

## **Financial Leverage Behaviour and Firm Performance: Evidence from Publicly Quoted Companies in Nigeria**

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**Abstract:** This paper scrutinizes financial leverage behaviour and firm performance of publicly quoted companies in Nigeria. Data of Leverage, Profitability and Firm Size were sourced from the Nigerian Stock Exchange Fact-book and Annual Report and Accounts of 120 publicly quoted companies in Nigeria during the period 1990 through 2013. Findings suggest that profitability and firm size had a negative effect on financial leverage behaviour of publicly quoted companies in Nigeria. Thus, it was recommended that firms should carry out projects that would help enhance size and profitability in all aspect of the firm. Size in terms of assets would help increase the internal funding. This in turn will have a positive impact on the financial structure of firm as more of internally generated funds will be used instead of external borrowings. Firms should not assume that making of profit shows good application of leverage as this was not found to be true from the analysis. This implies that the result can be relied upon for policy direction.

**Keywords:** financial leverage; firm performance; profitability; firm size

JEL Classification: O47

### **1. Introduction**

In spite of quite a few decades of research, there has been no general consensus on the relationship between financial leverage and firm performance. These unresolved issue stems from the contrary arguments in literature that leverage affects firm performance or not. A vital subject in finance hooves around whether financial leverage influences firm performance. Laurent (2002) notes that two elements may have influenced these arguments, such as the various measures of performance (either basic accounting ratios or more sophisticated measures on the one hand and on the other hand, some of the studies were performed on one country. The results of such studies may be influenced by the institutional framework in that country where the study is being carried thus leading to the divergent results on the relationship between financial leverage and performance. However, this paper present a novel approach using some measures of financial performance in order to establish whether relationship exists between financial

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leverage and performance using data from Nigerian publicly quoted companies. The remaining part of this paper is organized as follows: Literature Review; Methodology; Results and Discussion; Conclusion and Recommendations.

## **2. Literature Review**

Several studies have been carried out to examine the relationship between financial leverage and other financial measures such as corporate governance, performance, environmental risk and a host of other issues. For instance, Safieddine and Titman (1999) explores leverage and corporate performance from unsuccessful takeovers in New York. The study finds that on average, targets that terminate takeover offers significantly increase leverage ratios and targets that increase leverage ratios the most decrease capital expenditures, cut employment, lessen focus and help realize cash flows and share prices that outperform failed takeover. The study additionally indicates that higher leverage helps firms remain independent. Laurent (2002) tests the relationship between leverage and corporate performance in France, Germany and Italy. The regression statistical technique was adopted on various sets of variables (leverage, tangibility, short-term liabilities, inventory and size). The study found mixed evidence depending on the country; while significantly negative in Italy, the relationship between leverage and corporate performance is significantly positive in France and Germany.

Allen, Wharton Financial Institutions Center and Emilia (2002) report the relationship between capital structure and firm performance with a new approach to testing agency theory and application in the banking industry in United States, employing a simultaneous equations model. The study suggests that data on United States banking industry are consistent with the agency theory and the results are statistically significant, economically significant and robust. Laurent (2008) investigates the relationship between leverage and corporate performance of medium-sized firms from seven European countries using a maximum likelihood procedure to estimate a stochastic cost frontier and the parameters of an equation relating cost inefficiency to leverage simultaneously. Findings indicate that relationship between leverage and corporate performance carries across countries which tend to support the influence of institutional factors on this link.

Tih (2010) tests the relationship between financial distress and firm performance during the Asian Financial Crisis of 1997-1998 with regression estimation technique. The results of the study reaffirms that firms with low financial leverage tend to perform better than firms with high financial leverage. In addition to the findings, the crisis magnifies the negative relationship between financial distress and firm performance. Hence, high leverage firms experience worse performance

during a crisis. Fabrizio *et al.* (2010) explores the relationship between leverage and growth in a group of emerging central and eastern European countries with different levels of financial market development via a non-linear model. Estimates of a threshold model showed the non-linear relationship after controlling for various firms, industry and financial market characteristics.

Fabrizio *et al.* (2011) studies bridge the gap between the literature on optimal capital structure and the literature on finance-output-growth nexus using both the standard and IV threshold regression models for a sample of Central and Eastern European countries. The study found a non-linear hump-shaped relationship between leverage and productivity growth, thus endogenously identifying an optimal leverage ratio. Humera *et al.* (2011) examines the relationship between corporate governance and firm performance of twenty firms listed on Karachi Stock Exchange during the period 2005-2009. The performance of corporate governance was done via Tobin's Q while performance of firms proxy by return on assets and return on equity. The findings indicated that leverage and growth have a positive relationship with Tobin's Q, which confirms a significant effect in measuring performance of firm. The implication is that having good corporate governance measures perform well as compared to firms having no or less corporate governance practices.

Akhtar *et al.* (2012) investigates the relationship between financial leverage and financial performance using the Fuel and Energy Sector of Pakistan. The findings showed a positive relationship between financial leverage and financial performance of the companies thus confirming that the firms having higher profitability may improve their performance by having high levels of financial leverage. In addition, the study provides evidence that the players of the fuel and energy in Pakistan can improve at their financial performance by employing the financial leverage and can arrive at a sustainable future growth by making vital decisions about the choice of their optimal capital structure. Akinmulegun (2012) tests the effect of financial leverage on selected indicators of corporate performance [Earnings per Share (EPS), Net Assets per Share (NAPS)] in Nigeria using the Vector Auto-Regression (VAR) technique. Findings indicated that leverage shocks exert significantly on corporate performance. Also, the measures of corporate performance (EPS, NAPS) depends more on feedback shock and less on leverage shock but the leverage shocks on EPS indirectly affect NAPS of firms as the bulk of the shock on NAPS was received from EPS of the firms.

Raza (2013) using a panel data analysis examines the determinants of capital structure of Karachi Stock Exchange listed none-financial firms for the period 2004 through 2009. The regression statistical technique was adopted for the study. The findings indicated a negative relation between performance leverage. Also, there was no significance between leverage and profitability. Fabrizio *et al.* (2013)

examine the relationship between optimal capital structure and the wider macro literature on finance-growth nexus using a non-linear model and analysis performed with a threshold regression model of Hansen (2000). The study showed that the existence of an optimal leverage ratio where the net benefits of debt in terms of productivity gains is exhausted.

Gonzalez (2013) tests the effect of financial leverage on corporate operating performance and how this effect varies across countries using 10,375 firms in 39 countries. The study indicates that performance of firms with greater leverage is significantly reduced compared to their competitors' industry downturns. The study additionally showed that this effect varies according to the legal origin of the countries, being positive in French civil law countries. Hsueh-En (2013) investigates the effect of leverage and ownership structure as moderating effects between research and development expenditures and firm performance in Taiwan. The results suggest that ownership structure has a positive effect on research and development performance relationship. In addition, leverage has a negative effect on the relationship between research and development and firm performance.

Rehman (2013) reports the influence of financial leverage on financial performance with evidence from listed sugar firms in Pakistan. The study found a mixed result such that a positive relationship exists among debt equity ratio, return on assets and sales growth and negative relationship exists among debt equity ratio with earnings per share, net profit margin and return on equity. Saber (2013) investigates the effect of financial leverage and environmental risk on performance firms of listed companies in Tehran Stock Exchange. The variables of free cash flow per share and return on equity and market risk and economic risk were used as the dependent and independent variables respectively for 95 firms during 2005 through 2011. Panel data and multiple regressions were used to test the hypotheses. Findings indicated that there is a negative relation between financial leverage and free cash flow per share and between market and economic risks with free cash flow per share positive significant. Additionally, the study found a positive significant relationship between financial leverage and return on equity.

Fosu (2013) examines the relationship between capital structure and firm performance, paying particular attention to the degree of industry competition, using panel data comprising of 257 firms in South Africa with period 1998 through 2009. The results indicated that financial leverage has a positive and significant effect on firm performance. Also, it was found that product market competition enhances the performance effect of leverage. To conclude this empirical survey of literature, it appears that there is no consensus on the relationship between financial leverage behaviour and firm performance using some corporate performance measures (profitability and firm size) in Nigeria. Towards this end, this study

investigated financial leverage behaviour and firm performance with evidence from publicly quoted companies in Nigeria.

### 3. Methodology

This study was carried out to scrutinize financial leverage behaviour and firm performance of publicly quoted companies in Nigeria.

#### 3.1. Method of Analysis

A multiple regression technique was employed in estimating the parameters of the model. In the multiple regression models, “Leverage” is the dependent variable while “Profitability” and “Firm Size” are the independent variables. Leverage is measured by book value of long term-debt divided by capital employed. Specifically, we used profitability and firm size as proxies for firm performance. Profitability is the profit after tax of each of the firms and Firm Size is measured by total assets owned by each of the firms.

#### 3.2. Data Definition and Source

This study obtained secondary data from the Nigerian Stock Exchange Fact-book and Annual Report and Accounts of 120 publicly quoted companies in Nigeria during the 1990 through 2013. Data of Leverage, Profitability and Firm Size were used in a unifying model.

#### 3.3. Model Specification

The multiple regression models for the study takes the below form:

$$\begin{aligned}
 \text{FLEVR} &= \text{F}(\text{PROFT}, \text{FIMSZE}) && \text{eq. 1} \\
 \text{FLEVR}_{it} &= \alpha_0 + \beta_1 \text{PROFT}_{it} + \beta_2 \text{FIMSZE}_{it} + U_{it} && \text{eq. 2}
 \end{aligned}$$

Where:

$\alpha_0$	=	Constant or intercept
$\beta_{1-2}$	=	Regression Coefficients
$U_t$	=	Error term not represented in the model
$it$	=	Time period of the study
FLEVR=		Financial Leverage
PROFT=		Profitability (Profit after tax)
FMSZE=		Firm Size (Total Assets)

#### 4. Results and Discussion

The analysis of data was done in two phases: first was the descriptive statistics and second was the regression analysis.

**Table 1. Descriptive Statistics**

	<b>FLEVR</b>	<b>PROFT</b>	<b>FMSZE</b>
Mean	4.721809	0.294810	7.836355
Median	0.19945	0.211630	7.746112
Maximum	540.1165	45.81510	10.228110
Minimum	-0.31929	-13.786	5.11810
Std. Dev.	46.1262	3.746913	0.987596
Skewness	11.87579	-12.93176	-0.037142
Kurtosis	132.8138	191620.6	5.085614
Jarque-Bera	132570.3	191621.6	10.756594
Probability	.000	.000	.008
Observation	137	137	137

*Source: SPSS Output*

The descriptive statistics of the variables used in the analysis were presented in table 1 above. Financial leverage (FLEVR) represents the major variable of interest (dependent variable). The table above showed that financial leverage has a mean value of 4.721809 and a median of 0.19945. The maximum value is 540.1165, while the minimum value is -0.31929 and standard deviation of 46.1262. Financial leverage was positively skewed with a value of 11.87579 and a Jacque-Bera value of 132570.3. This suggests a high degree of variability of the data between financial leverage behaviour and independent variables. Firm Size had the highest mean with a value of 7.836355, median of 7.746112, maximum value of 10.228110, minimum value of 5.11810 and standard deviation of 0.987596. Firm Size was negatively skewed with a value of -0.037142 and Jacque-Bera value of 10.756594. Profitability had the lowest mean with a value of 0.294810, median of 0.211630, maximum and minimum values of 45.81510 and -13.786 respectively and standard deviation with value 3.746913. Profitability has the highest skewness of -12.93176 and a Jacque-Bera value of 191621.6.

**Table 2. Regression Result**

<b>Variables</b>	<b>Coefficient</b>	<b>T-ratio</b>	<b>Prob.</b>
C	-2.28208	-0.38609	0.8930
FMSZE	0.085845	-0.258078	0.8935
PROFT	-0.04296	-0.311167	0.8535
$R^2 = 0.89$		Durbin Watson = 1.36	

*Source: SPSS Output*

The results in table 2 above showed that firm size had a positive relationship with financial leverage. Also the study found a negative relationship between profitability and financial leverage. The R-square with value 0.89 connotes very high and indicates that 89percent of the systematic variations in the dependent variable has been explained by the model. This indicates that the estimated model has a good predictive power. Thus, we can contend that a significant relationship exists between financial leverage behaviour and all the independent variables put together. The Durbin-Watson with value 1.36 suggests that there is the presence of first order serial correlation in the model since  $d_1 < DW < d_u$   $1.36 < 1.54$ .

## 5. Conclusion & Recommendations

This study examined financial leverage behaviour and firm performance using publicly quoted companies in Nigeria. The financial leverage behaviour is initiated by certain factors amongst which are profitability and firm size. From the study we found that these two (2) factors affect financial leverage behaviour positively. The implication of this finding is that profitability and firm size had a negative effect on financial leverage of publicly quoted companies in Nigeria. Thus, it was recommended that firms should carry out projects that would help enhance size and profitability in all aspect of the firm. Size in terms of assets would help increase the internal funding. This in turn will have a positive impact on the financial structure of the firm as more of internally generated funds will be used instead of external borrowings. Firms should not assume that making of profit shows good application of leverage as this was not found to be true from the analysis. This implies that the result can be relied upon for policy direction.

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