Determinants of capital structure with reference to paper industry: An explanatory analysis

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Abstract. Capital structure is the combination or proportion of various sources. An organization can procure funds by issuing equity shares, preference shares and debentures to the public. Apart from this, they may also borrow from the banks or financial institutions. These are the various sources available for a concern for procuring or mobilizing the capital. Whether capital is needed initially or additional fund needed for the smooth function there are various sources available for mobilizing the capital or fund. While designing the financial or capital structure manager has to consider the overall cost which will incur after constructing the capital structure. Paper industry is selected for the research. Five companies listed in the Bombay Stock Exchange were selected for the study. An attempt has been made to study the components of capital structure of paper industry.

1 Introduction

Capital structure is the composition of sources of capital such as long term debt, owners equity capital, preference capital and retained earnings. It is a part of financial structure of the organization. Financial structure includes all forms of debt. Capital structure excludes short term liabilities. Sound capital structure will increase the value of the firm, maximize the return to the shareholders and minimize the overall cost. An optimum capital structure will utilize maximum resources, high liquidity position and minimize the financial risk of the concern [5-10].

Capital structure is a vital gauge to assess the source, composition, and proportion of an organization common stock and debit capital. It is correlated to the internal operating environment of an organizations it relates to the rights and obligations of shareholders and also related to the organizations future prosperous direction, decision-making bodies and changes in governance structure. Considering the related theories, by building a convolutional neural network model, taking a organizations as the research object, this study analyses the capital structure, liabilities and other financial conditions. By improving the corporate governance structure of companies, strengthening the adjustment of the financing structure of companies and strengthening the management of company's operating risks, the organization capital structure can be boosted up so that it makes the financial situation to be continual and active.

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1.1 Statement of the problem

Finance manager of the concern plays a vital role in designing the capital composition. Deciding the capital composition is not a simple task. Many important factors have to be considered for deciding the capital structure. Capital structure should maximize the return and minimize the cost.

1.2 Objectives of the study

1. To study the determinants of capital structure of selected paper industry
2. To assess the mean difference among shareholder fund and long term debt of selected paper industry

2 Research methodology

2.1 Research Design

Research design is explanatory in nature. Secondary data analyzed to make assessment of Capital structure.

2.2 Period of Study

The study period is five years from 2017-2018 to 2021-2022.

2.3 Selection of Sample

Five companies belonging to paper industry was selected for the study viz., Star Paper Mills Ltd., Shreyans Industries Ltd., Kuantum Papers Ltd., South India Paper Mills Ltd., and Genus Paper & Boards Ltd., Five paper industry were listed in Bombay Stock Exchange. Five organization were chosen based on the available data for an unbroken period of five years [11-13].

2.4 Tools and techniques used:

*   Summary Statistics
*   Mean
*   Standard Deviation
*   Coefficient of Variation
*   ANOVA
*   Ratio Analysis

3 Review of literature

Ross Stephen A. [1] in his article he clearly explains the effect of tax on the elements of capital structure. Theories of capital structure has been applied in his study and the relationship and trade off between the components of capital structure has been analyzed and the impact of tax has been considered in this study and the advantage of procuring debt as a sources were analyzed.

Shankar H. and Gayathri J. [2] in their study an investigation made to find the outcome of capital composition on equity shareholders return. The efficiency of the organization and the pattern of capital structure are the most important variables for increasing the returns to the shareholders. Most of the finance manager are not taking the advantage of leverage, the use of debt finance for increasing the earnings to common shareholders is not considered in most of the organization. It clearly insists that the concern is not interested to take or face financial risk.

Rahul Kumar [3] the article investigated the elements that influence organizations fund position from the views of hypothetical underpinnings. The author assessed many research articles of financial experts in the major and non major. The researcher has identified a determinants of trading on equity based upon arguments categorized in the reviews. Various frames like leverage not relevant, static trade off, pecking order, asymmetric information signaling framework have partially supported us in understanding the basic variables describing the organizations trading on equity, there is no base and there is no universal variable in calculating the trading on equity.

Songul Kakilli Acaravci [4] Researcher investigates the components of financial structure. The study period spans from 1993 to 2010 for seventy nine organizations in the manufacturing sector. The theory has illustrated the organization size and sector specific effects. Widening opportunities, magnitude, profitability, visible and non-debt tax shields are considered as the organizations precise variables that influence an organizations capital composition decision. It was clear from the study that there are significant association between growth opportunities, size, profitability, tangibility and leverage variables. But non-debt tax shields explanatory variable has insignificant influence on trading on equity.

4 Results and discussion

Tools like summary statistics, ANOVA and ratio analysis were applied to assess the composition of capital in each organization. The study is made to find out whether the organization capital is owners contribution or debt composition. The decision and actual practice of capital proposition will increase the returns to the common stock holders or not [14-21]. The employment of debt in organizations capital structure will maximize the return to owners or not were also measured in this research by applying the tools.

Table 1. Capital Structure

S. No	Company Name	Figures in Percentage				
		Long Term Debt	Equity Share Capital	Reserves and Surplus	Preference Share Capital	Total
1	Star Paper Mills Ltd	20.28	4.70	75.02	0.00	100.00
2	Shreyans Industries Ltd	28.37	7.40	64.23	0.00	100.00
3	Kuantum Papers Ltd	33.66	1.23	65.11	0.00	100.00

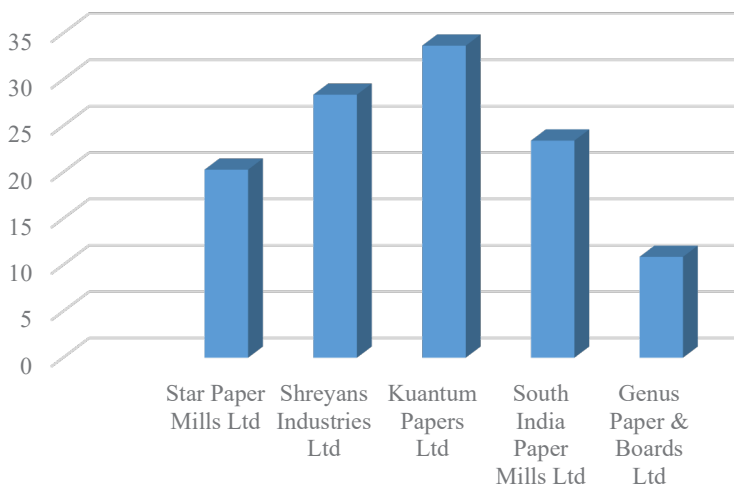| 4	South India Paper Mills Ltd	23.42	8.54	68.04	0.00	100.00
5	Genus Paper & Boards Ltd	10.88	6.83	82.29	0.00	100.00
	Overall Mean	23.32	5.74	70.94	0.00	100.00

Fig. 1. Long Term Debt

The overall mean in the capital structure for long term debt is 23.32 percent, equity share capital is 5.74 percent and reserves and surplus are 70.94 percent of the cost of capital. The percent debt ranges from 10.88 percent in Genus Paper & Boards Ltd., and 20.28 percent in Star Paper Mills Ltd. The portion of reserves and surplus is greater than the long term debt for all the companies.
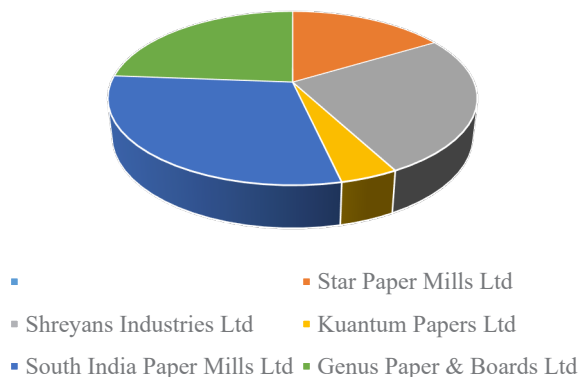
Company Name Equity Share Capital

- ▪
- ▪ Star Paper Mills Ltd
- ▪ Shreyans Industries Ltd
- ▪ Kuantum Papers Ltd
- ▪ South India Paper Mills Ltd
- ▪ Genus Paper & Boards Ltd

Fig. 2. Equity Share Capital

Table 2. Capital Gearing Ratio

S. No	Company Name	Mean	Standard Deviation	Coefficient of Variation
1	Star Paper Mills Ltd	0.90	0.24	26.67
2	Shreyans Industries Ltd	2.58	2.64	102.33
3	Kuantum Papers Ltd	13.45	9.52	70.78
4	South India Paper Mills Ltd	16.28	17.83	109.52
5	Genus Paper & Boards Ltd	44.87	15.18	33.83

Five companies are low gear companies. The standard deviation of capital gearing ratio of organizations ambit between 0.24 and 17.83. Standard deviation is less in Star Paper Mills Ltd. which designate less deviation in the capital gearing ratio. The normal diversion is high in South India Paper Mills Ltd., it shows more deviations in the capital gearing ratio.

Coefficient of variation of capital gearing ratio ranges between 26.67percent and 109.52 percent. The lowest coefficient of variation is found in Star Paper Mills Ltd. It designates stability in capital gearing ratio as collate to other organizations. High in South India Paper Mills Ltd. when related to other companies. It designates volatile in capital gearing ratio.
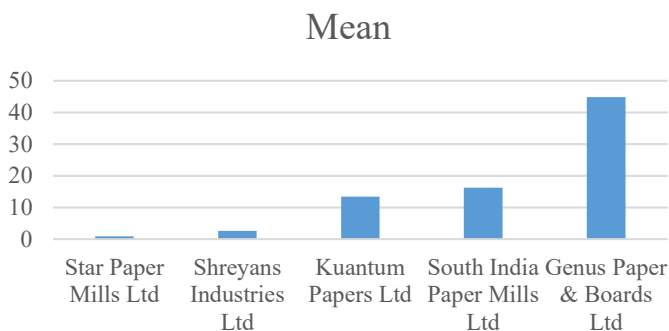
Fig. 3. Mean – Capital Gearing Ratio

Table 3. Debt Equity Ratio

S. No	Company Name	Mean	Standard Deviation	Coefficient of Variation
1	Star Paper Mills Ltd	1.56	0.39	25.00
2	Shreyans Industries Ltd	0.85	0.28	32.94
3	Kuantum Papers Ltd	0.38	0.11	28.95
4	South India Paper Mills Ltd	0.35	0.22	62.86
5	Genus Paper & Boards Ltd	0.26	0.07	26.92

Table 3 clearly states that the mean of debt equity ratio ambit from 0.26 and 1.56. The mean of debt equity ratio is low in Genus Paper & Boards Ltd., and the mean of debt equity ratio is high in Star Paper Mills Ltd.

Normal diversion of debt equity ratio ambit from 0.07 and 0.39. The normal deviation is low in Genus Paper & Boards Ltd., which shows less variability in the debt equity ratio. The normal diversion is found high in Star Paper Mills Ltd. it exhibit great diversion in the debt equity ratio.

The coefficient of variation of debt equity ratio ambit from 25.00 percent and 62.86 percent. The lowest coefficient of variation is found in Star Paper Mills Ltd.. It designates cohesion in debt equity ratio as to other organization. It is high in South India Paper Mills Ltd. as collated to other organization. It shows volatile in long term debt to owners equity ratio.
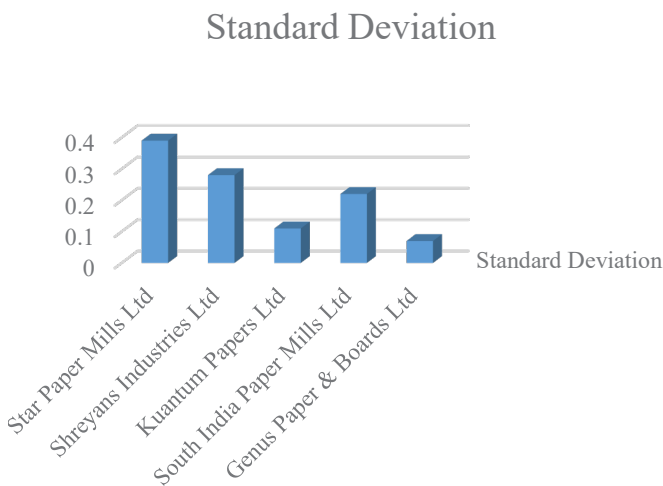
Fig. 4. Mean – Debt Equity Ratio

Fig. 5. Standard Deviation – Debt Equity Ratio

The lowest mean of total liabilities to total asset ratio is found in Genus Paper & Boards Ltd., and the total liabilities to total asset ratio mean is found high in Star Paper Mills Ltd.

The standard deviation of total liabilities to total asset ratio of five organization ambit from 0.05 and 0.13. The deviation is low in Star Paper Mills Ltd. which specify less variation in the total liabilities to total asset ratio. The normal diversion is erect high in Shreyans Industries Ltd., it designates high volatile in the total liabilities to total asset ratio.

Table 4. Total Liabilities to Total Asset Ratio

S. No	Company Name	Mean	Standard Deviation	Coefficient of Variation
1	Star Paper Mills Ltd	0.70	0.05	7.14
2	Shreyans Industries Ltd	0.52	0.13	25.00
3	Kuantum Papers Ltd	0.33	0.08	24.24

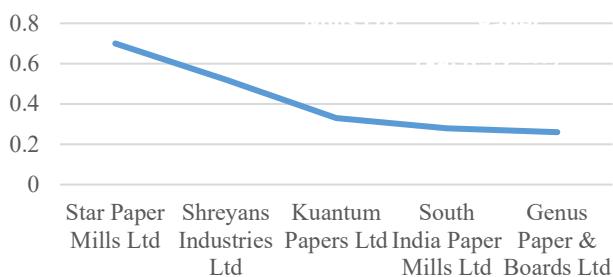| 4 | South India Paper Mills Ltd | 0.28 | 0.12 | 42.86 |
| 5 | Genus Paper & Boards Ltd | 0.26 | 0.07 | 26.92 |

Fig. 6. Mean - Total Liabilities to Total Asset Ratio

The coefficient of variation of total liabilities to total asset ratio ambit between 7.14 percent and 42.86 percent. The coefficient of variation is found low in Star Paper Mills Ltd. It express cohesion in total liabilities to total asset ratio as referred to other organization. South India Paper Mills Ltd. Is high when collate to other companies. It designate volatility in total liabilities to total asset ratio.

4.1 Anova

4.1.1 Debt

H0 - There is no mean difference among the debt of selected paper industry

Table 5. ANOVA- Debt

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Sum of Square	F Value	p Value	S / NS
Between Groups	2754392.38	2	1377196.19	1.95	0.02	S
Within Groups	3524078.07	5	704815.61			
Total	6278470.45	7				

Null hypothesis is not proved. It means that there is mean difference among the debt of selected paper industry.

4.2 Equity Share Capital

H0 - There is no mean difference among the equity share capital of selected paper industry

Table 6. ANOVA - Equity Share Capital

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Sum of Square	F Value	p Value	S / NS
Between Groups	30818.51	2	15409.25	3.23	0.03	S
Within Groups	23857.85	5	4771.57			
Total	54676.36	7				

Null hypothesis is not proved. It is concluded that there is mean difference among the equity share capital of paper industry selected for the study.

4.3 Reserves and Surplus

H0 - There is no mean difference among the reserves and surplus of selected paper industry

Table 7. ANOVA - Retained Earnings

Source of Variation	Sum of Squares	Degrees of Freedom	Mean Sum of Square	F Value	p Value	S / NS
Between Groups	17250000.00	2	8625000.00	5.14	0.03	S
Within Groups	8394199.54	5	1678839.91			
Total	25644199.54	7				

Null hypothesis is not proved. It is concluded that there is mean difference among the reserves and surplus of selected paper industry

5 Findings

The overall mean in the capital structure for long term debt is 23.32 percent, equity share capital is 5.74 percent and reserves and surplus are 70.94 percent of the total capital. Portion of reserves and surplus is greater than the long term debt for all the companies.

Selected five companies were low gear companies. The proportion of shareholders fund for all the companies are greater than the long term debt in the total capital structure.

South India Paper Mills Ltd., shows high variation in the capital gearing ratio.

South India Paper Mills Ltd. as referred to other organization, it indicates volatility in capital gearing ratio

Star Paper Mills Ltd. exhibit high variation in the debt equity ratio.

South India Paper Mills Ltd., express volatile in debt equity ratio.

Shreyans Industries Ltd., exhibit high variation in the total liabilities to total asset ratio.

South India Paper Mills Ltd. referred compared to other organization. It exhibit volatile in total liabilities to total asset ratio

Debt, Equity share capital and Reserves and surplus have mean difference among the selected paper industry

6 Suggesstions

1. Companies which is selected for the study is suggested to utilize the preference share capital as a source of finance
2. When long term debt is available at low cost it must be utilized to magnify the earnings of shareholders

7 Conclusion

Equity share capital, debt, preference capital and retained earnings are sources available for constructing the capital structure of an organization. The proper mix of debt and equity will yield a maximum return to the organization. The construction of optimal capital structure means which will maximize the return and minimize the cost. All forms of organization face some difficulties in designing the capital structure. Finance managers must put efforts to construct an optimum capital structure which in turn will reduce the cost of capital. Organization with ownership apply less leverage, but organization with ownership by biased owners use higher debt levels related to organization with ownership by owners. The trade off of benefits and costs under diversification is referred as organizations with high ownership underperform the market, but the underperformance is weaker in firms with biased ownership, Financing decision is one of the main areas in fund management to increase owners wealth. A company can utilize either debenture or common stock to finance. The motto of the study is to identify the variables of capital composition and its outcome on soundness of organization. Summary statistics and ANOVA was applied to study the result of capital composition. The study concludes that there capital composition has the influence on concert of sample companies.

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