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An Empirical Analysis of the Determinants of Corporate Debt Policy of Nigerian Firms

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Abstract

Corporate debt policy remained a significant, but a challenging decision for managers entrusted with the responsibility to improve the value of the firm. Thus, this study examines the factors influencing the capital structure decisions of firms in Nigeria. The study employs a panel data regression model to analyze data from firms in Nigeria for the period 2011 to 2015. The result of the empirical analysis reveals that firms in Nigeria have a preference to finance economic operations from retained earnings and the use of short-term debt on rollover basis. The finding of this study confirms that debt decreases with profitability and growth opportunities. The findings show that asset tangibility and firm size have a positive and significant relationship with debt policy of firms in Nigeria. The analysis also reveals that managerial ownership has a negative and significant relationship with debt ratio of firms in Nigeria. The study shows a non-significant positive relationship between non-debt tax shields and debt. The study demonstrates that the trade-off and pecking order theories both explains the factors influencing capital structure decisions of firms in Nigeria. Therefore, this study suggests the need for stakeholders to develop the financial markets and make it accessible for firms to obtain long-term financing for economic growth and development.
Keywords: Capital structure; Nigeria stock exchange; Developing economies; Profitability; Growth; Debt; Trade-offs; Pecking order; Financial decisions, Ownership.

1. Introduction

Corporate debt policy has remained a significant, but a challenging decision for corporate managers in both the developed and developing countries. In the business world of today, the debt policy of a firm is an important mechanism to strategically drive an inclusive growth, and for the shareholders to monitor and control the activities of the managers assigned with the responsibility to maximize the value of the firm. Importantly, stakeholders such as the creditors and regulators consider debt policy too as a means to evaluate the performance of the firm in order to determine its continued importance. The capital structure of a firm is the combination of debt and equity finance to fund the operations and assets of the business. For a long time, the puzzling issue in finance has been how do firms decide their debt policy and what factors determine the optimal capital structure, particularly in developing countries? Are the theories of a capital structure having similar effects on the value of firms in developing countries? A number of studies have examined this issue, especially in advance countries and recently in developing countries but with conflicting results, (Abor, 2007; Jensen and Meckling, 1976; Titman and Wessels, 1988).

Since the revolutionary work of Modigliani and Miller in 1958 on the theory of capital structure, studies on the subject of capital structure has advanced using theoretical and empirical models to establish the influence of capital structure and its determinants on the value of the firm. Under certain assumptions, Modigliani and Miller concluded that the value of the firm is not dependent on its capital structure. This means that the capital structure of the firm is irrelevant in a perfect market condition. Furthermore, MM posits that the associated cost of equity for a leveraged and unleveraged firms are the same, which means the value of the firm would remain the same no matter the level of debt structure. However, the MM theory of irrelevant capital structure has since been criticized based on certain unrealistic assumptions in their study. In a real world, imperfections actually exist in the marketplace and the capital structure of the firm could actually influence the performance and value of the firm, (Wiwattanakantang, 1999).

Capital structure has gained considerable attention in the literature. However, the choice of appropriate explanatory variables and their effects on capital structure decisions is still an issue in finance, (Harris and Raviv, 1991). In addition, the empirical results, especially on the relevance of the theories of capital structure to explain firm performance are inconclusive. Furthermore, research work on this subject in Nigeria are still scanty and only appeared in recent times with some of the studies focusing on banking (Aremu *et al.*, 2013) and manufacturing (Akinyomi and Olagunju, 2013) sectors, but also with conflicting remarks. For instance, while Akinlo (2011) reported a relationship between debt and other variables in Nigeria, Akinyomi and Olagunju (2013) studied 24 manufacturing firms and reported that there is no significant link between profitability, growth, size of firms and capital structure in Nigeria. Apart from the conflicting results reported, the focus of these studies on banking and manufacturing sectors undermined the importance of other sectors of the Nigeria economy.

Thus, this study aimed to examine the determinants of capital structure and the theories relevant to explain capital structure decisions in Nigeria. In other words, the study intends to establish the relevance of static trade-off and the pecking order theories of capital structure to explain firms' financing behaviour in developing countries like Nigeria. As a developing country, Nigeria is saddled with the challenges and responsibility to evolve strong financial

markets, institutions and governance structures that would ensure economic growth and development. With strong financial markets and institutions, managers would be able to raise the required funds to improve the return on investment for shareholders. As the largest market in sub-Sahara Africa, Nigeria houses a good number of firms in twelve sectors of the economy and the understanding of the factors influencing debt policy and its effect on market value is significant. Against the foundation of other studies that focused on data from listed firms only (Akinlo, 2011), this study employed data from both listed and unlisted firms for the period 2011 to 2015 and used the panel data regression model for the analysis.

The result of the study reveals that Nigeria firms have preference to finance economic operations from retained earnings and the use of short-term debts on rollover basis. This suggests the level of financial markets development and the inability of Nigeria firms to access the markets to raise long-term financing for economic growth and development. The study indicates that profitability and growth opportunities have a negative and significant relationship with debt. The findings reveal that tangibility and firm size serves to explain the capital structure decisions of firms in Nigeria. The result showed too that managerial ownership provides ground for firms in developing countries to reduce debt in their financial structure. The study shows that the pecking order and trade-off theories both explain the connection between capital structure decisions and the performance and value of firms in Nigeria. This study

The rest of this paper is structured as follows. Section 2 presents a literature review of capital structure; section 3 discusses the dataset and methodology used in the empirical analysis and section 4 presents and discussed the empirical results. Finally, section 5 presents the conclusion.

2. Literature Review

The concept of capital structure has been a contentious, but an interesting issue in the theory of finance. Since the work of MM in 1958, a number of competing theories have been advanced to explain capital structure behaviour and its effect on the value of the firm (DeAngelo and Masulis, 1980; Jensen and Meckling, 1976; Myers S., 1984). Huang and Frank (2006) in a study in China argued that the tax-based and agency-cost-based models have their roots on the static trade-off model. This, therefore, makes the static trade-off and the pecking order theories the two commonly acknowledged theories of capital structure in the literature.

According to the static trade-off theory, a firm would be at its optimal capital structure where net tax benefits of debt financing are at equilibrium with debt related costs such as the bankruptcy costs and cost of holding firms' assets constant among others (DeAngelo and Masulis, 1980). Altman (1984) examined the effect of tax and bankruptcy costs on capital structure in a study of 12 retail and 7 industrial firms and concluded that the optimal capital structure of a firm should be at a point where the present value of marginal tax benefits is equal to the present value of marginal costs of financial distress. The trade-off theory explain further the differences in debt to equity ratios between industries and maintained that equity financing might mean a shift in the equilibrium, which is usually perceived by stakeholders as an imprudent financial decision that constantly undermine the objective of the firm. In a real word, firms are supposed to set their target capital structure based on the costs and benefits of debt financing and the overall objective and policy of the firm (Myers S., 1984).

The trade-off model argued that agency costs are fundamental in financing decisions due to a possible conflict of interests between the creditors on the one side and shareholders and managers on the other side. Following the agency costs perspective, management has the moral obligation to take decisions that would favour shareholders at the expense of other stakeholders like the creditors, especially where a firm is on the verge of financial distress. Titman and Wessels (1988) noted that the conflict of interests and other related agency costs arising from the shareholders and debt provider relationship is likely to be severe for firms in growing industries. However, Jensen and Meckling (1976) argued that compelling managers to use secured debt to finance any potential investment might reduce the agency cost of debt. Accordingly, the optimal capital structure of the firm can only be determined by ensuring the minimization of possible costs that would arise from the conflict between the stakeholders involved.

The pecking-order theory developed based on asymmetric information, aimed at resolving the agency problems between the firm insiders and outside investors (Myers S., 1984). This theory posits that managers have more and better information about the firms' prospects, risk and value than any other stakeholders. According to Myers S. C. and Majhuf (1984), firms have no well-defined debt ratio, but a hierarchy of preferences to finance positive investments. The pecking-order theory proposed that firms with new investment opportunity would prefer to explore retained earnings. Thereafter, and where additional funds are required, such a firm may turn to less risky debt before the issuance of new equity (common and preferred stocks). The pecking order model gained popularity when (Myers S., 1984), argued that managers should not be quick to issue stocks, especially when such stocks are underpriced. The model, however, encourages managers to build huge cash reserves at the expense of payout in the form of dividends to shareholders. Following the pecking order theory, payout to investors in the form of a dividend is only sure when firms do not have potential projects to finance with retained earnings or when firms have the intention to raise additional financing through equity.

A number of factors from the environment can influence the capital structure decisions of a firm. According to Titman and Wessels (1988), the choice of explanatory variables to explain the capital structure decisions of a firm is a function of the environment and the institutional structures. This makes it possible for large firms to enjoy the benefits of debt financing in their capital structure. Previous studies have identified profitability, size, growth opportunities, asset structures and non-debt tax shields as factors that affects the choice of capital structure and firm performance (Esperance *et al.*, 2003; Hall *et al.*, 2004; Wald, 1999). However, the actual effect of these variables on capital structure decisions is still an issue.

2.1. Profitability

The effect of profitability on financial leverage since Modigliani and Miller (1958) has been examined with no conclusive results. The relationship between profitability and debt could be positive or negative. Using data from the U.S, Titman and Wessels (1988) and Chittenden *et al.* (1996) reported that financial leverage has an adverse relationship with firm's profitability. Barton *et al.* (1989) and Wiwattanakantang (1999) who used data from developing countries and reported a negative relationship between debt and profitability in Thai firms supports the findings from the U.S. In a similar study, Akinlo (2011) examined the determinants of capital structure in Nigeria using data from 66 firms for the period 1999-2007 and reported a negative relationship between debt and profitability. On the other hand, the relationship between profitability and leverage has also been reported to be positive (Jensen, 1986). Long and Maltiz (1985) reported a positive but non-significant relationship between profitability and financial leverage. In this study, we predict that profitable firms will follow the pecking order theory and have lower debt ratio in their capital structure.

2.2. Asset Tangibility

Assets tangibility and capital structure can both explain firm performance. The magnitude of debt in a firm's financial structure is partly a function of its assets. Firms with relatively large assets have the potential to borrow funds for investment. While this advantage exists, the relationship between tangible assets and financial leverage is contradictory. According to the agency theory, conflicts exist between managers and shareholders as well as shareholder and lenders (Jensen and Meckling, 1976). However, to minimize the agency problems stemming from moral hazards and adverse selection on the one hand, and to prevent managers from engaging in any opportunistic behaviour, the principal has the moral right to direct the agent to finance new investment opportunities using debts. Nevertheless, to protect against the risk of debt, lenders may take actions by requesting tangible assets as collateral for potential debts financing (Harris and Raviv, 1991). In this instance, assets tangibility may have positive (Rajan and Zingales, 1995; Wiwattanakantang, 1999) or negative (Booth *et al.*, 2001; Huang and Frank, 2006) influence on leverage. Akinlo (2011) studied the link between capital structure and asset tangibility in Nigeria and reported a negative relationship. However, this study postulates a positive relationship between asset tangibility and debt.

2.3. Firm Size

In the real sense of it, large firms enjoy economies of scale in their operations, which they often utilized to issue long-term debt to finance any investment opportunities (Jensen and Meckling, 1976). On the contrary, small firms may issue short-term debt to finance their operations since they may not have the required collateral for long time financing. In a competitive and volatile business environment, larger firms are quick to diversification with less problem of asymmetric information as compared to the smaller ones (Berger *et al.*, 1997). Rajan and Zingales (1995) noted that larger firms tend to provide better and quality information to outside stakeholders than smaller firms. In addition, the ability to attract managerial expertise coupled with the oversight functions of the institutions and regulatory authorities helps larger firms to build public confidence and reduce the risk of bankruptcy. In a study done in G-7 countries, Rajan and Zingales (1995) established a positive correlation between size and leverage. In addition, in developing countries, leverage is reported to have a positive relationship with the size of the firm (Akinlo, 2011; Huang and Frank, 2006). However, Wald (1999) reported that larger firms in Germany tend to have less debt in their financial structure. In this study, we assume a positive correlation between debt and size.

2.4. Growth Opportunities

The influence of growth opportunities on debt has been documented, but with conflicting results as well. In an agent-principal relationship, shareholders employ debt as a control mechanism to reduce agent opportunistic behaviour (Jensen, 1986; Titman and Wessels, 1988). Nonetheless, managers in a growing firm prefer the use of internally generated funds to mitigate the risk of bankruptcy. According to Myers S. (1984), firms with high growth opportunities would prefer to consider retained earnings and other sources of funding before debt. Recent studies by Hall *et al.* (2004) and Booth *et al.* (2001) documented a positive relationship between growth opportunities and leverage. However, firms experiencing growth opportunities may also have a simultaneous growth rate in the associated costs. This is particularly so with costs related to shareholders and creditors relationship. Bevan and Danbolt (2002) and Rajan and Zingales (1995) in their studies reported a negative relationship between growth and leverage. While Akinlo (2011) investigated capital structure in Nigeria using panel data on 66 listed firms and reported a negative relationship between leverage and growth, Esperance *et al.* (2003) and Chittenden *et al.* (1996) reported mixed reaction on the link between debt and growth.

2.5. Ownership Structure

The agency theory posits that the capital structure of a firm can serve as a mechanism to minimize total agency costs arising from the conflicts of interests between managers and shareholders on the one hand, and on the other hand, between shareholders and creditors. In this instance, increase in managerial share ownership can help to align the interest of the managers with that of the owners of the firm. Furthermore, increase in the use of debt can help to reduce the consumption of perks in order to prevent the risk of bankruptcy (Jensen and Meckling, 1976; Jensen, 1986). Prior studies have shown that the direction of this relationship between ownership structure and capital structure is mixed. For instance, Berger *et al.* (1997) documented that leverage is positively associated with

ownership structure. Furthermore, Wiwattanakantang (1999) examined the determinants of capital structure in Thailand and reported that managerial ownership has positive and significant relationship with debt only when a single family owns the firms. On the contrary, Friend and Larry (1988) documented a negative relationship between leverage and ownership structure. To examine the influence of ownership structure on debt, this study assumed a negative relationship.

2.6. Non-Debt Tax Shields

According to Modigliani and Miller (1961), interest tax shields can create incentives for firms to raise debts. For instance, DeAngelo and Masulis (1980) argued that non-debt tax shields are tax benefits of debt financing and firms with enormous non-debt tax shields in their financial statement are supposed to use less debt financing. However, excessive non-debt tax shields may positively or negatively affect leverage, though this connection depend largely on the component of debt involved. DeAngelo and Masulis (1980) analyzed the effect of tax on debt financing and reported that firms with large non-debt tax shields, a proxy for tax, employs less debt to finance profitable opportunities. In another study, Wald (1999) argued that a firm's debt structure will actually decreases with non-debt tax shields, ceteris paribus. However, Harris and Raviv (1991) reviewed several empirical studies from the U.S. firms and reported that the debt of firms increases rather than decreases with non-debt tax shields.

3. Data and Methodology

The study employed sample data from firms registered in Nigeria either as Limited Liability Company or as Public Liability Company during the period 2011 to 2015. We computed data for the variables identified from the sampled firms' annual reports and accounts. As part of the regulatory requirements in Nigeria, registered firms in either of the category are supposed to make available their business activities to the relevant agencies such as tax authority and Corporate Affair Commission as stipulated by the rules and regulations governing the operations of business in the country. In addition, firms in this category are assumed to conform to a common accounting practice and corporate governance standards as specified by regulatory authorities. The study relied too on data from annual publications from regulatory agencies.

The initial sample size consists of 525 firms from major cities in the country. However, to ensure the reliability of the study, we exclude firms in the financial sector and those with missing data from the sample. Firms in the financial sector by nature carry large sums of debt and differ in the structure of their financial statements, which makes it difficult to integrate and compare with firms in other sectors of the economy. Furthermore, firms in the financial sector also differ in the way earnings before interest and taxes are considered in their financial statements. In all, the study used data from 331 firms as the final sample size, which is 63% of the initial sample.

Corporate debt policy (capital structure) is proxy as debt and it is categorize into total debt, long-term debt and short-term debt. This is to allow appropriate analysis of the influence of the explanatory variables on different levels of debt in Nigeria firms. The study of capital structure which measure debt based on total debt only may downplay the significant differences between long-term and short-term debts (Bevan and Danbolt, 2002). The explanatory variables in the study are firm's profitability, size, growth opportunities, asset tangibility, managerial share ownership and non-debt tax shields. The study employs panel data regression model since the sample contains data across firms and over time. The use of panel data helps to take into account firms' heterogeneity of possible explanatory variables. The cross-sectional analysis of time series variables helps to reduce the problem of multicollinearity. The regression model for this study is as follows:

$$\hat{Y}_{i,t} = \alpha_0 + \beta_1 PROF_{i,t} + \beta_2 GROW_{i,t} + \beta_3 FSIZE_{i,t} + \beta_4 TANG_{i,}$$
$$+ \beta_5 MSO_{i,t} + \beta_6 NDTS_{i,t} + \beta_7 INDUM_{i,t} + \mu_{1i,t} \text{------------------------------------ (1)}$$

Where:
$\hat{Y}_{i,t}$ represents the debt ratios (total, long-term and short-term debts) of firm i at time t
β represents the slope coefficients
PROF, GROW, SIZE, TANG, MSO, NDTS and INDUM represents firm's profitability, growth opportunities, size, tangibility, managerial share ownership, non-debt-tax-shields and industry dummy.
α stands for the intercept
μ represents the random error term
i denotes the number of firms in the study, and
t represents the time period of the study

The total debt ratio is the sum of long-term and short-term debts and measured as the ratio of total debt to total capital. While long-term debt ratio is defined as debts falling due after one year and measured as the ratio of long-term debt to total capital, the short-term debt ratio is defined as debts falling due within one year and it is measured as the ratio of short-term debt to total capital. Firm's profitability is measured as the ratio of earnings before interest, tax and depreciation to total assets. Growth opportunities are measured as sales growth over total assets growth. Firm size is the total assets owned by the firm and it is measured as the natural logarithm of total assets. Assets tangibility is the ratio of fixed assets to total assets. We measured managerial shareholding as the total number of shares held by the directors over the number of outstanding shares. Non-debt tax shield is measured as the ratio of depreciation to total assets. Finally, we introduced industry dummy variable to control for industry effects and it is measured to take the value of 1 if the firm is in a particular sector, 0 otherwise.

4. Empirical Analysis of Results

4.1. Descriptive Statistics

The results of the summary statistics for the variables in our model are presented in Table 1. The result revealed that firms in Nigeria employ an average of 0.6417 total debt ratios in their capital structure. The mean ratio of 0.1640 for long-term debt and 0.4777 for short-term debt ratio suggests that a greater percentage of investment in Nigeria is financed using short-term debt ratio. Compared to advanced economies as reported by Claessens *et al.* (1998), where long-term debt constitutes about 75 and 55 percent of total debts of US and German firms respectively, the use of short-term debt in Nigeria firms is a reflection of the level of financial markets development to provide long-term financial support to firms operating in Nigeria.

Table-1. Summary statistics of variables

Variables	Mean	Std dev	Mini	Median	Maxim
Total debt ratio	0.6417	0.26832	0.0025	0.49520	1.9240
Long-term debt ratio	0.1640	0.11973	0.0034	0.03060	0.7540
Short-term debt ratio	0.4777	0.3307	0.0025	0.45612	1.1700
Asset Tangibility	0.46583	0.28756	0.0014	0.34481	0.97080
Profitability	0.24024	0.16338	-1.800	0.06100	0.3200
Firm Size	0.67145	0.38156	0.2545	0.5376	0.9878
Growth opportunities	0.46978	0.32190	0.0600	1.29700	3.1860
NDTS	0.08654	0.02268	0.0000	0.17100	0.3188
Managerial Share Ownership	0.2372	0.09754	0.0000	0.01790	0.4840
INDDUM	0.016	0.012	0	0	1

Furthermore, the results showed a mean of 46.5 percent and standard deviation of 0.287 for asset tangibility, which suggests that fixed assets account for 46.5 percent of total assets of firms in Nigeria. This result indicates that a greater percentage of total assets are held in the form of current assets, which further suggests that firms in Nigeria have the potential to service their debt, without putting pressure on the fixed assets. The firm size has a mean of 0.6714 and standard deviation of 0.3815. The profitability of Nigeria firms is on the average of 0.2402 and standard deviation of 0.1633. This result implies that firms in Nigeria lack enough internally generated funds to finance opportunities and grow the business. This, however, suggests the need for stakeholders' intervention to develop the financial markets and make it accessible for firms with productive business interest. The result suggests that Nigeria firms have high growth prospect and opportunity for investors as observed in the average growth rate of 46.9 percent with a standard deviation of 32.1 percent.

4.2. Correlation Analysis

The correlation matrix as reported in Table 2 showed that all the correlation coefficients are statistically significant at the 1% and 5% levels. The cross-correlation for the explanatory variables is small, and thus gives no cause for concern about the problem of multicollinearity among the explanatory variables. The results indicate that the different levels of debt are highly correlated with each other. Among the explanatory variables, while asset tangibility and growth variables have a positive correlation with debt, profitability and size were found to have a negative correlation with total debt. This implies that growing companies use debt to complement their internally generated funds. The results revealed a positive relationship between asset tangibility and variables like size and growth. However, assets tangibility reveals a negative relationship with profitability.

Table-2. Correlation matrix of debt and explanatory variables

Variables	TDR	LDR	SDR	TANG	PROF	SIZE	GROW	MSO	NDTS	INDDUM
TDR	1.00									
LDR	0.16	1.00								
SDR	0.06	-0.03	1.00							
TANG	0.03	0.05	-0.01	1.00						
PROF	-0.04	-0.01	-0.01	-0.03	1.00					
SIZE	0.03	0.03	-0.00	-0.01	-0.11	1.00				
GROW	-0.03	-0.06	-0.02	0.04	0.12	-0.12	1.00			
MSO	0.10	0.13	0.02	0.04	0.02	0.08	0.00	1.00		
NDTS	0.01	0.03	0.14	0.05	0.07	0.11	0.05	0.02	1.00	
INDDUM	0.02	0.03	0.03	0.14	0.23	0.10	0.17	0.81	0.24	1.00

Notes:
*This table presents the correlation matrix of all the variables in the sample.
*All the correlation coefficients are significantly different from zero at the 1% and 5% levels

4.3. Regression Analysis

This study examines the determinants of capital structure and the theories relevant to explain capital structure decisions of firms in Nigeria. The results of our empirical analysis are statistically significant at 1% and 5% levels, with an R^2 value (adjusted R^2) of 0.821 (0.786), 0.883 (0.864) and 0.830 (0.811) for total, long-term and short-term debt ratios respectively. This implies that the good part of the variations in the capital structure of firms in Nigeria is influenced by the explanatory variables in this study. The F-statistics of 25.033, 24.016 and 28.05 confirms the validity of the estimated models for total debt, long-term debt and short-term debt respectively. Generally, while Profitability, growth opportunities and managerial share ownership exhibits a negative relationship with debt, variables such as size and asset structure shows a positive correlation with debt ratios. In addition, the overall results of the panel data analysis as presented in Table 3, supports both theoretical predictions of the pecking order and static trade-off models, and the results of previous empirical studies.

Table-3. Results of Regression Analysis with Debt

Independent variables	Dependent variables		
	TDR	LDR	SDR
C	2.03524 (5.06452)	2.07462 (3.017462)	1.08463 (3.033702)
Asset Tangibility	0.30288 (0.50316)*	0.21576 (0.22318)**	-0.02213 (-0.02580)**
Profitability	-0.574053 (-1.2682)**	-0.711806 (-1.61562)*	-0.42840 (-0.97962)**
Firm Size	0.412412 (0.8287)*	0.244781 (0.25330)**	-0.02132 (1.09360)
Growth Opportunities	-0.601341 (0.581458)**	-0.4028130 (-0.68816)	-0.014524 (0.58483)*
Managerial Share Ownership	-0.4092563 (-1.0382)	-0.206157 (-0.18381)**	-0.162097 (-0.05801)
Non-debt Tax Shields	0.01500 (1.2376)**	0.068653 (0.25606)	0.01475 (0.35649)
Industry Dummy	0.02653 (0.12506)	0.02063 (0.03426)	0.03016 (0.076)
No of observations	1655	1655	1655
R^2	0.821	0.883	0.830
Adj. R^2	0.786	0.864	0.811
F-statistics (P-value)	25.0333 (0.0000)	24.0160 (0.10030)	28.0540 (0.05010)
Durbin-Watson	1.62201	1.80914	1.60901

This table presents the coefficients of OLS regression of debt on various variables. The dependent variable is debt (total debt, long-term debt and short-term debt). The values in parentheses are t – values and *, **, *** denote significant at 1%, 5% and 10% levels respectively. Total-term debt ratio (TDR), long-term debt ratio (LDR) and short-term debt ratio (SDR).

The empirical evidence from our analysis indicates that profitability have a negative influence on the three components of debts (total, long-term and short-term debts). With a coefficient value of -0.5740, -0.7118 and -0.4284 respectively, this result confirms our prediction and it is consistent with the pecking order theory and previous studies by Wiwattanakantang (1999) and Akinlo (2011). The results suggest that profitable firms would rely more on their internally generated funds before the use of funds from other sources to finance any investment opportunities. The weight of this result is also on the premise that profitable firms would prefer to have less reliance on debt financing in order to avoid payment of interest and adherence to other obligations from creditors. The results suggest that profitable firms would use less debt in order to prevent any creditor from forcing the business to bankruptcy. Compared with equity that is associated with transaction costs and a lot of procedure and time, retained earnings is a more convenient means of financing positive net present value projects in Nigeria. Although the results of this study conflicts with the findings of Akinyomi and Olagunju (2013), it however, suggests the need for managers to main a positive outlook since the issuance of new equity may erode public confidence in the ability of firms in Nigeria to maximize shareholders wealth.

As reported in Table 3, the results of the analysis with a coefficient value of 0.30288 and 0.2157 show that asset tangibility has a positive relationship with total and long-term debt ratios. This result is in line with both pecking order and the trade-off theories of capital structure. Empirically, the result is consistent with Rajan and Zingales (1995) but contradict the report of Huang and Frank (2006) from China. Our results reveal that firms with a relatively high level of tangible assets are perceived to be less likely to defaults and thus have the potential to take more debts at a very low-interest-rate to finance any new investment. In addition, the result implies that the value of fixed assets is an important condition for creditors to evaluate any potential debt holders. The positive correlation between debt and asset tangibility in our study explains the confidence and importance creditors attach to uninterrupted payment of interest from performing firms. It also implies the importance creditors ascribe to the settlement of any obligations in case of bankruptcy. The short-term debt, however, showed a negative relation with

asset tangibility, which indicates firm's interest to match the duration of assets and liabilities. It shows too that larger firms are good at using their assets to generate funds for working capital. This result confirms findings from previous work by Akinlo (2011) who reported a negative relationship between short-term debt and asset tangibility.

Given the result of the analysis as presented in Table 3, firm size with a coefficient value of 0.41241 and 0.244781 for total and long-term debt respectively shows that firm size has a positive relationship with total and long-term debt ratios of firms in Nigeria. This suggests that larger firms in Nigeria have better access to the financial markets and hold more debt in their capital structure, and can easily diversify their economic activities. It is also an indication that the markets accepts larger firms and provide them with necessary support. This result also suggests the ability of larger firms to provide collateral and attract managerial expertise to steer the affairs of the business. Contrary to Wald (1999) who reported larger firms in Germany to have less debt in their financial structure, our finding is consistent with Rajan and Zingales (1995), who reported that larger firms are quick to diversification and have less asymmetric information, which reduces the probability of bankruptcy due to improved public confidence. Our findings also confirmed Berger *et al.* (1997), who reported a positive relationship between total debt and size of the firm. On the other hand, firm size with a coefficient value of -0.02132 reveals a negative but insignificant relationship with short-term debt. This implies that larger firms do not rely on short-term debt but on their internally generated funds and long-term debt to finance their economic operations.

Another important factor influencing capital structure is growth opportunities. The result of the regression analysis shows that firms with growth opportunities have a negative and significant influence on the three components of debt. This result is consistent with the prediction of the trade-off theory and previous empirical studies by Bevan and Danbolt (2002), and implies that growing firms in Nigeria employs less of debt to finance new investment opportunities. In other words, the negative coefficient value of -0.60134, -0.40281 and -0.473452 for total, long-term and short-term debts respectively and as shown in Table 3, suggests that growing firms do not use debt financing except as last option. This is in line with the report of Rajan and Zingales (1995), who argued that firms with growth potential should use a greater amount of equity than debt financing. This study also supports the views that in a bid to impress the shareholders, managers in growing firms will invest in risky projects without consideration to the interest of other stakeholders, particularly the creditors. To discourage managers from undertaking risky ventures, the creditors would demand the extra cost of debt, which would force managers to resort to equity financing.

Furthermore, the influence of ownership structure on the debt structure of the firm and as presented in Table 3 indicates that managerial share ownership has a negative relationship with total, long-term and short-term debt ratios in Nigeria firms. This result suggests that the managerial share ownership can serve as a mechanism to control the opportunistic behaviour of the managers. It further shows that ownership structure can help to align the interest of the managers with that of the owners of the firm. Further, the result indicates that such ownership structure can force managers to put in their best to guarantee superior performance and avoid the negative influence of debt that may lead to bankruptcy and loss of jobs. This study suggests that the debt level in Nigeria firms is important to assure outside investors that management will not engage in any activities that would undermine the interest of the shareholders. This result is consistent with studies by Brailsford *et al.* (1999) in Australia and Wiwattanakantang (1999) in Thailand.

Furthermore, the results of the estimations in Table 3 showed that the correlation between non-debt tax shields, measured as the ratio of depreciation to total assets and debt ratios (total, long-term and short-term debt ratios) is positive but insignificant. This result suggests that firms in Nigeria make capital structure decisions without any consideration to the level of depreciation and its tax effects. This result is however consistent with studies by Wald (1999) who reported a decrease in the firm's level of debt with non-debt tax shields. The influence of industry dummy on debt is positive but insignificant. Generally, industry dummy is more severe on debt in the financial institutions than other sectors of the economy. This is partly because of the size of debt and the nature of business in the financial sector.

5. Conclusion

Capital structure decision has remained an important factor for firms. Consequently, this study, examines the factors influencing the capital structure decisions of firms in Nigeria, using a panel data regression model. The result of the regression model confirms that debt decreases with profitability and growth opportunities. This means that profitable firms in Nigeria are more likely to use internally generated funds and less likely to use debt to finance any investment opportunities. The result confirms the pecking order theory, which advocates profitable firms to use internally generated funds and demand less of debt to finance any investment opportunities. The ownership structure also helps to explain capital structure decisions of firms in Nigeria. The finding shows that managerial share ownership has a significant negative correlation with debt ratios, which indicates the power of ownership structure to reduce agency costs in Nigeria firms.

The increase in corporate debt policy due to company size and asset tangibility, suggests that large firms in Nigeria are likely to attract the required funds through debt financing because of their perceived ability to provide the required collateral and the ability to pay back. It also implies a reduction in information asymmetric in larger firms since directors in those firms are guided by the disclosure requirements of the regulatory bodies. This again confirms that the static trade-off model is pertinent to explain the debt policy of firms in Nigeria. Therefore, this study suggests the need for stakeholders to develop the financial markets and make it accessible for firms to obtain long-term financing for economic growth and development.

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