Capital Structure and Firm Performance in Nigeria.

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Abstract

This paper examines the impact of capital structure on firm performance in Nigeria as well as test the possibility of non-monotonic relationship between capital structure and firm performance based on the prediction of the agency cost theory of capital structure when firm use debt financing excessively. The study used dynamic panel model on panel data of 115 listed non-financial firms in Nigeria. Specifically, the paper employed the two step generalized method of moments (GMM) estimation method that recognizes the persistence of the dependent variable by including its lag value as an explanatory variable in the regression model. The major findings indicate statistical significant relationship exist between capital structure and firm performance particularly when debt financing is moderately employed. However, the paper found evidence of non-monotonic relationship between capital structure and firm performance when firms in Nigeria employed excessive debt financing which impinged on the performance of firms. The findings support the portability of the agency cost theory in the Nigeria context but with caution considering the facts that firms in Nigeria were largely finance through short term debt as against long term debt financing that was assumed in the agency cost theoretical proposition.

Keywords: capital structure, generalized method of moment, firm performance, Agency cost.

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1.0 Introduction

A vibrant and developed private sector that can serve as engine of growth and development is very crucial in any nation (Gwatidzo, 2009). As developing countries strive to build their private sector, lack of adequate capital in terms of debt and equity may impede the growth and survival of businesses especially in Africa. Due to this constraint, firms strive to ensure they combine available different types of debt and equity in an optimal manner that can guarantee the maximization of shareholders' wealth or minimizes the weighted average cost of capital. This suggests that capital structure may affect firm value (hence performance). This is a complete departure from the Modigliani and Miller (1958; 1963) proposition that the different combination of debt and equity (capital structure) does not affect firm value. Modigliani & Miller (1958) posits in their first proposition that the capital structure of the firm is independent of the value of firm.

While the irrelevance capital structure theorem of Modigliani & Miller (1958) was accorded many criticisms due to its idealistic assumptions of no taxes, no transaction or distress costs, perfect market information coupled with the linearly related capital structure refinement (MM, 1963); the agency cost theoretical model popularized by Jensen and Meckling (1976) assumed that firms have optimal capital structure position they strive to achieve. The optimal capital structure of the firm in the agency cost theoretical model is the capital structure level that minimizes the agency cost and maximizes the value of the firm. This implies that capital structure choice of the firm is dynamic. The dynamic nature of capital structure suggests that capital structure of firms change across firms and time i.e. each firm in an industry for example can change their capital structure over time to ensure the agency cost is minimized and value of the firm is maximized. More so, capital structure is considered inherently dynamic rather than static. Firms often do not adjust instantaneous when making capital structure choice. There are transaction costs and adjustment processes involved when adjusting capital structure towards the target level, therefore, empirical analysis of capital structure must be treated as a dynamic phenomenon rather than static.

The empirical evidence on capital structure and firm performance particularly in Nigeria is scanty (see Onwualah, 1998; Sobodu, 1998; Salawu, 2007; Salawu & Agboola, 2008; Adesola, 2009; Onaolapo & Kajola 2009; Akintoye, 2009). More so, the few studies do not provide analyses of the dynamic relationship between capital structure and firm performance. Most previous studies in the literature carried out static analyses of the impact of capital structure on firm performance within the trade-off and pecking order theoretical framework. The empirical findings of past studies have been mixed and inconclusive. There are two basic strands of findings in the empirical literature. Some studies such as Berger et al., (1997), John and Senbet (1998), Safieddine and Titman (1999), Harvey et al., (2004), Abor (2005), Zeitun and Tian (2007), Majumdar and Sen (2010), Sen and Heng (2011), Salim and Yadav (2012) document positive relationship between leverage and firm performance. However, several other studies report negative relationship between leverage and firm performance including Armen et al.,(2004),Zeitun and Tian (2007),King and Santor (2008), Ebaid (2009),Asimakopoulos et al.,(2009), Liew (2010), Majumdar and Sen (2010),Salim and Yadav (2012). Due to these empirical irregularities, the current study contributes to the capital structure literature by

providing evidence from an emerging market context (Nigeria) by examining the dynamic impact of capital structure on firm performance of quoted non-financial firms.

The major contribution of this study stem from the use of dynamic estimator to analyze the relationship between capital structure and firm performance within the agency cost theoretical model in a low income developing countries characterize with several markets imperfections such as information asymmetries, poor creditors and shareholders' protection and poor contract enforcements compared to those in the extant literature. The empirical findings indicate that a moderate use of debt financing has a significant positive effect on firm performance, while excessive use has a negative significant effect on firm performance. Both empirical findings support the prediction of the agency cost theory of capital structure and therefore indicate the portability of the agency cost theory in the Nigerian context.

Apart from this introduction, the study is presented in four other sections. Section two reviews the literature. Section three presents the data and methodology. Section four presents the results and discussion of findings. Section five concludes the study.

2.0 Literature Review

Modigliani and Miller (1958) seminal paper on the irrelevance of capital structure on firm value (hence performance) and its later refinement on the relevance of capital structure (see Modigliani & Miller, 1963) laid the foundations for other differing theoretical predictions. The trade-off theory relaxed the perfect market assumptions of Modigliani and Miller (1958) and predict that capital structure is relevant for firm performance for reasons such as tax deductibility of debt interest and agency costs (Fosu,2013). The agency cost theoretical model which is an extension of the dynamic trade-off theory by Jensen and Meckling (1976) suggests that there are two kinds of conflicts of interest at the firm level. One is the conflict of interest between shareholders and managers and the other is the conflict between managers and debtholders. They posit that debt financing is employed to resolve the conflict of interest between managers and shareholders to mitigate managers' opportunistic behaviour and other agency related problems. This has the tendency to reduce the free cash flow that managers can use for perks and perquisites by firm since it brings about debt commitment that must be repaid to meet up with debt obligations to prevent bankruptcy of firm. Going bankrupt may be very costly for the managers especially when they have managerial shareholding in the organisation. To forestall this kind of event, managers often strive to ensure they meet up with the debt commitments of the organisation. Similarly, the managers would also work to maximize value of the firm through improve performance.

On the other hand, is the conflict between the shareholders and debt holders (see Harris & Raviv, 1991; Manos, 2001). The conflict that arises between these parties is usually due to risk of default (Margaritis and Psillaki, 2010). The risk of default often leads to an underinvestment (Myers, 1977). Stulz (1990) posits that debt financing by the firm compounds the underinvestment problem of the firm. The conflict between the debt holders and equity investor due to underinvestment is regarded as a cost of using debt rather than benefit therefore agency cost theory hypothesizes negative relationship between capital structure and firm performance.

Generally, the agency cost theory posits monotonic relationship between leverage and firm performance.

The irrelevance of capital structure to firm performance theoretical proposition was first tested empirically in the pioneering and seminal article by Modigliani & Miller (1958) refer later as (M&M). They tested the relationship between capital structure and firm value under the perfect market assumptions in the United States Petroleum, oil and electricity industries using the two – stage instrumental variable approach. They found value of firms not to be influence by their capital structure. Five years later, Modigliani and Miller (1963) corrected their previous assumption of no taxes under the perfect market classical assumption by incorporating corporate income taxes into their model, because of the tax deductibility of interest payment at the corporate level, capital structure was found to have an increasing effect on the value of firm. They noted that this is because interest payments were deducted in arriving at the profit figure on which taxes is charge. They argued that these payments reduce the corporate tax liability. This corporate tax model asserted that the value of firm will be at the maximum with 100 percent use of leverage financing. Neither of these predictions reflects objective reality of the world (Ismail, 2006). Rarely would firms use 100 percent debt in their capital structure.

Fourteen years later, Miller (1977) presented another model that incorporated personal income taxes to the existing corporate tax model. Their study asserted that the corporate tax benefit of debt may be offset by the tax disadvantage of interest payments at the personal level. Miller (1977) hypothesized that if personal tax rates on interest income are relatively higher than the personal tax rates on equity, then the gains to corporate leverage can largely be discounted or even eliminated entirely, thus reverting to the irrelevant results of capital structure earlier reported in the MM(1958) study. Since this position has been held by Modigliani and Miller, several empirical studies have been conducted in the capital structure literature both in the developed and developing economies to test the validity of the proposition of relevant or irrelevance of capital structure to firm performance.

There is extensive literature on the impact of capital structure on firm performance. The empirical findings of these studies in the extant literature that have used datasets and samples of firms from developed and developing economies have documented mixed and inconclusive findings. For the purpose of this paper, we focus on the relevant and important ones after the M&M empirical studies that test the agency cost theory of capital structure. We also reviewed studies that found empirical supports for other theories of capital structure particularly studies that employed datasets and samples of firms from developing economies.

Berger and Bonaccosi di Patti (2006) examined the relevance of the agency cost theory in the United States banking Industry revealed that higher leverage or a lower equity capital ratio is associated with higher profit efficiency over almost the entire range of the observed data of the study. Further evidence on the impact of capital structure on firm performance by Margaritis and Psillaki (2007) departed largely from past studies that have investigated the relationship between capital structure and firm performance including the novel study of Berger and Bonacorssi di Patti (2006). The study employed the non-parametric efficiency measure that capture the industry's best practice production frontier using data envelopment method (DEA) and quantile

regression method to test the way capital structure affect performance across spectrums of firms and compared the findings with OLS. These findings support the agency cost hypothesis that higher leverage lead to enhance performance measured by efficiency. Another interesting and related study by Margaritis and Psillaki (2010) provides better understanding and empirical evidence on how competing hypotheses may behave at different segments of the relevant data distribution and cautioning against the standard practice of drawing inferences by capital structure studies that have used conditional mean (OLS) estimates. The study found support for the prediction of the Jensen and Meckling (1976) agency cost hypothesis. Higher leverage was found to lead to improved performance in terms of efficiency over the entire range of the dataset.

Contrary to Berger and Bonaccosi di Patti (2006) that used profit efficiency and Margaritis and Psillaki (2007&2010) that measure efficiency using X efficiency as proxy of firm performance, Yeh (2011) employed the dual of X-efficiency to measure performance of Banks in Taiwan in the study of capital structure and firm performance of Taiwanese firms. The stochastic frontier approach was used to determine cost efficiency as indicator of firm performance. The study argued that this method is superior to the data envelopment method employed by previous studies to estimate profit efficiency because it considers producer-specific random shocks to generate a relatively stable efficiency index for each firm. The study supports the agency cost theory of capital structure as the submissions of other similar studies that have used efficiency as measure of performance rather than financial performance (Berger and Borcossi di Patti, 2006; Margaritis and Psillaki, 2007, 2010). The findings of the study indicated that reducing managerial shareholdings will decrease agency costs and increase firm performance. To account for the impact of ownership on firm performance and how it interacts with capital structure. King and Santor (2008) examine the relationship between ownership structure, performance and capital structure. The estimated results indicated that leverage is negatively related to performance of Canadian firms. Contrarily, positive relationship was reported between leverage and firm performance by Kim (2005) for Japanese large business groups.

Other studies in the extant literature carried out from the perspective of developing economies equally reported mixed findings. One of the notable studies was by Abor(2005). The study examines the relationship between capital structure and profitability of listed firms in Ghana from 1998 to 2002. The findings of this study indicates that significant positive relationship exist between short term debt ratio and return on equity. Similar positive result was reported between total debt to total capital and return on equity. The findings of this study support the tradeoff theory. However, the findings equally indicates that negative relationship exist between long term debt to total capital and the return on equity which supports the pecking order theory of capital structure. Further study by Abor (2007) enriched the capital structure literature by providing empirical evidence on the impact of debt policy on performance of small and medium enterprises in both Ghana and South Africa. This study focused on SMES, unlike past studies that have focused largely on large firms. The findings revealed that SMES in South Africa use more long term debt than Ghanaian SMES. The same applies to total debt as the results show that SMES in South Africa have more total debt in their capital structure than the Ghanaian SMES. The regression result shows that short term debt have significant negative effect on performance when gross profit margin was used as the proxy for performance for both Ghanaian and South African firms. The results also indicate that long term debt was significant and

positively related with gross profit margin for SMES in both countries. But the effect of total debt on gross profit margin was found to be significant and negatively related to gross profit margin.

Zeitun and Tian (2007) reported similar significant negative result between capital structure and performance of Jordanian firms when accounting and markets measures were used as proxies of performance. This finding supports the position of Abor (2007) for Ghana and South Africa. However, they reported statistically significant positive relationship between capital structure and performance when capital structure was measured by short-term debt to total assets and the market measure (Tobin's Q) was used to proxy performance. Similarly, Bandyopadyay (2005) reports positive relationship between leverage and sales performance of India firms. However, the study by Onaolapo and Kajola (2010) revealed significant negative relationship between performance and debt ratio which they contended supported the agency cost theory of capital structure.

A related study by Ebaid (2009) examines the empirical relationship between debt level and financial performance of 64 listed non-financial Egyptian firms. The study show that negative significant relationship exists between short term debt, total debt and financial performance measured by Return on asset but the relationship between financial leverage and ROA was not found to be significant when long-term debt was used as measure of financial leverage. The study also reported that short-term debt, long-term debt and total debt were found not to have significant influence on financial performance when it was measured by ROE and Gross Margin. Generally, they assert that the results show that the capital structure choice has a weak-to-no impact on firm's performance in Egypt.

Further study on capital structure and firm performance by Majumdar and Sen (2010) examines the role of different types of debt on the strategic behaviour and performance of firms in India. The finding indicates that only fixed deposit has significant and positive relationship with performance. Other types of debt were not found to be significant. In a related study, San and Heng (2011) investigated the relationship between capital structure and performance of Malaysian firms in the construction sector before and during crisis that started since 2007.The results indicated that return on capital was found to be positively related to debt to equity market value for big firms. The same positive relationship was found between earnings per share and long term debt to capital. However, earnings per share were found to be negatively related with debt to capital. They also reported that operating margin and long term debt to common equity were positively related for medium companies and earnings per share and debt to capital has negative relationship in small companies.

A study on Malaysian listed firms by Salim and Yadav (2012) analyze the effect of capital structure on performance of listed firms. The results indicated that capital structure measured by total debt and short term debts have negative impacts on ROE. This result is consistent with Ebaid (2009). Long term debt and Total debt as measure of capital structure has negative impact on the performance of firms when it was measured by ROA. This supports the findings of Zeitun and Tian (2007) and Abor (2007) that indicate that performance is negatively related to capital structure. The study also found that Tobin's Q has positive and significant impact on short term

debt, long- term debt and total debt. A recent study by Fosu (2013) analyzes the effect of capital structure on firm performance with focus on the degree of product market competition of South African firms. The findings reveal that financial leverage has a positive and significant effect on firm performance and product market competition helps in enhancing the performance effect of leverage of South African firms. More recent studies by Oino and Ukaegbu (2015) on Nigeria firms indicated that profitability is negatively related to leverage. However, a current study by Bandyopadhyay and Barua (2016) on capital structure and firm performance in India indicated that macroeconomic cycle significantly influence capital structure choice of firms which in turn affect their performance.

Generally, the empirical evidences on capital structure and firm performance are mixed and inconclusive. The measures of capital structure and firm performance differ across various studies. The estimation techniques also vary from one study to the other. The empirical irregularities necessitated further investigation into the impact of capital structure on firm performance particularly in the emerging market context (Nigeria) using agency cost theoretical model by Jensen and Meckling (1976). This is carried out with the focus of establishing the portability of the agency cost theoretical model of capital structure in an environment that has different institutional and structural characteristics from the developed markets where the model was developed based on experiences of firms operating in the developed western markets. It is against the foregoing that this study provides empirical investigation of the impact of capital structure on firm performance using the agency cost theoretical framework. The only hypothesis for this study is that:

H1: there is a relationship between capital structure and firm performance.

3.0 Data and Methodology

The scope of the study cover 1998-2015 for one hundred and fifteen (115) companies listed on the Nigerian Stock Exchange. The choice of the scope was due to data availability and to enhance validity. Financial services and investment firms were excluded in keeping with the style in previous studies and because these companies have different reporting requirements and are more heavily regulated. In effect, this study employs secondary data available in the annual reports of listed companies in Nigeria and the facts books published by the Nigerian Stock Exchange (NSE).

The empirical model below reflects the expectation of the agency cost theoretical model; this study specified the relationship between capital structure and firm performance following the work of Margaritis and Psillaki (2010). The study used dynamic panel model that recognizes the persistence of the dependent variable by including its lag value as an explanatory variable in the regression model. Using a dynamic panel model is particularly useful in that it removes the concern over econometric issues such as endogeneity and unobservable heterogeneity.

In the model below *roe* is return on equity which is a measure of firm performance, and roe_{it-1} represents performance in the previous period. LEV is the measure of capital structure (short term leverage ratio, long term leverage ratio and total leverage ratio) and Z_{it} is a vector of control

variables (firm size, age, ownership, growth opportunities, asset tangibility) U_{it} is a stochastic error term.

$$roe_{it} = \alpha_0 + \theta roe_{it-1} + \beta lev_{it} + \phi z_{it}^{'} + u_{it} \quad \text{.....(1)}$$

In this model, θ captures the speed of adjustment of performance to equilibrium. A value of θ between 0 and 1 indicates the persistence of performance. One of the reasons why the standard ordinary least squares (OLS) is not suitable in this instance is the presence of the lagged dependent variable as part of the explanatory variables. This implies that the errors will become correlated violating one of the assumptions of OLS making the estimates of the parameters bias and inconsistent (Flannery and Hankins, 2013). A popular solution to this problem was proposed by Arellano and Bond (1991) who suggested the used of generalized methods of moment for dynamic panels. Their suggestion implies that the use of lagged exogenous variables at level is adequate instruments for the first difference lagged dependent variable. Blundell and Bond (1998) improved on this, arguing that lagged variables are inadequate in a context of limited time and large cross section. They proposed a system of estimators which explore more moment conditions on the lagged difference and levels using lagged first difference of all the exogenous variables as instruments in the level equation.

Two conditions are crucial in the reliability of a GMM model. One is the assumption of no autocorrelation and two is the validity of the instruments. Note that although residuals may have first order correlations, the presence of second order autocorrelation lead to inconsistent estimates of the parameters. The use of the lagged value of the explanatory variables improves the validity of the instruments.

Table 1: Variable definition

Variable	Description	Expected relationship
Total leverage ratio (TLR)	Defined as the total debt divided by total debt and total equity	Positive
Long term leverage (LTLR)	Defined as long term debt divided by total debt plus total equity	Positive
Short term leverage (STLR)	Short term debt divided by total debt plus equity.	Positive
Return on equity	Defined as earnings before interest and tax divided by book value of equity	Positive
Size (SIZE)	Defined as the natural log of total assets	Positive
Asset Tangibility (TANG)	Defined as total tangible asset divided by total assets.	Positive
Growth opportunity (GO)	Defined as the percentage change in the log of total assets	Positive/Negative
Risk (RISK)	Defined as the standard deviation of the earnings before interest and tax divided by total assets	Positive/Negative
Ownership	Is the shareholding held by the different categories of shareholders (Individual, foreign and institutions)	Positive
Age	Defined the listing age of the firms on the exchange	Positive

4.0 Estimations and Analyses

The results of the estimated model and findings are discussed in the context of outcomes from previous studies and the predictions of the agency cost theoretical model of capital structure. We begin with providing the statistical properties of the variables included in our model. Table 1 above defines the variables and their expected signs. Table 2 below presents the descriptive statistics.

Table 2: Descriptive Statistics

Variable	Mean	Std Dev.	Min.	Max.	C.V	Obs.
Total leverage ratio	0.4092	1.0423	3.308	30.8928	2.54	1710
Long term leverage ratio	0.1731	0.8839	0	21.017	5.10	1710
Short term leverage ratio	0.7053	9.1541	0	216.6249	12.9	1710
Age	30.6740	19.1659	0	89	0.62	1710
Growth Opportunities	0.1555	2.1229	28.7904	33.16512	13.65	1710
Asset Tangibility	0.1927	0.3623	0	10.44	1.88	1710
Size	7.6004	5.4619	4.2929	20.0598	0.71	1710
Return on equity	6.8590	58.489	7.99	1558.6	8.52	1710
Ownership	18.8021	16.526	0	33.666	0.87	1710

TLR is Total leverage ratio defined as the total debt divided by total debt and total equity. LTLR is Long term leverage defined as long term debt divided by total debt plus total equity. STLR is short term leverage defined as short term debt divided by total debt plus equity. SIZE is firm size defined as the natural log of total assets. TANG is asset tangibility defined as total tangible asset divided by total assets. GO is growth opportunity defined as the percentage change in the log of total assets. RISK is risk, defined as the standard deviation of the earnings before interest and tax divided by total assets. Ownership is the shareholding held by the different categories of shareholders (Individual, foreign and institutions). Age is the listing age of the firms on the exchange. CV=Coefficient of Variation; Std. Dev. = Standard Deviation.

The table shows the number of observations, minimum, maximum, standard deviation and coefficient of variation for all variables from 1998 to 2012. During the entire period, the mean of total leverage ratio is 0.40 for the entire sample firms. This is greater than the mean of long term leverage ratio of 0.17 but less than the mean of short term leverage of 0.70. This indicates that on the average the sample firms employ more short-term debt than long term debt as a proportion of total asset. The standard deviation and coefficient of variation for the total leverage ratio of the sample firms is 1.04 and 2.54 respectively. This suggests that total leverage ratio of sample firms has high variability as evidence in the coefficient of variation (2.54) that is greater than one. Long term leverage ratio has standard deviation of 0.88 and coefficient of variation of 5.10. This indicates that long term leverage ratio has higher variability in terms of coefficient of variation than total leverage ratio. Short term leverage ratio has the highest standard deviation (9.15) and coefficient of variation (12.9) than total leverage and long term leverage ratios. The range of total leverage ratio is between 3.30 and 30.89 for the sample firms from 1998 to 2012. Long term leverage ratio of the sample firms ranges between 0 and 21.01 while the range of short term leverage ratio for the sample firms is between 0 and 216.62.

The average age of sample firms is 30 years. The oldest firms have been in existence for 89 years. The variability of the age of the sample firms is 0.62 as shown by the coefficient of variation. This indicates low variability. The standard deviation of age of the sample firms is 19.16. The average growth opportunity of the sample firms is 0.15. The standard deviation and coefficient of variation of growth opportunities for the sample firms between 1998 and 2012 is 2.12 and 13.65 respectively. This indicates high degree of variability of growth opportunities of the sample firms. The firm with the smallest growth opportunities has growth opportunities of

28.79 and firm with the largest growth opportunities has 33.16 has growth opportunities. The average fixed asset as a percentage of total assets (Asset tangibility) of the sample firms is 0.192. The standard deviation is 0.36 and coefficient of variation is 1.88. The minimum is 0 and maximum is 10.44. The average size of sample firms from 1998-2012 is 7.60. The minimum size is 4.2 and maximum size is 20.9. The standard deviation and coefficient of variation of the size of sample firm is 4.29 and 20.05 respectively. This indicates that firm size has higher variability. The average return on equity of sample firms is 6.85. The coefficient of variation is 8.52 and standard deviation is 58.48. This signifies that variability of return on equity is high as the coefficient of variation is greater than one. The range of return on equity for the sample firms is between 7.99 and 1558.6. The average shareholders of the firms have 18.80 shares as form of ownership stake. The standard deviation is 16.52 and coefficient of variation is 0.87. This indicates that the variability of ownership is low as the coefficient of variation is less than one.

4.1 Results and Discussion of findings

The results in Table 3 below show positive significant relationship between leverage measure by short term leverage ratio and firm performance (Return on equity). The estimated result produced coefficient of 0.61(P value of 0.000). The result indicates that short term leverage ratio is statistical significant at 1 percent significance level. The positive significant relationship between short term leverage ratio and firm performance (ROE) may indicate that capital structure (short term leverage ratio) has been effectively use as a disciplinary device to reduce managerial cash flow waste and mitigate the opportunistic behaviours of shareholders-managers through short term debt repayment obligations (Grossman and Hart,1982).

The result suggests that shareholders-managers have been able to use short term debt to enhance the performance of firms in a way that equity investments of outside equity investors are protected and enhanced. This is possible in a setting like Nigeria where majority of firms depend on short term financing from commercial banks to finance their operations due to underdeveloped bond market and high cost of raising equity from the stock market. The result supports the theoretical prediction of the agency cost theoretical model by Jensen and Meckling (1976) that high debts ratios serve as a disciplinary device which may help reduce the waste of cash flow due to the debt repayment obligation which makes managers strive to ensure they generate sufficient cash flow that can prevent liquidation.

To examine the agency cost theoretical prediction that conflict of interests exist between debt holders and equity investors (Myers, 1977), we include the square term of short term leverage ratio in the model. The result shows a negative significant relationship between the square term of leverage ratio and return on equity. This finding conforms with the negative theoretical prediction of the agency cost model that debt financing may aggravate the underinvestment problem (Stulz, 1990). The result indicates that short term debt may be excessively employed by firms in a bid to use debt as a disciplinary device to reduce managerial cash flows. The excess short term debt may be employed for suboptimal investment which increases the default risk which may make debt repayment very difficult and eventually can result to debt overhang problem which may be inimical to firm performance. In this kind of case, debt may not produce the desirable beneficial better performance that outside equity participants expect from the use of debt through the reduction of agency problem to ensure better performance. The negative

significant results between the square of short term leverage ratio and return on equity reflect the true state of how firm debt financing affect shareholder's investment of firms in Nigeria.

Table 3: Two-step Dynamic GMM Estimations

Variables	STLR	LTLR	TLR
ROEt-$_1$	0.4238 (0.000)***	0.4225 (0.000)***	0.4396 (0.000)***
STLR/LTLR/TLR	0.6157 (0.000)***	1.2585 (0.175)	8.5413 (0.000)***
$STLR)^2/(LTLR)^2/(TLR)^2$	-0.0030 (0.000)***	-0.0509 (0.253)	-0.2781 (0.000)***
Asset Tangibility	-1.0153 (0.165)	-0.0247 (0.974)	-0.8307 (0.000)***
Size	-0.0739 (0.021)	-0.0653 (0.038)	-0.1856 (0.000)***
Age	-0.0566 (0.001)	-0.0292 (0.057)	-0.05136 (0.000)***
Growth opportunities	-0.0022 (0.875)	-0.0063 (0.563)	-0.0067 (0.490)
Risk	0.0006 (0.575)	0.0001 (0.895)	-0.0031 (0.000)
Ownership	-0.0617 (0.008)	-0.0142 (0.414)	-0.0842 (0.000)
Arellano and Bond AR(2)	0.310	0.305	0.329
Hansen Prob	1.600	1.678	1.538

TLR is Total leverage ratio defined as the total debt divided by total debt and total equity. LTLR is Long term leverage defined as long term debt divided by total debt plus total equity. STLR is short term leverage defined as short term debt divided by total debt plus equity.. SIZE is firm size defined as the natural log of total assets. TANG is asset tangibility defined as total tangible asset divided by total assets. GO is growth opportunity defined as the percentage change in the log of total assets. RISK is risk, defined as the standard deviation of the earnings before interest and tax divided by total assets. Ownership is the shareholding held by the different categories of shareholders (Individual, foreign and institutions). Age is the listing age of the firms on the exchange. Note: Significance level *10% **5% ***1%. P values are in parentheses.

Apart from the use of unconventional measure of capital structure (short term leverage ratio) in model 1 as a result of the fact that majority of non-financial firms in the study setting (Nigeria) use more short term debt than long term debt (see table 2 on descriptive statistics), the study equally include the conventional and common measure of capital structure (long term leverage ratio and total leverage ratio) employ in most of the capital structure literature (see, Psillaki and Margaritis,2010;Fosu, 2013). The study therefore employs long term leverage ratio in model; 1 as measure of capital structure to analyse the impact of capital structure on firm performance in order to test the portability of the theoretical predictions of the agency cost model by Jensen and Meckling (1976) in the Nigerian context.

The estimated result for the long-term leverage ratio indicates positive insignificant relationship between capital structure (long term leverage ratio) and firm performance (ROE). The estimated results produced coefficient of 1.2585(P value of 0.175).The results indicates that total leverage ratio is not statistical significant at any of the conventional levels. The result suggests that long term debt may not be sufficiently available to use as a disciplinary device to reduce cash flow waste of shareholder-managers (Grossman and Hart, 1982; Garcia Teruel and Martinez-Solano, 2010; Lidia Diaz-Diaz, Garcia-Teruel and Martinez-Solano, 2016) such that firm performance can be enhanced. Based on the positive insignificant results that exist between capital structure (long-term leverage ratio) and firm performance (ROE) The study advanced further for the purpose of robustness employed another traditional conventional measure of leverage (total leverage ratio) to assess the impact of capital structure on firm performance. The estimated result above indicate positive significant relationship between capital structure (total leverage

ratio) and firm performance (ROE).The estimated result produced coefficient of 8.5413(P value of 0.000).The result indicates that total leverage ratio is statistical significant at any of the conventional levels.

The implication of the positive significant relationship found between capital structure (total leverage ratio) and firm performance (ROE) is that leverage may have helped to reduce the agency problems at the firm level thereby assist in ensuring managers strive to achieve better performance(ROE) through optimal use of debts to create value for shareholders. This results support the theoretical position of the agency cost theoretical hypothesis that high debt ratios may use be able to prevent the opportunistic behaviour of shareholders-managers and ensure the protection of interest of outside equity investors. Debt may serve as disciplinary device that ensure shareholders-managers generate cash flows and do not waste the cash flows. This is possible because of the repayment obligations associated with debt.

The positive findings between leverage and firm performance conforms to the findings in the study of Margaritis and Psillaki (2007) that reported positive relationship between leverage and firm performance of New Zealand companies.The finding is also in line with similar positive finding in the study carried out by Margaritis and Psillaki (2010) using sample of French firms where they reported positive relationship between leverage and performance thereby supports the agency cost hypothesis that higher leverage is related to improved performance. The positive relationship between leverage and performance reveal in this study equally supports the positive findings in the works of San and Heng (2011) for Malaysian firms and Majumdar and Sen (2010) for Indian firms. Similar positive finding between leverage and firm performance was reported in the study of Abor (2005) that document positive relationship between leverage and performance of firms in Ghana. The findings of these studies suggests that disciplinary measures embodied in debt contracts can be used to mitigate agency problem which in turn reduce moral hazards of the managers thereby make them strive to achieve better firm performance.

However, the negative relationship between square of leverage (short term, long term and total leverage) and firm performance (ROE) conforms to the theoretical prediction of the agency cost theory by Jensen and Meckling (1976) that at excessive use of debt leverage tends to impinge firm performance. The negative finding reported between leverage and firm performance conforms with empirical finding in studies such as Armen et al., (2004), Zeitun and Tian (2007), Bhagat and Bolton (2008) King and Santor (2008), Ghosh (2008); Ebaid (2009), Asimakopoulos et al.,(2009), Liew (2010), Majumdar and Sen (2010),Salim and Yadav (2012) on the relationship between leverage and firm performance. The work of Ebaid (2009) on Egyptian firm shows negative relationship between leverage and firm performance. Similar negative result was documented in the study of Salam and Yadav (2012) that reported negative relationship between leverage and firm performance of listed firms in Malaysia. Similar negative result was documented in the work of Zeitun and Tian (2007) on Jordanian listed firms. The negative finding between leverage and firm performance supports the under investment or debt overhang problem of firms that arises due to default risk that may occur due to conflict of interest between debt holders and shareholders as posits by Jensen and Meckling (1976).

Generally, the empirical findings from the estimated model using short term, long term and total leverage ratios and their square term as main variables in model 1 indicate that the relationship between capital structure and firm performance in Nigeria is mixed. The findings generally provide support for the agency cost theoretical model of capital structure as posits by Jensen and Meckling (1976) and espoused by Stulz (1990).Stulz (1990) relate that debt can have both positive and negative effect on firm performance and both effects are presumed to be present in all firms. This study therefore supports the portability of the agency cost theoretical model in the Nigerian context but not full portability due to several market imperfections of the Nigerian environment (High default risk, high transaction costs, information asymmetries, risk shifting behaviour, poor contract enforcement and weak investor protection, weak legal institutions, unsound corporate governance etc) that characterize a lower income developing market like Nigeria which may restrict the full portability of the agency cost theory in the Nigerian context.

5.0 Conclusion

Agency cost theorists have argued that capital structure can have both positive and negative impact on firm performance. This depends on how debt is use to resolve conflict of interest between shareholders and managers on one hand and between debt holders and shareholders on the other hand. The study found evidence that show capital structure (Short term leverage and total leverage ratios) are directly related to firm performance(return on equity).The implication being that the more short term employed by firms in Nigeria the better the returns to shareholders. The use of debt may push majority shareholders to exert more control and monitoring to ensure those they have appointed to manage the firm on day to day strive to achieve better performance to meet up with debt repayment obligations and employ debt to finance positive net present value projects such that they can obtain better returns on their equity. The practical implication of this in reducing agency problems in a setting where the majority shareholders dominates the minority shareholders is that greater use of both short term and long term debt may mean better protection of financial interest of minority shareholders in Nigeria firms. The results still confirm the relevance of the agency cost theoretical model to explain relationship between capital structure and firm performance in the Nigerian context. It is against this backdrop that this study concludes that capital structure matters for firm performance.

The regulators need to create fair rules and regulations that can empower and protect shareholders of companies especially the minority shareholders who often times have minute diluted shares in firms and do not have the capacity and resources to monitor as well as sue the majority shareholders who engage in opportunistic activities that are detrimental to the interest of the minority shareholders. In view of this, there is need for urgent regulations and enforcements that can protect and give better protections to the minority shareholders so that their interest can be more protected.

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