₹ 200 ISSN - 2249-555X
Volume : 1 Issue : 7 April 2012

Indian Journal Of Applied Research

Journal for All Subjects

www.ijar.in
Listed in International ISSN Directory, Paris.

ISSN - 2249-555X

Indian Journal of Applied Research

Journal for All Subjects

Editor,
Indian Journal Of Applied Research
8-A, Banans, Opp. SLU Girls College, New Congres Bhavan, Paldi,
Ahmedabad-380006, Gujarat, INDIA
Contact.: +91-9824097643 E-mail : editor@ijar.in

INDEX

Volume : 1 | Issue : 7 | April 2012 ISSN - 2249-555X

Research Paper Management

CAPITAL STRUCTURE ANALYSIS (An Empirical Study of Paper Mills in India)

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ABSTRACT

The term capital structure means the financial planning according to which the assets of an industry are furnished. The word 'structure' is used in science of engineering where it means different parts of a building. Companies, raise their capital through various sources viz. shares, debentures, retained earnings etc. In the present study null hypotheses has been used to analyze difference between the capital structures. Results show that there was a significant difference in the companies from the view point of debt-equity ratio and capital gearing ratio.

Keywords :

The term capital structure means the financial planning according to which the assets of an industry are furnished. According to Lawrence and Haley (1999), "The term capital structure means the proportion of different types of securities issued by a firm. The optimal capital structure is the set of proportion that maximizes the total value of the firm.

Thus capital structure refers to the combination or mix of debt and equity which a company uses to finance its long-term operations.

Hypothesis of the Study: -
In the present study null hypotheses has been used-

(i) There is no significant difference in the capital structure of the companies under study
(ii) The year-wise difference in the capital structure position of the companies under study is not significant.

Methodology of Study:
For the purpose of present study four paper companies viz., Andhra Pradesh Paper Mills Ltd. (APPML), Ellora Paper Mills Ltd. (EPML), Shree Krishna Paper Mills Limited (SKPML) and South India Paper Mills Ltd (SIPML) have been selected. A five year period commencing from 2005-06 to 2009-10 has been covered.

1. Debt-Equity Ratio
This ratio is an indicator of the soundness of the configuration of the debt-equity mix. A proper mix of debt and equity helps in improving the rate of capital formation in the long run.

Debt- Equity Ratio has been calculated by using the following formula

Debt- Equity Ratio = Total Debts
Equity

Table 1

Debt-Equity Ratio of Paper Mills under Study

(For the Period from 2005-06 to 2009-10)

(Ratio in Times)

Year	APPML	EPML	SKPML	SIPML
2005-06	1.37	1.79	2.57	1.53
2006-07	1.72	1.57	4.47	1.11
2007-08	1.66	1.97	9.66	0.91
2008-09	1.78	2.28	8.92	0.91
2009-10	1.32	3.11	17.42	0.66
Average	**1.57**	**2.14**	**8.61**	**1.02**
Standard Deviation	**0.19**	**0.54**	**5.15**	**0.29**
Coefficient of Variation (%)	**11.87**	**25.12**	**59.79**	**28.35**

Source: Computed from Annual Reports and Accounts of the Selected Paper Mills for the period from 2005-06 to 2009-10

The above table 1 shows the debt equity ratio of the paper mills under study. It is clear from the above table that the debt equity ratio in APPML registered a fluctuating trend throughout the whole period under study. It varied within the range of 1.78 times in 2008-09 to 1.32 times in 2009-10.

It is clear from the above table that the debt equity ratio in EPML showed an increasing trend during the period of study except in the year 2006-07. Initially, the debt equity ratio was 1.79 times in 2005-06 decreased to 1.57 times in 2006-07, but this ratio increased to 1.97 times in 2007-08, to 2.28 time in 2008-09 and further to 3.11 times in 2009-10. It is suggested that the management of the company should be watchful because this policy may be harmful in long run. The company should try to reduce the burden the long term borrowings.

In SKPML, the debt equity ratio registered an increasing trend except in the year 2008-09. During 2005-06, this ratio was 2.57 times, which increased to 4.47 times in 2006-07 and further to 9.66 times in 2007-08. But the debt equity ratio decreased to 8.92 times in 2008-09 but further increased to 17.42 times in 2009-10. The company had adopted an aggressive debt financing policy which should be avoided by the management of the company.

Table 1 shows that the debt equity ratio in SIMPL showed a decreasing trend during the whole period of under study and varied within the rang of 1.53 times in 2005-06 to 0.66 times in 2009-10. The average of debt equity ratio was 1.02 times which is in favour of the company.

F Test for Debt- Equity Ratio:-

i) F Test Between the Companies
F = Higher Variance / Smaller Variance
= 62.79 /8.24 = 7.62
V1=3:V2=12TablevalueofFat5%levelofsignificance=3.49
The null hypothesis is rejected because the calculated value of F (7.59) is more than the table value (3.49). Thus, it can be concluded that the difference in the Debt-Equity Ratio of the companies under study is significant.

ii) F Test Within the Years
F = Higher Variance / Smaller Variance
= 8.89 / 8.24 = 1.08
V1=4: V2 = 12 Table value of F at 5% level of significance = 3.26
The calculated value of F is less than the table value, hence, the null hypothesis is accepted and it is concluded that the year-wise difference in the Debt- Equity Ratio of the companies under study in not significant.

2. Capital Gearing Ratio

The Capital gearing ratio measures the relationship between fixed cost bearing capital and variable cost bearing capital.

Capital Gearing Ratio= Fixed Cost Bearing Capital / Variable Cost Bearing Capital

Table 2

Capital Gearing Ratio of Paper Mills Under Study

(For the Period of 2005-06 to 2009-10)

(Ratio in Times)

Year	APPML	EPML	SKPML	SIPML
2005-06	0.92	1.03	1.92	0.74
2006-07	1.33	0.87	3.65	0.49
2007-08	1.28	1.11	7.55	0.39
2008-09	1.34	1.54	6.49	0.46
2009-10	1.01	2.18	14.06	0.27
Average	**1.17**	**1.35**	**6.73**	**0.47**
Standard Deviation	**0.18**	**0.47**	**4.17**	**0.15**
Coefficient of Variation (%)	**15.02**	**35.25**	**61.96**	**32.98**

Source: Computed from Annual Reports and Accounts of the Selected Paper Mills for the period from 2005-06 to 2009-10

It can be seen from the table 2 that the capital gearing ratio in APPML registered a fluctuating trend during the period of study. The average of capital gearing ratio was 1.17 times which indicates that the company has adopted conservative financing policy. It is suggested that the management of the company should properly use external sources of finance.

The capital gearing ratio of EPML showed a decreasing cum increasing trend during the period of study. The average of this ratio was 1.35 times which can be regarded satisfactory.

In SKPML, this ratio showed an increasing trend except in the year 2008-09. The ratio was high because of the fact that the fixed cost bearing capital was more than the variable cost bearing capital. It shows that the capital of the company was high geared which is not favourable for the company and denotes that the company is incurring a heavy amount in the form of interest.

The capital gearing ratio in SIPML showed a fluctuating trend during the period of study. The average of capital gearing ratio was 0.47 times which shows that the company followed a conservative financing policy and the burden of interest for the company was not high.

The coefficient of variation was highest in SKPML at 61.96 percent denoting high fluctuations followed by EPML at 35.25 percent and at 32.98 percent in SIPML. The management of these companies should try to control the fluctuations. The fluctuation in capital gearing ratio of APPML can be regarded satisfactory because the coefficient of variation was 15.02 percent and the management of the company should try to maintain it in future also.

F Test for Capital Gearing Ratio

i) F Test Between the Companies
F = Higher Variance / Smaller Variance
= 41.86 / 5.32 = 7.87
V1=3: V2 = 12 Table value of F at 5% level of significance = 3.49
The null hypothesis is rejected because the calculated value of F (7.87) is more than the table value (3.49). Thus, it can be concluded that the difference in the Capital Gearing Ratio of the companies under study is significant.

ii) F Test Within the Years
F = Higher Variance / Smaller Variance
= 6.17 / 5.32 = 1.16
V1=4: V2 = 12 and table value of F at 5% level of significance = 3.26
The calculated value of F is less than the table value, hence, the null hypothesis is accepted and it is concluded that the year-wise difference in the Capital Gearing Ratio of the paper mills under study in not significant.

3. Ratio of Fixed Assets to Long Term Funds

This ratio is also known as Fixed Assets Ratio or 'Fixed Assets to Capital Employed Ratio. The fixed assets ratio reveals the long term solvency of the business. The fixed assets ratio can be calculated by using the following formula

=Fixed Assets / Long Term Funds or Capital Employed

Table 3

Fixed Assets to Long Term Funds Ratio of Paper Mills under Study

(For the Period of 2005-06 to 2009-10)

(Ratio in Times)

Year	APPML	EPML	SKPML	SIPML
2005-06	0.62	0.69	0.87	0.82
2006-07	0.82	0.66	0.74	0.74
2007-08	0.79	0.81	0.79	0.64
2008-09	0.79	0.73	0.71	0.76
2009-10	0.69	0.57	0.69	0.72
Average	**0.74**	**0.69**	**0.76**	**0.74**
Standard Deviation	**0.08**	**0.08**	**0.07**	**0.06**
Coefficient of Variance (%)	**10.29**	**11.39**	**8.57**	**7.73**

Source: Computed from Annual Reports and Accounts of the Selected Paper Mills for the period from 2005-06 to 2009-10

Table 3 shows the fixed assets to long term funds ratio of the paper mills under study. . It can be noted from the above table that the fixed assets to long term funds in APPML showed a increasing cum decreasing trend. The average of this ratio was 0.74 times which is not poor but it is suggested that the management should be decrease.

The fixed assets to long term funds of EPML registered a fluctuating trend during the period of study. The average of this

ratio was 0.69 times with the coefficient of variation as 11.39 percent which can be regarded satisfactory. It is suggested that the management should maintain same position in future also.

In SKPML, the fixed assets to long term funds ratio showed a decreasing trend except in the year 2007-08. The average of fixed assets to long term funds ratio was 0.76 times which should be control by the management of the company.

The fixed assets to long term funds of SIPML showed a fluctuating trend during the whole period of under study. The average of this ratio was 0.74 times with the coefficient of variation as 7.73 percent which should be control by the management.

F Test for Fixed Assets to long term funds Ratio

i) F Test Between the Companies
F = Higher Variance / Smaller Variance
= 0.0075/ 0.0033 = 2.27
V1=12: V2 = 3 Table value of F at 5% level of significance = 8.74
The null hypothesis is accepted because the calculated value of F (2.27) is less than the table value (8.74). Thus, it can be concluded that the difference in the Fixed Assets to long funds Ratio of the companies under study is not significant.

ii) F Test Within the Years
F = Higher Variance / Smaller Variance
= 0.0075 / 0.0050 = 1.50
V1=12: V2 = 4 Table value of F at 5% level of significance = 5.91
The calculated value of F is less than the table value, hence, the null hypothesis is accepted and it is concluded that the year-wise difference in the Fixed Assets to Net Worth Ratio of the Paper Mills under study in not significant.

Conclusion:

The above study reveals that some of the companies followed debt financing policy while some followed conservative financing policy. There was a significant difference in the companies from the view point of debt-equity ratio and capital gearing ratio. The year-wise position of all the companies under study was same and the difference was not significant. It is suggested that to increase the profitability and wealth of stockholders the company should adopt a debt-financing policy

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Editor,
Indian Journal Of Applied Research
8-A, Banans, Opp. SLU Girls College,
New Congres Bhavan, Paldi, Ahmedabad-380006.
Contact.: +91-9824097643 E-mail : editor@ijar.in

Printed at Unique Offset, Novatsing Rupam Estate, Opp. Abhay Estate, Tavdipura, Shahibaug, Ahmedabad