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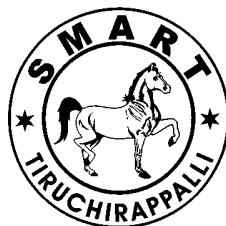
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## **CAPITAL STRUCTURE IN SUGAR MILLS**

**(A comparative study of the Cooperative, Government and Private sector mill)**

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A Capital - intensive industry like sugar mills need a colossal amount of funds for investments and growth. A sugar mill having determined its investment policy should plan for its capital structure. Capital structure decision is an important area of financial decision-making that has direct impact on cost of capital, profitability and market value of an enterprise. Unsound capital structure decisions result in increased cost of capital to the enterprise and consequently reduced earnings to the owners. Sound capital structure decisions are, therefore, of paramount importance to maximise the returns to the owners of an enterprise. The objective of this paper is to examine the capital structure pattern of the sugar mills for which purpose three mills have been selected from the Thanjavur district covering all the three sectors, namely, private, government and cooperative.

Capital structure planning is one of the most complex areas of financial decision-making. The term 'capital structure', in its simple sense, refers to the composition of capital raised by an enterprise. It signifies the permanent financing of an enterprise, primarily represented by long-term debt, preferred stock and net worth. Keeping in view this conceptual background, the following ratios have been calculated to analyze the capital structure of the sugar mills in the then undivided Thanjavur district.

### **Debt-Equity Ratio**

The fundamental object of calculating this ratio is to measure the relative claims of creditors and owners against the capital employed by the enterprise. This ratio is calculated in various ways. One view is to calculate the debt-equity ratio as long-term debts (non-current liabilities) divided by the shareholders' equity<sup>1</sup>. For the purpose of calculation of this ratio, the term, "debt" includes all borrowings not repayable before the completion of one year from the date of borrowings. "Equity" includes share capital, reserves and surplus minus fictitious assets shown in balance sheet.

This ratio shows the extent to which debt financing has been used in a business. A high ratio indicates that the claims of creditors are higher as compared to owners' funds. A very high ratio does not indicate a sound position for the concern. Although it may provide the advantage of high leverage, at the time of market uncertainties such capital structure will not be able to resist the unfavorable market conditions. A lower ratio may result in a higher claim of equity and it gives greater protection to the creditors against possible losses in the event of liquidation. An ideal norm of the ratio is 100 per cent, i.e., 1:1. However, this ratio differs from industry to industry. According to the guidelines issued by the finance ministry to financial institutions, the debt equity ratio in the case of projects entailing an investment of less than Rs.5 crores will be in the range of 1:1 and 1.5:1. In the case of project whose investment ranges between Rs.5 crores and 10 crores, the ratio

will be in the range of 1.5:1 to 2:1. Similarly, where the investment on the project exceeds Rs.10 crores, which is considered capital intensive, the debt-equity ration will be 2:1 or more<sup>2</sup>.

The debt-equity ratio has been presented in the Table 1. The debt-equity ratio of the private mill was fluctuating upto 1998-99 between 1.08 times and 1.51 times. Though there was an increase in both variables, i.e., long term debt and equity, the ratio was fluctuating due to the fluctuations in the long term debt and equity. The ratio was fluctuating due to the fluctuations in the rate of growth in both the debt and equity. The ratio decreased to 0.85 times in 1999-00 and to 0.78 times in 2000-01. This low ratio (i.e., less than one) is due to a drastic decrease in the amount of long-term debt. At the same time, it should not be inferred that the private mill was moving towards the low degree of financial leverage but it has used another source of fixed cost capital i.e., preference capital. In the Govt. mill, the debt-equity ratio registered a decreasing trend from 0.64 times in 1991-92 to 0.01 times in 1997-98 and it was zero during 1999-00 and 2000-01. This is because of the continuous decrease in the amount of long-term debt and there was no long-term debt in the last two years of the study period.

The debt-equity ratio of the coop. mill increased from 0.02 times in 1991-92 to 1.48 times in 1996-97 due to a regular increase in the amount of long-term debt and decrease in the amount of owners' equity. The ratio was in minus during the last four years of the study period because of the negative value of owners' equity due to the heavy losses suffered by the mill. On the basis of the above analysis, it can be concluded that the private mill maintained a reasonable level of debt-equity proportion and it used larger funds of their own. The debt equity ratio of the Govt. mill was always less than one during the study period and it was zero in the last two years. This low ratio may make any one think that the equity base of the mill was very strong. But such a low ratio was due to the diversion of short-term borrowings to meet the long-term requirements of funds. Even though there was a continuous increase in the amount of long-term debt in the coop. mill, there was a negative debt-equity ratio because of the negative networth due to the erosion of capital by the heavy losses. In brief, it can be said that the Govt. and coop. mills were not in a position to absorb the shock of losses in case of liquidation and it is a danger signal for the creditors.

### **Capital Gearing Ratio**

The capital gearing ratio is another tool to analyze the financial leverage. It indicates the relative proportion of fixed cost capital as represented by the preference share capital and the debt capital to the ordinary share capital. Under this ratio, we compare the fixed charge bearing capital and capital which does not bear fixed charge or fixed dividend. The capital gearing is of two kinds. A highly geared capital is one which has a small proportion of equity share capital. If the larger proportion of total capital is made up of equity capital, the capital is said to be low-g geared<sup>3</sup>.

A high geared capital structure may cause large variations in the returns on equity share with a slight change in the profit. "Trading on equity is profitable only when the corporation can earn on the money a higher rate than is being paid for the use of the funds<sup>4</sup>". "The capital gearing at present will affect the future trend in financing. In such a situation, a lion's share of the profit

shall go to the shareholders. In the period of trade depression ,low gearing can be employed in the same way as a driver who changes to low gearing when driving upwards<sup>5</sup>”.A successful blending of different sources of funds employed in the business concern is desirable from the point of view of investors, the creditors and the concern itself. With the knowledge of proper capital gear, the financial manager is able to navigate successfully the business in the period of trade cycles.

Table - 2 presents the capital gearing ratio. Capital gearing ratio of the private mill increased from 3.49 times in 1991-92 to 18.95 times in 1998-99 due to the larger proportion of fixed cost bearing securities in the capital structure. The ratio decreased in the last two years of the study period and it was 11.22 times in 2000-01 because of the repayment of debt to the tune of Rs.12.07 crores and redemption of preference shares of Rs.4.67 crores.In the case of the Govt. mill, the capital gearing ratio registered a decreasing trend from 1.77 times in 1991-92 to zero in 2000-01. Further the ratio was less than one from 1993-94 and it was zero in 1999-00 and 2000-01. Long-term debt of the coop. mill increased from Rs.72.71 lakhs in 1991-92 to Rs.5294.64 lakhs in 2000-01. In other words, the capital gearing ratio also registered an increasing trend from 0.11 times in 1991-92 to 5.19 times in 2000-01. The analysis of the term loan position of the mill reveals that there were instances of overdues of loans and interest.To sum up, it can be said that the private and coop. mills were highly geared while the Govt. mill was low geared. At the same time, it cannot be said that the low geared mill was working with owners’ funds because the Govt. mill in five years depended on current liabilities.

### **Financial Leverage Ratio**

Financial leverage may be defined as the tendency of the residual net income to vary disproportionately with operating profit. It indicates the change that takes place in the taxable income as a result of change in the operating income. It signifies the existence of fixed interest / fixed dividend bearing securities in the total capital structure of the company. Thus, the use of fixed interest / dividend bearing securities such as debt and preference capital along with the owners’ equity in the total capital structure of the company, is described as financial leverage. In the capital structure of the company, if the fixed interest / dividend bearing securities are greater as compared to the equity capital, the leverage is said to be larger. In the reverse case, the leverage will be said to be smaller. Financial leverage may be favourable or unfavourable depending upon whether the earnings made by the use of fixed interest or dividend bearing securities exceed the explicit fixed cost and the firm has to pay for the employment of such funds or not. The leverage will be considered to be favourable so long as the firm earns more on assets purchased with the funds than the fixed costs of their use. Unfavourable or negative leverage occurs when the firm does not earn as much as the funds cost.

Financial leverage is also sometimes termed as “trading on equity”. However, many authors on financial management are of the opinion that the term trading on equity should be used for the term financial leverage only when the financial leverage is favourable. The company resorts to trading on equity with the objective of giving the equity shareholders a higher rate of returns than

the general rate of earning on capital employed in the company to compensate them for the risk that they have to bear. It has the potentiality of increasing the returns to equity shareholders but at the same time, creates additional risk for them. Waterman in his Essays on Business finance has beautifully described the role of financial leverage in the following words : “This role of financial leverage suggests a lesson in Physics and there might be some point to considering the rate of interest paid as the fulcrum used in applying forces through leverage. At least it suggests consideration of pertinent variables ; the lower the interest rate, the greater will be the profit and less the chances of loss. The less the amount borrowed, the lower will be the profit or loss; also greater the borrowing, greater the risk of unprofitable leverage and greater the chances of gain<sup>6</sup>. Table 3 gives an overview of the financial leverage of the selected mills.

The financial leverage ratio of the private mill decreased from 3.66 times in 1991-92 to 1.65 times in 1995-96 and thereafter it registered an increasing trend. The ratio reached a peak of 13.85 times in 2000-01 due to the decrease in the EBIT at higher rate than the rate of decrease in the interest charges and preference dividend. In the Govt. mill, the financial leverage ratio was 4.67 times in 1992-93, 1.51 times in 1993-94, 48.73 times in 1996-97 and 3 times in 1997-98. The largest ratio of 48.73 times in 1996-97 was due to the heavy interest burden, i.e., 97.95 per cent of EBIT went as interest charges. The ratio was less than one during 1991-92 and 1994-95 to 1999-00 because of both the EBIT and EBT were negative.

The financial leverage ratio of the coop. mill was 1.08 times in 1991-92 and 1992-93 and it was 2.41 times in 1993-94. In the subsequent years, the ratio was less than one because both the variables were negative. On the basis of the above analysis, it may be inferred that the private mill had a favourable financial leverage during the whole period of study. At the same time it should be cautious of the very high degree of financial leverage during the last two years of the study period. In the case of the Govt. and coop. mills, the financial leverage ratio was less than one for many years because both the EBIT and EBT were negative. Therefore the financial leverage has given a multiplier negative effect to these mills. Thus it may be concluded that the rate of returns on investment was not proportionate to the rate of interest in the Govt. and coop. mills. In other words, the leverage gave only an adverse effect. These mills have to resort lower cost source of capital and to improve the rate of returns on investment to offset the adverse effect.

### **Proprietary Ratio**

This ratio shows the extent to which the shareholders own the business. In other words, it expresses the percentage of total assets financed by shareholders. Choudhary observes “this ratio brings out the extent of shareholders’ funds in relation to the total funds (i.e., shareholders’ funds plus liabilities) employed”. This ratio is of particular importance to the investors because the presence of a high percentage of share holders’ funds (including reserves and surplus) indicates that a percentage of share holders’ funds (including reserves and surplus) indicates that a concern is less dependent on outside funds for capital and there is relatively little danger of forced winding up or reorganization in the event of default in payment to outside liabilities. A high ratio suggests

sound financial strength of a concern due to (i) a greater margin of owners' funds against outside sources of finance, and (ii) a greater margin of safety for the creditors. A low ratio indicates a small amount of owners' funds to finance total assets and more dependence on outside funds for working capital. The low ratio also shows that in the event of financial difficulties, the shareholders may or may not receive share of their contribution. Higher the proprietary ratio, the better it is. This is not, however, always true because a high ratio does not itself show that the business is sound and the funds from outsiders can be used for long run advantage of the business enterprise. This ratio is calculated by dividing owners' equity by total assets. The total shareholders' equity comprises the paid up share capital and the accumulated amount of reserves and surplus minus fictitious items in the assets side like the preliminary expenses, debit balance of profit and loss account etc. The total assets include the total of current and fixed assets.

According to the Table 4, the proprietary ratio in the private mill varied between 0.25 times in 1991-92 and 0.36 times in 1997-98. On an average the share of equity in the total assets increased during the study period from 25 per cent to 35 per cent. This is because of the subsequent issues of share capital and continuous increase in the reserves and surplus by earning profits from the operations of the mill. In the Govt. mill the proprietary ratio increased from 0.25 times in 1991-92 to 0.37 times in 1993-94 but thereafter the ratio registered a decreasing trend and it was negative during 1999-00 and 2000-01. Though the total assets registered an increasing trend during the study period, the ratio decreased because of the decline in the owners' equity due to the heavy losses suffered by the mill.

Among the three mills selected during the period under study, the owners claim in the total assets of the coop. mill was highest i.e., 0.80 times in 1991-92. But the proprietary ratio of the coop. mill drastically declined during the study period and it was negative in the last four years due to the continuous, heavy losses suffered by the mill from 1994-95. During 1994-95, the expansion programme of the mill from 1250 TCD to 3500 TCD was carried out. Even though the crushing was started with the expanded capacity during 1995-96, the mill could not utilise the full capacity of 3500 TCD from 1995-96 to 1997-98. Another point worth noting here is that after the expansion, the total assets of the mill have doubled from Rs.3963.87 lakhs in 1991-92 to Rs.7913.91 lakhs in 1994-95 but the share capital has been issued only to the extent of Rs.329.43 lakhs during that period. The mill has depended mostly on the borrowed funds for its expansion. Hence it had to pay larger sums as interest. Thus the mill suffered the heavy losses due to larger interest burden on one side and the failure in achieving the productivity due to the delay in the expansion programme on the other side. A comparative picture of the three mills shows that the private mill only had the positive and increasing trend of proprietary ratio for the whole period under study. The Govt. and coop. mills were not in a sound position as there was no equity in two years and four years respectively to provide for total assets. The assets of these two mills were financed through outside funds which created an extra burden of interest and risk for the mills.

## Conclusion

The analysis of the capital structure reveals that the private mill only had a favourable financial leverage. Since the rate of return on investment was much lower than the cost of capital, the high degree of leverages gave an adverse effect in the case of Govt. and coop. mills. Further it may be concluded that the private mill maintained a reasonable level of debt-equity proportion but the Govt. and coop. mills had an excess dose of debt. Moreover they have relied more on current liabilities for financing long-term needs, which created an extra burden of interest and risk.

## References

1. **I.M.Pandey**, (1984) *Financial management*, Vani educational books, New Delhi, 508.
2. **R.P.Sharma**,(1988) *Corporate financial structure*, Printwell publishers, Jaipur, 130.
3. **R.K.Guptha**, (1989) *Profitability, financial structure and liquidity*, Printwell publishers, Jaipur,171.
4. **Joseph F. Bradley**,(1957) *Fundamentals of corporation finance*, Rinchart and company, Newyork, 242.
5. **R.P.Sharma**, Op.cit., 105.
6. **S.N.Maheswari**, (1996)*Financial management principles and practice*, Sultan chand & sons, New Delhi, 72.
7. **Anil B. Roy choudhary**, (1970) *Analysis and interpretations of financial statements through financial ratios*, Orient longmans, New Delhi, 22-23.

**Table- 1**  
**Debt Equity Ratio**

(In times)

Year	Pvt. Mill	Govt. mill	Coop. mill
1991-92	1.51	0.64	0.02
1992-93	1.37	0.40	0.13
1993-94	1.63	0.19	0.46
1994-95	1.15	0.09	0.54
1995-96	1.40	0.04	0.78
1996-97	1.35	0.03	1.48
1997-98	1.08	0.01	*
1998-99	1.39	0.05	*
1999-00	0.85	0.00	*
2000-01	0.78	0.00	*

\* Negative ratio due to the negative amount of net worth.

**Table- 2**  
**Financial Leverage**

(In times)

Year	Pvt. Mill	Govt. mill	Coop. mill
1991-92	3.66	0.16	1.08
1992-93	2.00	4.67	1.08
1993-94	1.68	1.51	2.41
1994-95	1.97	0.27	0.44
1995-96	1.65	0.33	0.42
1996-97	3.29	48.73	0.68
1997-98	3.46	3.00	0.53
1998-99	8.72	0.04	0.39
1999-00	11.23	0.25	0.45
2000-01	13.85	*	0.22

\* Negative ratio due to the negative EBT while there were positive EBIT.

**Table -3**  
**Capital Gearing Ratio**

(In times)

Year	Pvt. Mill	Govt. mill	Coop. mill
1991-92	3.49	1.77	0.11
1992-93	3.94	1.25	0.61
1993-94	6.11	0.76	1.71
1994-95	9.27	0.28	1.85
1995-96	12.47	0.04	2.19
1996-97	11.43	0.04	2.25
1997-98	14.53	0.01	2.40
1998-99	18.95	0.03	3.15
1999-00	12.77	0.00	4.98
2000-01	11.22	0.00	5.19



**Table- 4**  
**Proprietary Ratio**

(In times)

Year	Pvt. Mill	Govt. mill	Coop. mill
1991-92	0.25	0.25	0.80
1992-93	0.25	0.27	0.77
1993-94	0.28	0.37	0.55
1994-95	0.34	0.21	0.44
1995-96	0.31	0.06	0.38
1996-97	0.30	0.08	0.18
1997-98	0.36	0.16	*
1998-99	0.32	0.04	*
1999-00	0.35	*	*
2000-01	0.35	*	*

\* Negative ratio due to the negative net worth.