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RESEARCH ARTICLE

A STUDY ON THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND PROFITABILITY-A STUDY OF SELECT CEMENT COMPANIES

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Introduction

Capital Structure Decision is the vital one since the profitability of an enterprise is directly affected by such decision. The successful selection and use of capital is one of the key elements of the firm's financial strategy. Hence proper care and attention need is to be given while determining the capital structure decision. The purpose of this study is to investigate the relationship between capital structure and profitability of five listed cement companies over the past 10 year period from 2006 to 2016. The data has been analyzed by using descriptive statistics and correlation analysis to find out the association between the variables. Result of the analysis show that there is a negative association between capital structure and profitability except the association between debt to equity and return on equity. Present study focus on the association between capital structure and profitability of listed Cement companies. Capital structure is one of the most puzzling issues in corporate finance literature. The concept is generally described as the combination of debt and equity that make the total capital of firms. The proportion of debt to equity is a strategic choice of a finance manager. Capital structure decision is the vital one since the profitability of the enterprise is directly affected by such decision. Hence proper care and attention need to be given while determining capital structure decision. In the statement of the affair of an enterprise, the overall position of enterprise regarding all kind of assets, liabilities are shown. Capital structure is a vital part of the statement. The term "capital structure" of an enterprise is actually a combination of equity shares, preference shares and long term debts. A cautious attention has to be paid as far as optimum capital structure is concerned. With unplanned capital structure, companies may fail to economize the use of their funds. Consequently, it is being increasingly realized that a company should plan its capital structure to maximize the use of funds and to be able to adapt more easily to the changing conditions. The relationship between capital structure and profitability is one that received considerable attention in the finance literature. The study regarding the effects of capital structure on profitability will help us to know the potential problems in performance and capital structure. The modern industrial firm must conduct its business in a highly complex and competitive and competitive business environment. Therefore, these types of research findings will be benefited in selecting the capital structure to achieve the optimum level of firm's profitability. This study shows the statistical analysis carried out seeking to discover is there any relationship between capital structure and profitability of the listed cement companies.

OBJECTIVES

The objectives are geared towards the following:

1. To find out the relationship between capital structure and profitability.

2. To find an optimal capital structure that would be associated with the best performance.
3. To suggest the Cement companies in a way to increase profitability through adapting a better strategic framework of a capital structure.

REVIEW OF LITERATURE

Capital structure is referred to as the way in which the firm finances itself through debts, equity and securities. It is the composition of debt and equity that is required for a firm to finance its assets. The capital structure of a firm is very important since it is related to the ability of the firm to meet the needs of its stakeholders. The board of directors of the financial manager of a company should always endeavor to develop the capital structure that would lie beneficial to the equity shareholders in a particular and to the other groups such as employees, customers, creditors and society in general (Pandey, 2009).

Brander and Lewis (1986) and Maksimovic (1988) provided the theoretical framework that link capital structure and market structure. contrary to the profit Maximization objective postulated in industrial organization literature, these theories, like the corporate finance theory, assume that the firm's objectives to maximize the wealth of shareholders and show that market structure affects capital structure by influencing the competitive behavior and a strategies of firms. According to Brander & Lewis (1986) firms in the oligopolistic market will follow the strategy of maximizing their output for improving profitability in favorable economic conditions. In unfavorable economic conditions, they would take a cut in production and reduce their profitability. Shareholders enjoy increased wealth in good periods, but they tend to ignore decline in profitability in bad times as unfavorable consequences are passed on to lenders because of shareholders' limited liability status. Thus the oligopoly firms, in contrast to the firms in the competitive markets, would employ higher level of debt to produce more when opportunities to earn high profits arise. The implied prediction of the output maximization hypothesis is that capital structure and market structure have positive relationship.

Lalith, P.S (1999) investigated the capital structure of Srilankan companies and found that the use of long term debt is relatively low in srilankan companies. The mean leverage in srilanka is estimated as 13.5 percent, long term debt to equity ratio is 24 percent while the total debt to equity ratio is 104.1 percent. this evidence suggested that the use of debt financing in sri lanka is significantly low in comparison to G7 markets.

According to the business dictionary profitability is the ability of a firm to generate net income on a consistent basis. Ratio is used as a benchmark for evaluating the performance of a firm. Rations help to summarize large quantities of financial data and to make quantitative judgement about the firm's profitability. One of the most important financial decisions facing companies is the choice between debt and equity capital (Glen & Pinto, 1994). This decision can effectively be taken while managers are first of all aware of how capital structure influences firm profitability. This is because, this awareness would enable managers to know how profitable firm make their financing decisions in particular contexts to remain competitive. In the corporate finance literature, it is believed that this decision differs from one economy to another depending on country level characteristics.

Chiang Yat Hung, Chan Ping Chuen Albert & Hui Chi Man Eddie (2002) shows the inter-relationship between profitability, cost of capital and capital structure among property developers and contractors in Hong Kong. The data for this research paper was collected from datastream, an electronic financial database. The analysis of this paper shows that gearing is generally higher among contractors than developers and capital gearing is positively related with asset but negatively with profit margins.

Peterson & Rajan (1994)(found a significantly positive association between profitability and debt ratios in a study designed to investigate the relationship. Ooi (1999) argues that profitable firms are more attractive to financial institutions as lending prospects. The reason is that, those firms are expected to have higher tax shield and low bankruptcy cost. Furthermore, Abore (2005) has reported a significantly positive relationship between the ratios of short term debt to total assets & profitability but a negative association between the ratio of long term debt to total assets and profitability. Dimitris, & Maria, P. (2008) investigated the relationship between capital structure, ownership structure and firm performance acreoss different industries using a sample of French manufacturing firms. They found that a negative relationship between past profitability and leverage and there will be a positive relation between profitability and leverage.

HYPOTHESIS OF THE STUDY

Following Hypothesis were formulated for the study:

H_1 : there is a significant Negative relationship between debt to equity and Net profit

H_2 : There is a significant relationship between debt to equity and return on capital employed

H_3 : there is a significant negative association between debt to equity and return on equity.

METHODOLOGY

a) Data Collection: the present study used secondary data for the analysis. Secondary data is t he data that have been previously collected for some other project rather than the one at hand but found useful by the researcher. The financial statement which are made up of income statement and the Balance sheet of the sample Cement Companies were the main source of data for this study. Further scholarly articles from academic journals, relevant textbooks of the subjects and the internet search engines were used.

b) Sample design: according to Jancovicz (1994) generalization about the population from data collected using any sample is based on probability. In order to be able to generalize about the research finding to the population, it is necessary to select samples of sufficient size. The sample of this study composed of 5 cement companies listed in the National stock exchange. From 2007 to 2016.

c) Mode of Analysis: the quantitative research approach is employed to find out the findings of research study. Since numerical and secondary data is used, quantitative approach is considered to be suitable approach for the study. According to Leavy (2004), "statistical analysis is used to describe an account for the observed variability in the data". This involves the process of analyzing the data that has been collected. Thus the purpose of statistics is to summarize and answer questions that were obtained in the research. The upper level of statistical significance for hypotheses testing was set at 5%. All statistical test results were computed at the 2- tailed level of significance. Statistical analysis involves both descriptive and inferential statistics.

Descriptive statistics are used to describe and summarize the behavior of the variables in a study. The refer to the ways in which a large number of observations are reduced to interpretable numbers such as averages and percentages. Inferential statistics are used to draw conclusions about the reliability and generalizability of the findings. In order to test the research hypothesis; the inferential tests used include the correlation analysis.

d) Research Model: Correlation analysis was carried out to identify the relationship between capital structure and profitability. Here capital structure is the independent variable and profitability is the dependent variable. From these independent and dependent variables, the following relationship is formulated.

Profitability of the cement companies is dependent upon the capital structure. it is represented as follows; **P=f (CS)**

Which shows profitability is the function of capital structure. where P = Profitability & CS= Capital structure.

Here, profitability is measured with the help of four ratios. Namely Net Profit, Return on Capital employed, Return on Equity and Net interest margin. Capital structure is measured with the help of Debt/Equity ratio and Debt to total fund ratio.

RESULT AND ANALYSIS

a) Descriptive statistics

Table 1: **Descriptive statistics**

DESCRIPTIVE STATISTICS						
	Mean	**Standard Error**	**Median**	**Minimum**	**Maximum**	**Count**
NP RATIO	0.0987	0.009376	0.10425	0.0567	0.1616	10
ROE	0.1754	0.016816	0.2021	0.0621	0.228325	10
ROCE	0.1844	0.016486	0.1766	0.1008	0.2561	10
ICR	10.89	2.805	7.85	2.92	30.67	10
DER	0.9258	0.184343	0.89705	0.1305	1.7937	10
DTF	0.3828	0.059313	0.3728	0.0908	0.7029	10

The descriptive statistics shows that over the period under study, the profitability ratio measured by Net Profit, Return on Capital Employed, Return on Equity averaged 9.9 percent, 18.44 percent and 17.54 percent respectively. Interest Coverage Ratio is 10.89 percent, Debt equity ratio stood at 92.59 percent, and debt to total fund averaged 59.31 percent. This is an indication that approximately 69 percent of total assets in the Cement sector of India are represented by Debt.

The Interest Coverage Ratio averaged is 10.89 percent, the Minimum value of which is 2.92 and maximum is 30.67 percent (case of Top Listed Cement Companies). This statistics reveal that the interest coverage over Earnings before Interest and taxes may reach up to 30 percent in case of upper limit and hence it’s an indication that cement companies in India does not much depending up on Debt in order to fulfill the funds requirement and can be considered as a good sign, the basic reason is the level of risk involved in association with the increase in debt will be stabilized.

The thought the firm is in use of limited debt by the cement companies in above paragraph is absolutely correct and this can be observed from Debt equity ratio of 0.92 for which minimum value is 0.13 and maximum value is 1.79. Whereas the debt equity ratio of 2 is considered as idle. The figure 0.92 represents that the debt is 92 percent of Equity figure in the capital structure and this proportion is rising to 1.79 times at its maximum level in case of cement companies and the low level is only 13 percent. This clearly signifies that the Cement companies in India preferring to have limited amount of Debt in the capital structure, as a support to this context Interest coverage ratio is only 10.89 percent leaving good amount of Net earnings towards the equity shareholders.

The Debt to total Asset ratio is 0.38 percent. This signifies that the Assets in Cement companies were financed from debt source amounted to 38 percent of its total value and 62 percent is financed by equity. The maximum value of Debt to total assets is 0.70 and minimum value is 0.09. Conversely a debt level of 40 percent may be easily manageable for a company in a sector such as utilities and infrastructure, where cash flows are stable and higher debt ratios are norm. as Cement industry falls under manufacturing and infrastructure segment, the cash flows are generally expected to be stable and in fact they are, and hence the level of 38 percent of this ratio is considered to be acceptable and reveals again that the Cement companies are not much dependent on Debt source. The highest value of this ratio is 70 percent, which means the companies have got

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financed their assets 70 percent from debt source and 30 percent from equity and internal source and hence it's a good condition and favorable to the investor as the part of risk is limited.

Return on capital employed is 18.4 percent and return on equity is 17.5 percent. This small amount of difference is because of the less composition of debt in the total capital employed.

CORRELATION MATRIX

CORRELATION MATRIX						
	NP RATIO	**ROE**	**ROCE**	**ICR**	**DER**	**DTF**
NP RATIO	**1**	0.775234	0.714865	0.772597	-0.77934	-0.80377
ROE	0.7752339	**1**	0.547523	0.336003	-0.61118	-0.65178
ROCE	0.7148649	0.547523	**1**	0.884274	-0.90121	-0.89637
ICR	0.7725973	0.336003	0.884274	**1**	-0.83662	-0.83553
DER	-0.7793448	-0.61118	-0.90121	-0.83662	**1**	0.895371
DTF	-0.8037677	-0.65178	-0.89637	-0.83553	0.895371	**1**

The above mentioned table indicates the relationship between various Independent and dependent variables used in the study. From the table it is clear that the Association between Debt equity is positive only with Debt to total fund and is negative with all other dependent variables. Whereas Net Profit is negatively correlated with Debt ratios i.e., Debt equity and debt to total funds ratio and is positively correlated with Profitability ratios. Such as ROE, ROCE and Interest coverage ratios. According to the pecking order theory, the firm prefers internal funds over external funds, suggesting that profitable companies should use more internal funds. This clearly establishes the **negative relation** between leverage and profitability. Here in the present study, Profitability is found to be negatively correlated with leverage. A significant negative relationship between profitability and debt ratio supports the pecking order hypothesis – that firm with liquid assets, and internal accruals would use less debt. The r value is -0.779 for the association between Debt Equity and Net profit.

NO	Hypothesis	Result	Tool
H1	there is a significant Negative relationship between debt to equity and Net profit	Rejected	Correlation
H2	There is a significant relationship between debt to equity and return on capital employed	Rejected	Correlation
H3	There is a significant negative association between debt to equity and return on equity.	Rejected	Correlation

CONCLUSION AND RECOMMONDATIONS

This study examines the relationship between capital structure and Profitability in Listed Indian Cement companies. The study covers 10 Listed Cement Companies over the period 2004 to 2015 and the major findings of the study summarized below—

The mean value of Debt equity ratio and Debt to total funds ratio are 0.926 and 0.383 respectively. The mean value of Debt to equity ratio suggests that debt is debt is 9.26 times higher than equity. The Debt equity ratio is normally safe up to 2. It shows the fact that Cement companies in India depends more on Debt (Long term loans) rather than Equity capital. The mean value of Debt to total fund ration indicates 38.3 percent of the total capital of listed cement companies is made up of Debt.

Cement companies generally plays a crucial role in the infrastructure development of Country. One crucial decision companies' face is Debt equity choice. Among others, this choice is necessary for the profit determination of firms. What this means is that companies that are able ot make their financing decisions prudently would have a competitive advantage in the Industry and thus making super profits. Nonetheless, it is essential for us to recognize that this decision can only be wisely taken if companies know how debt policy influences their profitability. Therefore companies should take in to view the following matters in order to increase their profitability.

1) An approximate mix of capital structure should be adopted in order to increase the profitability of companies. Finding revealed that total debt is negatively correlated with Net Profit (r=-0.779) of the listed Cement companies in India. That is in the case of high debt, profitability tend to decline. The reason behind this may be due to high interest bearing securities engage in the total debt. In addition to these, increase in the level of debt increases the risk on part of companies. Therefore the bank should concern much on the internal source of financing in order to increase their profitability.
2) The r value between Debt Equity and Interest coverage ratio, Debt to total funds and Interest coverage, Debt equity to Net profit, Debt to total assets and Net profit is -0.837, -0.836, -0.779, -0.804. This clearly reveals that there exists a strong negative association these two variables. With an every increase in the level of debt results in increase in interest payments thus result in the decrease in Profitability.

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