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Composition of Capital Structure Decisions: Comparative Empirical Evidence from India

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Abstract-- *This empirical paper attempts to study the composition of capital structure of Automobile & vehicles industry, Electronics & electrical products industry, Cement industry and Plastic, thermoplastic & rubber industry of the Indian corporate sector. The study is limited to top 79 (17 firms from Automobile & vehicles industry, 29 firms from Electronics & electrical products industry, 20 firms from Plastic, thermoplastic & rubber industry and 13 firms from Cement industry) out of top 500 manufacturing firms selected on the basis of the turnover for the year 2004-2005 which covers the time span of eleven years commencing from 1995-96 to 2005-06. The study reveals that the companies in Automobile & vehicles industry and Electronics & electrical products industry are following conservative approach, while, the companies in Cement industry and Plastic, thermoplastic & rubber industry are following liberal approach of financing through debt in the composition of their capital structure during the study period. It is also observed that companies in Automobile & vehicles industry are following more conservative approach as compared to the approach used by the companies in Electronics & electrical products industry, where, the companies in Cement industry are following more liberal approach as compared to the approach used by the companies in Plastic, thermoplastic & rubber industry of financing through debt in the composition of their capital structure during the period under study. However, debt capital is a cheaper source of finance, thus, the use of debt may maximize the value of wealth of shareholders.*

Keywords: Conservative; Liberal; Capital; Structure; Shareholders

1. INTRODUCTION

"A company can finance its investments through debts/or equity. The company may also use preference capital. The rate of interest on debt is fixed irrespective of the company's rate of return on assets. The company has a legal binding to pay interest on debt. The rate of preference dividend is fixed, but preference dividends are paid when the company earns profits. The common shareholders are entitled to the residual income. That is, earnings after interest and taxes (less preference dividends) belong to them. The rate of equity is not fixed and depends on the dividend policy of the company." (Pandey, I. M., 2010, p 317-18).

The choice between debt and equity to finance a firm's assets involves a trade-off between risk and return (Pandey, Chotigeat&Ranjit, 2000). The excessive use of debt may endanger the survival of a firm, while a conservative use of debt may deprive the firm in leveraging return to equity owners. Therefore, in order to increase the advantage of debt capital and at the same time to save the firm from the financial and other risks, it is desirable to have a reasonable debt equity mix in the total capital structure. Thus, the decision regarding debt equity mix in the capital structure of a firm is of critical importance and has to be approached with a great care.

Every time when funds have to be procured, the financial manager weighs the pros and cons of various sources of finance and selects the most advantageous sources keeping in view the target capital structure. Thus, the capital structure decision is a continuous one and has to be taken whenever a firm needs additional finances. As the objective of a firm should be directed towards the maximization of the value of the firm, the capital structure, or leverage, decision should be examined from the point of view of its impact on the value of the firm. If the value of the firm can be effected by capital structure or financing decision, a firm would like to have a capital structure which maximizes the market value of the firm. So, the financial manager should plan an optimum capital structure for his company. The optimum capital structure is obtained when the market value per share is maximum.

Capital structure is the mix of debt, equity and preference securities that are used to finance a company's assets. Leverage is generally measured by the ratio called debt-equity ratio. This ratio indicates the relationship between the borrowed funds and owners' funds in the capital structure of a company.

"Many theories have been developed to show the relationship between capital structure and value of a firm. There are different views on how capital structure influences value of a firm. Some authors argue that there is

no relationship between capital structure and the value of a firm, whereas others hold that financial leverage has a positive effect on value of a firm. There are also some who take the intermediate approach that financial leverage has a positive effect on the value of a firm that is only up to a certain point and thereafter there will be negative effect, another contention that, other things being equal, the greater the leverage, the greater the firm value. According to the net income approach when leverage varies, the cost of debt and the cost of equity remain unchanged. Therefore, the weighted average cost of capital declines as leverage increases and the value of the firm will increase." (Narinder& Sharma, 2006).

Long-Term financing is closely linked up with the capital structure trends as reflected by the debt-equity ratio in various industries. Various all India financial institutions generally observed the debt-equity norm of 2:1 for financing the firms in private sector. Relaxation is made in certain cases e.g. in the case of capital-intensive industries like fertilizer, aluminum, petrochemical, electricity supply undertakings, steel and cement plants of the private sector, the permitted ratio is around 3:1. In the case of the shipping industry, the ratio of 6:1 or even higher is permitted. The experience in developed countries is quite fascinating. The ratio seems to have around 2:1 in Europe and U.K, and 4:1 in Japan implying very little reliance on owners' equity. However, this ratio is 1:2 in U.S.A., implying more reliance on owners' equity. Thus, the optimal capital structure should be decided ethically which will contribute to the stakeholders' wealth. It is well recognized by the government that a standard norm with regard to debt-equity ratio for all industrial units is neither desirable nor practicable as conditions differ from industry to industry and from unit to unit within industry. However, the choice between debt and equity from the point of view of shareholders as well as from the point of view of lenders is an important one and it will be useful to list the special advantages of either form of capital relative to the other.

- The greater use of debt, where the interest rate is lower than the average rate of return on the investment, increases the net return to equity shareholders.
- Higher debt does not impair the control of shareholders over the enlarged operations of the company.
- Deductibility of the interest on debt before computing profits charge to tax, as against payment of dividends out of profits after tax, implies an effective lowering of the tax rate on a company more or less in proportion to the extent to which debt is substituted for equity in the company's financing pattern.
- Debt is cheaper source of finance, cost of debt is lower than cost of preference share capital as well as equity share capital because the debt holders are the first claimants on the firm's assets at time of its liquidation. Similarly, they are the first to be paid their interest before any dividend is paid to preference and equity shareholders. Interest paid to the debt holders is an item chargeable to profits of a firm.

But, debt is riskier. It enhances the financial risk. Also, if interest and principal payments on debt are not promptly met when due, bankruptcy, loss of control for the owners may occur. It will turn out that use of some debt by the firm is desirable and a strong case can be made for the existence of an optimal capital structure, or debt/equity mix. Finally, the conclusion that some debt, but not 100 percent debt financing, is optimal will be reached by introducing various market imperfections. As far as preference share capital is concerned, it offers benefits only if the profits are available to the issuing company. Preference shareholders bear the risk being the owner of the company. At the same time, preference capital is used as a part of owners' stake for trading on equity.

The main purpose of a firm for using financial leverage is to magnify the shareholders' return under favourable economic conditions with the ultimate aim of increasing the value of each share. Value of share will increase if

(i) earnings per share or return on equity capital increases at rate higher than the increase in cost of equity capital,
(ii) cost of equity capital remains constant and the earnings per share or return on equity increases,
(iii) cost of equity capital decreases and earnings per share or return on equity increases or remains constant.

The role of financial leverage in magnifying the return of the shareholders is based on the assumptions that the fixed charges funds such as preference share capital, debentures and term-loans can be obtained at a cost lower than the firm's rate of return on its total assets. Thus, when the difference between the earnings generated by assets financed by the fixed charges funds and costs of these funds is distributed to the shareholders, the earnings per share or return on equity capital increases. It will contribute towards shareholders' wealth if cost of equity capital increases at a lower rate. However, earnings per share or return on equity will fall if the company obtains the fixed charges funds at a cost higher than the rate of return on the firm's assets. It should be therefore clear that earnings per share, return on equity capital and cost of equity share capital are the important figures for analyzing the impact of financial leverage." (Pandey, I. M., 2010, p. 320).

The paper is organized into five sections. Section I provides the introduction about capital structure. Section II deals with data source, sample size & research methodology to be followed in the study. Section III presents reports and analysis of the empirical results of the study. Section IV summarizes and concludes the study.

Section V describes the suggestions & scope for further research.

2. DATA SOURCE, SAMPLE SIZE & RESEARCH METHODOLOGY

In order to examine the composition of capital structure of Automobile & vehicles industry, Electronics & electrical products industry, Cement industry and Plastic, thermoplastic & rubber industry of the Indian corporate sector, the firm level panel data is taken into consideration and it is collected from the corporate data base PROWESS maintained by the Center for Monitoring the Indian Economy (CMIE). This database contains the detailed information on the financial performance of all the public listed companies in all the segments in India, compiled from various sources such as profit and loss accounts and balance sheets, stock price data, the annual reports etc. The database also contains background information including ownership pattern, products, profit, plant location, new investment and so on for the companies. This is a reliable source of information and many researchers in India have used the data for their empirical analysis. The data used in the analysis consists of the manufacturing firms listed on the Bombay Stock Exchange (BSE). We have also restricted our analysis to firms that have no missing data continuously for eleven years. So the sample size is a function of available data. Finally, we ended up with top 79 (17 firms from Automobile & vehicles industry, 29 firms from Electronics & electrical products industry, 13 firms from Cement industry and 20 firms from Plastic, thermoplastic & rubber industry) out of the list of top 500 private sector manufacturing firms published in the Business Today, on the basis of sales turnover for the year 2004-05. So, these top 79 firms from Automobile & vehicles industry, Electronics & electrical products industry, Cement industry and Plastic, thermoplastic & rubber industry constitute sample for our empirical study. The study covers time span of eleven years commencing from 1995-96 to 2005-06.

In the present study, the ratio of total borrowings to net worth is being used for measuring the capital structure (debt–equity ratio) of a firm. Here, borrowings include all forms of debt-interest bearing or otherwise. All secured and unsecured debt is included under total borrowings. Thus, total borrowings include debt from banks (short term as well as long term) and financial institutions, inter-corporate loans, fixed deposits from public and directors, foreign loans, loan from government, etc. Funds rose from the capital market through the issue of debt instruments such as debentures (both convertible and non-convertible) and commercial paper are also included here while net worth includes equity share capital, preference share capital and reserve & surpluses minus revaluation reserves & miscellaneous expenses not written off. Preference share capital is irredeemable in nature. So, it is considered as a part of net worth. Short-term borrowings are included in the debt or total borrowings because it is observed that short-term borrowings are being used as a long-term source of finance in the Indian contest. The capital structure has been divided into thirty one ranges during the period for empirical study. Further these capital structure ranges are classified into four broader categories – i.e. 0-100 percent, 100-200 percent, 200-300 percent and more than 300 percent for analytical analysis.

3. EMPIRICAL RESULTS

Automobile & Vehicles Industry

Table 1 reveals information relating to Automobile & vehicles industry which includes 182 observations from the years 1995-96 to 2005-06 over a period under study. Capital structure wise analysis reveals that the highest number of companies (25.82 percent) is in 0-10 percent capital structure range, followed by 13.74 percent companies in 10-20 percent capital structure range, while no company is lying in 120-130 percent, 230-240 percent, 240-250 percent, 260-270 percent and 270-280 percent capital structure ranges during the period under study. Yearly analysis reveals that the highest number of companies (43.75 percent each) is in 0-10 percent capital structure range in the years 2004-05 and 2005-06, respectively. It may be noted that 80.21 percent companies are in0-100 percent, 12.09 percent companies in 100-200 percent, 4.95 percent companies in 200-300 percent and 2.75 percent companies in more than 300 percent broadly classified capital structure ranges during the period under study. So, it has been observed that slightly more than 80 percent companies (80.21 percent) in Automobile & vehicles industry are in 0-100 percent capital structure range. It means that in this industry, such companies are following conservative approach of financing through debt. These companies are using lesser amount of debt in their capital structure as compared to even their own capital also, although it is a cheaper source of finance. Similarly, it has also been observed that more than one tenth of the companies (12.09 percent) are in 100-200 percent capital structure range. Such companies are following liberal and safe approach of financing through debt. These companies are using more amount of debt in their capital structure than their own capital but less than the well established standard range of 200 percent (2:1).It has been observed that around 8 percent of the companies (7.70 percent which means that 4.95 percent in 200-300 percent and 2.75 percent in more than 300 percent capital structure ranges) are in more than 200 percent capital structure ranges. It means that such companies are using debt freely as a source of finance. Such companies are using debt beyond the well established standard range of 200 percent (2:1).

Table 1 - Percentage Distribution of 17 Companies under Automobile & Vehicles Industry

Capital Structure(%)	Year											Avg.
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	
00-10	6.25	11.76	23.53	29.41	17.65	25.00	23.53	29.41	31.25	**43.75**	**43.75**	**25.82**
10-20	18.75	23.53	11.76	5.88	23.53	18.75	5.88	11.76	25.00	6.25	0	13.74
20-30	6.25	0	0	11.76	5.88	0	17.65	29.41	12.50	18.75	0	9.34
30-40	18.75	5.88	0	0	0	6.25	0	0	6.25	0	12.50	4.40
40-50	0	5.88	17.65	5.88	5.88	12.50	5.88	5.88	6.25	6.25	6.25	7.14
50-60	6.25	0	0	0	5.88	0	11.76	0	0	6.25	12.50	3.85
60-70	0	0	5.88	5.88	5.88	6.25	5.88	0	0	0	0	2.75
70-80	0	5.88	5.88	0	5.88	6.25	0	5.88	0	6.25	0	3.30
80-90	6.25	5.88	11.76	17.65	5.88	12.50	5.88	0	0	0	0	6.04
90-100	12.50	5.88	0	5.88	5.88	0	5.88	0	0	0	6.25	3.85
100-110	0	5.88	5.88	0	0	0	0	5.88	6.25	0	0	2.20
110-120	6.25	5.88	5.88	0	0	0	0	0	0	6.25	0	2.20
120-130	0	0	0	0	0	0	0	0	0	0	0	0
130-140	6.25	5.88	0	0	0	0	0	0	0	0	6.25	1.65
140-150	6.25	0	0	5.88	0	0	0	0	0	0	0	1.10
150-160	0	5.88	0	0	0	0	0	0	0	0	0	0.55
160-170	0	5.88	5.88	0	0	0	0	0	0	0	0	1.10
170-180	0	0	0	0	5.88	6.25	0	0	0	0	6.25	1.65
180-190	0	0	0	0	0	0	0	0	0	6.25	0	0.55
190-200	0	0	0	0	5.88	6.25	0	0	0	0	0	**1.10**
200-210	6.25	0	0	0	0	0	5.88	0	0	0	0	**1.10**
210-220	0	0	0	0	0	0	0	0	0	0	6.25	0.55
220-230	0	0	5.88	5.88	0	0	5.88	0	0	0	0	1.65
230-240	0	0	0	0	0	0	0	0	0	0	0	0
240-250	0	0	0	0	0	0	0	0	0	0	0	0
250-260	0	0	0	5.88	0	0	0	0	0	0	0	0.55
260-270	0	0	0	0	0	0	0	0	0	0	0	0
270-280	0	0	0	0	0	0	0	0	0	0	0	0
280-290	0	0	0	0	0	0	0	5.88	0	0	0	0.55
290-300	0	0	0	0	0	0	0	0	6.25	0	0	0.55
>300	0	5.88	0	0	5.88	0	5.88	5.88	6.25	0	0	2.75
Total %	100	100	100	100	100	100	100	100	100	100	100	100
0-100	**75**	**64.71**	**76.47**	**82.35**	**82.35**	**87.50**	**82.35**	**82.35**	**81.25**	**87.50**	**81.25**	**80.21**
100-200	**18.75**	**29.41**	**17.65**	**5.88**	**11.76**	**12.50**	**0**	**5.88**	**6.25**	**12.50**	**12.50**	**12.09**
200-300	**6.25**	**0**	**5.88**	**11.76**	**0**	**0**	**11.76**	**5.88**	**6.25**	**0**	**6.25**	**4.95**
>300	**0**	**5.88**	**0**	**0**	**5.88**	**0**	**5.88**	**5.88**	**6.25**	**0**	**0**	**2.75**

But, in this industry, only 2.20 percent companies are in 190 to 210 percent (1.90:1 to 2.10:1) capital structure range which is approaching to the well established standard range of 200 percent (2:1) during the study period. It has been observed that under 100-200 percent capital structure range, eight sub capital structure ranges are having less than 2 percent companies, each, respectively. Under 200-300 percent capital structure range, eight sub capital structure ranges are having less than 1 percent companies, each, respectively. There is no company in any sub-range of 200-300 percent broader capital structure range during 1996-97, 1999-00, 2000-01 and 2004-05. However, during 1995-96, 1997-98, 2002-03, 2003-04 and 2005-06 only a small number of companies are lying in one particular sub capital structure range. It has also been observed that there are a certain percentage of companies in highest capital structure range, i.e. more than 300 percent, in only five out of eleven year study period. Overall, it is found that absolute majority of the companies in Automobile & vehicles industry in India are using lesser amount of debt in their capital structure during the study period. It means that the majority (80.21 percent) of the companies in this industry are not using the debt capital as compared to their own capital to extent of the well established standard of 2:1.

Cement Industry

Table 2 reveals information related to companies (4.41 percent of the total number of sample companies) lying in Cement industry which includes 138 observations from the years 1995-96 to 2005-06 over a period under study. Capital structure wise analysis reveals that highest number of companies (9.42 percent) is in 120-130 percent capital structure range, followed by 8.70 percent of companies in 140-150 percent capital structure range, while no company is lying in 270-280 percent capital structure range during the period under study. Yearly analysis reveals that highest number of companies (33.33 percent) is in 80-90 percent capital structure range in the year 1995-96. It may be noted that 25.36 percent companies are in 0-100 percent, 54.35 percent companies in 100-200 percent, 13.77 percent companies in 200-300 percent and 6.52 percent companies in more than 300 percent broadly classified capital structure ranges during the period under study. So, it has been observed that more than half of the companies (54.35 percent) in Cement industry are in 100-200 percent capital structure range. It means that in this industry, such companies are following liberal and safe approach of financing through debt. These companies are using more amount of debt in their capital structure than their own capital but less than the well established standard range of 200 percent (2:1). Similarly, it has also been observed that more than one fourth of the companies (25.36 percent) are in 0-100 percent capital structure range. Such companies are following conservative approach of financing through debt. These companies are using lesser amount of debt in their capital structure as compared to even their own capital also, although it is a cheaper source of finance. It has been observed that a little more than one fifth of the companies (20.29 percent which means that 13.77 percent in 200-300 percent and 6.52 percent in more than 300 percent capital structure ranges) are in more than 200 percent capital structure ranges. It means that such companies are using debt freely as a source of finance. Such companies are using debt beyond the well established standard range of 200 percent (2:1). But, in this industry, only 9.42 percent companies are in 190 to 210 percent (1.90:1 to 2.10:1) capital structure range which is approaching to the well established standard range of 200 percent (2:1) during the study period. Under 200-300 percent capital structure range, eight sub capital structure ranges are having less than 2 percent companies, each, respectively. There is no company in any sub-range of 200-300 percent broader capital structure range during 1995-96, 1996-97 and 2005-06. However, during 1997-98 only a small number of companies is lying in one particular sub capital structure range. It has also been observed that there are a certain percentage of companies in highest capital structure range, i.e. more than 300 percent, in only six out of eleven year study period. Overall, it is found that companies under Cement industry are using more amount of debt in their capital structure during the study period.

Plastic, Thermoplastic & Rubber Industry

Table 3 shows information related to companies (6.71 percent of the total number of sample companies) lying in Plastic, thermoplastic & rubber industry which includes 210 observations from the years 1995-96 to 2005-06 over a period under study. Capital structure wise analysis reveals that highest number of companies (9.52 percent) is in 110-120 percent capital structure range, followed by 6.67 percent of companies in 70-80 percent and 100-110 percent capital structure range, respectively, while no company is lying in 260-270 percent and 290-300 percent capital structure ranges during the period under study. Yearly analysis reveals that highest number of companies (30 percent) is in 110-120 percent capital structure range in the year 2005-06. It may be noted that 40 percent companies are in 0-100 percent, 45.24 percent companies in 100-200 percent, 10.48 percent companies in 200-300 percent and 4.28 percent companies in more than 300 percent broadly classified capital structure ranges during the period under study. So, it has been observed that more than two fifth of the companies (45.24 percent) in Plastic, thermoplastic & rubber industry are in 100-200 percent capital structure range. It means that in this industry, such companies are following liberal and safe approach of financing through debt. These companies are using more amount of debt in their capital structure than their own capital but less than the well established standard range of 200 percent (2:1).

Table 2 - Percentage Distribution of 13 Companies under Cement Industry

Capital Structure (%)	Year											Avg.
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	
00-10	0	0	0	0	0	0	0	0	0	0	0	0
10 20	0	0	0	0	0	0	0	0	0	0	0	0
20-30	8.33	0	0	0	0	0	0	0	0	0	0	0.72
30-40	0	8.33	0	0	0	0	0	0	0	0	7.69	1.45
40-50	8.33	0	0	0	0	0	0	0	0	0	7.69	1.45
50-60	0	0	8.33	0	0	0	0	0	0	7.69	7.69	2.17
60-70	0	0	0	0	7.69	0	7.69	7.69	0	15.38	7.69	4.35
70-80	0	8.33	0	0	0	18.18	0	0	15.38	7.69	0	4.35
80-90	**33.33**	16.67	0	0	7.69	9.09	0	0	0	0	0	5.80
90-100	25	0	8.33	15.38	7.69	0	0	0	0	0	0	5.07
100-110	0	8.33	0	0	0	9.09	15.38	0	15.38	0	7.69	5.07
110-120	0	25	0	15.38	7.69	0	0	15.38	7.69	0	0	6.52
120-130	0	8.33	25.00	7.69	0	9.09	15.38	15.38	7.69	7.69	7.69	**9.42**
130-140	0	0	0	7.69	0	0	0	0	7.69	0	0	1.45
140-150	16.67	16.67	8.33	0	15.38	9.09	0	0	7.69	15.38	7.69	8.70
150-160	8.33	0	8.33	0	15.38	9.09	0	7.69	0	0	7.69	5.07
160-170	0	0	0	7.69	7.69	0	0	7.69	0	0	0	2.17
170-180	0	8.33	8.33	7.69	0	18.18	0	7.69	0	0	23.08	6.52
180-190	0	0	0	7.69	0	0	0	0	0	15.38	7.69	2.90
190-200	0	0	25	0	7.69	0	15.38	7.69	0	7.69	7.69	**6.52**
200-210	0	0	0	0	0	0	7.69	0	15.38	7.69	0	**2.90**
210-220	0	0	8.33	0	7.69	9.09	0	0	15.38	0	0	3.62
220-230	0	0	0	7.69	0	0	0	0	0	7.69	0	1.45
230-240	0	0	0	7.69	0	9.09	0	0	0	0	0	1.45
240-250	0	0	0	0	0	0	7.69	0	0	0	0	0.72
250-260	0	0	0	7.69	0	0	0	7.69	0	0	0	1.45
260-270	0	0	0	0	0	0	0	7.69	0	0	0	0.72
270-280	0	0	0	0	0	0	0	0	0	0	0	0
280-290	0	0	0	0	0	0	7.69	0	0	0	0	0.72
290-300	0	0	0	0	7.69	0	0	0	0	0	0	0.72
>300	0	0	0	7.69	7.69	0	23.08	15.38	7.69	7.69	0	6.52
Total %	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
0-100	**75**	**33.33**	**16.67**	**15.38**	**23.08**	**27.27**	**7.69**	**7.69**	**15.38**	**30.77**	**30.77**	**25.36**
100-200	**25**	**66.67**	**75**	**53.85**	**53.85**	**54.55**	**46.15**	**61.54**	**46.15**	**46.15**	**69.23**	**54.35**
200-300	**0**	**0**	**8.33**	**23.08**	**15.38**	**18.18**	**23.08**	**15.38**	**30.77**	**15.38**	**0**	**13.77**
>300	**0**	**0**	**0**	**7.69**	**7.69**	**0**	**23.08**	**15.38**	**7.69**	**7.69**	**0**	**6.52**

Table 3-%age Distribution of 20 Companies under Plastic, Thermoplastic & Rubber Industry

Capital Structure (%)	Year											Avg.
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	
00-10	0	0	0	0	0	0	0	5.26	5.56	5	15	2.86
10 20	0	5.26	0	5	5	0	5.88	5.26	5.56	10	10	4.76
20-30	0	0	0	0	5	15	11.76	0	0	5	5	3.81
30-40	0	0	5.56	5	0	0	11.76	5.26	5.56	5	0	3.33
40-50	0	0	0	5	10	5	0	0	5.56	5	0	2.86
50-60	0	0	0	0	0	5	5.88	5.26	0	0	0	1.43
60-70	0	0	5.56	0	10	5	0	5.26	11.11	0	0	3.33
70-80	5.26	5.26	5.56	10	5	0	0	10.53	11.11	10	10	6.67
80-90	10.53	10.53	0	5	15	5	5.88	5.26	0	5	0	5.71
90-100	0	10.53	11.11	10	5	5	5.88	0	0	10	0	5.24
100-110	15.79	5.26	0	5	5	5	0	0	0	25	10	6.67
110-120	10.53	10.53	11.11	10	0	5	5.88	5.26	**16.67**	0	30	**9.52**
120-130	10.53	10.53	5.56	0	0	0	5.88	5.26	5.56	0	0	3.81
130-140	10.53	10.53	0	0	0	10	0	5.26	5.56	0	5	4.29
140-150	10.53	0	5.56	0	0	0	0	5.26	5.56	0	0	2.38
150-160	0	5.26	11.11	10	5	5	5.88	0	0	10	5	5.24
160-170	5.26	10.53	5.56	5	20	0	5.88	0	5.56	5	0	5.71
170-180	10.53	0	0	0	0	5	0	15.79	0	0	0	2.86
180-190	0	0	11.11	0	0	10	5.88	0	0	5	0	2.86
190-200	5.26	5.26	0	0	0	0	0	0	5.56	0	5	**1.90**
200-210	0	5.26	0	10	0	0	5.88	10.53	11.11	0	0	**3.81**
210-220	0	0	5.56	0	0	0	0	0	0	0	0	0.48
220-230	5.26	0	5.56	5	0	5	0	0	0	0	5	2.38
230-240	0	0	0	5	0	0	0	0	0	0	0	0.48
240-250	0	0	0	0	5	0	0	0	0	0	0	0.48
250-260	0	0	0	0	0	5	0	0	0	0	0	0.48
260-270	0	0	0	0	0	0	0	0	0	0	0	0
270-280	0	0	0	0	0	0	5.88	0	0	0	0	0.48
280-290	0	0	5.56	0	0	0	5.88	10.53	0	0	0	1.90
290-300	0	0	0	0	0	0	0	0	0	0	0	0
>300	0	5.26	5.56	10	10	10	5.88	0	0	0	0	4.29
Total %	100	100	100	100	100	100	100	100	100	100	100	100
0-100	**15.79**	**31.58**	**27.78**	**40**	**55**	**40**	**47.06**	**42.11**	**44.44**	**55**	**40**	**40**
100-200	**78.95**	**57.89**	**50**	**30**	**30**	**40**	**29.41**	**36.84**	**44.44**	**45**	**55**	**45.24**
200-300	**5.26**	**5.26**	**16.67**	**20**	**5**	**10**	**17.65**	**21.05**	**11.11**	**0**	**5**	**10.48**
>300	**0**	**5.26**	**5.56**	**10**	**10**	**10**	**5.88**	**0**	**0**	**0**	**0**	**4.28**

Similarly, it has also been observed that two fifth of the companies (40 percent) are in 0-100 percent capital structure range. Such companies are following conservative approach of financing through debt. These

companies are using lesser amount of debt in their capital structure as compared to even their own capital also, although it is a cheaper source of finance. It has been observed that around 15 percent of the companies (14.46) percent which means that 10.48 percent in 200-300 percent and 4.28 percent in more than 300 percent capital structure ranges) are in more than 200 percent capital structure ranges. It means that such companies are using debt freely as a source of finance. Such companies are using debt beyond the well established standard range of 200 percent (2:1). But, in this industry, only 5.71 percent companies are in 190 to 210 percent (1.90:1 to 2.10:1) capital structure range which is approaching to the well established standard range of 200 percent (2:1) during the study period. Under 200-300 percent capital structure range, eight sub capital structure ranges are having less than 2 percent companies, each, respectively. There is no company in any sub-range of 200-300 percent broader capital structure range during 2004-05. However, during 1995-96, 1996-97, 1999-00, 2003-04 and 2005-06 only a small number of companies is lying in one particular sub capital structure range. It has also been observed that there are a certain percentage of companies in highest capital structure range, i.e. more than 300 percent, in only six out of eleven year study period. Overall, it is found that less number of companies in Plastic, thermoplastic & rubber industry is using lesser amount of debt in their capital structure during the study period.

Electronics & Electrical Products Industry

Table 4 reveals information related to companies (9.80 percent of the total number of sample companies) lying in Electronics & electrical products industry which includes 307 observations from the years 1995-96 to 2005-06 over a period under study. Capital structure wise analysis reveals that highest number of companies (15.31 percent) is in 0-10 percent capital structure range, followed by 7.49 percent of companies in 50-60 percent capital structure range, while no company is lying in 250-260 percent capital structure range during the period under study. Yearly analysis reveals that highest number of companies (31.03 percent) is in 0-10 percent capital structure range in the year 2004-05. It may be noted that 65.80 percent companies are in 0-100 percent, 22.15 percent companies in 100-200 percent, 7.17 percent companies in 200-300 percent and 4.88 percent companies in more than 300 percent broadly classified capital structure ranges during the period under study. So, it has been observed that around two third of the companies (65.80 percent) in Electronics & electrical products industry are in 0-100 percent capital structure range. It means that in this industry, such companies are following conservative approach of financing through debt. These companies are using lesser amount of debt in their capital structure as compared to even their own capital also, although it is a cheaper source of finance. Similarly, it has also been observed that more than one-fourth but less than one-fifth of the companies (22.15 percent) are in 100-200 percent capital structure range. Such companies are following liberal and safe approach of financing through debt. These companies are using more amount of debt in their capital structure than their own capital but less than the well established standard range of 200 percent (2:1). It has been observed that more than one eighth of the companies (12.05 percent which means that 7.17 percent in 200-300 percent and 4.88 percent in more than 300 percent capital structure ranges) are in more than 200 percent capital structure ranges. It means that such companies are using debt freely as a source of finance. Such companies are using debt beyond the well established standard range of 200 percent

4. SUMMARY AND CONCLUSIONS

The paper analyses the composition of capital structure of Automobile & vehicles industry, Electronics & electrical products industry, Cement industry and Plastic, thermoplastic & rubber industry of the Indian corporate sector. The study is limited to top 79 (17 firms from Automobile & vehicles industry, 29 firms from Electronics & electrical products industry, 13 firms from Cement industry and 20 firms from Plastic, thermoplastic & rubber industry) out of the top 500 private sector manufacturing firms selected on the basis of sales turnover for the year 2004-2005, published in Business Today, which covers time span of eleven years commencing from 1995-96 to 2005-06. The following are the conclusion and findings of the composition of capital structure of the top 79 firms from Automobile & vehicles industry, Electronics & electrical products industry, Cement industry and Plastic, thermoplastic & rubber industry of the Indian Corporate Sector.

1. It is found that four-fifth (80.21 percent) companies in Automobile & vehicles industry and around two-third (65.80 percent) companies in Electronics & electrical products industry are in 0-100 percent capital structure range during the period under study. So, in Automobile & vehicles industry, companies are following very high while in Electronics & electrical products industry, companies are following high degree conservative approach of financing through debt in their capital structure composition during the study period. Thus, these companies are using lesser amount of debt capital as compared to their own capital in the composition of their capital structure during the period under study which is below the well-established standard of 2:1. While, it has been observed that one-fourth (25.36 percent) companies in Cement industry and (40 percent) companies in Plastic, thermoplastic & rubber industry are in the same capital structure range during the study period.

Table 4-%age Distribution of 29 Companies under Electronics & Electrical Products Industry

Capital Structure (%)	Year											Avg.
	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	
00-10	0	0	7.69	7.14	10.34	10.34	17.24	24.14	27.59	**31.03**	28.57	**15.31**
10 20	15.38	4	0	10.71	3.45	10.34	10.34	6.90	6.90	3.45	7.14	7.17
20-30	3.85	8	0	7.14	6.90	10.34	13.79	6.90	0	10.34	7.14	6.84
30-40	7.69	8	11.54	0	10.34	3.45	6.90	6.90	10.34	0	7.14	6.51
40-50	7.69	4	7.69	0	3.45	6.90	3.45	3.45	6.90	3.45	7.14	4.89
50-60	7.69	8	3.85	3.57	10.34	13.79	3.45	6.90	10.34	6.90	7.14	7.49
60-70	11.54	4	11.54	10.71	3.45	0	6.90	6.90	10.34	10.34	3.57	7.17
70-80	3.85	4	3.85	7.14	3.45	3.45	0	3.45	3.45	3.45	10.71	4.23
80-90	0	8	3.85	3.57	6.90	3.45	3.45	3.45	0	3.45	7.14	3.91
90-100	7.69	4	0	0	0	0	3.45	3.45	3.45	3.45	0	2.28
100-110	3.85	12	3.85	3.57	6.90	6.90	3.45	3.45	0	3.45	0	4.23
110-120	11.54	8	7.69	3.57	0	0	6.90	6.90	3.45	0	0	4.23
120-130	0	0	0	7.14	3.45	3.45	3.45	0	0	0	3.57	1.95
130-140	0	4	3.85	10.71	10.34	3.45	0	0	0	0	0	2.93
140-150	0	12	3.85	3.57	0	3.45	3.45	0	0	0	0	2.28
150-160	3.85	0	11.54	0	0	0	0	0	0	3.45	0	1.63
160-170	0	0	0	10.71	3.45	0	0	0	0	0	0	1.30
170-180	0	0	0	0	3.45	0	0	0	3.45	3.45	3.57	1.30
180-190	3.85	0	0	0	3.45	3.45	0	0	0	0	0	0.98
190-200	**0**	**4**	**7.69**	**3.57**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1.30**
200-210	**0**	**0**	**0**	**0**	**3.45**	**6.90**	**3.45**	**3.45**	**0**	**6.90**	**0**	**2.28**
210-220	0	4	3.85	0	0	0	0	0	0	0	0	0.65
220-230	0	0	0	0	0	3.45	0	0	0	0	0	0.33
230-240	0	0	3.85	0	0	0	0	3.45	3.45	0	3.57	1.30
240-250	0	0	0	0	0	0	0	0	0	3.45	0	0.33
250-260	0	0	0	0	0	0	0	0	0	0	0	0
260-270	0	0	0	3.57	0	0	0	0	0	0	0	0.33
270-280	3.85	0	0	0	0	0	3.45	0	0	0	0	0.65
280-290	0	0	0	0	0	3.45	3.45	0	0	0	0	0.65
290-300	0	0	0	0	0	0	0	0	3.45	0	3.57	0.65
>300	7.69	4	3.85	3.57	6.90	3.45	3.45	10.34	6.90	3.45	0	4.89
Total %	100	100	100	100	100	100	100	100	100	100	100	100
0-100	**65.38**	**52**	**50**	**50**	**58.62**	**62.07**	**68.97**	**72.41**	**79.31**	**75.86**	**85.71**	**65.80**
100-200	**23.08**	**40**	**38.46**	**42.86**	**31.03**	**20.69**	**17.24**	**10.34**	**6.90**	**10.34**	**7.14**	**22.15**
200-300	**3.85**	**4**	**7.69**	**3.57**	**3.45**	**13.79**	**10.34**	**6.90**	**6.90**	**10.34**	**7.14**	**7.17**
>300	**7.69**	**4**	**3.85**	**3.57**	**6.90**	**3.45**	**3.45**	**10.34**	**6.90**	**3.45**	**0**	**4.88**

It means that in these industries, such companies are not following conservative approach of financing through debt. Thus, it is observed that companies in Automobile & vehicles industry are following very high while the companies in Electronics & electrical products industry are using high degree conservative approach of financing through debt in the composition of their capital structure as compared to the approach used by the companies in Cement industry and Plastic, thermoplastic & rubber industry during the study period. However, debt capital is a cheaper source of finance, thus, the use of debt may maximize the value of wealth of shareholders.

2. It is found that more than half (54.35 percent) companies in Cement industry and more than two-fifth (45.24 percent) companies in Plastic, thermoplastic & rubber industry, are in 100-200 percent capital structure range during the period under study. So, in these industries, such companies are following liberal and safe approach of financing through debt in the composition of their capital structure. These companies are using more amount of debt in their capital structure than their own capital but less than the well established standard range of 200 percent (2:1). However, it is observed that companies in Cement industry are following more liberal approach of financing through debt in the composition of their capital structure as compared to the approach used by the companies in Plastic, thermoplastic & rubber industry during the study period. While lesser number of companies are lying in the same range in Automobile & vehicles industry (one-eighth companies i.e. 12.09 percent) and Electronics & electrical products industry (slightly more than one-fourth but less than one-fifth companies i.e. 22.15 percent) during the study period which shows that in this industry, such companies are following high degree conservative approach of financing through debt in their capital structure composition. However, Automobile & vehicles industry is more conservative regarding the use of debt in their capital structure as compared to the financing policies of Electronics & electrical products industry during the study period.
3. It is found that highest number of companies in Cement industry (9.42 percent) followed by Plastic, thermoplastic & rubber industry (5.71 percent) are in 190 to 210 percent (1.90:1 to 2.10:1) capital structure range, however, the only a few (2.20 percent) companies in Automobile & vehicles industry (3.58 percent) companies in Electronics & electrical products industry are in the same capital structure range in their capital structure composition which are approaching to the well-established standard range of 200 percent (2:1) during the study period.
4. It is observed that one-fourth (25.82 percent) companies in Automobile & vehicles industry and one-seventh (15.31 percent) companies in Electronics & electrical products industry are in 0-10 percent capital structure range during the period under study. It means that such companies in these industries are using negligible amount of debt in their capital structure during the period under study. However, number of companies in this range is nil in Cement industry and 2.86 percent in Plastic, thermoplastic & rubber industry during the study period.
5. It has been observed that the number of companies in 200-300 percent and more than 300 percent capital structure ranges are varying from industry to industry during the study period. However, companies in these ranges are using debt freely as a source of finance. Such companies are using debt beyond the well-established standard range of 200 percent (2:1) during the study period. It is observed that companies in Cement industry, Plastic, thermoplastic & rubber industry and Electronics & electrical products industry are following liberal approach of financing through debt, particularly in this range, in the composition of their capital structure as compared to the high degree conservative approach used by the companies in Automobile & vehicles industry during the study period.

To sum up, the study reveals that companies in Automobile & vehicles industry and Electronics & electrical products industry are following conservative approach, however, companies in Cement industry and Plastic, thermoplastic & rubber industry are following liberal approach of financing through debt in the composition of their capital structure during the study period.

5. SUGGESTIONS & SCOPE FOR FURTHER RESEARCH

Debt and equity are the backbone of the business world. Equilibrium is needed between them in order to maximize the value of a firm consequently the wealth of share holders. In the present study, use of conservative approach by Automobile & vehicles industry and Electronics & electrical products industry, and liberal approach by Cement industry and Plastic, thermoplastic & rubber industry of financing through debt in the composition of their capital structure in the Indian Corporate Sector is observed. Further research can be carried out for finding out the factors which are responsible for such conservative and liberal behaviour of firms in planning the capital structure of these industries. So, a financial manager should consider a number of factors to set the composition of an optimal capital structure for a firm giving considerable weight to earning rate, collateral value of

assets, age, cash flow coverage ratio, non-debt tax shield, size (net sales), dividend payout ratio, debt service ratio, cost of borrowing, corporate tax rate, current ratio, growth rate, operating leverage and uniqueness (selling cost/sales) etc. India is blended with full of laws. There is no need to create new laws. The need is to change mind set of the Indians. Thus, there is a need to develop such an ethical culture in the corporate sector which is to be based upon the teachings of ancient Indian Wisdoms which will develop the capital market to the fullest extent with the fullest faith and will lead to contribute to the wealth of shareholders.

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ANNEXURE

LIST OF SAMPLE COMPANIES

Automobile & Vehicles Industry	Jubilant Organosys Ltd.
Bajaj Auto Ltd.	Pidilite Industries Ltd.
Hero Honda Motors Ltd.	Bhansali Engineering Polymers Ltd.
T V S Motor Co. Ltd.	Chemplast Sanmar Ltd.
Maharashtra Scooters Ltd.	National Organic Chemical Inds. Ltd.
Ashok Leyland Ltd.	Supreme Petrochem Ltd.
Eicher Motors Ltd.	M R F Ltd.
Force Motors Ltd.	Balkrishna Industries Ltd.
Swaraj Mazda Ltd.	Apollo Tyres Ltd.
MarutiUdyog Ltd.	J K Industries Ltd.
Hindustan Motors Ltd.	Ceat Ltd.
Cummins India Ltd.	**Electronics & Electrical Products Industry**
Thermax Ltd.	Blue Star Ltd.
Kirloskar Oil Engines Ltd.	Whirlpool Of India Ltd.
Greaves Cotton Ltd.	Astra Microwave Products Ltd.
Hindustan Powerplus Ltd.	Avaya Globalconnect Ltd.
Punjab Tractors Ltd.	Himachal Futuristic Communications Ltd.
Escorts Ltd.	Shyam Telecom Ltd.
Cement Industry	Atlas Copco (India) Ltd.
Gujarat Ambuja Cements Ltd.	Ingersoll-Rand (India) Ltd.
Birla Corporation Ltd.	Elgi Equipments Ltd.
Ambuja Cement Eastern Ltd. [Merged]	Bajaj Electricals Ltd.
Madras Cements Ltd.	Eveready Industries (India) Ltd.
India Cements Ltd.	Exide Industries Ltd.
Prism Cement Ltd.	H B L Power Systems Ltd.
Chettinad Cement Corpn. Ltd.	Siemens Ltd.
O C L India Ltd.	A B B Ltd.
Dalmia Cement (Bharat) Ltd.	Areva T & D India Ltd.
Ramco Industries Ltd.	Havell'S India Ltd.
Hyderabad Industries Ltd.	Finolex Cables Ltd.
Hindustan Sanitaryware & Inds. Ltd.	Bharat Bijlee Ltd.
Kajaria Ceramics Ltd.	Emco Ltd.
Plastic, Thermoplastics & Rubber Industry	Titan Industries Ltd.
Finolex Industries Ltd.	Moser Baer India Ltd.
Paper Products Ltd.	Opto Circuits (India) Ltd.
Uflex Ltd.	Solectron Centum Electronics Ltd.
Ciba Specialty Chemicals (India) Ltd.	Honeywell Automation India Ltd.
Jain Irrigation Systems Ltd.	Yokogawa India Ltd.
Supreme Industries Ltd.	H C L Infosystems Ltd.
Max India Ltd.	D-Link (India) Ltd.
Polyplex Corporation Ltd.	Mirc Electronics Ltd.
Indian Petrochemicals Corpn. Ltd.	