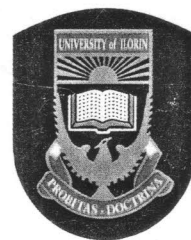


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ILORIN JOURNAL OF MANAGEMENT SCIENCES



ISSN 2408-655X

Published by:
**FACULTY OF MANAGEMENT SCIENCES
UNIVERSITY OF ILORIN**

e-mail: editorijms@hotmail.co.uk

www.unilorin.edu.ng

**Volume 3, No. 1,
June 2016.**

IMPACT OF FINANCIAL LEVERAGE ON PERFORMANCE OF QUOTED CEMENT MANUFACTURING COMPANIES IN NIGERIA

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Abstract

In a corporate environment the major challenge to the finance manager is how to maximize the owners' wealth on the long-run. With the view to achieve this objective of the organization, finance manager have to pay due attention on the proportion of debt and equity combination in capital structure of the organization. The main objective of this study is to investigate impact of financial leverage on financial performance of quoted cement manufacturing companies in Nigeria. Specifically, the study focuses on the relationship between debt-equity ratio and performance of firms. The study employed secondary data sourced from the annual financial statements of the selected companies. The data collected were subjected to linear regression and correlation analysis. The results revealed that there was 10% significant impact of financial leverage on financial performance and a positive relationship between debt-equity ratio and financial performance. Based on the findings of this study, the study recommends optimal used of debt/equity, following the principle of traditional capital structure theory. The study concludes therefore that if optimum mix of debt/equity is achieved, it will enhance the financial performance of the cement manufacturing companies in Nigeria.

Keywords: Financial Leverage, Financial Performance, Optimum Capital Structure, Quoted Cement companies in Nigeria

JEL CODE: G3; G30.

Introduction

There is a general perception that a relationship exists between the financial leverage and the performance of the companies (Akhtar, Javed, Maryam and Sadia, 2012). The assets of a company can be financed either by increasing equity or debt. One crucial issue confronting managers today is how to choose the combination of debt and equity to achieve optimum capital structure that would minimize the firm's cost of capital and improves return to stakeholders of the business. The proportionate mix of debt and equity in financing a firm's investment proposals has been the subject of intensive theoretical modeling and empirical examination over the years. Modigliani and Miller (1958) assumed that a business's value is distinct from its debt and equity mix of

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financing but ignoring issues that play a positive role in determining the best capital structure such as corporate taxes. Consequently, Modigliani and Miller (1963) reaffirmed that corporate taxes are significant factor in capital structure.

In the employment of debt in capital structure, company pays interest to debt holders and it also serves as benefit to the firm in form of interest tax shield. High leverage increases profitability of the firm in favourable economic condition but more risk is associated with high leverage. Due to positive impact of leverage in favourable economic condition, companies earning potential shoot up and such companies therefore, may decide to give more dividends as compared to firms having less leverage (Sigh, 2010).

The pertinent issue in the capital structure is how much leverage should be used to finance assets to meet organization goal and that of the firm's ability to generate sales to meet its debt burden? This problem serves as the motivation for the current study.

Literature Review

Conceptual Issues: Financial leverage and Financial Performance

According to Smith (1990) leverage is used as borrowed money to make an investment and return on that investment. It is more risky for a company to have a high level financial leverage ratio. Financial leverage or gearing is defined as the use of fixed interest sources of long term funds (long-term debt and preference share capital) in capital structure of a company and it is the ratio of fixed interest loans and preference share capital to ordinary shareholders' funds (Olowe, 2011). It is generally believe in literature that the higher the level of debts in capital structure of a firm, the higher the financial leverage. A high financial leverage creates financial risk and it is risky to the company (highly levered firm cannot pay its debt as at when due), the creditor (might not be able to recover their money in full) and ordinary shareholders (company has to generate more profit before interest and taxes (PBIT) to pay its interest charges before its shareholders can be paid dividend).

Financial leverage is the extent to which a firm relies on debt to finance its operations (Cooper and Schindler, 2000). It is the use of fixed income securities like debt in financing the operations. The use of debt, in financing a firm's operations, can improve the firm's return on equity and earnings per share. This is because the firm is not diluting the owner's earnings by using equity financing. Too much financial leverage, however, can lead to the risk of default and bankruptcy. Financial risk of the business is measured by degree of financial leverage (DFL). DFL helps to measure the sensitivity of earnings per share (EPS) to changes in earnings before interest and taxes (EBIT).

Capital structure of a firm is defined by its leverage; that is, a mix of debt and equity financing which is subject to different financial difficulties. One crucial issue confronting managers today is how to choose the combination of debt and equity to achieve optimum capital structure that would minimize the firm's cost of capital and improves return to owners of the business (Myers, 1984; Hillier, Jaffe, Jordan, Ross and Westerfield, 2010).

The principle of the traditional capital structure theory according to Solomon and Ezra (1963), (as cited in Solomon, 2010) suggests that the value of firm will increase as the cost of capital decreases within a reasonable limit. Thus, the optimal mix of capital structure exists and occurs when value of the firm is at maximum point and cost of capital at its minimum. Pandey (2010) confirms that a judicious mix of debt and equity capital will increase the value of the firm and also reduces the weighted average cost of capital (WACC) up to a certain level and beyond the minimum level of WACC, according to traditional theory of capital structure, further increase in debt units will lead to fall in the value of the firm.

Corporate performance can be expressed in terms of growth of sales, turnover, employment, equity, assets or stock prices (Havnes and Senneseth, 2001). There are various measures of financial performance. For example, return on sales which reveal how much a company earns in relations to its sales; return on assets it determines an organization's ability to make use of its assets and return on equity which reveals what return investors take for their investments. Whatever measure used, it should be aggregated. Revenue from operations, operating income or cash flow from operations can be used as well as total unit sales.

Theoretical Review

This study is built upon two sets of theories, namely, the trade-off theory and pecking-order theory.

Trade-Off Theory

Butters(1949), (as cited in Alkhatib, 2012) states that the trade-off theory is the way a firm selects how much debt finance and equity finance it needs to employ by evaluating the costs and benefits of each type of finance. Certainly such preference is not contemporary it is rather familiar to researchers and managers (Butters, 1949). Modigliani and Miller came up with trade-off theory which assumes that there are benefits to leverage within a capital structure until the optimal capital structure is reached. Firms achieve the optimal capital structures by trading off the costs against the benefits of the use of debt (Gu, 1993). One of the benefits of the use of debt is the advantage of a debt tax shield enjoy by firms. It is postulated that, debt offers firms a tax shield, and firms, therefore, pursue higher levels of debt in order to gain the maximum tax benefit and ultimately enhance profitability (Myers, 2001). The right financing decision normally relies on the margin of financing that firms expect in the future; certain firms either have outflow (fund payments) or inflow of funds (raising funds) in which case it would be in debt and or equity structure. Thus, firms commonly use mix of debt and equity financing. The tax benefits of debt dominate up to a certain debt ratio, resulting in higher return on equity, but the benefit would be less than the cost after the level of debt ratio. In other words, the more a company uses debt, the less income tax the company pays, but the greater its financial risk. Based on the trade-off theory for capital structure, firms can take advantage of debt to make a better return on equity using trade-off theory of capital.

Pecking Order Theory

According to Maghanga and Kalio (2014), the pecking order theory does not take an optimal capital structure as a starting point, but instead asserts the empirical fact that firms show a distinct preference for using internal finance (such as retained earnings or excess liquid assets) over external finance. If internal funds are not enough to finance investment opportunities, firms may or may not acquire external financing, and if they do, they will choose among the different external finance sources in such a way as to minimise additional costs of asymmetric information. The process of pecking order of financing is as follows: internally generated funds first, followed by respectively low-risk debt financing and share financing. In Myers and Majluf model outside investors rationally discount the firm's stock price when managers issue equity instead of riskless debt (Myers and Majluf, 2009). To avoid this discount, managers avoid equity whenever is possible. The Myers and Majluf model predicts that managers will follow a pecking order, using up internal funds first, then using up risky debt, and finally resorting to equity. In the absence of investment opportunities, firms retain profits and build up financial slack to avoid having to raise external finance in the future. The theory assists in understanding the order and various capital funding options available to the firm.

However, this study is theoretically built on the trade-off theory. Based on the trade-off theory, firms can take advantage of debt to make a better return on equity, Modigliani and Miller (1958) on his investigation on balancing theory of optimal capital structure between the tax advantages of debt and the cost of debt ascertain an increase in the value of firm as a result of tax deduct ability.

Ur-Rehman (2013) study on the relationship between financial leverage and financial performance of listed sugar companies in Pakistan, shows a positive relationship of debt-equity ratio with return on asset and sales growth, and negative relationship of debt-equity ratio with earning per share, net profit margin and return on equity.

Mahmoudi (2014) work on the effect of leverage on profitability of cement industry found a significant and negative relation between leverage information and firm profitability. The result also revealed that the descriptive statistics indicated that cement companies are highly levered and the performance of listed cement companies was measured by returns on equity (ROE) and return on assets (ROA).

Methodology

This study provides empirical evidences on impact of financial leverage on financial performance of quoted cement manufacturing companies in Nigeria Stock Exchange (NSE) using Panel data model. The estimation techniques employed in analysing the data were panel estimated General Least Square (GLS) regression and correlation analysis. The target population of the study was the all five (5) quoted cement companies on the Nigerian Stock Exchange (NSE, 2013). Out of this, only four (4) companies (namely Lafarge Nig. (WAPCO) PLC, Dangote Cement PLC, Ahsaka Cement PLC and Cement Company of Northern Nig. PLC) were taken for this study. The last company- Benue Cement Company PLC was not considered due to unavailability of required data. The

study used only secondary data that were extracted from the Annual Financial Statements of four (4) quoted cement manufacturing companies on Nigeria Stock of Exchange for the period of seven (7) years from 2009-2015.

Specification of the Models

The model used for the study was adopted from Ur-Rehman (2013) which was given as:

$$FP = \beta_0 + \beta_1 DER_{it} + \mu_{it}$$

Where:

FP = Financial performance

DER = Debt Equity Ratio

μ_{it} = Error term

Following literature, the model for this study is specified in three categories as financial performance: Return on assets (ROA), return on equity (ROE), and net profit margin (NPM) being a function of debt-equity ratio (financial leverage).

The model is restated as:

Model 1:

$$ROA = \beta_0 + \beta_1 DEQUITY_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

Model 2:

$$ROE = \beta_0 + \beta_1 DEQUITY_{it} + \varepsilon_{it} \dots \dots \dots (2)$$

Model 3:

$$NPM = \beta_0 + \beta_1 DEQUITY_{it} + \varepsilon_{it} \dots \dots \dots (3)$$

Where;

DEQUITY= Debt-Equity Ratio

ROA= Return on Asset,

ROE = Return on Equity

NPM= Net profit Margin.

The subscripts i and t refer to the cross-dimension and time series dimension of the model respectively, explaining the panel nature of the model.

ε_{it} Is a composite error term, which can be decomposed, further into specific time effect (γ_t), cross-sectional effect (ϕ_i) and remainder disturbance term, as $\varepsilon_{it} = \phi_i + \gamma_t + \mu_{it}$

Definition of Variables

The dependent variable which is used in this study is the financial performance while debt-equity (financial leverage) serves as the independent variable of the quoted cement companies. The financial performance was measured by using three (3) performance indicators named as, Return on Assets, Return on Equity and Net Profit Margi

Data Analysis and Discussion of Results

Test of Hypothesis 1

H₀₁: There is no significant influence of financial leverage on the firms' financial performance.

Table 1, 2 and 3 are the results of Coefficient in regression analysis for Hypothesis one.

Table 1: Random Effects on Return on Asset (Model 1).

Model I Return on Assets (ROA)	Random Effects	
	Coeffic	P-val
Debt/Equity	0.1644	0.0601
R ²	0.9835	
Prob-F	0.0601	
Wald- Chi Square	3.53	
Rho	0	

Source: Authors' computation, 2016.

Table 1 shows the estimates of random effect model investigating the impact of financial leverage on the return on asset (ROA). The value of coefficients of debt-equity ratio is 0.1644. This shows that financial leverage (debt-equity ratio) is positively related to return on asset as indicator for performance. The model indicates that debt-equity ratio is the significant determinant of financial performance. The p-value (0.060) shows that the coefficient of debt-equity ratio is statistically significant at 10%, the average effect of increase in the debt- equity ratio on increase in performance across firms over time is 0.1644. In other words a unit increase in debt-equity ratio will on the average brings about 0.1644 unit increase in performance. The Wald chi-square test statistics (3.53) with probability value 0.0601 depicts that the model has a good fit. The R² is 0.9835 which implies that 98.35% the variance in performance (ROA) explained by changes in debt-equity ratio.

Table 2: Random Effects on Return on Equity (Model 2)

Model II Return on Equity	Random Effects	
	Coef efficient	P-val
Debt/Equity	0.1051	0.051
R ²	0.3317	
Prob-F	0.051	
Wald – Chi Square	3.82	
Rho	0.3299	

Source: Authors' computation, 2016.

The result of the random effect regression expressing the impact of financial leverage on performance (returned on equity) of firms is shown in table 2 above. It indicates that debt-equity ratio is a significant determinant of the return on equity as a measure of performance of the firms. Debt-equity ratio positively affects firms' performance (ROE). This is indicated by the value 0.105 for the coefficients of debt-equity ratio (dequity). The p-values 0.051 show that the variables are statistically significant 5%. On the basis of magnitude, a unit increase in the debt-equity ratio will lead to 0.11 units increase in the rate of firm's performance (ROE) and the reverse is the case in when there is decrease in the ratio. This portrays the average effect of change in debt-equity ratio on the changes of performance measured by return on equity across firms over time. The intra-class correlation (rho) shows that 33% variation in performance is due to difference across firms while the Wald chi statistics (3.82) with p-value 0.0507 indicates that the model is good.

Table 3: Random Effects on Net profit margin (model 3).

Model III Net Profit Margin	Random Effects	
	Co efficient	P-val
Debt/Equity	0.1222	0.0012
R ²	0.0912	
Prob-F	0.0012	
Wald – Chi Square	10.56	
Rho	0.8173	

Source: Authors' computation, 2016.

Similarly, the estimates of the regression expressing the impact of financial leverage (debt-equity ratio) on financial performance (net profit margin) as reported in table 3. The coefficient of debt-equity ratio (dequity) is 0.1222 with Z-score 3.25 and p-value 0.001. This indicates that the coefficient is statistically significant at 1% implying that debt equity ratio significantly determines firms' performance measured by the net profit

margin. The rho shows that 81.73% variance in the firms' performance is as a result of their peculiar differences. Also, the Wald chi-square statistics, 10.56 with probability value 0.0012 implies that the model has good fit.

Test of Hypothesis 2

Ho₁: There is no significant relationship between debt-equity ratio and financial performance.

Table 4: Correlation (Statistics) Matrix.

	ROA	ROE	NP Margin	Debt/Equity
ROA	1.0000			
ROE	0.7263	1.0000		
NP Margin	0.3096	0.5756	1.0000	
Debt/Equity	0.3459	0.1980	0.2024	1.0000

Source: Authors' computation, 2016.

Table 4 shows the relationship between debt-equity ratio and various performance indicators and the pairwise correlation was used to estimate the relationship between the variables used for the study. The results show the positive relationship of debt equity ratio with return on asset (0.3459), return on equity (0.1980) and net profit margin (0.2024).

The positive relationship between debt equity ratio and return on asset indicates that the assets which are financed by the debt have greater returns.

Net profit margin (NP Margin) tells that how much additional naira earned by the company has effect on profits. The positive relation between debt-equity ratio and net profit margin ratio indicates that as debt increase, net profits of the company tend to decrease, because most of the revenues are used to pay off the debts. So, the net profit margin ratio will also decrease.

The relationship between debt equity ratio and return on equity (ROE) is positive as shown in table four (4). The large debt will decrease the ROE.

Conclusion and Recommendations

From the findings of this study, it is concluded that financial leverage has a significant positive impact on the corporate performance of cement manufacturing companies in Nigeria. Also, the finding revealed that debt-equity ratio (financial leverage) has a direct and positive relationship with various performance indicators used in this study.

Based on the finding of this study, the study therefore recommends that management of quoted cement manufacturing companies in Nigeria should build their capital structure on the principle of the traditional capital structure theory; where the combination of debt/equity gives maximum returns at minimum cost of capital.

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APPEDINCE

Table 1 Random Effects on Return on Asset

. xtreg roa dequity, re

Random-effects GLS regression
Group variable: cid

R-sq: within = 0.2912
between = 0.9835
overall = 0.1197

Random effects u_i ~ Gaussian
corr(u_i, x) = 0 (assumed)

Number of obs = 28
Number of groups = 4

Obs per group: min = 7
avg = 7.0
max = 7

wald chi2(1) = 3.53
Prob > chi2 = 0.0601

roa	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
dequity	.164408	.0874562	1.88	0.060	-.007003	.335819
_cons	.1009481	.0492869	2.05	0.041	.0043475	.1975487
sigma_u	0					
sigma_e	.18232608					
rho	0	(fraction of variance due to u_i)				

Source: Authors' computation, 2016.

Table 2 Random Effects on Return on Equity

```
. xtreg roe dequity, re
```

Random-effects GLS regression
Group variable: cid

Number of obs = 28
Number of groups = 4

R-sq: within = 0.1757
between = 0.3317
overall = 0.0392

Obs per group: min = 7
avg = 7.0
max = 7

Random effects u_i ~ Gaussian
corr(u_i, X) = 0 (assumed)

Wald chi2(1) = 3.82
Prob > chi2 = 0.0507

roe	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
dequity	.1050893	.0537898	1.95	0.051	-.0003367	.2105153
_cons	.2112048	.0507245	4.16	0.000	.1117867	.3106229
sigma_u	.08134435					
sigma_e	.11591274					
rho	.32997625	(fraction of variance due to u_i)				

Source: Authors' computation, 2016.

Table 3 Random Effects on Net profit margin

```
. xtreg npm dequity, re
```

Random-effects GLS regression
Group variable: cid

Number of obs = 28
Number of groups = 4

R-sq: within = 0.3155
between = 0.0912
overall = 0.0410

Obs per group: min = 7
avg = 7.0
max = 7

Random effects u_i ~ Gaussian
corr(u_i, X) = 0 (assumed)

Wald chi2(1) = 10.56
Prob > chi2 = 0.0012

npm	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
dequity	.1222462	.0376111	3.25	0.001	.0485298	.1959626
_cons	.1858179	.0882953	2.10	0.035	.0127622	.3588736
sigma_u	.17367531					
sigma_e	.08210746					
rho	.81732337	(fraction of variance due to u_i)				

Source: Authors' computation, 2016.