A DESIRABLE CAPITAL STRUCTURE: A CASE STUDY FROM INDIA

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This empirical paper attempts to study a desirable capital structure of Plastic, thermoplastic & rubber industry of the Indian corporate sector. The study is limited to top 20 firms from Plastic, thermoplastic & rubber 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 slightly 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). It has also been observed that two-fifth of the companies (40 percent) are in 0-100 percent capital structure range during the period under study. These companies are using lesser amount of debt in their capital structure as compared to even their own capital during the study period. So such companies are following conservative approach of financing through debt during the period under study, although, it is a cheaper source of finance. Overall, in the present study, use of combined form of conservative and liberal approach by Plastic, thermoplastic & rubber industry for financing through debt in the composition of their desirable capital structure in the Indian Corporate Sector is observed during the study period

Key Words:- Conservative, Liberal, Aggressive, Capital Structure, Shareholders.

Section I – Introduction

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 earnings per share or return on equity capital increases at rate higher than the increase in cost of equity capital, cost of equity capital remains constant and the earnings per share or return on equity increases, 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.

Section II – Data Source, Sample Size & Research Methodology

For studying the desirable capital structure of 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 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 20 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.

Section III – Empirical Results

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 are shown in the given Table. 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 slightly 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). 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

Table-%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**

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 near 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.

Section IV – Summary and Conclusions

The paper analyses the composition of a desirable capital structure of Plastic, thermoplastic & rubber industry of the Indian corporate sector. The study is limited to top 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 present study.

1. It has been observed that slightly 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 during the period under study. 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) during the period under study.
2. It has also been observed that two-fifth of the companies (40 percent) are in 0-100 percent capital structure range. These companies are using lesser amount of debt in their capital structure as compared to even their own capital. So such companies are following conservative approach of financing through debt during the period under study, although, it is a cheaper source of finance.
3. It is found that only 5.71 percent companies in this industry are in 190 to 210 percent (1.90:1 to 2.10:1) capital structure ranges during the period under study. It means that in this industry a few numbers of

companies are approaching to the well-established standard range of 200 percent (2:1) during the study period.

4. It has been observed that in this industry the number of companies in 200-300 percent and more than 300 percent capital structure ranges are 10.48 percent and 4.28 percent respectively during the study period. Such 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. In this industry, the number of companies in these ranges are very lesser during the period under study.

Overall, in the present study, use of combined form of conservative and liberal approach by Plastic, thermoplastic & rubber industry for financing through debt in the composition of their desirable capital structure in the Indian Corporate Sector is observed during the study period.

Section V- Suggestions & Scope for Further Research

In the present study, use of combined form of conservative and liberal approach by 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 combined conservative and liberal behaviour of firms in planning the capital structure of this industry. 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 earnings 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

Plastic, Thermoplastics & Rubber Industry

Finolex Industries Ltd.
Paper Products Ltd.
Uflex Ltd.
Ciba Specialty Chemicals (India) Ltd.
Jain Irrigation Systems Ltd.
Supreme Industries Ltd.
Max India Ltd.
Polyplex Corporation Ltd.
Indian Petrochemicals Corpn. Ltd.
Jubilant Organosys Ltd.
Pidilite Industries Ltd.
Bhansali Engineering Polymers Ltd.
Chemplast Sanmar Ltd.
National Organic Chemical Inds. Ltd.
Supreme Petrochem Ltd.
M R F Ltd.
Balkrishna Industries Ltd.
Apollo Tyres Ltd.
J K Industries Ltd.
Ceat Ltd.