

## **IMPACT OF CAPITAL STRUCTURE ON THE FINANCIAL PERFORMANCE OF NIGERIAN FIRMS**

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### **ABSTRACT**

*This paper examines the impact of capital structure on financial performance of Nigerian firms using a sample of thirty non-financial firms listed on the Nigerian Stock Exchange during the seven year period, 2004 – 2010. Panel data for the selected firms were generated and analyzed using ordinary least squares (OLS) as a method of estimation. The result shows that a firm's capita structure surrogated by Debt Ratio, Dr has a significantly negative impact on the firm's financial measures (Return on Asset, ROA, and Return on Equity, ROE). The study of these findings, indicate consistency with prior empirical studies and provide evidence in support of Agency cost theory.*

**Keywords:** *Capital Structure, Financial Performance, agency cost*

### **1.0 OVERVIEW OF THE STUDY**

Capital structure is the means by which an organization is financed. It is the mix of debt and equity capital maintained by a firm. The extent literature is full of theories on capital structure since the seminal work of Modigliani and miller (1958). How an organization is financed is of paramount importance to both the managers of the firms and providers of funds. This is because if a wrong mix of finance is employed, the performance and survival of the business enterprise may be seriously affected. This study wants to contribute to the debate on the relationship between capital structure and firm performance from the agency cost theory perspective using Nigerian date.

This study seeks to provide answer to the question, “does capital structure affect financial performance of firms”? data of thirty firms listed on the Nigerian Stock Exchange (NSE) between 2004 and 2010, representing 210 firm year observations would be used for the study.

The rest of the paper is organized as follows: sections two provides the literature review on capital structure and firm performance. Section three discusses the variable descriptions, expectation and methodology. The empirical results and discussion are presented in section four. Lastly, section five concludes the study.

## **2.0 Review of Related Literature**

All modern researches have issues with the Modigliani and Miller (1958) proposition which states that in a world of perfect capital market and no taxes, a firm's financial structure will not influence its cost of capital. This, proposition submitted that firms in a given risk class would be unaffected by financial gearing (Weston and Copeland, 1998). Borigham and Gapenski (1996) argue that an optimal capital structure can be attained if there exist a tax sheltering benefits provided an increase in debt level is equal to the bankruptcy costs. They suggest that managers of a firm should be able to identify when the optimal capital structure is attained and try to maintain it at that level. This is the point at which the financing costs and cost of capital are minimized, thereby increasing firm value and performance. Berle and means (1932) put forward the agency theory which also contributes to the capital structure decision. The theory argues that conflicts arise from the possible divergence of interests between shareholders (principals) and managers (agents) of firms. The primary duty of managers is to returns to shareholders thereby increasing the profit figures and cost cash flows (Elliot and Chiber (2002). However, senses and Meckling (1976) and Jensen and Ruback (1983) argue that managers do not always run the firm to maximize returns to shareholders. As a result of this, managers may adopt non-profitable investments, even though the outcome is likely to be losses for shareholders. They tend to use the three cash flow available to fulfill their personal interest instead of investing in positive not present value projects that would benefit the shareholders. Jensen (1986) argues that the agency cost is likely to exacerbate in the presence of free cash flow in the firm.

In an effort to mitigate this agency conflict, Pinegar and Wilbruch (1989) argue that capital structure can be used through increasing the debt level and without causing any radical increase in agency costs. This will force the managers to invest in profitable ventures that will be of benefit to the shareholders. If they decide to invest in non-profitable projects and they are

unable to pay the interest due to debt holders, the debt holders can force the firm to liquidation and managers will lose their decision rights or possibly their employment.

Agency theory contributes that leverage firms are better for shareholders as debt level can be used for monitoring the managers (Booth, 2009). Thus, Higher leverage is expected to lower agency costs, reduce inefficiency and thereby lead to improvement in a firm's performance (Kochhar, 1996, Aghion, Dewatripont and Rey, 1999, Akintoye, 2008, Onaolapo and Kajola, 2010).

Empirical supports for the relationship between capital structure and firm performance from the agency perspective are many and in support of negative relationship. Zeitun and Tian (2007), using 167 Jordanian companies over fifteen year period (1989 – 2003), found that a firm's capital structure has a significant negative impact on the firm's performance indicators, in both the accounting and market measures. Mojumder and Chiber (2004) and Rao, and Syed (2007) also confirm negative relationship between financial leverage and performance. Their results further suggest that liquidity, age and capital intensity have significant influence on financial performance.

### **3.0 Methodology**

#### **3.1 Description of Variables and Hypotheses**

The variables used in the study are as follows: Debt Ratio (DR): The agency cost theory predicts that higher leverage is expected to lower agency costs, reduce inefficiency and thereby lead to improvement in firm's performance. Bergar (2002) argues that increasing the leverage ratio should result in lower agency costs of outside equity and improve firm performance, all else held constant. From the above contributions, we expect an inverse relationship between leverage (DR) and firm performance. The following hypothesis will be tested:

**H<sub>1</sub>:** A firm's capital structure should not have a negative impact on its performance.

Asset turnover. The efficiency of the management of a firm can be measured by the way and manner they utilize the assets of the firm to yield positive returns to the firm. Asset turnover ratio is an important financial ratio that can be used to achieve the purpose of measuring management efficiency, hence the introduction of the variable, TURN, as a controlled variable,

in the study it is expected that a positive relationship exists between asset turnover and firm performance. The hypothesis to be tested here is:

**H<sub>2</sub>:** There should be no positive relationship between asset turnover and firm performance.

**Age:** The age of a firm may also have an impact on firm's performance, hence the introduction of a controlling variable, AGE in this study. Stiochcombe (1965) argues that older firms can achieve experience – based economies and can avoid the liabilities of newness. We expect a positive relationship between age and firm's performance. The hypothesis to be tested here is:

**H<sub>4</sub>:** There should be no positive relationship between firm's age and its performance

**Asset Tangibility:** This is considered to be the major determinant of a firm's performance. The most common argument in the literature favours a positive relationship between asset tangibility and performance. Mackie (1990) concludes that a firm with high fraction of plant and equipment (tangible assets) is the asset base made the debt choice more likely and influences the firm performance. Akistnye (2008) argues that a firm which retains large investments in tangible assets will have smaller costs of financial distress than a firm that relies on intangible assets. The relationship between asset tangibility and firm performance is expected to be positive. The hypothesis to be tested here is

**H<sub>5</sub>:** there should be no positive relationship between firm's asset tangibility and its performance

**Growth Opportunities;** The extant literature considers growth opportunities available to a firm as an important determinant of firm's performance, hence the introduction of a controlled variable, GROW, a proxy for growth opportunities in this study. Zeitun and Tian (2007) argue that growth firms are able to generate profit from investment. We expect a positive relationship between growth opportunities and firm's performance. The hypothesis to be tested here is:

**H<sub>6</sub>:** there should be no positive relationship between a firm's growth opportunity and its performance

**Industrial Sector:** Marsh (1982), Costanias (1983), Bradly, Jerral and Kim (1984) and Adebola (2002) among others argue that capital structure for firms vary from one industrial sector to another. Also, so many other factors (such as firm's risk and growth) influence the ability of firms to source for external funds. Hence, industrial sector is seen to affect firm's financial performance. Thus, there is need for the introduction, of industrial sector (IWD) as a controlled variable in this study. The hypothesis to be tested here is

**H<sub>7</sub>:** Industrial sector does not affect firm’s performance. Two financial measures adopted as well as surrogates for the above variable are computed using the underlisted formulae:

$$\text{R.O.A} = \frac{\text{Profit after tax}}{\text{Total assets}} \dots\dots\dots (1)$$

$$\text{R.O.E} = \frac{\text{Profit after tax}}{\text{Total number of ordinary shares in issue}} \dots\dots\dots (2)$$

$$\text{Debt ratio} = \frac{\text{Total Debt}}{\text{Total Assets}} \dots\dots\dots (3)$$

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Total Assets}} \dots\dots\dots (4)$$

$$\text{Size} = \text{Natural logarithm of total assets} \dots\dots\dots (5)$$

$$\text{Age} = \text{The number of years since the inception of the firm to the observation date} \dots\dots\dots (6)$$

$$\text{Asset tangibility} = \frac{\text{Net fixed Assets}}{\text{Total Assets}} \dots\dots\dots (7)$$

$$\text{Growth} = \text{Change in the natural logarithm of total assets} \dots\dots\dots (8)$$

$$\text{Industrial sector} = \text{The dummy variable takes the value 1 if the firm is in that sector, otherwise it takes the value 0} \dots\dots\dots (9)$$

**3.2 Sample Selection**

Data were gathered from the published financial statements of 30 out of the non-financial firms listed on the Nigerian Stock Exchange (NSE) as at January 2011. In order to guard against data omission and ensure uniformity in presentation, some firms, because of the following factors, were excluded. Firms that ceased to operate at any point during the period of study were excluded. Mostly affected were firms in the agriculture/agro allied industry and domestic product, machinery, marketing, Engineering, technology, footwear, Textile and construction sectors.

Also excluded were firms that had problems with the NSE and Securities and Exchange Commission (SEC) regarding their financial reports and firms that had course to change their financial accounting year – end at any time during the period of study. Only thirty firms with complete data for the period 2004 – 2010 period were used for the study.

### **3.3 Model Specification**

The study employs return on Assets (ROA) and Return on Equity (ROE) as the two dependent variables, and measures of firm performance. Although there is no unique measurement of firm performance in the literature, ROA and ROE were chosen because they are important accounting – based and widely accepted measures of financial performance. ROA can also be viewed as a measure of management’s efficiency in utilizing all the assets under its control, regardless of source of financing.

Some writers such as Betis and Hall (1982), Demsets and Lehn (1985), Habib and Victor (1991), Cole and Line (2000) Onaolapo and Kajola (2010), among others, made use of ROA and ROC as performance proxies in their studies. The market based financial performance which is extensively used in the empirical literature is Tobin’s Q. However, the market value of debt, an important variable adopted in the determination of Tobin’s Q is not previewed by the selected firms, hence could not be used in this study. Also, many researcher, as reported by Xu and Wang (1997) and Zatan and Tian (2007), see Tobin’s Q as a noisy signal and not a good performance measure.

The only independent (explanatory) variable in this study is the Debt ratio (DR). It serves as the proxy for capital structure. However, a number of factors may impact on profitability (firm performance), hence, the need for controlled variables to be included in the model. These controlled variables are treated in the same way as explanatory variables. The following controlled variables are used in model 1, Asset Turnover (TURN), firm’s size (SIZE), firm’s Age (AGE), Asset Tangibility (TAN 6), and Growth opportunity (GROW).

Model 2, recognizes the importance of industrial sector which a firm belong, hence the need for the inclusion of variable IND to other variables in model 1 to form the mode 2.

Thus, the general model for this study as is mostly found in the extant literature is represented by,

$$Y = \beta_0 + \beta_1 D_1 + \beta_2 Z_2 + \text{eit} \dots\dots\dots (10)$$

Where; Y is the dependent variable

$D_1$  is the explanatory variable

$Z_2$  is the controllable variable

$\beta_1$  and  $\beta_2$  are the coefficients of the explanatory and controllable variables, respectively.

eit is the error term. It has zero means, constant variance and non-autocorrelated

Specifically, when the above model is adopted here, equation (10) above can be written as:

**Model 1**

$$ROA = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 SIZE + \beta_4 AGE + \beta_5 TANG + \beta_6 GROW + eit \dots\dots\dots (11)$$

$$ROE = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 SIZE + \beta_4 AGE + \beta_5 TANG + \beta_6 GROW + eit \dots\dots\dots(12)$$

**Model 2** (with the inclusion of industrial sector variable)

$$ROA = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 SIZE + \beta_4 AGE + \beta_5 TANG + \beta_6 GROW + \beta IND + eit \dots\dots\dots (13)$$

$$ROE = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 SIZE + \beta_4 AGE + \beta_5 TANG + \beta_6 GROW + \beta_7 IND + eit \dots\dots\dots(14)$$

The co-efficient of the explanatory and controllable variables ( $\beta_1 \dots\dots, \beta_7$ ) can be estimated by the use of OLS technique. Panel data methodology is adopted in this study. This combines simultaneously cross – section and time series data. Thus, there is need to check for the level of stationarity of the data.

This is done by the use of Unit Root test. It is also necessary to look out for both fixed and random effects. The fixed effect model, according to Vicente-Lorente (2001), is viewed as one in which the researcher makes inferences on the effects that are in the sample. The random effect model is viewed as one in which researcher make unconditional inferences with respect to a larger population. This test is necessary especially when the estimates differ widely between the two models. This study employs the Housman test to compare the fixed and random effects estimates of the co-efficients

**4.0 Presentation of Results and Discussion**

**4.1 Unit Root Test**

The study employs E-view 4.1 package to carry out three different unit root tests (Augmented Dickey – Fuller, 1979, Phillips, Perron, 1998 and GLS – detrended Dickey – Fular) in order to determine the stationarity of the variables used. All the variables were not stationary at level. Further tests were extended for the first difference. The result shows that all the variables are stationary; hence they are 1(1) stochastic process.

**4.2 Fixed and Random Effect Models**

This study employs sample of Nigerian non-financial institutions, hence the tendency for the fixed effect and random effect models’ estimates to differ significantly. Hausman chi-square test was conducted and result shows that the Hausman is not significant at 5% level. The implication of this is that the two estimates do not differ significantly. Since, there is presence of industrial effect in model 2; the random effect estimates is preferable to the fixed effect estimate. However, the results of the random estimates do not differ significantly from the OLS estimates, hence we based out conclusions using the results of the OLS estimates

**4.3 Descriptive Statistics**

Table 1 below shows the descriptive statistics of all the variables used in the study

**Table 1: Descriptive Statistics**

	<b>ROA</b>	<b>ROE</b>	<b>DR</b>	<b>TURN</b>	<b>SIZE</b>	<b>AGE</b>	<b>TANG</b>	<b>GROW</b>
Mean	0.059	1.457	3.419	1.329	7.150	1.607	0.379	0.070
Std. Dev	0.115	2.789	13.949	0.768	1.433	0.139	0.217	0.191
Skewness	-0.935	0.682	6.447	1.493	0.506	-1.377	0.829	0.792
Kurtosis	5.633	5.214	44.837	3.504	0.452	3.095	-0.099	19.288
Range	0.950	23.610	121.840	4.780	6.920	0.840	0.950	2.290
Minimum	-0.440	-12.900	-4.860	0.030	3.630	1.040	0.010	-0.970
Maximum	0.510	10.710	116.980	4.810	10550	1.880	0.960	1.320
Sum	12.370	305.950	717.980	279.040	1501.460	337.510	79.530	14.720



N Valid	210	210	210	210	210	210	210	210
Missing	0	0	0	0	0	0	0	0

**Source: Generated from analysis using SPSS**

The mean ROA of the sampled firms is about 6%, while that of the ROE is about 146%. The results indicate that on the average, for every N100 worth of total assets of the firms, mere N6 was earned as profit after tax, while N146 was earned as after tax profit on every N100 equity share issued. The above analysis shows that the selected firms have a low accounting performance during the period of study. The mean debt ratio is 3.42; asset turnover is 1.33 and size of the firm, 7.15. The average age of the firm is about 41 years (log 1.61). This shows that the firms are not relatively young. The mean asset tangibility is 0.38. This indicates that the proportion of the firms' fixed assets to the total assets is about 38%. The mean growth opportunity is about 7%.

Tables 2a and 2b present the correlations among the variables. From Table 2a, ROA is reported to be negatively correlated with debt ratio and is significant at 10% (Sig. 0.066) and also negatively correlated with asset tangibility and significant at 1%. Table 2a further reveals a positive correlation between ROA and asset turnover and significant at 1% level. ROA is however positively correlated with firm's size, age and growth opportunity, but not significant.

**Table 2a: Correlations (Pearson) ROA as a dependent variable**

	ROA	DR	TURN	SIZE	AGE	TANG	GROW
ROA	1						
DR	-0.127	1					
TURN	0.263	0.351	1				
SIZE	0.011	0.382	0.250	1			
AGE	0.070	-0.021	0.224	-0.155	1		
TANG	-0.320	-0.064	-0.350	-0.042	-0.176	1	
GROW	0.094	0.060	-0.007	0.137	0.021	-0.217	1
Sig (2-tailed) ROA	-	0.066	0.000	0.878	0.3 14	0.000	0.176
DR	0.066	-	0.000	0.000	0.758	0.355	0.386
TURN	0.000	0.000	-	0.000	0.001	0.000	0.922
SIZE	0.878	0.000	0.000	-	0.025	0.547	0.048
AGE	0.314	0.758	0.001	0.025	-	0.011	0.758
TANG	0.000	0.355	0.000	0.547	0.011	-	0.002
GROW	0.176	0.386	0.922	0.048	0.758	0.002	-

**Table 2b: Correlations (Pearson) ROE as a dependent variable**

	ROA	DR	TURN	SIZE	AGE	TANG	GROW
ROE	1						
DR	-0.118	1					

TURN	0.365	0.351	1				
SIZE	0.271	0.382	0.250	1			
AGE	0.202	-0.021	0.224	-0.155	1		
TANG	-0.147	-0.064	-0.350	-0.042	-0.176	1	
GROW	0.054	0.060	-0.007	0.137	0.021	-0.217	1
Sig (2-tailed) ROE	-	0.087	0.000	0.000	0.758	0.033	0.433
DR	0.087	-	0.000	0.000	0.758	0.355	0.386
TURN	0.000	0.000	-	0.000	0.001	0.000	0.922
SIZE	0.000	0.000	0.000	-	0.025	0.547	0.048
AGE	0.003	0.758	0.001	0.025	-	0.011	0.758
TANG	0.033	0.355	0.000	0.547	0.011	-	0.002
GROW	0.433	0.386	0.922	0.04	0.758	0.002	-

**Source: Authors' compilation, gene rated using SPSS.**

Table 2b shows that ROE is negatively correlated with debt ratio and significant at 10% level (sig. 0.087). ROE is also negatively correlated with asset tangibility and significant at 5%. The table further reveals a positive correlation and significant at 1% between ROE and asset turnover, size and age. ROE is however positively correlated with growth opportunity but not significant.

#### **4.4 Regression Results and Discussion**

Table 3 provides the results of the regression of the two performance measures (ROA and ROE). The results indicate a negative and significant relationship between ROA and debt ratio at 1% level. It also shows the same relationship between ROE and debt ratio.

Hypothesis 1 predicts that a firm's capital structure should have a negative impact on its financial performance. The above results confirm this hypothesis and also provide evidence in support of agency cost hypothesis. It suggests that due to agency conflicts between a firm's stockholders, firms tend to over-leveraged themselves and this leads to negative financial performance. This outcome is consistent with the findings of previous studies such as Krishnan and Moyer (1997), Majumdar and Cbhibber (1997), Gleason, Mathur and Mathur (2000), Tzelepis and Skuras (2004), Pratomo and Ismail (2006), Margaritis and Psillaki (2006), Zeitun and Tian (2007), Rao et al (2007), Akintoye (2008), among others.

The relationship between ROA and asset turnover is positive and significant at 1% level. ROE also shows a positive and significant relationship with asset turnover. Hypothesis 2 predicts a positive relationship between asset turnover and firm's performance measure. The outcome of

this study confirms this hypothesis. Thus, asset turnover is an important determinant of firm’s financial performance.

The relationship between ROA and firm’s size is positive but not significant. However, the relationship between ROE and the size of firm is positive and significant at 1% level. Hypothesis 3 predicts a positive relationship between firm’s size and financial performance. The outcome of the study confirms this hypothesis when ROE is used as a firm performance proxy. Thus, firm’s size is an important determinant of firm’s financial performance. The outcome is consistent with the findings of previous writers such as Gleason et al (2000) and Zeitun and Tian (2007).

**Table 3a: Regression results (Model 1)**

	<b>ROA</b>	<b>ROE</b>
DR	-0.002 (-3.435)*** (0.001)	-0.076 [.5759]*** (0.000)
TURN	0.041 (3.601)*** (0.000)	1.381 [5.464]*** (0.000)
SIZE	0.001 [0.189] (0.851)	0.670 [5.215]*** (0.000)
AGE	-0.030 [-0.5341 (0594)	3.325 [2.6561]*** (0.009)
TANG	-0.124 (13.304)*** (0.001)	0.169 [0.203] (0.840)
GROW	0.036 (0.8861 (0377)	0.470 (0.5291 (0.598)
R. square	0.181	0310
Adjusted R square	0.157	0.290
F-Statistics	7453***	15.126***
Number of observation	210	210
Durbin Watson	1.105	1.101

Predictors (constant) DR, TURN, SIZE, GE, TANG, GROW. Dependent variables: ROA and ROE. t-statistics are shown in the form [ ], while p-values are in the form { }.

\*, \*\*, \*\*\* indicate significant at 10%, 5% and 1% respectively.

The relationship between ROA and firm’s age is negative but not significant. However, the relationship between ROE and firm’s age is positive and significant at 1% level. Hypothesis 4

predicts a positive relationship between firm’s age and its performance. The outcome of this study confirms the hypothesis when ROE is used as a performance measure.

Against theoretical expectations, the relationship between ROA and firm’s asset tangibility is negative and significant at 1% level. This shows that firms with high ratio of tangibility have a lower financial performance ratio. However, the relationship between ROE and asset tangibility is positive but not significant. Hypothesis 5 predicts a positive relationship between firm’s asset tangibility and its performance. We therefore reject the hypothesis. It provides salient evidence that the sampled firms were not able to utilize their fixed asset composition in the total asset judiciously to impact on their performance.

The relationship between the two performance measures (ROA and ROE) and growth opportunity is positive but not significant. Hypothesis 6 predicts a positive relationship between a firm’s growth opportunity and its performance. Although the expected sign (positive) is confirmed, the hypothesis is rejected on the ground of its non- significance. Thus, growth opportunity is not a major determinant of the sampled farms’ performance.

**Table 3b: Regression results (Model 2)**

	<b>ROA</b>	<b>ROE</b>
DR	-0.002 [-3.010]*** (0.003)	-0.083 [6.9661]*** (0.000)
TURN	0.034 [2.308]** {10.022}	0.906 [2.807]*** (0.006)
SIZE	0.020 [2.416]** (0.017)	0.542 [2.954]*** (0.004)
AGE	-0.081 [-1.304] (0.194)	0.735 [0.540] (0.590)
TANG	-0.082 11.7701* (0.077)	0.661 [0.657] (0.512)
GROW	0.017 [-0.480] 10.632)	0.039 [0.050] 10.960)

IND DUMMY 1	-0.006 [-0.117] (10.907)	-.095 [-0.079] (0.960)
IND DUMMY 2	0.053 (0.8781 (0381)	1.184 [0.8%] (0.371)
IND DUMMY 3	0.131 [2.9101**** (0.004)	4.130 [4.204]**** (0.000)
IND DUMMY 4	0.090 [1.632] 10.104)	1.553 [1.285] (0.201)
IND DUMMY 5	0.092 [1.5751 (0.117)	0.724 [0.5681 (0.571)
IND DUMMY 6	-0.006 1-0.2431 (0.808)	0.291 [0.5101 (0.611)
IND DUMMY 7	0.095 [2.0711** (0.040)	1.407 [1.404] (0.162)
IND DUMMY 8	0.053 [1.023] (0.307)	1.467 [1.283] (0.201)
IND DUMMY 9	0.019 [0.434] (0.664)	2.572 [2.68 1]**** (0.008)
IND DUMMY 10	0.082 [I .7411* (0.083)	1.606 [1.552] (0.122)
IND DUMMY 11	-0.069 [.1.659]* [0.099]	-0.059 [-0.065] (0.948)
IND DUMMY I2	0.130 [2.805]**** (0.006)	4.376 [4.310]**** (0.000)
IND DUMMY 13	0.039 [0.7841 (0.434)	1.432 [1.379] (0.170)
IND DUMMY 14	-0.042 [-0.8411 (0.401)	3.472 [3.177]**** (0.002)
IND DUMMY 15	-0.023 [-0.4331 (0.666)	0.368 [0.3 19] (0.750)

R square	0.420	0.523
Adjusted R square	0.355	0.470
F-Statistics	6.484***	9.819***
Number of observation	210	210
Durbin Watson	1.462	1.485

Predictors (constant) DR., TURN, SIZE, AGE, TANG, GROW. END DUMMY 1 to 15.  
 Dependent variables: ROA and ROE.

t-statistics are shown in the form [ ], while p-values are in the form { }

\*, \*\*, \*\*\* indicate significant at 10%, 5% and 1% respectively.

Table 3b shows the regression results for Model 2 (when the controlled variable IND DUMMY 1 to 15, representing all the 15 sectors used in the study are introduced).

The relationship between ROA and ROE (performance proxies) with the only independent variable (DR) is negative and significant at 1% level. This outcome, which is similar to the result of Model 1, confirmed hypothesis 1, and provides evidence for the support of agency cost theory.

The Table 3b further reveals that firm’s asset turnover, size and asset tangibility are major determinants of firm’s financial performance. With the introduction of the controlled variable, industrial sector (IND DUMMY), Table 3b indicates a positive and significant relationship between the two performance proxies, ROA and ROE and IND DUMMY 3 and 12 (Breweries and Food! beverages and tobacco). A positive and significant relationship also occurred between ROA and ND DUMMY 7 and 10 (Chemical and paints and Printing and publishing) and between ROE and ND DUMMY 9 and 14 (Construction and Petroleum marketing). This study provides the evidence that these seven industrial sectors influence their financial performance positively; hence they are viable sectors to invest in.

On the other hand, the relationship between ROA and ND DUMMY 11 (Computer and office equipment) is negative and statistically significant. This indicates that the sector influences its financial performance negatively, and the sector is not good for investment purpose. Other sectors such as Agric and agro- allied (ND DUMMY 1), Building materials (ND DUMMY 6), and Textiles (ND DUMMY 15) also show a negative relationship between the performance proxies and their sectors, but not significant.

Based on the line of discussion above, hypothesis 7 which predicts that the industrial sector of a firm influences its financial performance is hereby accepted.

Table 3b above (Model 2) provides robust results than that of Table 3a (Model 1). This can be seen from the results of the adjusted R square and Durbin- Watson which improved significantly in Model 2.

## **5. CONCLUSION**

This paper examines the impact of capital structure on firm's financial performance using 30 listed non- financial firms in Nigeria between 2001 and 2007. The paper seeks to fill the gap in the literature as a result of limited studies that have been conducted so far in this area using Nigerian data. An attempt was made by Akintoye (2008) but the study only used 10 Nigerian firms; a sample size not representative enough. It also lacked the empirical analysis a study of this nature demands. Its conclusions are based on financial ratios as indicators of capital structure and no regression or any form of econometric exercise was carried out. This paper therefore attempts to fill the inherent gap noticed in the study.

The study shows that the expected sign for is confirmed by the actual relation obtained for the model under study by the two financial performance measures, ROA and ROE in the two models. Thus, the firm's capital structure is an important determinant of firm's financial performance and the direction of the relationship is reverse. The outcome provides evidence in support of the agency cost hypothesis. The study further reveals that asset turnover, is an important determinant of financial performance. The expected sign of 2 is confirmed by the two financial performance proxies. With ROE as a measure of financial performance, size and age are also considered as major determinants of financial performance in model 1, but firm's age is not a major determinant in model 2.

The study, against theoretical expectations, provides evidence of a negative and significant relationship between asset tangibility and ROA as a measure of performance in the two models. The implication of this is that the sampled firms were not able to utilize the fixed asset composition of their total assets judiciously to impact positively on their firms' performance.

However, it provides evidence that asset tangibility is a major determinant of firm's performance. On the other hand, the study could not provide evidence that growth opportunity is a determinant of firm's performance in the two proxies of corporate performance for the two models.

The Model 2 provides evidence that industrial sector which a firm belongs affects its financial performance positively and significantly in 6 sectors- 3,7,9,10,12 and 14 (Breweries; Chemical and paints; Construction; Printing and publishing; Food/ beverages and tobacco; and Petroleum marketing) and negatively in one sector (sector 11- Computer and office equipment).

Regarding future line of research, this study can be improved upon if the number of firms and the performance measures are increased. The use of market- based performance measures such as the original Tobin's Q, price- earnings, market value to book value of equity, among others, will make the study more robust. Attention should also be shifted to the study of small and medium scale firms in the developing countries.



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