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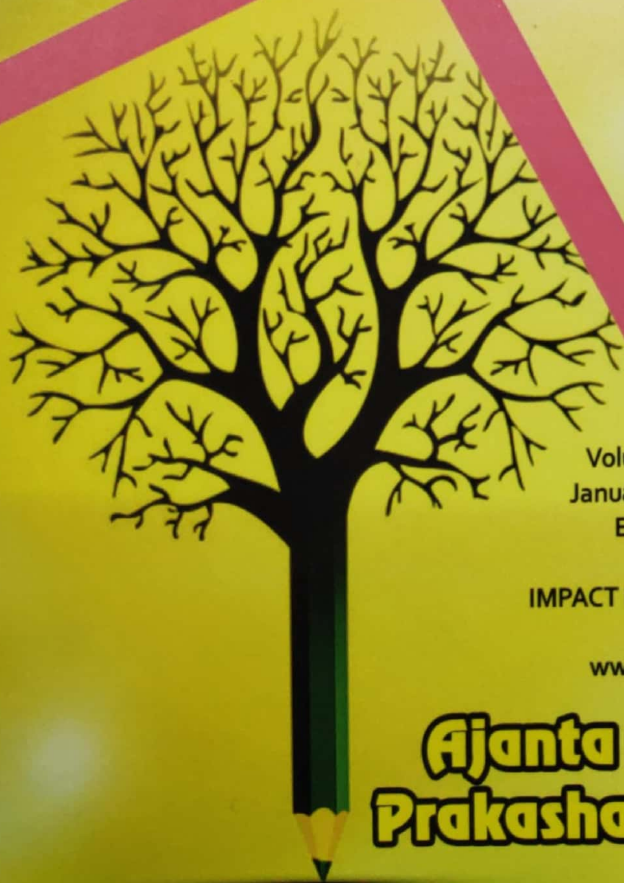

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12. An Empirical Study of the Effect of Financial Leverage on Return on Assets (ROA) of Selected Cement Companies in India

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Abstract

Cement Industry is a vital part of the Indian Economy. The Indian cement industry has attracted huge investments, both from Indian as well as foreign investors. It is a general concept that financial leverage and financial performance has a positive relationship. In this research an attempt has been made to study this relationship in some selected cement companies of India. Secondary data has been used for eight cement companies covering a period of five years from 2013-14 to 2017-18.

The research has used the indicators of financial performance ROA, ROE, EPS, Net profit Margin and Sales Growth to examine the impact of financial leverage on financial performance indicator. This study has also examined the relationship of Debt Equity ratio with ROA and Earning Per Share and ROA.

The result of the study explained that financial leverage has a negative relationship with indicators of financial performance, whereas Earnings per share has a significant and positive impact on ROA, and Debt-Equity Ratio has a negative correlation with ROA which is supported by the theory also.

Keywords: Financial Leverage, ROA, ROE, Financial Performance

Introduction

Financial leverage can be described as a business using borrowed money in its capital structure along with share capital. Debt used along with share capital results into leverage. An increase in debt results in an increase in financial leverage. A sample of eight cement companies has been studied with regards to the use of financial leverage and its impact on the performance of the firm. There are companies which have neither used or used negligible debt as a source of

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finance in its capital structure, such companies did not form a part of this study. A proper mix of debt and equity is a major financial decision for any firm. Financial leverage if not used in a proper ratio to equity is an indicator of risk. Borrowed debt is associated with a payment of interest. The firm has to measure its capacity to pay this interest else the financial position may be affected. Cement industry forms an important part of the Indian economy. The top 20 cement companies account for almost 70 per cent of the total cement production of the country. A total of 210 large cement plants account for a cumulative installed capacity of over 350 million tonnes, with 350 small plants accounting for the rest. Of these 210 large cement plants, 77 are located in the states of Andhra Pradesh, Rajasthan and Tamil Nadu. Financial performance can be measured using indicators like ROA, ROE, EPS after tax, NP margin and sales growth. The researcher has used ROA as an indicator of financial performance. Financial leverage is the independent variable measured by using debt to equity ratio. Descriptive and correlation analysis has been used for data analysis.

Review of Literature

Past researches recognize that profitability in any industry is necessary to analyse the financial performance of any sector. Several studies have been conducted in this field. A brief review of some of the studies has been presented.

Javet et at (2015) investigated the impact of operating effectiveness among the firms in the Asian continent. The data used in the study involved 150 manufacturing firms. The study revealed the existence of a negative correlation between financial leverage and firms effectiveness. The study focused on operating effectiveness and leverage and not leverage and financial performance.

Zahoor Hussain Javeda et al. (2015) revealed in their study that leverage has a negative association with the efficiency of the firm.

Mhammad Wajid Raza (2013) undertook a study on 482 firms and the result concluded that there is a negative impact on performance and leverage. In the same study yet another hypothesis accepted the insignificance relationship between leverage and profitability.

Mangalam & Govindasamy (2010) analyzed the impact of leverage on the profitability of the firm by investigating the relationship between the leverage and the earning per share taking seven public limited companies listed on the Bombay stock exchange. The results suggest that there is a significant negative relationship exists between financial leverage and earnings per

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share. The leverage effect is positive when the earnings of the firm are higher than the fixed charges to be paid for the lenders. The leverage is an important factor which is having an impact on the profitability of the firm and the wealth of the shareholders can be maximized when the firm is able to employ more debt.

Quang and Xin (2012) analysed Vietnamese Firms and concluded that leverage has a significant negative impact on financial performance as measured by ROA and ROE.

Sheikh and Wang (2013), investigates the impact of leverage on the performance of non-financial firms listed on the Karachi Stock Exchange Pakistan during 2004-2009. They propounded that all measures of debt (i.e. total debt ratio, long and short-term debt ratio) have a significant negative impact on ROA.

Chadha and Sharma (2015) analyzed 422 BSE listed Indian manufacturing firms from 2004 to 2013 to assess the impact of financial leverage on firm financial performance. They deduced that financial leverage has no impact on the firm's financial performance parameters of ROA and Tobin's Q. However, it has a negative and significant impact on ROE.

Objectives of the Study

Objectives of the research study are as follows :

- To study the variables of financial performance
- To examine the effect of Financial leverage on firms performance
- To examine the impact of Debt Funding on Return on Assets.
- To examine the impact of Earnings per share on Return on Asset.

Research Methodology

a) Data Collection

This data is quantitative research in which secondary data has been used. The secondary data necessarily required to perform the research was gathered from the official sites of cement producing companies in India. Various financial statements of firms were used for data extraction supported by the annual reports of the company. Data was extracted mainly from moneycontrol.com , gurufocus.com, financialexpress.com and topstockreserach.com.

b) Sample Design

Eight companies were selected, while three companies were excluded due to unavailability of full data required for this study.. The data used for the purpose of research

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consisted of five years of annual data of the variables used in this study. Data of all the variables belonged to the period starting from the year 2014 to the year 2018 was taken in this study.

c) Variables

Financial leverage is used as independent variable in this study which was measured as the ratio of total debt to total assets and ROA is used as dependent variable in this study which was measured as the ratio of net income after tax to total assets. It is a comprehensive indicator of a firm's performance because it provides information as to how well a company is using its total assets to generate profits.

Profitability (ROA) = Net Income / Total Assets.

Financial Performance = parameters like EPS, Net Profit Margin, Return on Asset, Return on Equity, and Sales growth.

Financial Leverage = Total Debt / Total Assets

d) Hypothesis

- H1 : EPS has a significant impact on Return on Asset
- H2 : Debt Equity Ratio has a significant impact on Return on Asset.
- H3 : Financial leverage has a significant impact on Financial performance

Statistical Techniques

Descriptive statistics have been used to describe and summarize the behavior of the dependent and independent variables under study. There is a general acceptance that financial leverage affects the financial performance of the companies. Correlation analysis is also used to find out the relationship between the dependent and independent variable.

Limitation of the study

1. The study is related to a period of 5 years only
2. Only eight companies data has been covered under this study
3. Data is secondary and collected online from different websites.

Data Analysis and Discussion

The results of the data analysed using statistical tools SPSS are discussed in this section. Debt equity ratio is an indicator of the existence of financial leverage in the company. Debt to equity ratio is obtained from secondary data and has been tested with indicators of financial performance. The indicators of financial performance include Earnings per share, Net profit Margin, Return on Asset, Return on Equity and Sales Growth.

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Table 1. Statistical Analysis of Financial Leverage Indicator						
	N	Minimum	Maximum	Mean	Std. Deviation	Variance
Debt Equity Ratio	8	.20	1.51	.7163	.46432	.216

Table 1. indicates descriptive statistics of independent variable Debt Equity Ratio which is an indicator of Financial Leverage. In the selected cement companies, the average debt-equity ratio is 0.7163, the minimum debt-equity ratio being 0.20 and maximum 1.51 indicating that there are firms using high debt equity and there are firms who use minimum debt in the composition of their capital structure.

a) H1 : EPS has a significant impact on Return on Asset

Table 2. Correlations between EPS and ROA		
	EPS	ROA
Earnings per Share	1	**.842****
Return on Assets	**.842****	1

Table 2 shows that Earning per share is positively correlated to ROA . Firms with higher EPS is more favourable because the company is generating higher profits. Higher profit is important for ROA because ROA is obtained by dividing the profit of the firm with total assets of the firm. The higher profit results in higher ROA. This is evident in Table 2 above that the impact of EPS is 0.842 on ROA.

b) H2: Debt equity has a significant impact on ROA

Table 3. Correlations between Debt Equity and Return on Assets		
	Debt Equity	Return on Assets
Debt Equity	1	**-.722***
Return on Assets	**-.722***	1

Relationship of Debt Equity Ratio to Return on Assets is negative which is reflected in table 3 above. Firms with higher DER is riskier since the debt is used more than equity, it will result in a higher interest rate which will decrease the profit. The lower profits will result in a lower value of ROA. So the increase of DER will result in decreasing ROA. Thus as DER increases the ROA decreases.

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e) **H3 : Financial leverage has significant impact on Financial performance**

Table 4 below shows statistical analysis of indicators of financial performance which include Earnings per share, Net profit Margin, Return on Asset, Return on Equity and Sales Growth.

Table 4. Statistical Analysis of Financial Performance Indicator

	Observations	Minimum	Maximum	Mean	Std. Deviation	Variance
Earnings Per Share	8	.11	291.64	55.98	99.40	9881.31
Net Profit Margin	8	.08	14.07	6.39	4.72	22.29
Return on Asset	8	.13	9.85	4.07	3.12	9.75
Return on Equity	8	.58	14.88	8.18	4.98	24.83
Sales Growth	8	1.03	1.20	1.09	.059	.004

The company under study show a variation in minimum and maximum EPS ranging from a minimum of 0.11 to 291.64 with a mean EPS of 55.98. The Maximum Net Profit Margin in 6.39 percent , Maximum Return on Asset being 9.85 percent and Return on Equity being 14.88. Sales growth has been observed to be having a minimum variance over the years with 0.04 as its variance.

Table 5. Correlation Analysis of Financial Performance indicators with Financial Leverage

	Debt Equity Ratio	Earnings Per Share	Net Profit Margin	Return on Asset	Return on Equity	Sales Growth
Debt Equity Ratio	1	-.594	-.764*	-.722*	-.535	.265
Earnings Per Share	-.594	1	.765*	.842**	.642	.277
Net Profit Margin	-.764*	.765*	1	.986**	.933**	.191
Return on Asset	-.722*	.842**	.986**	1	.932**	.278
Return on	-.535	.642	.933**	.932**	1	.463

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Equity						
Sales Growth	.265	.277	.191	.278	.463	1

Table 5 shows the relationship between financial leverage/ debt-equity ratio and various indicators of financial performance. The results are inductive that Debt Equity Ratio has an only positive relationship with sales growth, other than that the debt-equity ratio has a negative relationship with Earning per share, whereas theory evidence that if a proper proportion of debt is used in capital structure its gives a better return to the shareholders. But here the data being varied the results are inductive that there is a negative relationship between the debt-equity ratio, Earnings per share, Net profit Margin, Return on Asset and Return on Equity.

Conclusion

The present study has been done to examine the empirical relationship between Earnings per share and ROA, Debt-Equity Ratio and ROA and the relationship between Debt Equity Ratio and Financial Performance Indicators. The sample size was 8 (eight) companies. Correlation has been used to examine these impacts. The results have shown a positive correlation between EPS and ROA and a negative correlation between DER and ROA. The impact of financial leverage on ROA is positive , whereas the impact of financial leverage on other indicators of financial performance is negative. The result is thus conclusive with the past researches conducted by Javet et at (2015), Zahoor Hussain Javeda et al. (2015) , Mhammad Wajid Raza (2013) , Mangalam & Govindasamy (2010), Quang and Xin (2012) ,Sheikh and Wang (2013), Chadha and Sharma (2015) .

Suggestions

This research is restricted to a period of five years and few firms in cement industry. Future research may be extended to do a detailed study of each indicator separately and the impact of debt-equity ratio on each of the financial performance indicators . A Comparative study can be made by taking firms using intensive debt and firms using minimum or no debt in their capital structure.

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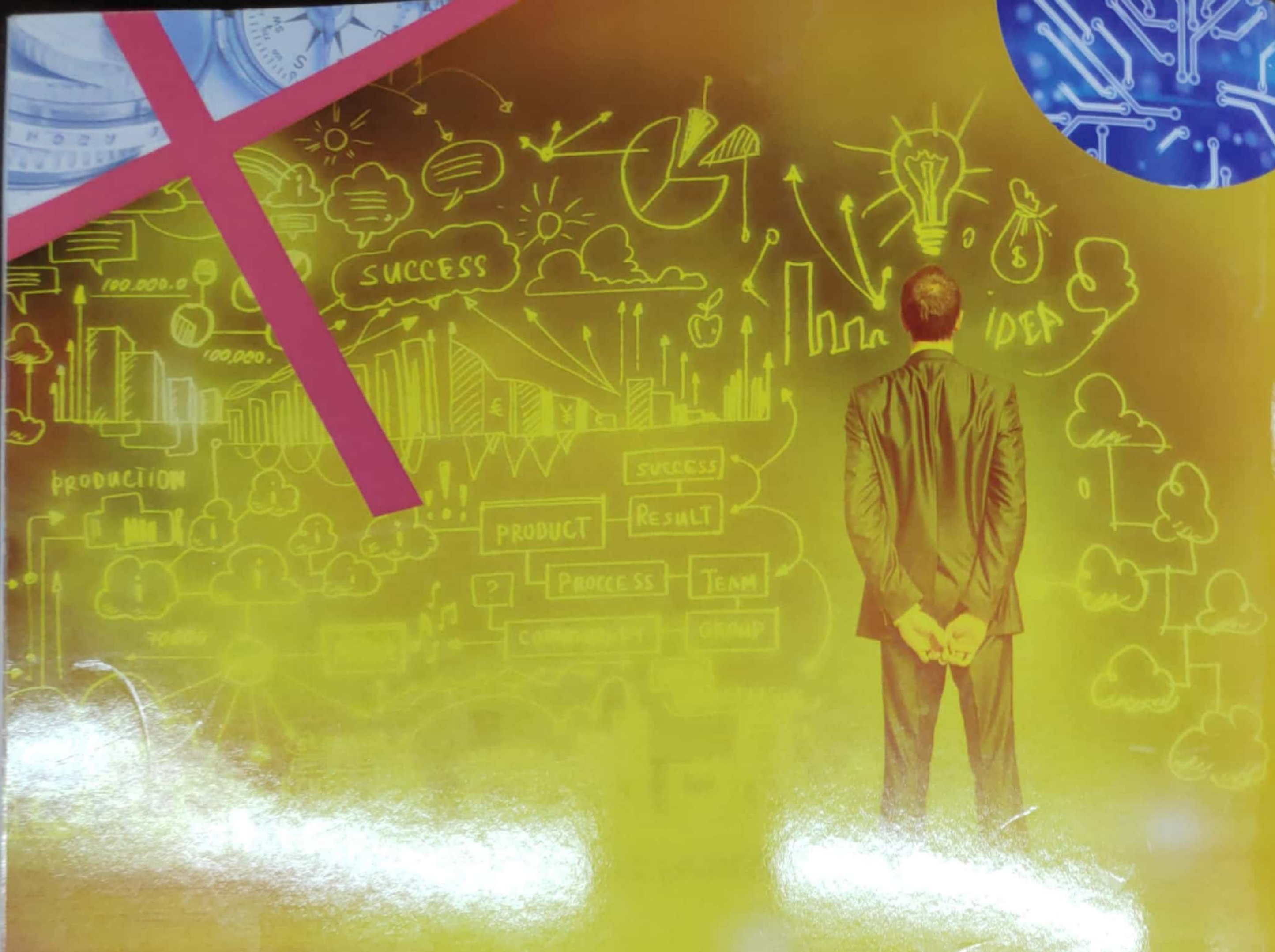

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