

“PLANNING AND DETERMINANTS OF CORPORATE STRUCTURE: AN EMPIRICAL STUDY OF POWER INDUSTRY”

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Abstract-The liberal foreign investment policy adopted by Indian government under economic reforms has facilitated raising of capital and debt funds from overseas markets. Investment opportunities have expanded and financing options have widened for Indian corporate units. Now no corporate unit will like to depend just upon the domestic sources of funds. The composition of capital structure varies from industry to industry, from trade to trade and even within the same industry from company to company. Power industry has undergone significant change since economic reforms. For the purpose of analyzing financing pattern of power companies we have undertaken this research work. This study intends to throw light on whether the choice of financing instruments in power companies is same or differ significantly with each other and with the industry average using t-test.

The study concludes that the Equity of all the sample units of Power Industry has increased many times over the period of study which is mainly because of increase in reserves and funds. It reflects policy of ploughing back of profits and financial strength of the sample units of Power Industry. All the sample units of Power Industry are using debt as a source of finance because debt cost is less than the cost of equity. Preference share capital has not been used as a source of finance by the sample units of Power Industry.

Keywords- Capital Structure, Cement Industry, Cost of Capital, T-test, Reserves & funds.

I. INTRODUCTION

The two principal sources of finance for a business unit are equity capital and debt. On debt interest is to be paid at fixed rate but in case of equity capital there is no such fixed

burden. By using debt the corporate unit can increase the value of shares if the money collected through debts is invested in a project which fetches return higher than interest on debt. The corporate unit has to decide as to how much financial leverage it should employ so as to maximize the value of its shares and minimize its cost of capital.

Capital structure is the composition of debt and equity securities that are used to finance a company's assets. Both debt and equity securities are used in most of the companies. Having determined its investment policy, a company should plan the sources of finance and their mix. Decisions on capital structure formulation are influenced by multiple factors. Companies that do not formally plan their capital structure are likely to have uneconomical and imbalanced capital structures and could face immense difficulties in raising capital on favourable terms in the long run. Also, inappropriate mix of sources of finance can render the operations of companies inflexible.

An optimal or sound capital structure can properly be defined as that combination of debt and equity, which achieves the goal of maximizing the company's market value. The optimal capital structure is also defined as that combination of debt and equity which minimizes the company's cost of capital. Hence, the optimal capital structure is concerned with two important factors at one time – the maximization of shareholders wealth as well as minimization of cost of capital. There are different views on how capital structure influences value of the firm. Some argue that there is no relationship whatsoever between capital structure and value of firm; others believe that financial leverage, i.e. the use of debt capital has a positive effect on the firm's value up to a point and negative effect thereafter; still others contend that other things being equal, greater the leverage, greater the value of the firm.

Corporate finance theory was born with the publication of Modigliani and Miller's (M&M) theoretical model about corporate capital structure in 1958. They showed that in a capital market free of taxes, transaction costs and other frictions, the choice of a firm's capital structure does not affect its market valuation. The Modigliani-Miller theorem of capital structure states that the value of a firm is irrelevant to how that firm is financed in a perfect market.

However, the real world reflects that the firm's value is relevant with its bankruptcy costs, agency costs, taxes, information asymmetry and so on. That is why a company's value is affected by the capital structure it employs. On the basis of Modigliani-Miller theorem, two traditional theories of capital structure, the Trade-off Theory and the Pecking Order Theory are developed. These theories guide most of the capital structure studies. The Trade-off Theory considers that firms have a target capital structure that is determined by the marginal benefits of debt (tax advantage of debt) and costs associated with debt (bankruptcy costs and agency costs). In other words, Trade-off Theory implies that firms adjust their capital structure in response to the temporary shocks that cause their leverage to deviate from the target.

As opposed to the trade off theory, the pecking order theory claims that there is no well-defined optimal debt ratio for firms to target. The pecking order theory was first advanced by Myers and Majluf (1984), based on asymmetric information and signaling problems with external financing. According to Myers and Majluf, there is a hierarchy in firm's financing activities, namely, a preference for internal financing over external financing, and for debt financing over equity financing when it comes to external financing. For this reason, firms follow a financing hierarchy that descends from internal funds, to debt, to external equity. The business firms may not be at their optimal capital structure at any point of time. Therefore, it is possible to identify the determinants of optimal capital structure rather than the observed capital structure. It could be suspected that there exist possibilities for companies to improve their capital structures because of the lack of theoretical guidelines. To be able to examine these kinds of questions I tend to investigate corporate capital structure in cement industry of India.

II. LITERATURE REVIEW

For undertaking the present study, the literature on capital structure was reviewed. Kinsman and Newman (1999) state that examination of the relationship between capital structure choice (i.e. debt level) and firm's performance is very important for many reasons. Among these reasons: first, mean firm debt level has risen substantially over the last periods, requiring an explanation of the impact of debt level on firm's performance, so that appropriate debt level decisions can be made in a particular firm. Second, since managers and investors may have different emphases, the relative effect of debt on firm's performance must be known. Final and most important reason for studying debt level and firm's performance is to examine the association between debt level and shareholders wealth, since shareholders

wealth maximization is the primary goal of firm's managers.

The capital structure of the firm could be explained, in general terms, by two dominant theories: the trade-off and pecking order theories. According to trade-off theory, optimal capital structure could be determined by balancing the different benefits and costs associated with debt financing. Debt benefits include tax shields (saving) induced by the deductibility of interest expenses from pre-tax income of the firm (Modigliani and Miller,

1963), reduction of agency costs through the threat of liquidation which causes personal losses to managers of salaries, reputation, perquisites, and through the need to generate cash flow to pay interest payment (Grossman and Hart, 1982; Williams, 1987). High leverage can also enhance the firm's performance by mitigating conflicts between shareholders and managers concerning the free cash flow (Jensen, 1986), optimal investment strategy (Myers, 1977), the amount of risk to be undertaken (Jensen and Meckling, 1976). On the other hand, debt costs include direct and indirect bankruptcy costs, debt financing brings with it commitment for future cash outflows in terms of periodic interest and the principal borrowed, and these commitments increase the likelihood of firm's financial default and bankruptcy.

However, several studies suggest that bankruptcy costs do exist but they are reasonably small relative to tax saving associated with debt (Miller, 1977; Warner, 1977). Thus, according to trade-off theory, more profitable firms have higher income to shield and thus should borrow more to take tax advantages (i.e. operate with higher leverage) consequently, a positive relationship could be expected between debt level and firm's performance (i.e. profitability). A number of studies provide empirical evidence supporting this positive relationship between debt level and firm's performance (Taub, 1975; Roden and Lewellen, 1995; Champion, 1999; Ghosh, 2000; Hadlock and James, 2002; Berger and Bonaccorsi di Patti, 2009).

III. BRIEF PROFILE OF POWER INDUSTRY

The present study tends to analyze the capital structure of power industry in India. Power or electricity is an important component of infrastructure affecting the pace of economic development of any nation. India is one of the largest producer and consumer of electricity in the world. The Ministry of Power is the nodal authority for the overall development for electric energy in India. Various policy reforms and initiatives have been taken by the government for the rapid growth of power industry. Electricity Act 2003 which was later amended in 2007 has played significant role in the rapid development of this industry. The thermal, hydro and

nuclear energy are the major sources of generation of electricity in India.

Our country has progressed well in generating solar and wind energy also on a large scale to meet the increasing requirement of electricity. Many states like Gujarat and Madhya Pradesh have undertaken research projects to enhance the generation of renewable energy like solar and wind energy.

Electricity is one of the key industries that play significant role in the rapid industrial and economic development of any nation. It has strong linkage with almost every segment of the economy. The growth of this industry has strong and positive multiplier effect. The production and consumption of power is the indicator of level of development of any nation. The main units of power industry included for the purpose of this study are selected on the basis of their sales, size of total assets, market share, market image, etc.

IV. OBJECTIVE AND HYPOTHESIS OF THE STUDY

The present study tends to get deep insight into the capital structure of Power Industry. The null hypothesis of no significant difference in capital structure of selected industrial units of power industry has been tested using t-test at 5 per cent level of significance.

V. RESULTS AND FINDINGS OF THE STUDY

The analysis reveals that none of the sample unit of Power Industry, i.e. National Hydro Power Corporation Limited (NHPC), Tata Power Limited, National Thermal Power Company (NTPC) has used Preference Share Capital as a source of finance. The growth in Equity Share Capital is too little in NHPC and Tata Power; while Equity Share Capital is static in NTPC. The total Equity of Power Industry, as a whole, has increased to 1.98 times which is mainly due to increase in Reserves & Funds of sample units. In case of NHPC, Reserve & Funds have increased to 3.7 times. In case of Tata Power, these have increased to 2.4 times; in NTPC these have increased to 2.1 times over the period of study. It reflects that in Power Industry also, Reserve & Funds are the main source of finance. It implies that the sample units of Power Industry are strengthening their financial position by ploughing back their profits. It also reflects good profitability of sample units of Power Industry.

The debt of Power Industry is analyzed unit wise. The average debt-equity of Power Industry is 0.57. The coefficient of variation of debt-equity in Power Industry is low at 0.17, which reflects consistency in capital structure of Power Industry over the period under study. In Power Industry, average cost of debt is 0.02, average cost of equity is 0.17 and average overall cost of capital is 0.12. For the Power Industry

as a whole, cost of debt is very low due to the policy of government to provide concessional loans to Power Industry as it is an important component of infrastructure. Very high negative correlation (0.91) is found between debt equity ratio and overall cost of capital. The p value (0.00) gives strong evidence of this correlation. It can be safely concluded that increase in the use of debt helps in reducing overall cost of capital. It supports Traditional Theory, Net Income Approach and MM Model II. Positive correlation (0.89) is found between debt equity ratio and cost of equity. The p value (0.00) gives strong evidence of this correlation. It implies that the increased use of debt results in increase in cost of equity as equity shareholders have to bear the extra risk. This is in accordance with the views of Traditional Theory and MM Model. Further, positive correlation (0.52) is found between debt equity ratio and value of firm, which is not supported by p value of 0.15.

In Power Industry, the coefficient of determination (R^2) is found to be 0.634. It implies that 63.4 per cent variations in debt equity ratio are explained by independent variables under study. The F value of this model indicates that the model is not much reliable as the p-value of F-test is 0.250. The multi-collinearity was examined by construction of pair wise correlation matrix of all the independent variables. The relationship among the variables in this matrix was not found very substantial. From the value of coefficients of independent variables, business risk and growth rate appear to be the most prominent variables affecting capital structure. The t-test results indicate that none of the independent variables has unique significant effect on debt equity ratio. So, all the independent variables turn out to be weak explanatory determinants of capital structure of Power Industry. So the null hypothesis of no effect of independent variables on capital structure is accepted in case of Power Industry.

The brief findings of this study are:

- Reserves and funds have been used as major source of finance in all the sample units of Power Industry.
- Preference share capital has not been used as a source of finance by the sample units of Power Industry.
- Equity of all the sample units of Power Industry has increased many times over the period of study which is mainly because of increase in reserves and funds. It reflects policy of ploughing back of profits and financial strength of the sample units of Power Industry.

- All the sample units of Power Industry are using debt as a source of finance as debt cost is less than the cost of equity.
- The average debt-equity ratio of all the sample units and the industry as a whole is almost same. It is ranging from 0.57 to 0.59. It means the debt-equity pattern of all the sample units is almost similar. Further, C.V. of the sample units and the industry as a whole is very low, which indicates that debt-equity ratio is consistently moving in a narrow range. So the null hypothesis of no significant difference in composition of capital structure of selected units of Power industry is accepted.

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