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MANAGERIAL SHARE OWNERSHIP AND CAPITAL STRUCTURE DECISION OF NIGERIAN LISTED NON-FINANCIAL FIRMS

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ABSTRACT

The paper examined the relationship between managerial share ownership and leverage of 35 non-financial firms listed on the floor of the Nigerian Stock Exchange. The study covered the period 2005-2014. Using panel data regression analysis and fixed effects model (with least squares as an estimation technique), result revealed a positive and significant relationship between leverage and managerial share ownership. This suggested that managerial share ownership, an important internal corporate governance mechanism, played an important role in a company's capital structure decision. The outcome of this study was supported by some prior empirical studies and provided evidence of alignment of the interests of management and shareholders as proposed by the Agency theory. It is recommended that Nigerian companies should encourage management to own shares in companies where they serve as directors as this will reduce managerial incentives to consume perquisites and expropriation of shareholders' wealth or investing in unprofitable projects.

Key words: Managerial ownership, Agency cost, Capital structure, Leverage, Pecking order.

INTRODUCTION

Background to the study

Capital structure refers to the mix of debt and equity an organisation uses in financing its assets and operations. The decision concerning capital structure is very critical to every business enterprise because it affects the stability as well as the ability of the firm to meet the requirements of its stakeholders. The seminal work of Modigliani and Miller (1958) opened the gate for the study of capital structure in the modern era. In their proposition, Modigliani and Miller concluded that under certain perfect market situations, the mode of financing does not matter in the determination of the value of the firm. They therefore suggested that a firm can as well be financed by 99.99% of debt capital as this will not affect the overall cost of capital and its value. Modigliani and Miller (1963) later faulted the above conclusion when tax was taken into consideration. They realized that debt financing have tax advantage and concluded that firm should not take the tax advantage to the extreme because the value of the firm may be negatively affected with high usage of debt capital.

A comprehensive review of older empirical literature reveals attention of researchers to the study of the relationship between capital structure and firm performance or value. Recently, authors are now showing concern on how capital structure impacts on corporate governance mechanisms, as proposed in Agency theory of Jensen and Meckling (1976). One of such governance mechanisms that is not well explored is ownership structure. Ownership structure is discussed in many forms in the literature. This paper considers managerial share ownership as ownership structure proxy.

There are several ways on how ownership of the firm may affect the capital structure. Reduction in scope of managerial opportunism (Shleifer & Vishny, 1986); internal control mechanism (Jensen, 1986); managerial incentives reduction due to managerial share ownership (Jensen & Meckling, 1976); adverse effect on agency conflicts (Fama & Jensen, 1983). However, results of prior empirical studies on the relationship between ownership and capital structure are mixed.

Research objective

The primary objective of this study is to investigate the relationship between managerial share ownership and capital structure decisions of listed firms in Nigeria.

Justification for the study

Paucity of research materials in this area of study especially in the developing countries, such as Nigeria, serves as a source of motivation for the current study. It is expected that the outcome of this study will be a valuable contribution to the ever increasing empirical literature in Financial Management / Accounting. Furthermore, academics, management of corporations, shareholders, debt holders, regulatory agencies, professional managers and the general reading public will find it useful in taking informed decisions.

LITERATURE REVIEW

Theoretical framework

The outcomes of the studies of Modigliani and Miller (MM) (1958 and 1963) propositions led to several alternative capital structure theories. Of the theories that challenged the principles behind MM theorems, three of them need to be explained. First was the Static trade-off theory which presumes that a firm sets up a debt target ratio and moves towards its achievement. This target is set up as a trade-off between the costs and the benefits of debt, that is, bankruptcy costs against tax benefits. Empirically, the theory posited a positive relationship between profitability and level of debt usage. Studies conducted by Flamnery and Rangan (2004), Salawu and Agboola (2008), Abdeljawad, Mat-Nor, Ibrahim and Abdul-Rahim (2013) and Haron (2014) have confirmed this theory empirically.

Secondly, the pecking order theory of Myers (1984) and Myers and Majluf (1984) submitted that due to asymmetry information, a firm will prefer the use of internal source (retained earnings) to external source when faced with financing decision. When external source is required, a firm will prefer debt capital (a cheaper source) to equity capital. Empirically, the theory suggested a negative relationship between profitability and debt. Among authors that have tested and confirmed the prediction of this theory are Abor and Biekpe (2005), Chen and Zhao (2005), Bharath, Pasquariello and Wu (2006), Abor (2008), Kajola, Okewale and Desu (2008), Abdeljawad, et al (2013), Haron (2014), Fathi, Ghandehari and Shirangi (2014), Wahab

and Ramli (2014), Masood (2014), Alani and Alamri (2015), Acaravci (2015) and Kajola (2015).

Thirdly, Agency theory propounded by Jensen and Meckling (1976) argued that managers as agent of shareholders, the principal, have tendency to involve in some activities which profit them as managers but which are against the interest of their principal. This results in agency conflict. To compel managers to do things according to the wishes of the shareholders will involve serious monitoring. The cost attached to this monitoring is known as agency cost. The higher the need to monitor the managers, the higher the agency costs will be.

Jensen and Meckling (1976) suggested that managerial shareholding can be used to reduce managerial incentives to consume perquisites and expropriate shareholders' wealth and results in alignment of the interest of management and shareholders. Although, this was challenged by Fama and Jensen (1983) who argued that managerial shareholding can have adverse effects on agency conflict through entrenchment of present managers leading to increase in managerial opportunism. Pinegar and Wilbricht (1989) cited in Boodhoo (2009), argued that principal-agent problem can be dealt with to some extent through the capital structure by increasing the debt level and without causing any radical increase in agency costs.

Related empirical studies

In the literature different variables have been discussed and used to measure ownership. Some of these are ownership concentration, managerial ownership, domestic ownership, foreign ownership and institutional ownership. The relationship between each of these ownership proxies and leverage has produced mixed empirical results. Some of these studies are reported here.

Wen (2002) used data from listed companies in China, provided evidence of negative and significant relationship between gearing (leverage) level and representation of non-executive directors on the board (ownership structure proxy). This finding was contrary to the outcome of Pfeffer and Salancick (1978) who reported a positive relationship between the two variables in their study.

Joher, Ali and Nazul (2006) assessed the relationship between ownership structure (managerial ownership) and debt policy of firms listed on Kuala Lumpur Stock Exchange. Result showed a negative association between leverage and managerial ownership. Similar result was also found in a study conducted by Nyonna (2012).

Arshad and Safdar (2009) explored the relationship between corporate governance and capital structure of 58 listed companies in Pakistan for the period 2002 to 2005. Results revealed that board size and managerial shareholding was significantly and negatively correlated with debt to equity ratio. The results suggested that corporate governance variables like size and ownership structure and managerial shareholding played significant role in determination of financial mix of the selected firms.

Cheng and Tzeng (2011) investigated the effect of ownership structure (surrogated by ownership concentration and family ownership) on leverage and performance in the electronics, textile and chemical industries in Taiwan from 2000-2009. The empirical results showed that ownership concentration was positively related to leverage and firm

performance for the electronics and textile industries; the positive effects of ownership concentration on leverage tend to be weaker when moderated by firm performance; and various ownership structures reflected different levels of managerial opportunism across different industries.

Sivathaasan (2013) studied the impact of ownership structure (foreign and domestic ownerships) on capital structure decision among quoted manufacturing firms in Sri Lanka during 2009-2011. Results revealed a positive relationship between foreign ownership and leverage, whereas leverage was negatively correlated with domestic ownership.

Javeed, Hassan and Azeem (2014) investigated the impact of capital structure on corporate governance measures (board independence, ownership concentration, managerial ownership, board independence and chief executive officer duality) of 155 non-financial companies listed on Karachi Stock Exchange, Pakistan for financial years, 2008 -2012. The study revealed insignificant impact of leverage on corporate governance measures.

Ukaegbu, Oino and Dada (2014) examined the relationship between corporate governance and capital structure using panel data of selected Nigerian large non-financial firms for 2008-2012. Results indicated significant relationship between ownership variables and leverage; positive with board composition and negative with board meeting.

Arsian and Zaman (2014) explored the impact of ownership structure (institutional ownership and ownership concentration) on capital structure in textile sector and rest of the manufacturing sectors (non-textile) in Pakistan for 2006-2009. The results suggested that in textile sector no significant relationship exists between ownership concentration and capital structure whereas a significant negative relationship was found between these two variables in case of non-textile firms. Furthermore, institutional ownership variable was found to be non-significant in both textile and non-textile sectors.

METHODOLOGY

Data source

Data for this study were sourced from the audited reports and accounts of the sampled companies and from the Nigerian Stock Exchange Fact Books for 2005-2014. The choice of the study period was guided by availability of data.

Population, sample and sampling technique

183 non- financial firms were listed on the floor of the Nigerian Stock Exchange as at the beginning of 2005 and this constituted the population of the study. The sample size of 35 companies was chosen from the population through the combination of judgmental and stratified sampling techniques. In all, the 35 companies covered 15 business sectors (see Appendix 1).

Research instrument

Panel data regression analysis was adopted. This involved simultaneous combination of cross-sectional and time series data. Three different estimation techniques were initially considered. These are simple pooled Ordinary Least Squares (OLS); Fixed effects; and Random effects. Since companies of different sizes and sectors comprised the sample, the use of simple pooled OLS may not give correct inferences on the relationship be-

tween the study variables. Hence, in line with Marfo-Yiadom and Agyei (2011) and Dawood *et al* (2011), Least Squares with Fixed effects model and Random effects model (with Generalized Least Squares, GLS as estimation technique) where lagged values are not included among the regressors was applied. This helped to alleviate the endogeneity problem that may occur due to omitted variables, measurement error of explanatory variables or reverse causality between the dependent variable and the explanatory variables. In order to determine which of the other two (Fixed or Random effects) techniques to be used for valid inferences, Hausman's specification test was conducted.

Description of variables

Dependent Variable

Leverage: This is the only dependent variable of the study and it is measured by the ratio of total debts to total asset. Although, there is no universally acceptable proxy for leverage (as some researchers prefer book values to market values and vice versa) in the literature, the study adopted the use of book values in line with the submission of Rajan and Zingales (1995).

Independent variable

Ownership structure is the only independent variable of the study. The current study adopted managerial share ownership, which is measured as the proportion of shares owned by management (directors or insiders) to the total equity shares in issue by the company, as ownership structure proxy. Using managerial share ownership as ownership structure proxy is unique because directors who own shares in an organisation belong to both management and equity shareholders (owners) and resolving conflict between management and owners is the main issue in Agency theory. The direction of the relationship between leverage and ownership structure depends on the theory behind it. The Alignment of interest hypothesis proposes a positive relationship while the Entrenchment hypothesis predicts a negative relationship.

Control variables

Profitability: There exist in the literature sufficient evidence that show the importance of profitability as a variable that can influence both leverage and ownership structure. That explains the reason for the use of profitability as a control variable in the study. The direction of the relationship between profitability and leverage however, depends on the capital structure theory. The pecking order theory predicts a negative relationship between leverage and profitability. Static tradeoff predicts a positive signal because the higher the firm's profitability, the higher the potential tax shields and therefore the higher the debt level. Profitability in this study is defined as the ratio of profit after tax to total assets.

Firm Size: This is defined as natural log of total assets. Bevan and Danbolt (2002), in support of the Static trade- off theory, argued that large firms tend to hold more debt because they are regarded as being "too big to fail" and therefore receive better access to the capital market. Abor (2008) posited that lenders to larger firms are more likely to get repaid than lenders to smaller firms, reducing the agency cost associated with debt. Therefore, larger firms will have higher debts. Static Trade Off theory expects a positive signal from this variable. On the other hand, the Pecking order theory argues that larger firms are able to support their investment from internal source, hence the use of lesser amount of debts. A negative relationship is

predicted between the two variables by the theory.

Tangibility: This is defined as the ratio of firm's non-current asset (fixed asset) to total asset. Asset tangibility is considered as a proxy for collaterals. Wedig, Sloan, Asan and Morrisey (1988) submitted that debt may be more readily used if there are durable assets to serve as collateral. Therefore, the more tangible assets a firm possess, the more the expectation for higher leverage. This assertion is supported by the Static trade- off theory. Pecking order theory considers the relationship between asset tangibility and leverage from another stand point. The theory argues that firms with higher tangible assets generally have less information asymmetry and they are able to sell their equity shares at fair prices. The result is that such firms use lesser amount of debt capital; hence a negative relationship is expected between the two variables.

Hypothesis

The hypothesis of the study in its null form is as stated below:

H_0: There is no significant relationship between managerial share ownership and capital structure decision of Nigerian listed firms.

Model specification

The model specification of the study is in line with what obtains in the extant empirical literature, with a little modification. This is as presented in 3.1.

$$L_{it}=\beta_0+\beta_1 OWN_{it}+\beta_2 PROF_{it}+\beta_3 SIZE_{it}+\beta_4 TANG_{it}+e_{it} \quad (3.1)$$

Where,

Lit = Leverage
OWN = Managerial share ownership
PROF = Profitability
SIZE = Firm size
TANG = Asset tangibility
β_0 = Intercept of the equation
$\beta_1, \beta_2, \beta_3, \beta_4$ = coefficients of the independent and control variables
e_{it} = error term

Validity and reliability of research instrument

Data used for the study were obtained from reliable sources. The companies' annual accounts and reports were audited by reputable firms of accountants and were scrutinized by relevant regulatory agencies- Securities and Exchange Commission (SEC), Nigerian Stock Exchange (NSE) and Financial Reporting Council of Nigeria (FRCN) and approved for public use. Furthermore, the research instrument used for the study has been used and empirically found to be suitable by researchers in both developed and emerging countries.

RESULTS AND DISCUSSION

Descriptive statistics

Table 1 presents the descriptive statistics of the variables used in the study.

Table 1: Descriptive statistics

	Mean	Minimum	Maximum	Standard deviation	Skewness	Kurtosis
LEV	0.206	0.000	3.091	0.275	5.019	42.575
OWN	0.109	0.000	0.761	0.190	1.960	2.729
PROF	0.049	-3.026	0.508	0.192	-12.066	189.538
SIZ	9.816	8.020	11.499	0.768	-0.346	-0.662
TANG	0.374	0.049	0.823	0.182	0.562	-0.333

Source: Authors' computation with the use of E- Views 7.0 (2016)

The average debt to total asset used by the sampled firms during the period of study, as shown in Table 1,is 0.206. It clearly shows that majority of the firms are low geared, although one of the firms used more than three times the size of total asset (maximum value of 3.091). The Table 1 further shows that the average managerial ownership of 0.109. This indicates that, on the average, managers' ownership (represented by directors' holding), was about 11%, while other shareholders owned about 89%. The average profitability of the firms is about 5% and the proportion of fixed (non-current) asset to total asset is about 37.4%.

Collinearity test

Three methods were used to test the multicollinearity between the explanatory models used in the study. These are correlation matrix; Vector Inflation Factor (VIF) and Tolerance Value (TV). Gujarati (2003) and Rumsey (2007) suggested that correlation coefficient value of 0.8 and above for an independent variable indicated existence of high multicollinearity problem between it and other variables. Furthermore, Gujarati (2003) posited that a variable with VIF of above 10 or Tolerance value of less than 0.1 showed existence of high multicollinearity between it and other variables.

As seen in Table 3, no variable has a coefficient value of 0.8 and above. Also in Table 2, no variable has VIF of above 10 or TV of less than 0.1. These results confirmed that there was no high multicollinearity between explanatory variables used in the study. Hence, valid inferences would be made in regression analysis conducted.

Table 2 shows the result of collinearity test conducted using the VIF and TV methods.

Variable	VIF	Tolerance value
OWN	1.230	0.813
PROF	1.015	0.985
SIZ	1.255	0.797
TANG	1.037	0.964

Source: Authors' computation with the use of E- Views 7.0 (2016)

Correlation

Table 3 presents the correlation matrix of the variables.

Table 3: Correlation matrix

	LEV	OWN	PROF	SIZ	TANG
LEV	1.000				
OWN	0.065	1.000			
	(0.227)				
PROF	-0.520*	-0.072	1.000		
	(0.000)	(0.181)			
SIZ	0.108*	-0.427*	0.069	1.000	
	(0.044)	(0.000)	(0.200)		
TANG	0.023	-0.094	-0.077	0.165*	1.000
	(0.675)	(0.081)	(0.153)	(0.002)	

* indicates significant at 5% level
Sig-values are shown in parentheses
Source: Authors' computation with the use of E- Views 7.0 (2016)

Table 3 presents a positive but insignificant association between leverage and managerial ownership. It also shows a negative and significant association between leverage and profitability at 5% level; positive association between leverage and firm size and insignificant association with asset tangibility.

Since, correlation matrix only shows direction of relationship or association (not strength of relationship) between two variables, it cannot be used to make valid inferences, hence the reason for the conduct of regression analysis.

Regression

Table 4(a) exhibits the regression analysis for the simple pooled OLS.

Table 4: Regression results- Simple pooled OLS

Variable	coefficient	t-stat	prob
Constant	-0.432	-2.391*	0.017
OWN	0.153	2.118*	0.035
PROF	-0.757	-11.654*	0.000
SIZE	0.069	3.816*	0.000
TANG	-0.060	-0.869	0.385
R2	0.301		
Adj R2	0.293		
F-stat	37.091*		
Durbin-Watson	1.179		
Observations	350		

Dependent variable: Leverage

*, indicates significant at 5% level

Source: Authors' computation with the use of E- Views 7.0 (2016)

In Table 4 the relationship between leverage (capital structure proxy) and managerial share ownership (ownership proxy) is positive and significant at 5%. For the control variables, it reveals a negative and significant relationship between leverage and profitability at 5% and positive and significant relationship between leverage and firm size at 5% level. A negative but insignificant relationship is also shown between leverage and asset tangibility. However, as a result of the limitation in using simple pooled OLS as estimation technique, the study then conducted another set of regression analysis using both the Fixed effects and Random effects models. The F-stat value of 37.091 which is significant at 1% level indicates that, as a whole the model is fit. Durbin-Watson value of 1.179 (which is between 1 and 3, according to Wooldridge, 2002 and Alseed, 2005) indicates little or no presence of autocorrelation.

Discussion of findings

In order to determine which of the estimations of the two models (Fixed and Random effects) is to be used for the purpose of making conclusions, Hausman specification test was conducted. The null hypothesis underlying the Hausman specification test is that fixed and random effects models' estimates

do not differ substantially. Empirically, if the *prob* value of the Chi-square is greater (lesser) than 0.05, the estimations based on the Random effects (Fixed effects) will be better off.

Results of Hausman specification test are reported in Table 5. It shows that the *prob* value of the test is 0.000, which is less than 0.05. Null hypothesis is rejected and this lead to the use of Fixed effects model for making valid inferences.

Table 4(b) also presented the regression analysis for the Fixed effects and Random effects models. Although, there is no significant difference between the results of the two models, but based on the outcome of the Hausman specification test, inference was made using the outcome of the Fixed effects model alone.

The F-stat value of 13.285 indicates that as a whole, the model is fit. The Durbin-Watson statistic value of 1.343 indicates no presence of serial autocorrelation.

There is a positive and significant relationship between leverage and managerial share ownership at 1% level. It suggests that the higher the equity ownership by management (directors) of corporation, the higher will be the level of gearing of the firm. This supports the view that ownership influences capital decisions of firms. This outcome has the support of Lubatkin and Chatterjee (1994), who argued that increasing the debt to equity ratio will help firms ensure that managers are running the business efficiently. Hence, managers will return excess cash flow to the shareholders rather than investing in negative NPV projects since the managers will have to make sure that the debt obligations of the firms are repaid. Thus, managers that are not able to meet the debt obligations can be replaced by more efficient managers who can better serve the interests of shareholders. The implication of this is that high geared firms are better for both shareholders and debt holders as debt level can be used for monitoring the managers. Empirical supports for the positive relationship between the two variables also come from the studies conducted by Pfefzer and Salancick (1978), Kim and Sorenson (1986), Mehran et al (1992), Short, Keasey and Duxbury (2002) and Driffield, Mahambare, and Pal (2006, 2007), Gul, Sajid, Razzaq and Afzal (2012), Agyei and Owusu (2014) and Seyed, Hassan and Mohsen (2015). Theoretically, the outcome of the study is in agreement with the alignment of interest hypothesis of Agency theory.

The null hypothesis is rejected in favour of the alternative hypothesis. Thus, there is a significant relationship between managerial share ownership and capital structure decision of Nigerian listed firms.

As for the control variables, Table 5 reveals a negative and significant relationship between leverage and profitability. This is in accordance with the Pecking order theory. Empirically, the outcome is in agreement with the studies of Abdeljawad, *et al* (2013), Haron (2014), Fathi, Ghandehari and Shirangi (2014), Kajola, Abosede and Akindele (2014), Arslan and Zaman (2014), Ukaegbu, *et al* (2014), Wahab and Ramli (2014), Alani and Alamri (2015), Onaolapo, Kajola and Nwidobie (2015), Mohammad, Mir, and Hojjatollah, (2015) and Acaravci (2015).

The relationship between firm size and leverage is positive and significant at 5% level. This is in line with the prediction of Static trade-off theory. The empirical studies of Arshad and Safdar (2009), Bae (2009), Cheng and Tzeng (2011), Akinlo (2011), Ezeoha (2011), Levent and Ersan (2012), Kumar, Dhanasekaran, Sandhya and Saravanan

(2012), Mahvish and Qaisar (2012), Maxwell and Kehinde (2012), Tomak (2013), Wahab and Ramli (2014), Abdeljawad et al (2014) and Kajola (2015) supported a positive relationship between the two variables.

Table 5 further reveals a negative but insignificant relationship between leverage and asset tangibility. This is against the predictions of both the Static trade-off and Agency theories, which predicted positive and negative relationship, respectively. The finding is consistent with studies conducted by Al-Fayoumi and Abuzayed (2009) and Arslan and Zaman (2014).

Table 5: Regression results- Fixed effects and Random effects

	Fixed	effects		Random	effects	
Variable	coefficient	t-stat	prob	coefficient	t-stat	prob
Constant	-2.488	-3.535*	0.001	-0.506	-2.038*	0.042
OWN	0.398	2.711*	0.007	0.242	2.483*	0.014
PROF	-0.482	-8.615*	0.000	-0.539	-10.029*	0.000
SIZE	0.275	3.855*	0.000	0.076	3.021*	0.003
TANG	-0.072	-0.682	0.496	-0.086	-1.009	0.314
R2	0.675			0.222		
Adj R2	0.624			0.213		
F-stat	13.285*			24.570*		
prob	(0.000)			(0.000)		
Durbin-Watson	1.343			1.083		
Hausman's Test (Chi-sq)			30.138			
Prob			(0.000)			
Observations	350			350		

Dependent variable: Leverage
* indicates significant at 5% level
Source: Authors' computation with the use of E- Views 7.0 (2016)

CONCLUSION, RECOMMENDATION AND FUTURE STUDY

Conclusion

The objective of the study was to examine the relationship between ownership structure and capital structure decision of 35 non -financial firms listed on Nigerian Stock Exchange for the period 2005-2014. This represented 350 firm-year observations. Managerial share ownership, an important internal control corporate governance mechanism, was used to proxy for ownership structure while leverage served as surrogate for capital structure decision.

Managerial share ownership as a proxy for ownership structure is interesting and its relationship with leverage is not well researched in both developed and developing economies. This is because managers (represented by directors) occupy a distinct

position in an organisation. They are the agents of shareholders on one hand and on the other hand, part-owners of the business, due to their equity holdings.

The study employed Fixed effects model, with least squares, to estimate the coefficients of the explanatory (ownership structure) and control variables (profitability, firm size and asset tangibility).
The result revealed a strong positive and significant relationship between ownership structure and capital structure decision. It further suggested that debt is an efficient mechanism which is used to monitor managers with the aim of minimizing managerial opportunism or moral hazard problems. The result provided evidence in support of alignment of interest hypothesis.

Recommendation

Following the outcome of the study, it is recommended that Nigerian corporations should encourage managers to buy and own shares in companies where they serve as directors. This will enable them to judiciously utilize debt capital in such projects that will improve the performance of the business. Excess cash flow will not be used to finance unprofitable projects because if that is done and they find it difficult to service the obligations of debt holders, they can be replaced by some other people.

Suggestion for future study

In order to increase the accuracy of the regression model, efforts in the future should be directed to the study of the effects of other corporate governance mechanisms such as ownership concentration, family ownership, foreign/ domestic ownership and institutional ownership on capital structure decisions. There is also the need to increase the study period to at least twenty years, as well as the number of sample firms.

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