IMPACT OF CAPITAL STRUCTURE ON PROFITABILITY OF SELECTED CEMENT INDUSTRY IN INDIA

PRABHAKARA T[1] & Dr. B BAKKAPPA [2]
[1]Research scholar,Institute of Management Studies, Davangere University, Shivagangothri Campus, Davangere-577 002
[2]Director and Professor,Dept. of MBA, GMIT, Davanagere-577 006.

Received: June 07, 2018 Accepted: July 19, 2018

ABSTRACT *Capital structure is an important decision of the business to fix the mixture of debt and equity capital of the company. The objective of this study is to examine the impact of capital structure on firm's profitability through the selected cement companies. The data for the study has been obtained from annual reports of the selected five companies for ten years from 2008 to 2017. Statistical tools like correlation coefficient used to find out a significant negative relationship between debt and profitability means that companies with higher proportion of debt tend to have low profitability.The company that has a high debt ratio will have a negative impact on profitability. Thus by reducing the debt ratio management can increase profitability and ROCE, ROE measures can be improved.*

Keywords: *Capital Structure, Profitability, Gross Profit, Return on Capital Employed, Return on Equity.*

1. INTRODUCTION:

India is the 2ndlargest cement producer as well as consumer in the world led by the enormous growth in the infrastructure and construction sector for the last two decades.With cement production capacity of nearly 366 million tonnes, as of 2015 and in 2016, country's cement production capacity is expected to reach 395 million tonnes, which is expected to further increase to 550 million tonnes by 2025.

210 large cement plants account for a cumulative installed capacity of over 350 million tonnes, while over 350 mini cement plants have an estimated production capacity of nearly 11.10 million tonnes, as of 2016. Demand is expected to be boosted by growth in real estate sector, initiative to build 100 smart cities to give a further stimulus.

As of August 2015, cement production in India accounted for around 6.7 per cent of overall global cement output.In order to meet the rising demand, cement companies are expected to pent up production by around 56 MT in the next three years. Cement production increased at a CAGR of 6.44 per cent to 282.79 million tonnes over FY07–16. As per the 12thFive Year Plan, production is expected to reach 407 million tonnes by FY17.

Domestic cement consumption is to reach 280 million tonnes in FY15 from 165.63 million tonnes in FY11. The consumption is further expected to increase at a CAGR of 15.7 per cent during FY11-17 and reach 398 million tonnes.

Demand will be supported by infrastructure development in tier 2 and tier 3 cities. The country's per capita consumption is around 190 kg as of 2015, compared to the world average of over 350 kg per capita, which shows great potential for growth.

2. REVIEW OF LITERATURE:

The relationship between capital structure and profitability some of the major studies have been reviewed as follow.

Abor (2005) studied the relationship among capital structure and profitability Ghana and found the significant positive relationship between short term debt to ROE and negative relationship between long term debts to ROE.

Khan (2010) studied capital structure in the Indian paint industry. She found that profitability, tangibility, growth and business risk were significant determinants in the choice of capital structure, while size and tax rate were weak determinants. She found a positive relationship between leverage and tangibility of assets and size, and a negative relationship between leverage and profitability.

M.S. Ramaratnam, and R. Jayaraman (2013), examined the "Determinants of Capital structure with special reference to Indian pharmaceutical sector: panel Data analysis". They selected 24 companies from Indian pharmaceutical sector. In this study the influence of independent variables such as tangibility ratio, return on total assets, net profit margin, and accumulated depreciation to total assets were analyzed with respect to the dependent variable of leverage ratio.

Sanjay Hiran and MahendraSojatia(2014), examined the "Capital structure and its impact on profitability of automotive industry: the indian case". The objective of the study was to measure, evaluate and empirically studies the relationship between capital structure and financial performance of automotive companies in India. They selected the data of nine major companies from automotive industry, listed both BSE/NSE. The statistical tools like linear regression model have been used. They concluded that there is a weak negative correlation between proxies of capital structure and proxies of financial performance.

3. CONCEPTUAL FRAME WORK

After doing review of literature the following model has been developed. This model shows the relationship between capital structure and financial performance of selected cementindustry in India.

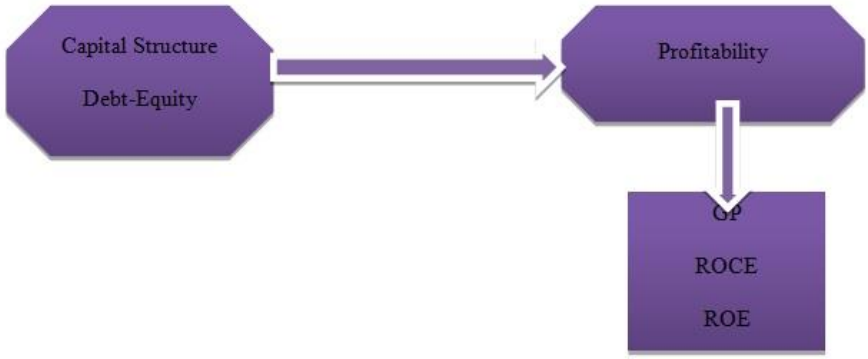

Figure No.1: Conceptualization model

4. OBJECTIVES:

The general objective of this study is to find the relationship between financing decisions (capital structure) and theprofitability of cement companies in India. Other specific objectives are as follow:

1) To know the Debt-Equity ratio of selected cement industry
2) To measure profitability of cement industry
3) To measure the impact of Debt-Equity ratio on profitability of selected cement industry.

5. HYPOTHESIS:

H_0: There is no significant relationship between between Debt-Equity ratio (D-E) and profitability (G/P, ROCE ROE)

H_1: There is a significant relationship between between Debt-Equity ratio (D-E) and profitability (G/P, ROCE ROE).

The following three propositions (P) have been framed for the present study.

Table No.1: Propositions	
P_1	There exist a relationship between Debt-Equity and Gross Profit Ratio
P_2	There exist a relationship between Debt-Equity and Return on Capital Employed
P_3	There exist a relationship between Debt-Equity and Return on Equity

6. RESEARCH METHODOLOGY:

To analyse the research secondary data was collected from CMIE Prowess and different financial reviews and annual financial reports of companies. Thisresearch includes 05 companies listed in BSE and NSE from the year of 2008-2017. All the valuesfrom these companies have been taken for analysis of ratios.

Mode of analysis:

Table No.2:Mode of analysis	
Capital Structure (Dependent Variable)	Debt-Equity Ratio (Current Liabilities + Non-Current Liabilities)/ Shareholders Equity * 100
Profitability (Independent Variable)	GP Gross Profit/Net Sales * 100
	ROI/ROCE NPBT/Average of Total Capital Employed *

	100
	ROE NPBT/Average of Shareholders Equity * 100

7. RESULTS AND DISCUSSIONS:

Table No.3: Debt-Equity ratio (figures in times)

Company name	N	Minimum	Maximum	Mean	Std. Deviation
ACC LTD	10	.00	.10	.0430	.04322
BINANI CEMENT LTD	10	1.58	4.95	2.8820	1.32388
CENTURY TEXTILES AND INDUSTRIES CEMENT	10	1.15	3.10	2.1210	.69190
PRISM CEMENT	10	.00	1.92	1.0900	.74979
ULTRA TECH CEMENT LTD	10	.32	.62	.4010	.09267
Valid N (listwise)	10				

Source: Author compilation from annual reports of the companies

The table 3 depicts that among all the cement companies Binani cement, Century textiles and industries cement and Prism cement are highly leveraged companies having highest debt to equity ratio i.e. 2.88, 2.12, and 1.09 respectively. On the other side cement companies like ACC ltd, and Ultratech cement are low leveraged with lowest debt to equity ratio with the mean score of 0.043, and 0.401 respectively.
It is also clear from the table that Binanicement have highest standard deviation of 1.32 which indicates that this company made number of changes in its debt and equity mix over the period of time on the other hand ACC ltd, and Ultratechhave lowest standard deviation of 0.04 and 0.09 which indicates that these companies have made very few changes in their capital structure.

Table No.4: Gross Profit ratio (figures in per cent)

Company Name	N	Minimum	Maximum	Mean	Std. Deviation
ACCLTD	10	12.17	32.84	19.4550	6.93869
BINANICEMENTLTD	10	-26.73	31.25	4.3560	19.08374
CENTURYTEXTILESANDINDUSTRIESCEMENT	10	1.76	16.89	8.1200	5.14200
PRISMCEMENT	10	.98	39.78	10.3360	13.29310
ULTRATECHCEMENTLTD	10	17.53	31.64	22.9190	4.59960
Valid N (listwise)	10				

Source: Author compilation from annual reports of the companies

The above table 4 depicts that Ultratech cement ltd have highest gross profit ratio with the mean score of 22.91 and implies that company is very efficient in producing products and have efficient resources to pay for cost required to run and grow their business. On other hand companies like Binani cement ltd, Century Textiles and Industries cement are having low gross profit ratio with mean score 4.35 and 8.12 respectively as compare to other companies in the study. This shows that companies are inefficient in producing products.
The standard deviation of gross profit ratio of Binani cement, Prism cement,Century Textiles and Industries cement and ACC ltd is maximum (19.08, 13.29,6.93 and 5.14 respectively). It means that these companies are notconsistent in generating profits. On other hand companieslike Ultra tech cement has minimum standard deviation (i.e.4.5) which implies that companies are enjoyinggross profit at constant rate.

Table No.5: Return on Capital Employed (figures in per cent)

	N	Minimum	Maximum	Mean	Std. Deviation
ACCLTD	10	10.83	39.67	21.0760	9.81074
BINANICEMENTLTD	10	-.32	32.80	12.5940	10.85230
CENTURYTEXTILESAND INDUSTRIESCEMENT	10	3.35	19.57	8.9240	5.61562
PRISMCEMENT	10	4.05	62.18	16.8540	19.26115
ULTRATECHCEMENTLTD	10	12.10	29.21	18.8100	6.43516
Valid N (listwise)	10				

Source: Author compilation from annual reports of the companies

It can be observed from table 5 that return on capitalemployed ratio is maximum in case of ACC Ltd and Ultra Tech Cement having the mean value of 21.07 and 18.81 times respectively as compare to other companies in the study. It implies that these companies are using their funds efficiently and are also among the preferred choice among investors. On other sidethe companies like Century Textiles and Industries cement and Binani cement have lowest return on capital with mean score of 8.92, and 12.54 respectively.
Prism Cement and Binani cement have shown inconsistency in their earning as reflected by high standard deviation. On the other companies like ACC ltd, Century Textiles and Industries cement andUltra Tech Cement have minimum standard deviation which implies that there is a minor fluctuation in their return.

Table No.6: Return on Equity (figures in per cent)

	N	Minimum	Maximum	Mean	Std. Deviation
ACCLTD	10	7.49	29.36	16.4720	7.34124
BINANICEMENTLTD	10	-52.64	48.96	4.8490	33.79437
CENTURY TEXTILES ANDINDUSTRIESCEMENT	10	-4.29	24.24	7.1200	9.78305
PRISMCEMENT	10	-7.78	46.96	7.9970	18.02179
ULTRATECHCEMENTLTD	10	8.95	31.03	17.1540	7.38190
Valid N (listwise)	10				

Source: Author compilation from annual reports of the companies

The Return on equity ratio given in table 6 is highest in case of Ultra tech cement and ACC ltd, with the mean score of 17.15 and 16.47 respectively during study period as compare to the other companies in study.This shows that these companies are more profitable as compare to other companies in the study. So thesecompanies may be the preferred choice among investors. On the other sideBinani cement,Prism cement andCentury Textiles and Industries cementhave lowest return on equity with mean score of 4.84, 7.99 and 7.12respectively.
The standard deviation of Binani cement andPrism cement is maximum with the mean score of 33.79 and 18.12 respectively. It shows that there is a huge fluctuation in their returns, Century Textiles and Industries cement, Ultra Tech Cementand ACC ltd,shows small deviation in their returns.

Correlation Analysis:
Table 7 indicates that the relationship between selected capital structure and profitability is significant negative. The negative association points toward unsuitable debt equity mix in the capital structure of the concerned companies thereby having a negative impact on the select profitability variables

Table No.7: correlation for capital structure and profitability

		DE	GP	ROCE	ROE
DE	Pearson Correlation	1	-.780**	-.577**	-.661**
	Sig. (2-tailed)		.000	.000	.000
	N	50	50	50	50
GP	Pearson Correlation	-.780**	1	.834**	.919**
	Sig. (2-tailed)	.000		.000	.000
	N	50	50	50	50
ROCE	Pearson Correlation	-.577**	.834**	1	.811**
	Sig. (2-tailed)	.000	.000		.000
	N	50	50	50	50
ROE	Pearson Correlation	-.661**	.919**	.811**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	50	50	50	50

**. Correlation is significant at the 0.01 level (2-tailed).

Now the detail of the test result of the propositions become contextual to conclude some remedial so as to overcome the existing situation and the following table show the result accordingly.

Table No.8: The result of Proposition's

Propositions	Pearson Correlation
P_1: There exist a relationship between Debt-Equity and Gross Profit Ratio	-.780**
P_2: There exist a relationship between Debt-Equity and Return on Capital Employed	-.577**
P_3: There exist a relationship between Debt-Equity and Return on Equity	-.661**

8. CONCLUSIONS AND DISCUSSION:

Industrial firm do conduct their business in highly complex and competitive business environment today. Financial problem persisted before and will always be there, and if an industry has to move on, it should prepare itself to tackle such challenges. In this context it may be said that holding an optimum capital structure is one among pre-requisites of company for staying fit and maintaining profitability in this complex business world. In an attempt to analyse capital structure and profitability of 05 listed cement companies in India. Over a ten year period from 2008 to 2017, the present study shows that firm under consideration do not have sound debt-equity composition in their capital structure and hence failed to enjoy benefits of leverage properly.

So focus should be given on the following areas to improve the existing situation in order to have positive impact on profitability of the cement industry.

- Cement companies have scope to increase debt level in their exiting capital structure so that, companies can enjoy the benefits of leverage.
- Management should focus on internal factors like Production policy, HR policy, and marketing policy so that the fluctuation in profitability can be reduced

REFERENCES:

Citing an Online Journal Article:

1) Abor, J. (2005). The effect of capital structure on profitability: empirical analysis of listed firms in Ghana. Journal of Risk Finance, 6(5), pp. 438-445
2) M.S. Ramaratnam, and R. Jayaraman (2013), "Determinants of Capital structure with special reference to Indian pharmaceutical sector: panel Data analysis"published Volume 2 Issue 4 October 2013 Journal of Commerce and Accounting Research or http://www.publishingindia.com
3) Khan ZS (2010). Determinants of Capital Structure: Case of listed Paint Manufacturing companies," Interdisciplinary J. of Contemporary Res. in Bus., 2(6): 253-271.
4) Sanjay Hiran and MahendraSojatia (2014), "capital structure and its impact on profitability of automotive industry: the indian case" published volume no. 4 (2014), issue no. 10 (october) international journal of research in commerce, it & management or http://ijrcm.org.in/

Citing an Internet Source

5) www,ibef.org