

Impact of Capital Structure on Firm's Financial Performance: Cement Industry of Pakistan

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Abstract

This research is an attempt to gauge the impact of capital structure (leverage) on the financial performance of companies listed on the KSE in the cement sector. The data was extracted for a period of seven years from 2009 – 2015. The total firms listed in the sector are 18 out of which data for the period selected is available for 14 firms which are used for study. Correlation and Ordinary Least squares models are used in this study for testing the hypothesis. The results show that leverage measured by Debt to Assets has a statistically significant negative impact on firms' financial performance measured by Return on Assets at 99.9% confidence interval.

Keywords: Financial leverage, Capital Structure, Firms' performance.

1. Introduction

1.1 Background of the Study

Financing decisions are one of the most vital decisions for companies. This financing is done by a mix of debt and equity. This mix is also known as the capital structure. Debt is the amount payable within a specified period to the creditors of the company. The research on Indian markets show that the inverse relationship amongst the leverage and company's performance exist because of the fact that lending institutions are usually government owned in India (Majumdar, 1997).

Jensen & Meckling (1976) in their study suggested that there are conflicts and problems between the debt providers and the shareholders of the company because of which the financial performance. It may create clashes due to assortment of investment either debt, equity or a mix of both (Myers, 1977). Study in Indian region by Majumdar & Chhibber (1999) resulted in showing an inverse relation between corporate debt and that company's financial performance. This is mainly because of pressure of quite high agency costs. The same result was also showed by the research of Mahakud & Misra (2009). It was found that during industry downturns highly geared companies lose market share to their competitors which are low geared. Due to high interest and agency costs there's an inverse correlation. (Opler & Titman, 1994).

1.2 Research Objective

The research objective of this report is to find importance of capital structure and its impact on the performance of cement sector. The study will thus help company directors and managers to make informed decisions about financing.

1.3 Research Question

Is there an impact of capital structure on financial performance of Pakistan's cement industry?

2. Literature Review

The current literature available basically focuses on the capital structure factors. In developing economies the determinants of capital structure depends on the same variables as are of firms in developed economies. Booth et al. (2001). He conducted study on ten developing economies. Singh (2010) conducted a similar study and came to the conclusion that decisions of capital structure depend on the firm's own characteristics and that country's macroeconomic factors.

The firm's capital structure includes debt, equity or a combination of both and this choice of composition matters the most. Modigliani & Miller (1958) research work gave the foundation for the research on the topic of capital structure. In his view the firm's value does not depend on the structure of capital instead of its the real assets of the firm which affects it. The views were reinforced by (Stiglitz, 1972; Hatfield et al., 1994).

The performance pointers are considerably sensitive to capital structure in most of the companies (Akintoye, 2008). The dependent variables selected by him were EBIT and DPS. According to Jensen (1986) companies which have more leverage can increase financial performance of those companies, it is due to the executives of these companies are lesser able to initiate negative NPV projects.

The Pecking order theory with some improvements brings to the conclusion that unavailability of information is a significant determinant. (Fama & French, 2005). However a research conducted by Bharath,

Pasquariello & Wu (2006) came to the conclusion that firm level information is vital for cross sectional analysis but its not the sole determinant of the companies' capital structure.

Highly levered companies in comparison to the industry median have lesser growth in sales and decline in profits when compared with standard firm lying in the median (Ramachandra et al., 2008). Eriotis, Franguoli, and Neokosmides (2002) also found a negative relationship among debt and profitability of the companies. The data was taken in his research from the firm working in various different fields. Study conducted in Hong Kong's property sector showed a similar inverse connection (Chiang, Chang & Hui, 2002).

A research was conducted in Ghana examining the relationship of capital structure and listed companies' performance. It showed that debt to assets and current liabilities to total assets affects return on equity positively however long-term liabilities affect it negatively (Abor, 2005).

In African region the research conducted by Kyereboah & Coleman (2007) on micro finance banks examined the impact of capital structure on return on the equity and return on assets came to the conclusion regarding unconstructive relation between degree of leverage and measures of performance. Leverage is inversely related with performance measures however PE ratio shows an insignificant effect. (Zeitun & Tian, 2007). Similar results were produced by the research of DeAngelo & Masulis (1980) showing optimal capital structure tradeoff model. However, there was no relationship between debt to asset ratio ad non-debt tax shield.

Share price will increase on inserting of leverage increasing capital structure change. This is shared by all types of capital structure models (Harris & Raviv, 1991). The changes in capital structure and dividend policy serve as an indication device. Executives can go for using decisions of financial policy to disseminate market with information, if the market doesn't show strong form of efficiency.

The reaction to financial suffering and capital structure's connection was studied by Ofek (1993). Financial actions are taken such as non-payment of dividends to shareholders are taken when the firm feels increased pre-distress. Two types of costs associated in the bankruptcy of the firms such as direct and indirect.

There has been very few studies conducted in the developing countries, especially there's not enough work done on the Pakistan's cement sector specifically. The literature reviewed shows us assorted results on the relationship between financial performance and company's capital structure. Pakistan's capital markets appears to have high level of asymmetric information then developed economies markets. Thus in this study we are trying to examine impact of capital structure on the Pakistani firm's performance listed in cement sector.

3. Methodology

3.1 Research Approach

The research is conducted using quantitative research method to find the relationship between the company's capital structure and its resulting financial performance.

3.2 Research Sample

For conducting this research, sample of 14 listed companies is collected from Karachi stock exchange, Pakistan. The total companies listed in this sector are 18 out of which 14 are active and whose data is completely available. The data for the remaining 4 companies are incomplete and have been filtered out. Sample consists of 98 observations for period of 7 years i.e. 2009 and 2015. The firms were screened on the basis of availability of the data for the above mentioned years.

3.3 Data

Secondary data is used to conduct this research. Sources of data includes:

- ✓ Annual financial statements
- ✓ Official announcements from Company's websites
- ✓ Karachi stock exchange and Securities and Exchange Commission website.
- ✓

3.4. Statistical Technique

Correlation analysis is applied in order to compute interdependence between returns and leverage and regression analysis is carried out to gauge the impact of leverage on firms' returns using SPSS.

3.5 Research Model

We will be using the following regression model for testing the relationship:

$$\bar{ROA} = \alpha + \beta * Leverage + \varepsilon$$

3.6 Hypothesis

Ho: There is no relationship between leverage and firm's financial performance.

3.7 Symbol of Financial performance symbol and its description:

Symbol	Variable	Definition
ROA	Return on Assets = Profit after Tax / Total Assets	

3.8 Symbol of Leverage and its description:

Symbol	Variable	Definition
D/A	Debt to Assets = Total Debts / Total Assets	

In relation with literature review these variables were used by Majumdar & Chhiber (1999) and Ahmad, Salman & Shamsi (2015) in their research.

4. Data Analysis

4.1 Descriptive Analysis

The following table presents the descriptive statistics summary for the dependent and independent variable to get clear picture of the data.

Descriptive Statistics

	Mean	Std. Deviation	N
ROA	6.1106	8.38747	98
DebtToAsset	37.1559	20.39452	98

For this study 98 observations are tested and from the above table it can be seen that the mean value of ROA is 6.1106 whereas the standard deviation is 8.387. The mean value of the Debt to Asset value is 37.1559 and the standard deviation is 8.387.

Correlations

		ROA	DebtToAsset
Pearson Correlation	ROA	1.000	-.442
	DebtToAsset	-.442	1.000
Sig. (1-tailed)	ROA	.	.000
	DebtToAsset	.000	.
N	ROA	98	98
	DebtToAsset	98	98

This correlation table shows that there is 44.2% inverse interdependence between leverage and financial performance of the firms which is significant at 1% which means increase in leverage will result in decrease in performance.

4.2 Inferential Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.442 ^a	.195	.187	7.56453

a. Predictors: (Constant), DebtToAsset

Table presented above shows the extent of variability in the dependent variable which is explained by the independent variable. The value of R² shows at 0.195 which tells that around 19.50% of variability of financial performance is explained by leverage. Adjusted R² is very close to R² which means there is no sample error.

ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1330.607	1	1330.607	23.253	.000 ^b
1 Residual	5493.316	96	57.222		
Total	6823.923	97			

a. Dependent Variable: ROA

b. Predictors: (Constant), DebtToAsset

The overall validity of the model is presented by ANOVA statistics. The F – stat. value is 23.253 which is higher than 4 – cutoff for F-stats. Further, sig value represents significance of overall model and explanatory power of the model at 1% level.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.858	1.594		8.065	.000
	DebtToAsset	-.182	.038	-.442	-4.822	.000

a. Dependent Variable: ROA

The coefficients table given above presents the slope of the function, sign of the slope shows direction of the relationship and magnitude shows intensity of the relationship. If there is 1% increase in leverage, return of a firm will decrease by 18.2%. t-stat is 4.82 which is greater than 2 – cutoff for t-stat. moreover, associated sig value is lesser than 1%, hence model is significant at 1%.

5. Conclusion, Limitation, and Recommendations

5.1 Conclusion

This purpose of this study is to analyze the impact of capital structure on profitability of the companies listed in the cement sector of KSE. The results of tests provides evidence that there is a negative relationship amongst the financial performance and leverage. The results of our study suggest that as the leverage increases, the profitability decreases.

Similar outcomes were concluded by research done by Eunju and Soo Cheong (2005), Ahmad, Salman & Shamsi (2015). However a study conducted in Ghana showed a different result due to selection of sample of only top performing twenty firms of exchange and also the reason being the cost of debt being lower in that country as compared to Pakistan.

The results show a negative relationship as the correlation value is -0.442 which shows a negative relationship amongst the Debt to asset and Return on asset. Also the value of R² shows that the variability explained is 19.50%, remaining is unexplained.

5.2 Limitation & Recommendations

The data for this research was selected from 2009 to 2015. The complete data for the selected period was only available for 14 firms out of total 18 firms so in future if complete data is made available for them also, then this research can be expanded. Secondly, the time period can be increased to a longer time frame to get better results. This is also realized that cement sector is one of the highly leveraged ones in our country Pakistan, future research can also be conducted on other sectors of Pakistan to check the impact on them.

6. References

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