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CAPITAL STRUCTURE IN EMERGING MARKETS: EVIDENCE FROM NIGERIA

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Abstract:

This paper examines the impact of firm specific factors as determinants of capital structure choice of Nigerian firms based on the data of 115 non-financial firms listed on the Nigerian stock exchange, for the period 1998-2016.The study employed two-step system generalized method of moment in a dynamic panel framework. The findings of the study reveal positive relationship between profitability, firm risk, firm dividend and leverage. Asset tangibility, growth opportunities, size and age are found to be negatively related to leverage. The study therefore concludes that variables identified in the agency cost theory that provide explanations for capital structure of firms in the developed and some emerging countries, are relevant but not fully applicable in the Nigerian context.

This study shows that managers tend to use more debt as they prefer higher free cashflow because it facilitates the consumptions of perks. The use of long-term debt may reduce the opportunistic behaviour of managers. Managers may strive to ensure debt repayment promptly to avoid bankruptcy which can be very costly for the firm, and managers may lose their job and reputation. Managers would prefer the use of less debt in firms where there are high growth opportunities. Managers of firms may prefer to employ less debt when they see that debt can restrict them to explore future opportunities because of the commitment and covenants associated with debt.

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INTRODUCTION

Studies that have examined the capital structure decisions in the emerging countries context are basically divided into two streams. First, studies that report full portability of the capital structure theories in the emerging countries context without modification to account for the various market imperfections that characterise emerging market such as lack of contract enforcement, poor corporate governance, and high asymmetric information. These studies established that the traditional capital structure theories provide full explanation for the financing choices of firms in emerging markets (Sheik and Wang, 2011; Akinlo, 2011). Second, there is a large number of studies that suggest that the traditional capital structure theories are applicable in emerging countries, but they are not fully portable and therefore require modifications to account for the specificity of emerging countries in terms of institutional and macroeconomic framework that are quite different from the developed economies (Li et al. 2007).

Most of the previous studies on capital structure in the emerging countries in Africa (Akinlo, 2011 Barine, 2012; Chandrasekharan, 2012; Matemilola, Bany-Ariffin and Azman-Saini, 2013; Fosu, 2013; Muhtar and Ahmad, 2015) are focused on joint analyses of the different capital structure theories particularly in a static framework. None of these studies has considered the agency cost theory of capital structure in an emerging country context. Emerging market in Africa serves as excellent laboratory to test the agency theory of capital structure because of the profound misaligned interests between managers of firms in emerging market and their shareholders (Harvey, Lins and Roper, 2003). This study therefore addresses the gap by examining the portability of the agency cost theory in a market that defers from the developed market in terms of institutions and macroeconomic environment.This study complements the existing studies on emerging market by focusing specifically on firms in Nigeria; a low income emerging economy in sub Saharan Africa that is pervaded with several market imperfections (Gwartidzo, 2009).

The study contributes to the empirical literature on capital structure in three ways. First, the study represents one of the few studies which analyse the capital structure choices of firms within the agency cost theoretical framework using data from an emerging stock market in Africa. Second, the study uses two step dynamic generalized methods of moments which capture the dynamic effects of the capital structure as part of the determinants of capital structure rather than a static framework usually considered by past studies in the literature. The rest of the study is structured as follows- section 2 presents the literature review and hypotheses development. Section 3 deals with data and methodology, whereas section 4 presents the results and the paper concludes in section 5.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

This section of the study reviews relevant literature and develops hypotheses tested in the study.

Theoretical underpinning: *Agency cost theory*

Modigliani and Miller's (1958) seminal paper on the irrelevance of capital structure on firm value (hence performance) laid the foundation for other differing theoretical predictions. The trade-off theory relaxed the perfect market assumptions of Modigliani and Miller (1958) and made theoretical prediction that capital structure is relevant for firm performance for reasons such as tax deductibility of debt interest and agency costs (Fosu, 2013).

Jensen and Meckling (1976) pioneering research on agency cost theoretical model builds on the previous study by Fama and Miller (1972). Jensen and Meckling (1976) argued that the observed capital structure of a firm should have the central objective of minimising the potential for opportunistic behaviour. Modern firms are organised in such a way that ownership is separated from control. Managerial ownership further complicates the conflict of interests concerns (Jensen and Meckling, 1976; Florackis, Kanas and Kostakis, 2015). As part owner in the firm, managers have dual access to firm information which give them advantage above the residual claimants in the firm (Magaritis and Psillaki, 2007). This compounds the asymmetry in the informational wealth of the manager compared to other owners of the firm (Flannery, 1986; Ross, 1977). Agency theoretical underpinning also suggests that managers may be caught up in a classical moral hazard situation where their best intention produces negative value to the firm (De Miguel et al. 2005). This is what Jensen and Meckling (1976) described as the Agency cost, which is regarded as the reduction in the value of the firm as a result of the opportunistic behaviour by management of the firm.

One area of firm's operation that exposes both managers and shareholders to conflict of interests is their capital structure decision. In this situation, managers have a choice to either act in the interest of the firm or in their own interest. Agency theoretical frame argues that managers, as rational and utility maximising economic actors, are more likely to take decisions that maximises their personal returns than the firm's return. In order to ensure their wealth is maximized, the shareholders impose measures to ensure that the agency cost is mitigated. One of such measures that reduce manager's opportunistic behaviour is the use of capital structure, especially debt. Jensen and Meckling (1976) posit that firms can use their capital structure to mitigate the agency problem that arises from the opportunistic behaviour of managers. They identified two kinds of conflict in the firm due to agency problem and agency cost. They have noted that on one hand there is a conflict between the shareholders and managers and on the other hand there is a conflict between the shareholders and debt holders.

The conflict between shareholders and managers arises because managers do not have full residual claim in the firm. Therefore, managers may not act fully to protect the interest of shareholders but rather they may waste free cash flow on perquisites and bad investment. To forestall this, shareholders (Principal) create appropriate incentives for managers (agent) and incur monitoring costs to reduce the self-seeking behaviour of managers (Michalca, 2011). In order to resolve the conflict between managers and shareholders, firms tend to employ more debt in their capital structure. This often results into more debt repayment by the firms. This reduces the available cash flow in the firm and thus helps to control the opportunistic behaviour of managers (Manos, 2001; Michalca, 2011).

The second conflict identified by Jensen and Meckling (1976) is related to the conflict that arises between debt holder and equity holders, because the debt employed by the firm to mitigate agency problem creates opportunities for shareholders to invest in a suboptimal manner which can result in risk shifting (Harris and Raviv, 1991; Sun, Ding, Guo and Li, 2015). Risk shifting relates to the tendency of debt employed by firms to induce equity holders to engage in higher risk investment than the debt holder envisaged (Harris and Raviv, 1991). This would cause changes to the cash flow and reallocate wealth from debt holders to equity holders if the risky investment is successful. This is possible because the amount of interest payable to the debt holder must have been fixed in the debt contract before the risk shifting behaviour of the firm (Ismail, 2006). The extra gains from the successful risky investment become accruable to the equity holders. This risk shifting behaviour therefore could make debt to become more expensive, more constraining and less available in future as a source of finance (Manos, 2001). This implies that the use of debt becomes more of cost to the firm than benefit.

The explanations above implies that what drives firms to employ debt rather than equity in their capital structure is simply their aim to mitigate the agency cost that arises from separation of ownership from control, rather than to take the tax advantage of using debt and trade off the tax benefit of debt against the cost such as financial distress cost as posit in the trade-off theory (Sheik and Wang, 2011). The agency cost theory also signifies that debt is not used by the firm to signal to investors about the quality of the firm in terms of capacity to use debt and make repayment after exhausting the internal funds. Equity is however employed after the debt has also been exhausted and there is still financing needs by the firm as posit in the pecking order hypothesis (Belkhir, Maghyereh and Awartani, 2016).

The agency cost theoretical model by Jensen and Meckling (1976) assumed that firms have optimal capital leverage position that 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 (Gwartidzo, 2009). This implies that capital structure choice of the firm is not static but dynamic. The dynamic nature of capital structure suggests that capital structure of firm's changes across firms and across time i.e. each firm in an industry for example can change its capital structure over time to ensure the agency cost is minimized and value of the firm is maximized (Korajczyk and Levy, 2003).

It could be argued that the Agency cost theoretical model is more relevant in an environment where the rights of creditors and shareholders are not well protected, where institutional quality in terms of laws and its enforcements are very weak, and where financial development is still at infant stage because of the fact that these features perpetuate information asymmetry and do not make the market to be efficient in any meaningful way (Kesister, 2004). These features are persistent features in most emerging markets (Myers, 2003; Haron, 2014).

It is against the backdrop of the presence and persistence of these features that promotes agency related problems such as weak institutions and other market imperfections in a country like Nigeria that motivate this research to employ the agency cost theory as the main theoretical basis. The study empirically examines the full portability of agency cost theoretical model in the Nigerian context with the aim of providing empirical validity for the theory in an economy that is quite different in terms of operating environment of firms that Jensen and Meckling (1976) had in mind when they developed the agency cost theoretical model.

Jensen and Meckling (1976) identified some agency related theoretical variables as proxies for agency problem that influence the capital structure of firm. These variables are measured by firm characteristics such as: size, growth opportunities, asset tangibility, ownership, risk and profitability. The theoretical predictions of the agency cost based model on the relationship between capital structure and these agency theoretical variables differ from one variable to the other. Similarly, empirical studies that have considered these factors have also reported mixed and inconclusive findings. Based on the predictions of the agency cost theory and the empirical findings of studies in the literature, this study developed hypotheses to test the empirical validity of the agency cost theory in the Nigerian context. The next section develops hypotheses for this study.

Determinants of Leverage

There are several firm specific variables that influence capital structure choice of firms according to the agency cost theory. Several empirical studies on emerging market capital structure have provided mixed empirical results regarding the determinants of capital structure. Based on the firm specific

variables used in empirical capital structure model of Frank and Goyal (2007), this study employs the following firm specific factors as determinants of capital structure of firms using the agency cost theoretical framework.

Profitability

The expected theoretical relationship between leverage and profitability is positive. This theoretical prediction is hinged on the fact that debt is used by the firm as a measure to prevent managers to have access to excess cash flow that can enhance their opportunistic behaviours (Belkhir, Maghyereh and Awartani, 2016). As firms become more profitable, they have the capacity to obtain debt and repay it on due date. Free cash flow can make managers engage in other activities that are not value enhancing for the firm. Firms therefore use debt to forestall these (Charkraborty, 2010). Several empirical studies (including, Shehu, 2011; Chandrasekharan, 2011; Barine, 2012) have found support for the agency cost theory prediction of a positive relationship between profitability and leverage. However, other studies such as Al-Sakran (2001), Chen (2004), Chakraborty (2010), Sheik and Wang (2011), and Akinlo (2011) have reported negative relationship between profitability and leverage. They argue that profitable companies have less need for debt since new investment can be undertaken from retained earnings. Due to the conflicting findings in the literature, our null hypothesis is that:

H1: There is no relationship between profitability and leverage of firm.

Asset Tangibility

Agency cost theory predicts positive relationship between asset tangibility and firm leverage. This theoretical prediction is based on the fact that firms with tangible asset tend to use more debt in their capital structure. This is because the tangible asset can serve as collateral to secure the debt in the event of bankruptcy. Tangible asset could also provide additional economic benefit to the firm in terms of their tax-shield effects. Empirical findings in respect of the relationship between firms' asset tangibility and leverage have been inconclusive. While some studies report positive relationship (Shehu 2011; Chandrasekharan 2012; Drobetz et al. 2013), others have either reported negative or no relationship at all (Sheik and Wang 2011; Akinlo 2011; Michalca 2011, and Joeveer 2013). Studies that have reported negative or no findings argue that firms with more tangible assets are likely to have less need for debt financing since they could use their superior assets quality to generate better performance. However, there are far more studies that have found support for the agency cost prediction of positive relationship between firm leverage and asset tangibility. Consequently, we hypothesise that:

H2: There is a positive relationship between asset tangibility and leverage of firm.

Growth opportunities

Previous studies have argued that growth opportunities that a firm faces could impact on the propensity to use debt compared to equity (Manos, 2001). Firms in high growth potential industry require higher investment than firm in saturated industry. The decision on the sources of fund to explore growth

opportunities is a strategic one that directors have to make. Furthermore, previous studies argue that debt financing is cheaper than equity (Jensen, 1989) and consequently it should be expected that firms operating in high growth industry will use more debt rather than equity compared to firms operating in less growth opportunities. Looking from an agency theoretical frame, it is reasonable to expect a positive relationship between growth opportunities and leverage. Due to growth opportunities managers have high tendency to engage in opportunistic behaviour, since such behaviour may be covered by the need to exploit market opportunity which may be more significant than worrying about management opportunistic behaviour. Thus, firms may use debt to curtail managers' opportunistic behaviour due to repayment commitment (Jensen and Meckling, 1976; Margaritis and Psillaki, 2010).

However, managers would prefer the use of less debt in firms where there are high growth opportunities especially where the level of managerial entrenchment is high. Managers may prefer to use less debt when they see that debt can restrict them to explore future opportunities because of the commitment and covenants associated with debt and the fear of consequences associated with bankruptcy (Jensen and Meckling, 1976). Studies (such as Akinlo, 2011) document negative relationship between debt and growth opportunities. In order to mitigate the opportunistic behaviour that can arise due to future growth opportunities, firms are likely to employ more debt in order to prevent opportunistic behaviour of managers using the debt repayment commitment to reduce the free cashflow of managers. This suggests that the more the opportunities for growth the more debt firms are likely to employ. Therefore positive relationship is expected between growth opportunities and debt. Shehu, (2011) and Chandrasekharan, 2012 reported positive relationship between debt and growth opportunities. Based on these theoretical predictations and mixed empirical findings. The study formulates null hypotheses as below:

H3: There is no relationship between growth opportunities and leverage

Firm risk

The relationship between firm risk and leverage is inconclusive in extant literature. The positive relationship between firm risk and leverage is hinged on the fact that firms employ debt as disciplinary device to prevent moral hazard and other opportunistic behaviour of managers especially the tendency of the managers to take actions that can increase the variation of earnings of the firm (Jensen, 1986). To forestall this, the firms employ more debt in their capital structure to increase the debt commitment of the firm to debt holders. The higher the tendency for managers to engage in opportunistic behaviour, the more debt likely to be employed by the firm. However, the use of debt in an effort to reduce the opportunistic behaviour of managers can increase the level of volatility of the earnings of the firm and the tendency of going bankrupt if debt obligations are not met on due date (Jensen and Meckling, 1976; Jensen, 1986; Margaritis and Psillaki, 2010). Therefore risky firms have a dilemma in their capital structure decisions. This also depends on their current level of leverage. Highly leveraged firm may be symptomatic of high risk and in which case additional leverage could tilt the firm into bankruptcy when it is unable to meet repayment scheduled (Qian et al. 2009). Consequently, such a firm may reduce their level of leverage. This may lead to negative relationship between leverage and firm risk (Chen, 2004).

The literature gives inconclusive evidence on the relationship between leverage and firm risk. Positive relationship was reported between firms risk and debt ratio by Wiwattanakantang, (1999). However,

Alderson and Betker (1995), Qian and Wirjanto (2009), Sheik and Wang (2011), Qian et al. (2008), Drobetz et al. (2013) documented negative relationship. Therefore the study hypothesized that:

H4: There is no relationship between firm risk and leverage.

Dividend

Firms pay dividend out of profit as a reward for shareholder and to signal good performance including strong capital base and reliable management. Consequently, it is not expected that firms will use debt to pay dividends. The relationship between leverage and dividend payout is linked to firm performance in terms of profitability. Profitable firms are more likely to have excess cash generated from trading and will therefore be able to pay dividend.

Extant literature suggests that such firms will rationally have less demand for debt financing. It is therefore reasonable to expect a negative relationship between firms' dividend payout and leverage. Empircal evidence on this relationship is scanty. Notable existing studies include the work of Florackis, Kanas and Kostakis, 2015). We hypothesise that:

H5: There is a negative relationship between dividend payout and leverage.

Firm size and leverage

Agency cost theory predicts dual relationship between firm size and leverage. The positive relationship is based on the fact that firms employ long term debt to mitigate managers' opportunistic behaviour. This usually applies in large firms where managers do not have controlling interest. Furthermore, large firms tend to have access to debt at cheaper cost than small firms because they are diversified and have reputation as well as capacity to repay their debt than small firms (Byoun, 2008).Thus a positive relationship is expected between firm size and leverage. Agency problem is also more prominent in large firms than small firms as the principal (shareholders) are usually separated from the agent (managers).

However, where the managers have controlling interest in the firm, they tend to grow the firm to large size and ensure their interest is well protected so that they have continuous access to perks and perquisites, as well as opportunities to engage in empire building (Margaritis and Psillaki, 2010). The controlling managers have the incentive to avoid the use of debt even when it is available at a cheaper cost to prevent bankruptcy and taking over of the firm by the outsider (Jensen and Meckling, 1976; Margaritis and Psillaki, 2010; Chakraborty, 2010; Fosu, 2012), and to foster the access to consumptions of perks which may become constrained if the firm has high leverage. It is therefore reasonable to expect a negative relationship between leverage and firm size.

Empirical studies also report mixed findings. For example studies such as Chakraborty (2010), Shehu (2011) and Chandrasekharan (2012) report negative relationship between leverage and firm size. Based on the theoretical prediction of the agency cost theory and the mixed findings in the empirical literature. This study therefore hypothesized thus:

H6: There is no relationship between firm size and leverage.

Age

Firm that have been in existence a long time may have built reputation for credit worthiness. Such firms have better opportunities and tendencies to employ debt as a device to mitigate agency problem of managers. However, young firms may find it very difficult to use debt as a mitigating device of agency problem because of the absence of debt repayment reputation that requires time to build. It is against this backdrop that this study hypothesises thus:

H7: There is a positive relationship between age and leverage.

DATA AND METHODOLOGY

This section of the study explains the study design and data used in the investigation. Justifications are provided for the variables and scope of the study. Data for the investigation were gathered from the Facts Book of the NSE, and the annual reports and accounts of the companies. The study includes only non-financial firm with three or more years of consecutive observations to enable a robust analysis. The listed firms in Nigeria were classified into 13 new industrial classifications by the NSE as at 2012. The study excludes firms in the financial services and investment industries due to their significantly different reporting and regulatory requirements. Table 1 below shows the sector classification, number of listed firms on the Nigerian Stock Exchange, and sample selection for this study. This study is based on data from 115 Nigerian out of 184 non-financial firms listed on the NSE. 69 firms were excluded due to lack of data availability. The study uses an unbalanced panel data framework consisting of 115 Nigerian firms listed on the Nigerian Stock Exchange (NSE) from the period 1998 to 2016 with at least three year consecutive data for each firm. The study used unbalanced panel due to lack of data. Adelopo (2011) highlights the significant data challenge that accounting and finance researchers in Africa face. The next section presents the empirical model.

Industry Classification	Number of firms
Agriculture	8
Services	28
Consumer goods	43
Alternative Securities Market (ASEM)	15
Healthcare	16
Industrial Goods	30
Oil and Gas	10
Natural Resources	9
ICT	10
Construction and Real Estates	9
Conglomerates	6
Financial Services	97
Memorandum Quotation	27

Total Companies listed on the Nigerian Stock Exchange as at 2012	305
Exclude: Financial services companies	97
Memorandum companies (Investment companies)	27
Actual Working population of the study	184
Exclude companies without data point for at least three years	69
Actual sample firms for the study	**115**

Table 1. Firms distribution of companies listed on the Nigerian Stock Exchange and sample selection

Empirical Model

This study used a dynamic panel model of the form stated below to capture the persistence of leverage and to identify the optimal speed of adjustment in leverage level:

$$y_{it} = \varnothing y_{i,t-1} + x'_{it}\,\beta + \delta_i + \varepsilon_{it}$$

Where y_{it} is the current period leverage and $y_{i,t-1}$ is the leverage a year ago with $\varnothing$ as the speed of adjustment of leverage to it former level. x'_{it} is the vector of independent variables including profitability, Asset tangibility, size, growth opportunities, age, dividend and risk. δ_i is the fixed effect whilst ε_{it} is the disturbance term.Using GMM model in a dynamic panel framework solves two important problems that empirical investigations in finance often confront. These are the endogeneity and omitted variable problems (Roodman, 2009). A Dynamic panel requires the presence of the lagged dependent variable as part of the independent variables. However, this renders both OLS and the usual static panel estimator bias and inconsistent. The presence of the lagged dependent variable as part of the explanatory variable leads to correlation between the error term in one period and the dependent variable and the error terms of another period. To resolve this problem Arellano and Bond (1991) suggest the use of Generalised method of moments (GMM) which essentially uses the idea of instrumental variables to correct for correlations between the error terms and the dependent variable. They suggested the use of lagged exogenous variables as instrument both at level and at first difference. However, Blundell and Bond (1998) showed that this approach does not provide optimal solution and instead suggest the use of system GMM in circumstance with panel that contain limited time (T) and large cross section(N). Blundell and Bond (1998) argue that system GMM estimator explores more moment conditions on the lagged and difference level using the lagged difference of the exogenous variables as instruments in the level equation.

Two fundamental tests are undertaken to show the suitability of system GMM estimator. First whilst the rejection of the null hypothesis of no autocorrelation in the difference residual is not problematic, second order rejection of the null of no auto-correlation is problematic. Furthermore, Sargan/Hansen test is conducted to test the suitability of the instruments. The study used a stepwise regression approach whereby dependent variable is first regressed against its lagged value, then include the other firm specific variables in the model. Table 2 below presents detailed information about the variables including their sources, definitions, and expected signs between the variables.

Variable	Definition	Sources	sign
Total Leverage Ratio (TLR)	Total Debt/ Total Debt plus Total Equity.	Frank & Goyal (2007); Handoo & Sharma (2014).	Positive
Long Term Leverage Ratio (LTLR)	Long Term Debt/ Total Debt plus Total Equity	Frank & Goyal (2007); Handoo & Sharma (2014).	Positive
Short Term Leverage Ratio (STLR)	Short Term Debt/ Total Debt plus Total Equity.	Frank & Goyal (2007); Handoo & Sharma (2014).	Positive
Profitability (PROF)	Earnings Before Interest and Tax/ Total Assets	Kayo & Kimura (2011); Chang et al. (2014); Gwatidzo & Ojah (2014); Handoo & Sharma (2014); Alves & Francis (2015); Belkhir et al. (2016).	Positive/ Negative
Assets Tangibility (TANG)	Tangible Fixed Assets/ Total Assets.	Kayo & Kimura (2011); Chang et al. (2014); Handoo & Sharma (2014); Alves & Francis (2015); Belkhir et al. (2016).	Positive
Growth Opportunities (GO)	Percentage change in the log of Total Assets.	Kayo & Kimura (2011); Chang et al. (2014); Belkhir et al. (2016).	Positive/ negative
Risk	Standard deviation of the Earnings Before Interest and Tax / Total Asset.	Chang et al. (2014).	Positive/ negative
Dividend	Dividend/Profit after tax	Flokaris et al. (2015).	Negative
Size (SIZE)	Natural logarithm of Total Assets.	Kayo & Kimura (2011); Chang et al. (2014); Gwartidzo & Ojah (2014); Alves & Francis (2015).	Positive/ negative
Age	Number of years that the firm have been in existence	Gwatidzo & Ojah (2014); Belkhir et al. (2016).	Positive

Table 2. Definition of Variables

EMPIRICAL RESULTS AND DISCUSSION OF FINDINGS

This section presents the empirical results. First, it provides a detailed explanation of the descriptive statistics and the correlations analysis. This is then followed by the presentation of the two step system GMM regression results.

Descriptive statistics

Table 3 below presents the descriptive statistics of the variables. During the entire period, the mean of total leverage ratio was 0.50. This is greater than the mean of long term leverage ratio of 0.19 but both are less than the mean of short term leverage of 1.0097. These indicate that on average, the sample firms employ more short term leverage ratio and total leverage ratio. The standard deviation for the total leverage ratio of the sample firms is 1.19. This suggests that total leverage ratio of sample firms has high variability as evidence in the coefficient of standard deviation that is greater than one. Long term leverage ratio has standard deviation of 0.86.Short term leverage ratio has the highest standard deviation (11.23) than total leverage and long term leverage ratios. The average age of the sample firms in the study was 33 years.

Variable	Mean	Standard Deviation	Minimum	Maximum
Total leverage ratio	0.2462	0.2919	0.0000	0.9970
Long term leverage ratio	0.0874	0.1546	0.0000	0.9928
Short term leverage ratio	0.1588	0.2170	-0.3658	0.9744
Profitability	0.0363	0.0908	-0.3137	0.6213
Asset Tangibility	0.2018	0.3408	0.0000	10.4400
Growth Opportunities	0.2125	2.0104	-28.7904	33.1651
Risk	6.2020	74.3085	-166.856	2657.495
Dividend	0.1071	0.8614	-2.241	15.4936
Size	8.0335	5.5004	-4.2929	20.0598
Age	31.7790	19.4241	0.0000	93.00

Total Leverage Ratio (TLR) = total debt/Total Debt and total equity. Long Term Leverage Ratio (LTLR) = Long term debt/total debt and total equity. Short Term Leverage Ratio (STLR) = Short Term Debt/Total Debt and Total Equity. Profitability (PROF) = Earnings before Interest and Tax/Total Assets. Assets Tangibility (TANG) = Fixed tangible assets/total assets. Growth opportunities (GO) =Percentage change in the log of total assets. RISK = Standard deviation of the earnings before interest and tax to total asset.Size (SIZE) = Natural logarithm of total assets. Dividend pay-out= Dividend/Profit after tax. AGE = number of years on the Nigerian Stock Exchange.

Table 3. Descriptive statistics

The variability of the age of the sample firms is 19.42 as shown by the standard deviation. The average growth opportunities of the sample firms are 0.21.The standard deviation of growth opportunities for the sample firms was 2.01. This indicates high degree of variability of growth opportunities of the sample firms. The average fixed asset as a percentage of total assets (asset tangibility) of the sample firms is 0.20. The standard deviation is 0.34. The mean value of firm size is 8.03 while the standard deviation is 5.50. The average dividend of the sample firms from 1998 to 2012 is 0.11 with standard deviation of 0.86.The mean value of risk for the 115 firms is 6.20 and the variability of risk among the sample firms is 74.30.

This is consistent with findings from studies (Frank & Goyal, 2009; Kayo & Kimura, 2011; Chang et al. 2014) for emerging economies. They found book value of leverage and market value of leverage to be between 14.2% and 27.2%, 12.6% and 12.5% respectively establishing that firms value equity more than debt for their capital structure in those economies.

	TLR	LTLR	STLR	PROF	TANG	GO	RISK	DIV	SIZE	AGE
TLR	1.0000									
LTLR	0.6869	1.0000								
STLR	0.8557	0.2117	1.0000							
PROF	-0.0259	-0.0675	0.0132	1.0000						
TANG	-0.0861	-0.0860	-0.0546	0.1154	1.0000					
GO	-0.0566	-0.0378	-0.0492	0.0498	0.0719	1.0000				
RISK	0.0676	-0.0237	0.1078	0.0213	-0.0133	-0.0084	1.0000			
DIV	-0.0275	-0.0415	-0.0075	0.2081	0.0082	-0.0018	-0.0083	1.0000		
SIZE	-0.1294	-0.1145	-0.0926	0.0835	0.2359	0.0813	-0.0410	-0.0375	1.0000	
AGE	-0.2153	-0.1432	-0.1875	0.1187	0.1195	0.0281	-0.0422	0.0506	0.2478	1.0000

Total Leverage Ratio (TLR) = total debt/Total Debt and total equity. Long Term Leverage Ratio (LTLR) = Long term debt/total debt and total equity. Short Term Leverage Ratio (STLR) = Short Term Debt/Total Debt and Total Equity. Profitability (PROF) = Earnings before Interest and Tax/Total Assets. Assets Tangibility (TANG) = Fixed tangible assets/total assets. Growth opportunities (GO) =Percentage change in the log of total assets. RISK = Standard deviation of the earnings before interest and tax to total asset.Size (SIZE) = Natural logarithm of total assets. Dividend pay-out= Dividend/Profit after tax. AGE = number of years on the Nigerian Stock Exchange.

Table 4. Correlation matrix

Table 4 shows the pairwise correlation between leverage ratios (short term, long term and total) and firm specific variables (Age, growth opportunities, Asset tangibility, profitability, size dividend and risk).The correlation results does not reveal any high level of correlation among the variables therefore there is no problem of multicollinearity.

	$STLR_{T-1}$	**0.2825 (0.000)*** **	$LTLR_{T-1}$	**0.2003 (0.000)*** **	TLR_{T-1}	**0.3146 (0.000)*** **
Prof		0.3737 (0.001)***		0.1832 (0.001)***		0.5413 (0.001)***
Tang		-0.1532 (0.001)***		-0.1777 (0.001)***		-0.2994 (0.000)***
Go		-0.0068 (0.000)***		-0.0065 (0.000)***		-0.0117 (0.000)***
Risk		0.0015 (0.000)***		0.0003 (0.000)***		0.0012 (0.000)***
Div		0.0194 (0.002)***		-0.0046 (0.000)***		0.0122 (0.000)***
Size		-0.0004 (0.000)***		0.0068 (0.000)***		0.0057 (0.000)***
Age		-0.0152 (0.000)***		-0.0053 (0.000)***		-0.0188 (0.000)***
Arrelano and Bond AR(2) Probability		0.503		0.470		0.437
J-Statistic		93.217		94.331		96.51

Total Leverage Ratio (TLR) = total debt/Total Debt and total equity. Long Term Leverage Ratio (LTLR) = Long term debt/total debt and total equity. Short Term Leverage Ratio (STLR) = Short Term Debt/Total Debt and Total Equity. Profitability (PROF) = Earnings before Interest and Tax/Total Assets. Assets Tangibility (TANG) = Fixed tangible assets/total assets. Growth opportunities (GO) =Percentage change in the log of total assets. Dividend= RISK = Standard deviation of the earnings before interest and tax to total asset.Size (SIZE) = Natural logarithm of total assets. Dividend pay-out= Dividend/Profit after tax. AGE = number of years on the Nigerian Stock Exchange.

Table 5. Two step system Generalized method of moments results

Short Leverage ratio(Stlr) Long term Leverage ratio(Ltlr) Total Leverage ratio (Tlr)

Signficance level 10% * 5% **1%***

Table 5 above presents the results of three regression models. Model 1-3 is the regression with short term leverage, long term leverage and total leverage as the dependent variables respectively. The results in Table 5 indicate that the relationships between the lag leverage ratios (short term, long term and total leverage) and current leverage is positive and significant for all three measures of leverage. This indicates that as immediate year financing of firms increases, the current leverage also increases. This suggests that the capital structure choice (short term, long term and total leverage) firms make in previous year influences their current year capital structure choice. The positive significant coefficient confirms the presence of optimal capital structure of firms which supports the prediction of the agency cost theory of the existence of optimal capital structure that firms strive to achieve. This suggests that firms in Nigeria adjust their capital structure to reach a target level.

The results for all the three measures of leverage indicate that profitability is positive and significantly related to leverage. The results imply that as firms become more profitable they tend to employ more debt in their capital structure coupled with the fact that they have capacity to repay as evidenced in their profitability. The positive relationship also supports the perspective that managers tend to use more debt as they prefer higher free cashflow because it facilitates the consumptions of perks. The positive relationship is consistent with the expected theoretical positive relationship between profitability and leverage posits by the agency cost theory of capital structure. The finding complies with the positive relationship between profitability and leverage reported in past studies such as Qian and Wirjanto (2009) and Chakraborty (2010) for emerging market. Our study accept the hypothesis (H1)and suggests that there is a significant positive relationship between leverage and firm profitability.

The result from Table 5 above also shows negative but statistically insignificant relationship between tangibility and leverage for short and total leverage ratio. However, the finding indicates statistically significant positive relationship between asset tangibility and long term leverage ratio. This conforms to the theoretical prediction of the agency cost theory. This suggests that firms with tangible asset tend to use more long term debt and that there is a positive relationship between the tangible assets and leverage level. This is because the tangible asset may serve as collateral to secure the debt in the event of bankruptcy. Whereas creditors may not consider tangible assets for short term borrowing. The use of long term debt may reduce the opportunistic behaviour of managers. Managers may strive to ensure debt repayment promptly to avoid bankruptcy which can be very costly for the firm, and managers may lose their job and reputation in a situation where the firm ceases to exist due to the inability of the firm they manage to meet up with debt obligations or the firm's assets were taken over by the debt holders as a result of non repayment of debt. The finding conforms with the reported results in Salawu and Agboola (2008), Abor and Biekpe (2009) for countries in emerging market. Our findings therefore supports H2 of a positive relationship between tangibility and leverage.

The result in Table 5 further shows that there is a statistically significant negative relationship between leverage and growth opportunities for short term leverage and total leverage ratio but we found a statisitically significant positive relationship between growth opportunities and long term leverage. The negative result support the theoretical prediction of the agency cost theory and indicates that managers would prefer the use of less debt in firms where there are high growth opportunities. Managers of firms may prefer to employ less debt when they see that debt can restrict them to explore future opportunities because of the commitment and covenants associated with debt. The negative finding conforms with the reported findings in studies such as Salawu and Agboola, 2008; Qian, Tian and Wirjanto, 2009; Akinlo, 2011. On the other hand, the positive relationship reported in this study between long term

leverage ratio and growth opportunities supports similar findings reported by De Miguel and Pindado, 2001; Salawu, 2007; Karadeniz, 2008; Shehu, 2011; Chandrasekharan, 2012. These findings reflect the mixed findings in existing literature.

The results presented in Table 5 also show statisitically significant positive relationship between firm risk and leverage. This suggests that firms use more debt when the level of volatility of earnings is high. Therefore high earning volatility is associated with high firm leverage. Though, earnings volatility is associated with low long term debt. This finding is contrary with reported findings from Qian and Wirjanto (2009), Sheik and Wang (2011), Qian et al. (2008), Drobetz et al. (2013) that have reported negative relationship between firm risk and leverage. Based on the positive relationship found between risk and leverage the study accept hypothesis **H4.**

Furthermore, our empirical results indicate positive relationship between short term leverage, total leverage and dividend. While long term indicates statistically significant negative relationships with dividend. These suggest that firms tend to employ more short term debt when they have less dividend obligations therefore owners may will be able to use short term debt to mitigate the agency problem at the firm level. However, the results indicate positive relationship between long term. This suggests that dividend obligation of firms make them use more debt in their capital structure such that debt can be used to mitigate the agency problem at the firm level. Based on these findings the study thus accepts **H5.**

Table 5 also shows that the relationship between firm size and leverage is significantly negative with short term debt. These results indicate that larger firms tend to use more debt than equity compared to smaller firms. The positive relationship conforms with the findings of studies such as Haung and Song (2008), Salawu and Agboola (2008), Qian et al. (2008), Abor and Biekpe (2009), Qian and Wirjanto (2009), Sheik and Wang (2011), Akinlo (2011) and Michalca (2011) that have reported positive relationship between firm size and leverage. However, in this investigation the relationship is statistically significant therefore **H6** is rejected. In the same vein, the study rejects **H7** based on the negative relationship between age and leverage (total leverage ratio). This signifies that firms that have been in existence for long time may have built reputation especially debt repayment reputations to access debt for the purpose of mitigating the opportunistic behaviours of managers. The results from Table 5 above suggest that firm specific factors are crucial in the analysis of capital structure of firms in Nigeria.

CONCLUSION

This paper presents an analysis of the firm specific determinants of capital structure choices of Nigerian firms based on the data on 115 Nigerian non-financial firms listed on the Nigerian stock exchange, for the period 1998-2016 in a dynamic panel framework. Findings from the study reveal positive relationship between leverage and profitability and firm risk and firm dividend. Asset tangibility, growth opportunities, size and age are found to be negatively related to leverage. The study therefore concludes that variables identified in the agency cost theory that provide explanation for capital structure of firms in developed and some emerging countries, are relevant but not fully portable in the Nigerian context. Some of the variables stand as factors driving capital structure of firms in Nigeria as predicted by the agency cost theory but several other factors identified by the agency cost theory do not provide direct explanation for capital structure choice of firms in Nigeria as posits in the theoretical prediction of the agency cost theory. It is against this backdrop that this study suggests that further studies that capture the role of country factors alongside firm specific factors as determinants of capital structure of firms in emerging markets seems important to better appreciate the impacts of institutional factors on firm behaviour including their capital structure decisions.

This study show that managers tend to use more debt as they prefer higher free cashflow because it facilitates the consumptions of perks. The use of long-term debt may reduce the opportunistic behaviour of managers. Managers may strive to ensure debt repayment promptly to avoid bankruptcy which can be very costly for the firm, and managers may lose their job and reputation. Managers would prefer the use of less debt in firms where there are high growth opportunities. Managers of firms may prefer to employ less debt when they see that debt can restrict them to explore future opportunities because of the commitment and covenants associated with debt.

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STRUKTURA KAPITALA NA TRŽIŠTIMA U RAZVOJU: DOKAZI IZ NIGERIJE

Rezime:

Ovaj rad ispituje uticaj specifičnih faktora preduzeća kao determinante izbora strukture kapitala firmi iz Nigerije, na osnovu podataka od 115 nefinansijskih firmi navedenih na nigerijskoj berzi u periodu od 1998-2016. U radu je primenjen dvostepeni sistem generalizovane metode momenata u dinamičkom panelu. Rezultati ispitivanja pokazuju pozitivan odnos između profitabilnosti, čvrstog rizika, čvrste dividende i leveridža. Utvrđeno je da su opipljivost imovine, mogućnosti za napredovanje tj. razvoj, veličina i starost preduzeća negativno povezani sa leveridžom. Studija stoga zaključuje da su varijable identifikovane u teoriji troškova agencije koje pružaju objašnjenja za kapitalnu strukturu firmi u razvijenim i nekim zemljama u razvoju, relevantne ali nisu u potpunosti primenjive u nigerijskom kontekstu.

Ova studija pokazuje da rukovodioci imaju tendenciju da više koriste zaduživanje jer preferiraju slobodni tok gotovine što olakšava potrošnju bonusa. Korišćenje kredita sa dugim periodom otplate može smanjiti oportunističko ponašanje menadžera. Rukovodioci mogu nastojati da osiguraju otplatu duga, kako bi se izbegao stečaj koji može biti vrlo skup za firmu, dok menadžeri mogu izgubiti svoj posao i reputaciju. Menadžeri bi voleli da manje koriste zaduživanje u preduzećima gde postoje velike mogućnosti za rast. Menadžeri firmi radije izbegavaju zaduživanja kada vide da ih dug može ograničiti u istraživanju i iskorišćavanju budućih prilika, zbog obaveza koje zaduživanje povlači sa sobom.

Ključne reči:
struktura kapitala,
teorija agencije,
generalizovani metod momenata,
dinamički panel.