has been presented.

1-6-1) Population:

The study covers Indian Automobile Industry Firms which are listed in Bombay Stock Exchange, because:

The automobile industry is one of the core industries in the Indian economy. With the liberalization of the economy, India has become the playground of major global automobile majors.
India, the world’s largest democracy, having a very large pool of scientific and engineering talent in the world, has marched forward in critical areas of development in space or electronics. This pool of knowledge has enabled India to attain high levels of achievement in diverse high tech areas. The country has an open economy in the process of integrating with the world economy.

Far reaching economic reforms aimed at deregulation and attracting foreign investment have moved India firmly into the front ranks of rapidly growing Asia-Pacific Region in the automobile industry. The developing regions are the growth areas of tomorrow. In the dynamics of transition of the Indian economy, the automobile industry is emerging as a leading industry. The automotive industry’s strong linkages with the capital equipment and the services industry, and, the potential for earning foreign exchange through exports also acted as an impetus for its growth.

The Automotive Industry in India is now working in terms of the dynamics of an open market. Many joint ventures have been set up in India with foreign collaboration, both technical and financial with leading global manufacturers. The Government of India is keen to provide a suitable economic and business environment conducive to the success of the established and prospective foreign partnership ventures. These changes might have influenced the capital structure (financial structure) practices of Automobile Industry in India. This, then constitute the rationale to examine implications of the economic reforms in India on the Industry.

1-6-2) Periods for the Study:

The study attempts to compare capital structure practices of Indian Automobile Industry firms and the determinant of capital structure between pre and post-liberalization of Indian economy. 1990-1991 is the year in which liberalization reforms has started in
India. Adaptation with this changing scenario needs to enough time. Hence two periods have been taken for the purpose of the study: (1) The financial years 1985 to 1991 (7 years), Pre-Liberalization Period of the Indian economy; and (2) The financial years 1997 to 2003 (7 years), Post-liberalization Period of the economy.

1-7) METHODOLOGY OF THE STUDY

This section explains the methodology adopted for the purpose of the study. The size of population, methods used for collection of data, and statistical methods used for testing of hypotheses are discussed.

1-7-1) Sample of the Study:

The firms in the population were selected, based on the following criteria:

1) Automobile Industry firms which have been listed on Bombay Stock Exchange (BSE) in or before 1985;
2) They must be existing in BSE till the financial year 2003;
3) They should not have negative values for total assets or average operating income during the period of the study.

In short this means that we have a tendency towards relatively old and profitable firms for the sake of comparability and consistency between pre and post-liberalization periods of the Indian economy. The above population that consists of 15 companies in Automobile Industry would be used for both the periods under study.

1-7-2) Collection of Data:

The required financial data of the firms, for the purpose of the study has been obtained from Bombay Stock Exchange Official
Directory, Bombay Stock Exchange Corporate compendium, Center for Monitoring on Indian Economy Reports, Internet Sites such as "Equitymaster.com", "Indianinfoline.com", "Mindbranch.com", "Valuenotes.com", "BSE.com", "Myiris.com" and "SearchIndia.com". In addition the various Annual Reports of the Companies were duly referred to, in order to accumulate the missing data from the above mentioned sources.

1-7-3) Analysis of the Data:

The data would be classified and tabulated in such a fashion, which enabled to generate substantial evidence to test the hypotheses. To study the capital structure trends, descriptive statistical values would be computed and different charts would be drawn. To find out whether economic liberalization has influenced the capital structure practices of the firms, it is assumed that the pre-liberalization and post-liberalization samples are two independent samples. Thus two-independent samples t-test would be used to test the impact of economic liberalization.

In the study of the determinants of capital structure of the Industry, in order to find out whether any relationship exists between the dependent and the independent variables, Pearson correlation coefficient would be calculated between all the variables for the two periods under study.

Moreover, multiple regression analysis technique would be widely used to analyze the influence of the independent variables on the dependent variables. Further "F" and "t" tests would be used to check the level of significance of the linear regression and regression coefficients. Durbin Watson (DW) test would also be applied to detect any auto correlation among residuals. To find out any multicollinearity amongst the independent variables, collinearity diagnostics would be calculated. For checking the
normality of the error term, histogram and normal probability plots of standardized residuals would be drawn. All these steps would be followed for checking the reliability of regression results. Microsoft Excel Software and SPSS Software Package would be used for the purpose of analysis.

1-8) THE LIMITATION OF THE STUDY

The following limitations are noticed regarding this study:

a. In this study, just Automobile Industry has been chosen for the study and the results are restricted to this Industry only.

b. Only Automobile Industry companies listed in Bombay Stock Exchange has been selected for the study.

c. Because of data limitations in pre-liberalization period, values of net exports of the firms in 1985 to 1991 were not available. Hence the study could not to review the effect of net exports on capital structure ratios in pre-liberalization period.

1-9) CHAPTER SCHEME

The following chapter scheme has been adapted to present outcome of research.

Chapter II deals with the review of earlier literature regarding capital structure and choosing debt-equity ratio in corporate firms. In this chapter, relevant literature is studied from different angles:

(1) Review of articles published in journals
(2) Review of specific books on the subject

The above subject matter has been divided into two parts:

In the first part the articles published in foreign journals and Indian journals have been given chronologically. These articles have summarized varied views, opinions and commend pertaining to theory and its practical utility in accounting of the concepts of
capital structure. In the second part, the survey of earlier literature consists of twenty-one books. Most of these books belong to recent origin.

Chapter III highlights history of Automobile Industry of the world and in India. The present position of this Industry in the world and in India is studied. The scope of Automobile Industry in the near future is also explained. Finally all players in Automobile Industry of India are enumerated in this chapter.

Chapter IV explains the methodology adopted for the purpose of the study. The size of population, methods used for collection of data, statistical methods used for finding the correlations, and testing of hypotheses are discussed exhaustively.

Chapter V is the backbone of the study. It discloses results of analyses. These results are supported by various tables and charts and statistical techniques for testing hypotheses. After interpretations of the findings, major conclusions are drawn in this chapter.

Chapter VI as a final chapter deals with the summary of the Thesis, suggestions and areas open for further research.