

CAPITAL STRUCTURE AND PROFITABILITY OF QUOTED FIRMS ON NIGERIAN STOCK EXCHANGE

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ABSTRACT

This study investigates the effect of capital structure on the profitability of listed firms in Nigeria. Multiple regressions analysis was conducted on data obtained from 20 listed firms over the period of ten (10) years (2005 – 2014). Profitability of firms was measured by Return on Capital Employed (ROCE), Return on Equity (ROE) and Return on Total Assets (ROTA) while Debt-Equity Ratio (DER), Debt to Total Assets Ratio (DTAR), Debt-Total Capital Employed (DTCE) and Long and Short Term Debt to Equity (LSTDE) were adopted as capital structure parameters. As indicated by the value of adjusted R^2 , only 53.6% and 55.7% of changes in ROCE and ROE respectively are caused by capital structure. Nigerian firms' are observed to have apathy towards debt finance as 15% of the sampled firms were equity financed for the period under review and most of leveraged firms maintained below 50% leverage ratio. Firms should be encouraged to take advantage of low cost debt finance up till a level that is optimal for their firms' operations to maximize profitability and value of their firms.

Key Words: Capital structure, Debt, Equity, Profitability, Listed firms

Introduction

Capital Structure being one of the core decision areas of financial management can be difficult for companies and it is important topic for the scholars of accounting and finance (Younus S., Ishfaq K., Usman M. and Azeem M.; 2014). Paul and Paul (2011) classified the determinants of capital structure into internal and external factors. Internal factors are factors within the organization which guides the decision in selection of the source from which additional funds required to finance viable investments opportunities will be obtained which include the

nature and size of the firm, profitability, cost of capital, degree of risk, growth, dilution of control, purpose of financing, terms of finance amongst others. Other the other hand the external factors are outside the control of the firm and include economic conditions, tax policy, attitude of investors to risks, and level of interest rates on debt. Unfortunately, some financial managers fail to plan the capital structure of their company (Njogo, 2010). Although companies with unplanned capital structure may prosper in the short run, but they may have to face considerable difficulties in raising funds required to finance

their activities in the long run. The relationship between firms' capital structure and firms' performance can either be positive or negative (Taiwo, 2012).

Debt and equity holders are investors in the firm with different degree of risk, control, rights and benefits. While debt holders are entitled to fixed interest/dividends, lower control and no voting right, the ordinary shareholders have residual interest in the earnings of the firm coupled with greater control, and voting right. Choice of leverage level may give rise to conflict between the management and the shareholders. High leverage is usually to the advantage of shareholders as agency cost will be reduced and business performance can be enhanced at this level which the management may not be positively disposed to. In an attempt to maintain a balance, the management may fix the capital structure to highest possible leverage level subject to other requirements such as flexibility, solvency, liquidity, control, standards set by the financial institutions, the Security and Exchange commission (SEC) and the Nigerian Stock Exchange (NSE), etc. It is important for Nigerian firms to have an objective analysis of their business operations and obligations in order to determine the debt-equity mix that gives effective and efficient performance to their firms. Most of their studies were based on one sector (Yusuf, 2014; Ajeigbe et al., 2013 and Akinyomi 2013). The study conducted by Chechet and Olayiwola (2014) though covered all the industry but did not make use of industry representative based samples. Therefore, this study will adopt industry based strata in selection of samples for the study to examine the influence of capital structure on profitability of Nigerian firms.

Objectives of the Study

The main objective of this study was ascertainment of the effect of capital structure on the profitability of quoted firms in Nigeria. The following specific objectives were examined:

- i. To ascertain the effect of combination of equity and debt in the capital structure of Nigerian firms on their Return on Capital Employed (ROCE).
- ii. To determine the effect of debt-equity mix on the Return on Equity (ROE) of Nigerian firms.

Research hypotheses

- H₀₁: The debt to equity combination has no significant effect on return on capital employed of Nigerian firms.
- H₀₂: Debt-equity mix of Nigerian firms does not significantly affect their return on equity.

Literature Review

Even though there are number of factors influencing financial performance of firms, capital structure is one of the main factors that cannot be ignored (Simon-Oke, 2011). Ibe (2010) describes capital structure as "the appropriate mix of debt and equity that maximizes the return on investment and shareholders' wealth while minimizing the cost of capital, simultaneously". The components of capital structure includes share capital, private investments, bank and business debts, lease (finance) obligations, tax debts, retirement debts, deposits, product related debts and other probable debts (Yusuf, Onafujalo, Idowu and Soyeb, 2014). Brealey and Myers (2003) are of the opinion that in terms of the proportionate mix, one cannot say more debt is always better or more equity is better because debt may be better than equity in some cases and worse in others; since bankruptcy cost exists, deteriorating returns occur with further use of debt in order to get the

benefits of tax deductions.

Optimal capital structure is that which keep the Weighted Average Cost of Capital (WACC) at the minimum. Optimal capital structure differ from firm to firm since it is determined by the trade-off between the net-tax advantage of additional corporate leverage and cost associated with increased likelihood of financial distress and reduced marketability of corporate debt that would result from additional leverage (Nwidobie, 2012). In financing long term investments, a firm is faced with the option of choosing from various form of finance available such as debt and equity (Lawal, Edwin, Kiyanjui and Adisa, 2014). Njogo (2010) opined that debt capital is cheaper to use than equity as a result of the tax advantage of debt capital as interest payments are tax deductible and the fixed charge of the debt holders on the profits of a firm.

Equity is more costly than debt due to the residual interest of equity holders on the profits of the firm and dividends payments are not tax allowable expenses. It should be noted that the higher the debt in the capital structure of a firm the higher the financial risk. Increase in presence of debt in the capital structure of a firm will increase the risks of the shareholders' investments (financial risk) which would make ordinary shareholders demand more return if the portfolio law that 'the higher the risk the higher the returns' is anything to go by. In the extreme, the risk of bankruptcy and its associated costs increases as a firm increases debt in its capital structure as disappointed debt holders may drag the firm into liquidation if it fails to meet its obligations to them in interest payments and capital repayment. Also, as debts increased in a firm's capital structure, it may experience difficulty in raising funds through debt

as lenders may require stiffer covenants, higher interest rates, creditors would grant credits at more stringent conditions, etc. Competitors may also take the advantage of the perceived firm's financial weaknesses to ouster the firm.

Theoretical Review

Modigliani and Miller (1958) are the foremost proponents of theory of capital structure. They argued that the total market value of the firm and its cost of capital are independent of its capital structure. They argued further that firms and individuals have equal access to the capital markets which make homemade leverage possible (Lugi and Sorin, 2009). Their theory proposes that two firms with identical profitability but different capital structure will have the same value; but where two firms with identical profitability but with different capital structure have different values, investors that decide to transfer his/her investment from one company to another (arbitrage) would make financial gains as they can substitute corporate for personal leverage. However, in 1963, Modigliani and Miller, after so much criticism adjusted their initial stance of non-existence of corporation taxes, thereby confirming the effect of capital structure on the WACC of a firm and its valuation (Paul *et al*, 2011). Trade-off theory builds on the Modigliani and Miller (1958) theory by recognising tax benefit from interest payments. This optimal capital structure is achieved when the marginal benefit of an additional unit of debt is exactly offset the marginal cost of an additional unit of debt (Leon, 2013). The trade-off theorists, in other words believed that increase of debt in the capital structure increases the tax benefits enjoyed by leveraged firms while they give up the possibility of cost of insolvency.

The agency theory of capital structure (Jensen and

Meckling, 1976) propound that the agency costs of equity and debt that arises as owners of the firm appoint managers to oversee the firm on their behalf. The theory explained the agency cost of outside equity in two ways. First, the problems that conflict between the desire of the principal (shareholders) and agent (manager) as well as when it is difficult and expensive for the principal to verify what the agent are actually doing (Leon, 2013). The shareholder-manager may engage in ethically dangerous activities to increase their wealth and value at the expense of the firm, which results in increase in monitoring cost (equity cost) as a result of the disagreement. Second, another kind of agency cost may arise from the conflict that emanate between the debt holders and shareholder as they pursue their own interest. The agency cost of debt arises when the absentee shareholder would be willing to sell his holdings to an owner-manager who can avoid the cost (Jensen and Meckling, 1976).

According to the perking order theory of capital structure, the firm finances its activities by making use of the sources of finance in a particular order; the firm would first make use of internal pool of funds (i.e. retained earnings) before issuing debt and it will make use of equity as a matter of last resort, after the fund requirement exceeds amount available from retained earnings and debt issuance. It asserts that firms show a distinct preference for internal finance over external finance (Leon, 2013). Pecking order theory encourages excessive leverage as it suggests the use of equity only after the firm had exhausted its debt capacity. The view of the perking order theory was supported by Myers and Majluf (1984) model which predicts that managers will follow a perking order preference in their financing decisions.

Empirical Review

Emergence of the seminar work of Modigliani and Miller's (1958) irrelevant theory of capital structure have provoked serious research into the determinants of capital structure and the effect of capital structure on the profitability of firms among other areas. Salawu (2009) conducted an empirical analysis of the effect of capital structure on profitability of listed Nigerian firms from 1990 to 2004, using total liability ratio, long-term liability ratio, short term liability ratio and participation of equity as independent variables or parameters. The findings shows that the use of debt capital has an insignificant effect on the profitability of investigated firms. Unlike Salawu (2009), Simon-Oke *et al* (2011) employed the use of panel data regression analysis in the study of five (5) Nigerian firms' capital structure and industrial performance between 1999 and 2007. Their study established a significant relationship between profitability and capitals structure with equity playing a better role than debt financing. The findings of the study further revealed that a positive relationship exists between the profitability of firms and equity finance.

More recent studies by Osuji *et al* (2012) and Arowoshegbe and Idialu (2013) which covered a longer period up to 2010 found negative relationship between capital structure and profitability. Arowoshegbe and Idialu (2013) identified a significant negative relationship between leverage and profitability of Nigerian quoted firms confirming their a-priori expectation. They found out that the pecking order behavior in Nigerian context seems to be based on zero transaction cost associated with the use of retained earnings and low floatation cost for debt issue which suggests that Nigerian firms do not have a well-defined capital structure. Osuji *et al* (2012) employed panel data for survey of thirty (30) listed firms on Nigerian Stock Exchange (NSE) market

for a period of seven (7) years between 2004 and 2010 in investigating the effect of capital structure on the financial performance of Nigerian firms. From the study, using two financial performance measures such as Return on Assets (ROA) and Return on Equity (ROE), the capital structure was discovered as one of the determinants of financial performance of firms in Nigeria.

Evidence of Negative relationship between capital structure and financial performance of firms was also discovered by Akinyomi (2013) and Lawal et al. (2014). Akinyomi (2013) focused on Nigerian manufacturing firms using correlation analysis in analyzing data obtained from financial reports from 2007 to 2011 (5 years). The reveals a significant relationship between the financial performance of Nigerian firms and capital structure; while the relationship between the leverage and return on equity was significantly negative whereas with return on assets it was significantly positive. Unlike Osuji *et al* (2012), Akinyomi (2013) and Yusuf, Onafujalo, Idowu and Soyebó (2014) studied the effect of capital structure on profitability of quoted firms in Nigeria between 2000 and 2011 using samples of 120 listed firms revealed an insignificant effect of the capital structure on profitability of firms. Their study further revealed that the nature of effect of debt-equity mix on profitability depends on industry characteristics as the nature of influence exhibited by one industry differ from that of others.

Apart from the Nigerian case, there have been other research in other countries on the capital structure and performance relationship. Amongst these studies was Leon (2013) who researched manufacturing firms in Sri Lanka from 2008 to 2012. Using correlation analysis, the result of the study showed that there is a moderate negative relationship between leverage and ROE but no

significant relationship exist between leverage and ROA. Khanam *et al* (2014) examined the impact of capital structure on the financial performance of listed firms on Karachi Stock Exchange in Pakistan. They also concluded that capital structure has a significant negative effect on the firm's Return on Equity (ROE), net profit margin, Return on Capital Employed (ROE), and Return on Assets (ROA). Younus *et al* (2014) repeated same study on sugar industry firms listed on Karachi Stock Exchange in Pakistan. The results of the study, contrary to the conclusion of Khanam *et al* (2014), revealed that capital structure has a weak positive effect on gross and net profits of sugar firms listed on KSE, Pakistan.

Investigation on the effect of capital structure on profitability was carried out on the petrochemical companies in the Kingdom of Saudi Arabia. In the study, Ajlouni and Shower (2013) employed a simple regression analysis method and the results of the study showed that, contrary to what the results of other studies using ROA and ROE, a strong negative relationship exists between debt equity ratio and profitability. Research carried out in Jordan by Taani (2013) of 45 manufacturing companies listed in Amman Stock Exchange using financial indicators such as Return on Assets (ROA) and Profit Margin (PM) as well as short-term debt to Total Assets (STDA), Long term Debt to total Assets (LTDTA) and Total Debt to Equity (TDE) as capital Structure variables could not establish any statistically significant influence of capital structure on performance of firms in Jordan.

It was observed that while some of these previous empirical evidences investigating the effect of capital structure on profitability of firms cover all the industry; none of them seem to have employed sampling procedure which enable every industry have quota in the samples used for their studies

. Methodology

A total number of 183 firms quoted on the floor of first tier market of the Nigerian Stock Exchange (NSE), grouped into 11 sectors (NSE fact book 2012/2013) constitute the population of this study. This scope of this study was limited to listed firms in Nigeria, their capital structure and profitability over the past 10 years (2005 to 2014). The samples were selected using stratified sampling technique; thus, every industry had representative in the samples selected. The strata were industry classifications used by the NSE and the weight of each industry was considered in determination of

number of samples selected (see table 3.1 below). However, financial institutions such as banks and insurance firms were excluded in the analysis as they exhibit different capital structure characteristics from non-financial quoted companies. Data were gathered from the financial statement of twenty (20) out of the non-financial firms listed on the Nigerian Stock Exchange (NSE).

Table 3.1: The population and samples selected for the study

Serial No.	Industry (strata)	Population	No. of Samples Selected	Samples Selected
1	Agriculture	5	1	Presco Plc
2	Conglomerates	6	1	Transnational Co. Of Nig. Plc
3	Construction	9	1	UACN Property Devp't Co. Plc
4	Consumer goods	27	4	i. Int'l Brewries Plc ii. P. S. Mandries Plc iii. Cadbury Nig Plc iv. Vitafoam Nigeria Plc
5	Financial services	56	0	
6	Healthcare	10	2	i. Morrison Industries Plc ii. Glaxosmithkline Consumer Nigeria Plc
7	ICT	9	1	eTtransact International Plc
8	Industrial goods	24	4	i. Paints and Coatings Man. Plc ii. Avon Crown caps and Containers (Nig) Plc iii. Poly Products Nig Plc iv. Larfarge Cement Wapco Plc
9	Natural resources	5	1	B. O. C. Gasses Nigeria Plc
10	Oil and gas	10	2	i. Beco Petroleum Products Plc ii. Total Nigeria Plc
11	Services	20	3	i. Afromedia Plc ii. Ikeja Hotel Plc iii. University Press Plc
Total		183	20	

Source: Researcher's computations, 2016.

Model Specification

The model for this study was adapted from the work of Osuji and Odita (2012) which they stated as follows:

$$ROA = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 SIZE + \beta_4 AGE + \beta_5 TANG + \beta_6 GROW + \epsilon$$

$$ROE = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 SIZE + \beta_4 AGE + \beta_5 TANG + \beta_6 GROW + \epsilon$$

Osuji and Odita (2012) made use of one independent variable (Debt ratio (DR)) and two

dependent variables such as Return on Assets (ROA) and Return on Equity (ROE) as well as Asset Turnover (TURN), firm's size (SIZE), firm's Age (AGE), Asset Tangibility (TANG), and Growth opportunity (GROW) as controlled variables. The model, as a result of different size of variables used for this study, it was modified as stated below in order to accommodate number of dependent and independent variables of the study.

The dependent and independent variables of this study are profitability and capital structure respectively. The measures of profitability adopted for this study are Return on Capital Employed (ROCE) and Return on Equity (ROE). The independent variable, capital structure, measurement tools adopted for this study are Debt-Equity Ratio (DER), Debt to Total Assets Ratio (DTAR), Debt-Total Capital Employed (DTCE) and Long and Short Term Debt to Equity (LSTDE).

The model used for this study is specified thus.

$$ROCE = \beta_0 + \beta_1 DER + \beta_2 DTAR + \beta_3 DTCE + \beta_4 LSTDE + \text{eit} \dots(1)$$

$$ROE = \beta_0 + \beta_1 DER + \beta_2 DTAR + \beta_3 DTCE + \beta_4 LSTDE + \text{eit} \dots(2)$$

The coefficient of the variables β_1 to β_4 was estimated through the use of General Linear Model (GLS) Research hypothesis were tested at 5% level of significance.

DATA ANALYSIS AND INTERPRETATION
H0₁: The debt-equity combination has no significant effect on return on capital employed of Nigerian firms.

Table 4.1 shows the results from the test of hypothesis one. At 5% significance level, Debt to Capital Employed Ratio (DTCE) and Long and Short Term Debt to Equity (LSTDE) have significant effect on Return on Capital Employed (ROCE) of sampled firms. On the other hand, Debt to Total Assets Ratio (DTAR) has an insignificant effect on Return on Capital Employed (ROCE). Therefore, the null hypothesis that suggests that the capital structure has an insignificant influence on the Return on Capital Employed (ROCE) is not true for three out of four capital structure parameters used for this study but true with respect to Debt to Total Assets Ratio (DTAR) only. While Debt Equity Ratio (DER) maintained a significant positive effect, Debt to Capital Employed Ratio (DTCE) and

Long and Short Term Debt to Equity (LSTDE) displayed a negative significant effect on Return on Capital Employed (ROCE) of sampled firms. Consequently, the model for Return on Capital Employed (ROCE) is adjusted thus.

$$ROCE = 156.12 + 0.159\beta_1 - 0.622\beta_3 - 0.046\beta_4$$

In addition, one unit or 1% change in each of Debt Equity Ratio (DER), Debt to Capital Employed Ratio (DER) and Long and Short Term Debt to Equity (LSTDE) will results in 0.159, - 0.622, and - 0.046 equivalent change in Return on capital employed (ROCE) respectively.

Table 4.1: Regression Coefficients (Return on Capital Employed)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	156.120	146.058		1.069	.286
DER	.159	.022	.900	7.313	.000
DTA R	1.535	.800	.100	1.918	.057
DTCE	-.622	.285	-.112	-2.187	.030
LSTDE	-.046	.004	-.1423	-11.575	.000

Source: Researcher's computations, 2016.
 The adjusted R² value of 52.7 % as shown in Table 4.2 revealed that independent variables (Debt Equity Ratio (DER), Debt to Total Assets Ratio (DTAR), Debt to Capital Employed Ratio (DER) and Long and Short Term Debt to Equity (LSTDE)) are responsible for 52.7% variation in the Return on Capital Employed (ROCE). Likewise, a Durbin-Watson value of 2.046 depicts the presence of autocorrelation among the variables used for this study.

Table 4.2 R² Value of Regression Equation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			Durbin-Watson
					R Square Change	Sig. F Change	F Change	
1	.732 ^a	.536	.527	1616.83311	.536	.000	.000	2.046

Source: Researcher's computations, 2016.
H0₂: Debt-equity mix of Nigerian firms does not significantly affect their return on equity.
 Detailed results of the data analysis for hypothesis two is shown in Table 4.3. Only the Debt Equity

Ratio (DER) and Long and Short Term Debt to Equity (LSTDE) have significant effect on Return on Equity (ROE) at 5% significance level. While the Debt to Total Assets Ratio (DTAR) and Debt to Capital Employed Ratio (DER) have no significant effect on the Return on Equity (ROE). This shows that only the Debt Equity Ratio (DER) and Long and Short Term Debt to Equity (LSTDE) could contribute significantly to variation in Return on Equity (ROE) of Nigerian firms. Likewise, the null hypothesis (H₀) was found untrue with respect to two of the capital structure parameters (Debt Equity Ratio (DER) and Long and Short Term Debt to Equity (LSTDE)) while it is true of the other two parameters (Debt to Total Assets Ratio (DTAR) and Debt to Capital Employed Ratio (DER)). While Debt Equity Ratio (DER) significantly influence Return on Equity positively but Long and Short Term Debt to Equity (LSTDE) did same negatively. Consequently, the model is adjusted as follows.

$$ROE = -7972.295 + 13.526\beta_1 - 3.958\beta_4$$

It could further be explained that a 1% or one unit change in Debt Equity Ratio (DER) and Long and Short Term Debt to Equity (LSTDE) would lead to a 13.526 and -3.958 change in Return on Equity (ROE) respectively.

Table 4.3: Regression coefficients (Return on Equity)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-7972.295	11509.737		-.693	.489
DER	13.526	1.713	.940	7.896	.000
DTAR	116.207	63.077	.093	1.842	.067
DTCE	4.876	22.420	.011	.217	.828
LSTDE	-3.958	.312	-1.509	-12.686	.000

Source: Researcher's computations, 2016.

Likewise, it could be inferred from the value of adjusted R² that only 55.7% of movements or changes in Return on Equity (ROE) could be

explained by the independent variables of the study. Meanwhile, a Durbin-Watson value of 1.925 (less than 2) describe the presence of serial correlation in the observed variables.

Table 4.4: R² Value of Regression Equation (Return on Equity (ROE))

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics			
					R Square Change	F Change	Sig. F Change	Durbin-Watson
1	.752 ^a	.566	.557	127410.15837	.566	63.491	0.000	1.925

Source: Researcher's computations, 2016.

Industry-based Data Analysis

Further analysis conducted on the individual industry on this study revealed that the debt-equity combination pattern of Nigerian firms varied from one industry to another and they seem to affect profitability in different ways. Table 4.7 shows the summary of the regression coefficients and P-value or level of significance of influence of capital structure on Return on Capital Employed (ROCE) of individual industry. It could be observed from the table that the capital structure of most of the industries such as agriculture, conglomerates, construction and natural resources have insignificant effect on profitability judging from greater than 5% levels of significance. Service industry's capital structure has significant effect on the Return on Capital Employed (ROCE) of the firms in the industry while firms in the oil and gas industry's capital structure variables, except Debt to Total Capital Employed (DTAR), have significant impact on Return on Capital Employed (ROCE), posting P-values of less than 5%. Capital structure of health care and industrial goods sectors have insignificant effect with all the independent variables except Long and Short Term debt to Equity (LSTDE) compared to that of consumer goods industry where Debt to Total Asset Ratio (DTAR) and Debt to Capital Employed (DTCE) affect Return on Capital

Employed (ROCE) significantly. Durbin-Watson coefficient of two (2) and above shows the presence of autocorrelation while value of less than two (2) shows that the variables of the study are serially correlated. Only the Agriculture Industry firms variables have a Durbin-Watson value of greater than 2, thereby auto correlated but

other industries variable demonstrate a serial correlation as they posted a Durbin-Watson values of less than 2.

Table 4.7: Regression Coefficients and P-Value (Significance) for Return on Capital employed (ROCE): Industry Based

Industry		Constants	DER	DTAR	DTCE	LSTDE	Adjusted R ² (%)	Durbin Watson
Agriculture		133.192	-.125	-.996	1.972	-.434	34.2	2.804
	P-Value (Sig.)	.310	.735	.085	.126	.056		
Conglomerates	B	216.910	.183	.127	-.520	-.142	44.5	1.959
	P-Value (Sig.)	.380	.744	.707	.497	.719		
Construction	B	290.770	.415	-.107	-1.155	-.027	81.9	1.381
	P-Value (Sig.)	.008	.199	.810	.081	.500		
Consumer Goods	B	-158.420	.172	3.599	-.450	-.048	53.5	1.933
	P-Value (Sig.)	.826	.001	.169	.476	.000		
Health Care	B	172.247	.292	5.618	-7.275	.332	26.3	0.343
	P-Value (Sig.)	.036	.486	.142	.073	.039		
Industrial Goods	B	127.196	.775	.543	-2.010	.063	15.2	0.733
	P-Value (Sig.)	.021	.138	.462	.054	.027		
Natural Resources	B	219.593		-.730	-1.471	.127	10.32	1.454
	P-Value (Sig.)	.067		.412	.498	.194		
Oil and Gas	B	1127.024	-10.769	8.318	12.270	.295	77.4	1.604
	P-Value (Sig.)	.000	.000	.073	.024	.016		
Services	B	-70.840	15.094	34.145	-35.907	-.197	83.2	1.470
	P-Value (Sig.)	.730	.002	.000	.000	.000		

Source: Researcher's computations, 2016.

It could be observed from Table 4.8 that the capital structure service industry firms impact their Return on Equity (ROE) significantly while the Return on Equity (ROE) of Conglomerates, Construction, Industrial Goods and Natural Resources industries' firms capital structure affect Return on Equity (ROE) insignificantly, with all the capital structure indicators used in this study

having P-values of less than 5%. Meanwhile, Debt Equity Ratio (DER) and Long and Short Term Debt to Equity (LSTDE) have significant effect on the Return on Equity (ROE) of Oil and Gas and Consumer Goods industries' firms. The Agricultural industry firms demonstrate same relationship but with respect to Debt to Total Assets Ratio (DTAR) and Long and Short Term Debt to Equity (LSTDE). Long and Short Term

Debt to Equity (LSTDE) only significantly affect Return on Equity (ROE) of Healthcare industry firms. With Durbin-Watson value of greater than 2, only the Agriculture and Consumer Goods industries' variables demonstrated presence of

auto correlation while that of all other industries demonstrated presence of serial correlation.

Table 4.8: Regression Coefficients and P-Value (Significance) for Return on Equity (ROE): Industry Based

Industry		Constants	DER	DTAR	DTCE	LSTDE	Adjusted R ² (%)	Durbin Watson
Agriculture	B	120.101	-.212	-1.927	3.800	-.736	46.1	2.846
	P-Value (Sig.)	.515	.692	.036	.059	.034		
Conglome-rates	B	200.271	.011	.550	-.549	-.107	82.2	1.951
	P-Value (Sig.)	.469	.986	.188	.527	.811		
Construc-tion	B	323.232	.410	-.137	-1.091	-.039	63.1	1.260
	P-Value (Sig.)	.020	.354	.830	.209	.498		
Consumer Goods	B	-35092.346	16.113	332.330	23.373	-4.407	53.5	2.051
	P-Value (Sig.)	.579	.001	.148	.672	.000		
Health Care	B	167.454	.435	5.693	-7.525	.354	40.0	0.342
	P-Value (Sig.)	.044	.310	.145	.070	.032		
Industrial Goods	B	120894	1.067	-.276	-1.782	.067	13.3	0.685
	P-Value (Sig.)	.089	.120	.774	.184	.071		
Natural Resources	B	120.894		-.880	-.596	.113	-11.9	1.320
	P-Value (Sig.)	.182		.449	.886	.462		
Oil and Gas	B	-1122.999	-9.683	9.157	10.069	.344	79.0	1.612
	P-Value (Sig.)	.000	.004	.086	.095	.015		
Services	B	-205.398	20.793	48.922	-50.488	-.200	76.3	1.386
	P-Value (Sig.)	.467	.002	.000	.000	.000		

Source: Researcher's computations, 2016.

Conclusion and Recommendations

Most of the quoted firms in Nigeria used varying degree of combination of debt and equity finance in financing their operation while only few of them were all equity financed. Nigerian listed firms are observed to have apathy towards debt finance as the level of debt-equity mix of listed firms in Nigeria is still low. The quality of capital structure decisions of

quoted firms in Nigeria has significant impact on their Return on Capital Employed (ROCE) of all the profitability measures used in the study. The use of debt or alteration in the gearing will have significant positive influence on the ROE of Nigerian firms. **Nigerian listed firms have not taken full advantage of low-cost debt finance to optimize their capital structure and improve financial performance.**

The industry factors has influence on the level

of significance of the effect of capital structure on profitability of listed firms in Nigeria as different industries display varying degree of level of significance of capital structure on profitability. The profitability of listed firms in Nigeria varied in relation with the debt equity mix. Finding the right debt-equity mix for the firms becomes relatively important.

The following recommendations are considered relevant from this research. Listed firms in Nigeria should endeavor to take advantage of less costly debt finance to increase profitability. However, proper care should be exercised in choosing the optimal combination of debt and equity in corporate finance to avoid dwindling performance. This is necessary to sustain the confidence of the investors by ensuring that the shareholders' wealth is maximized. Industry characteristics that affect capital structure decisions should be identified and taken into consideration in making debt-equity mix decision as industry based analysis of the study revealed the potential level of impact that industry factors could posed to capital structure decisions' effect on profitability. Financing decision makers should ensure that they discover the optimal capital structure for their firms. The study recommends that further studies should ascertain other factors responsible for changes in profitability of listed firms in Nigeria. Also, it will interesting to examine the industry factors influencing debt-equity mix of firms in different industries and the extent of their influence.

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