IMPACT OF DEBTS ON THE CAPITAL STRUCTURE PATTERNS: A STUDY OF COMPANIES LISTED ON THE BOMBAY STOCK EXCHANGE

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ABSTRACT

To understand how companies finance their operations, it is necessary to examine the determinants of their financing or capital structure decisions. Company financing decisions involve a wide range of policy issues. A sound and appropriate capital structure of a firm is significant, because of inter relationship among capital structure and various others financial decisions variables. Therefore, an ability to assess the firm's capital structure and to understand its relationship to risk, return and value is a necessary skills. So, the present study aimed to investigate the capital structure patterns of the selected companies listed with the Bombay Stock Exchange in India and to test the extent of variations among industries as also among individual's firms companies within the same industry. The resulting inferences were that the capital structures among sampled industries investigated were significantly different.

KEYWORDS: Debt Ratio, Leverage Decision, Capital Structure, Firm Value, Corporate Finance, Wealth Maximization

INTRODUCTION

After the Modigliani-Miller (1958 and 1963) paradigms on firm's capital structure and their market values, there have been considerable debates, both in theoretical and empirical researches on the nature of relationship that exists between a firm's choice of capital structure and its market value. The company's choice of capital structure determines the allocation of its operating cash flow each period between debt holders and shareholders. The debate over the significance of a company's choice of capital structure is esoteric. But, in essence, it concerns the impact on the total market value of the company of splitting the cash flow stream into a debt component and earn equity component.

Financial experts traditionally believed that increasing a company's leverage, i.e. increasing the proportion of debt in the company's capital structure, would increase value up to a point. But beyond that point, further increases in leverage would increase the company's overall cost of capital and decrease its total market value. Capital structure refers to a mixture of a variety of long term sources of funds and equity shares including reserves and surpluses of an enterprise. The study revealed the situations under what conditions that the Capital structure is relevant or irrelevant to the financial performance of the listed companies.

LITERATURE REVIEW

The choice between debt and equity aims to find the right capital structure that will maximize stockholder wealth. The modern theory of capital structure was established by Modigliani and Miller (1958). Other researchers have added imperfections, such as bankruptcy costs (Baxter, 1967; Stiglitz, 1972; Kraus and Litzenberger, 1973; and Kim, 1978), agency costs (Jensen and Meckling, 1976), and gains from leverage-induced tax shields. Leland and Pyle (1977) and Ross (1977) propose that managers will take debt/equity ratio as a signal, by the fact that high leverage implies higher

bankruptcy risk (and cost) for low quality firms. Since managers always have information advantage over the outsiders, the debt structure may be considered as a signal to the market. Ross's model suggests that the value of firms will rise with leverage, since increasing leverage increases the market's perception of value. DeAngelo and Masulis (1980) demonstrated that with the presence of corporate tax shield substitutes for debt. DeAngelo-Masulis model implies that a firm's optimal capital structure will be industry related in part because of the evidence that tax rates vary across industry.

Masulis (1983) argues further that when firms which issue debt are moving toward the industry average from below, the market will react more positively than when the firm is moving away from the industry average. Assuming information asymmetry, the pecking order theory (Myers and Majluf, 1984) predicts that firm will follow the pecking order as an optimal financing strategy. The reason behind this theory is that if the manager act on behalf of the owners, they will issue securities at a higher price than they are truly worth. Stulz (1990) argues that debt can have both a positive and negative effect on the value of the firm. He develops a model in which debt financing can both alleviate the over investment problem and the impact of capital structure on firm's value. Harris and Raviv (1991, p. 299) in their survey of capital structure theories claimed and identified a large number of potential determinants of capital structure. The empirical work so far has not, however, sorted out which of these are important in various contexts. A firm's debt level and that of its industry does not appear to be of concern to the market (Hatfield et al., 1994). Similarly, Rajan and Zingales (1995, p. 1421) stated: "Theory has clearly made some progress on the subject. We now understand the most important departures from the Modigliani and Miller assumptions that make capital structure relevant to a firm's value. (Kochhar, 1997), it is considered "customer-driven" financial distress where prices for the firm output decline whenever firm has poor financial status."

"Employee driven" financial distress originates from loss of intangible assets when firm revenue decline. Those firms having lower debts have higher value than the firm, which has high debt. Thus, firm can maximize its value by choosing low debt or zero debt (Kinsman and Newman, 1998). The study found positive with pecking order approach and generally inconsistent with the tradeoff approach (Benito, 1999). Under some conditions capital structure does not affect the value of the firm. Splitting a fund into some mix of shares relating to debt, dividend and capital directly adds value to the company (Gemmille, 2001). According to Ehrhard and Bringham (2003), the value of a business based on the going concern expectation is the present value of all the expected future cash flows to be generated by the assets, discounted at the company's weighted average cost of capital (WACC).

Minimizing WACC of any firm will maximize value of the firm (Messbacher, 2004). The WACC has a direct impact on the value of a business. (Johannes and Dhanraj, 2007). Based on the above literature, we can say that several studies have been done on this area, but a comprehensive study has not yet been conducted, in India perspective. Hence the present study aimed to investigate the capital structure patterns of the selected companies listed with the BSE and to test the extent of variations among industries as also among individual firms within the same industry.

OBJECTIVES

The following objectives have been taken for the study

- To investigate the capital structure patterns of the selected companies enlisted with the BSE limited.

- To test the extent of variations among industries; and

- To examine the extent of variations among individual companies within the same industry in respect of capital structure

HYPOTHESIS

Ho$_1$: Capital structures as measured by debt ratios (Long term debts/Total permanent capital) did not vary significantly among individual companies within the same industry.

Ho$_2$: The average debt ratios did not vary among industries such as Banking Sector, Pharmaceutical Sector, Telecom Sector, Broadcasting and Cable T.V Sector, Cement and Cement Products.

RESEARCH METHODOLOGY

This section is divided into five sub sections. The first sub –section presents the scope. The second sub section discusses the period of the study. In the third sub section, data sources are discussed. The fourth sub section illustrates the reliability and validity whereas the last sub section highlights mode of analysis.

The scope of the study is listed companies on BSE in India. There are lot of sectors listed in Bombay Stock Exchange but for the convenient and reliability of study we selected five sectors randomly. i.e. 1) Banking Sector 2) Pharmaceutical Sector 3) Telecom Sector 4) Broadcasting and Cable TV Sector 5) Cement and Cement Products Sector. For study proposes only five companies are selected from each sector. Hence, ultimate sample is 25 companies (05 x 05 = 25). The data related to the period of 10 years from 2004-2013. In order to meet the objectives of the study, data were collected from secondary sources mainly from financial report of the selected companies, which had been collected from the capital line database as well as from the company's websites.

Secondary data for the study were drawn from audited accounts (i.e., income statement and balance sheet) of the concerned companies as fairly accurate and reliable. Therefore, these data may be considered reliable for the study. Necessary checking and cross checking were done while scanning information and data from the secondary sources. All these efforts were made in order to generate validity data for the present study. Hence, researchers satisfied content validity. We used one-way Analysis of variance (ANOVA) along with necessary ratio analysis. The following capital structure ratios are taken into accounts which are given below.

Table 1: Calculations of Capital Structure Ratios

Capital Structure Ratios	
Debt Ratio (D/R Ratio)	= Long Term Debts/Total Permanent Capital
Debt Equity Ratio(D/E Ratio)	= Total Debts/ Net Worth

RESULTS AND DISCUSSIONS

This section presents the findings of the study and is divided into two-sections. Section one begins with capital structure patterns. The final section presents the capital structure variations with hypotheses testing.

Table 2: Debt Ratios of Selected Industries from 2004-2013

Years	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Industries	D/R	D/R	D/R	D/R	D/R	D/R	D/R	D/R	D/R	D/R
Telecom	0.77	0.62	0.54	0.41	0.42	0.48	0.51	0.50	0.56	0.39
Banking	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92
Pharmaceutical	0.23	0.20	0.20	O.23	0.30	0.26	0.25	0.26	0.25	0.23
Cement	0.37	0.33	0.39	0.40	0.43	0.46	0.44	0.49	0.53	0.58

Table 2: Contd.,										
Broadcasting	0.40	0.49	0.40	0.47	0.86	1.78	0.51	0.43	0.10	0.04

Source: Calculated from the figures available in the income statements and Balance sheet of the companies concerned

Table 2 reveals that banking industries used more long term debts in the range of 0.93 to 0.92 for debt ratio, followed by telecom sector 0.77 to 0.39 broadcasting industries 1.78 to 0.10 and so on further cement industries 0.33 to 0.58 and Pharmaceutical industries 0.33 to 0.58. So from the above it is clear that overall debts shows a fluctuating trend in all the companies and affects the company capital structure.

CAPITAL STRUCTURE VARIATIONS

From the earlier analysis, it was observed that capital structure varied in different Industries in this section, an attempt has been made to test statistically the variations among industries as also among individual companies with the same industry with regard to the capital structures.

CAPITAL STRUCTURE VARIATIONS AMONG INDIVIDUAL COMPANIES WITHIN THE SAME INDUSTRY

H_{01}: Capital structures as measured by debt ratio do not vary significant among Individual companies within the same industry.

Table 3: Debts Ratios of Selected Companies from 2004-13

Sector	Banking Sector					Pharmaceutical Sector				
Years	HDFC	SBI	OBC	Canara	IDBI	Cipla	Cadila	Ranbaxy	Bsglaxo Smith Kline	Piramal
Mar '13	0.9	0.93	0.93	0.94	0.93	0.098	0.29	NA	NA	0.3
Mar '12	0.9	0.93	0.935	0.94	0.94	0.0016	0.21	0.71	0.002	0.1
Mar '11	0.89	0.94	0.934	0.95	0.95	0.062	0.27	0.67	0.002	0.02
Mar '10	0.89	0.94	0.94	0.95	0.96	0.0008	0.4	0.45	0.003	0.3
Mar '09	0.9	0.93	0.938	0.95	0.95	0.17	0.41	0.51	0.003	0.45
Mar '08	0.9	0.92	0.932	0.95	0.94	0.13	0.34	0.51	0.003	0.33
Mar '07	0.917	0.938	0.92	0.94	0.93	0.036	0.37	0.57	0.004	0.28
Mar '06	0.919	0.936	0.91	0.94	0.92	0.191	0.38	0.57	0.005	0.17
Mar '05	0.9	0.94	0.935	0.94	0.92	0.11	0.43	0.3	0.005	0.42
Mar '04	0.92	0.94	0.93	0.95	0.9	0.144	0.49	0.05	0.004	0.46
	Telecom Sector				Broadcasting and Cable TV					
Years	Idea	Reliance	Airtel Bharti	Maha Nagar Ltd.	TATA Telecom	Zee Ent	Dish TV	Sun TV Net.	City Cable	TV Today
Mar '13	0.45	0.48	0.19	1.31	1.43	0.0004	1.21	0	NA	NA
Mar '12	0.44	0.38	0.22	0.8	1.26	0.00033	1.08	0	1.28	0.13
Mar '11	0.46	0.39	0.19	0.53	1.15	0.00037	0.97	0	0.99	0.05
Mar '10	0.36	0.33	0.12	0	1.22	0.04	0.71	0	1.58	0.18
Mar '09	0.4	0.37	0.22	0	1.13	0.07	2.29	0	1.96	0
Mar '08	0.64	0.45	0.24	0	1.08	0.09	7.41	0	1.4	0
Mar '07	0.66	0.42	0.32	0	1.18	0.12	1.42	0	0.84	0.02
Mar '06	0.81	0	0.39	0	1.3	0.23	NA	0.43	1.06	0.02
Mar '05	0.72	0	0.52	O	1.02	0.2	NA	0.1	NA	0.006
Mar '04	0.68	NA	0.11	0	0.8	0.12	NA	0	NA	0

	Cement and Cement Products				
Years	Ultratech Cement	Shree Cement	ACC Cement	Ramco Cement	Century Textile
Mar '13	0.22	0.2	NA	NA	0.7
Mar '12	0.23	0.26	0.01	0.51	0.64
Mar '11	0.2	0.48	0.06	0.62	0.61
Mar '10	0.26	0.52	0.07	0.62	0.57
Mar '09	0.37	0.54	0.08	0.66	0.54
Mar '08	0.39	0.65	0.09	0.63	0.52

Table 3: Contd.,

Mar '07	0.47	0.65	0.07	0.5	0.55
Mar '06	0.58	0.54	0.19	0.6	0.53
Mar '05	0.6	0.49	0.33	0.67	0.54
Mar '04	0.6	0.57	0.47	0.68	0.58

Table 4: ANOVA Results of Selected Sectors

Industries	Source of Variance	Sum of Squares	Degree of Freedom	Mean Square	F	Sig.
Banking Sector	Between groups	0.01	4	0.002	20.109	0
	Within groups	0.005	45	0		
	Total	**0.015**	**49**			
Pharmaceutical Sector	Between Groups	1.308	4	0.327	17.653	0
	Within Groups	0.834	45	0.019		
	Total	**2.142**	**49**			
Telecom Sector	Between Groups	6.002	4	1.5	23.096	0
	Within Groups	2.923	45	0.065		
	Total	**8.925**	**49**			
Broadcasting & Cable TV	Between Groups	17.663	4	4.416	4.124	0.006
	Within Groups	48.183	45	1.071		
	Total	**65.846**	**49**			
Cement & Cement Product	Between Groups	1.27	4	0.317	13.691	0
	Within Groups	1.043	45	0.023		
	Total	**2.313**	**49**			

RESULTS OF ANOVA

Banking Sector: It is seen that the debt ratio of the selected companies within the banking industries is highly significant (F=20.109) at 1% level of significance (p < .01) which indicates that the debt ratio of the selected companies differs significantly. Therefore null hypothesis is rejected and it can be concluded that debt ratio is significantly different among selected companies of banking industry.

Pharmaceutical Sector: It is seen that the debt ratio of the selected companies within the pharmaceutical industries is highly significant (F=17.653) at 1% level of significance (p <.01) which indicates that the debt ratio of the selected companies differs significantly. Therefore null hypothesis is rejected and it can be concluded that debt ratio is significantly different among selected companies of pharmaceutical industry.

Telecom Sector: It is seen that the debt ratio of the selected companies within the telecom industries is highly significant (F=23.096) at 1% level of significance (p<.01) which indicates that the debt ratio of the selected companies differs significantly. Therefore null hypothesis is rejected and it can be concluded that debt ratio is significantly different among selected companies of telecom industry.

Broadcasting and Cable TV Industry: It is seen that the debt ratio of the selected companies within the broadcasting and cable TV industries is highly significant (F=4.124) at 1% level of significance (p<.01) which indicates that the debt ratio of the selected companies differs significantly. Therefore null hypothesis is rejected and it can be concluded that debt ratio is significantly different among selected companies of Broadcasting and Cable TV industry.

Cement and Cement Products Sector: It is seen that the debt ratio of the selected companies within the cement and cement product Industries is highly significant (F=13.691) at 1% level of significance (p<.01) which indicates that the debt ratio of the selected companies differs significantly. Therefore null hypothesis is rejected and it can be concluded that debt ratio is significantly different among selected companies of Cement and Cement Products industry.

VARIATIONS IN CAPITAL STRUCTURE AMONG INDUSTRIES

Ho_2: The average debt ratios didn't vary among industries such as Banking Pharmaceuticals, Telecom Sector, Broadcasting and Cable TV, Cement and Cement Products.

Table 5: Average Debt Ratios of the Selected Industries from 2004 to 2013

Year	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Industries	D/R	D/R	D/R	D/R	D/R	D/R	D/R	D/R	D/R	D/R
Telecom	0.77	0.62	0.54	0.41	0.42	0.48	0.51	0.50	0.56	0.39
Banking	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92
Pharmaceutical	0.23	0.20	0.20	O.23	0.30	0.26	0.25	0.26	0.25	0.23
Cement	0.37	0.33	0.39	0.40	0.43	0.46	0.44	0.49	0.53	0.58
Broadcasting	0.40	0.49	0.40	0.47	0.86	1.78	0.51	0.43	0.10	0.04

Source: Calculations based on data from annual reports of companies

Table 6: ANOVA

	Sum of Squares	Degree of Freedom	Mean Square	F	Sig
Between Groups	2.511	4	0.628	12.214	.000
Within Groups	2.313	45	0.051		
Total	**4.824**	**49**			

From the table 6 it is seen that the debt ratio of the selected industries is highly significant (F=12.214) at 1% level of significance (p<.01) which indicates that the debt ratio of the selected industries differs significantly. Therefore null hypothesis is rejected and it can be concluded that debt ratio is significantly different among selected industries.

CONCLUSIONS

This effort was about the capital structures of the industrial enterprise listed in BSE Limited. In addition, an attempt was also made to present evidence on whether capital Structures as measured by debt ratios vary significantly among industries as also among individual companies within the same industry. The analysis of data provided sufficient evidence that capital structure among sampled industries investigated were significantly varied. It is clear from the analysis that various industries, subject to various degrees of risks, have indeed developed characteristically different capital structures. The one way Analysis of variance used in this study indicated that the sample means were not all equal. The resulting inferences were that the capital structures among sampled industries investigated were significantly different. So we can conclude that debts is an important factor which is having a great impact on the capital structure practices of the companies within the same industry and intra industry.

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