Corporate governance and capital structure: evidence from listed firms in Nigeria stock exchange

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1 Introduction

The financial structure of a firm is one of the most critical areas in corporate finance that can affect the whole operations of a firm (Wen et al. 2002; Abor & Bikpie 2005; Abor & Bikpie 2007). One of the basic motives of capital structure management is to reduce the cost of capital to maximize the shareholders' wealth. Studies on firm's financial structure can be traced back to the seminal work of Modigliani and Miller (1958), were they opined that the capital structure of a firm was irrelevant in determining the firm's value and its future performance. Since the proclamation of Modigliani and Miller in 1958, several theories have been developed to explain firms' financing decisions. One of such theories that have gained strong empirical support is the agency theory. The theory posits that capital structure is determined by agency costs arising from conflicts of interest. Since then, discussions on firms' financial decisions have continued to be an issue of interest in the finance literatures. According to Jiraporn (2009), capital structure is one of the most puzzling topics in corporate finance literature. It is often referred to as a firm's financial framework. Booth, Aivazian, Demirguc-Kunt, & Maksimovic (2001) described it as the mix of debt and equity capital maintained by a firm. It is also seen a mixture of a variety of long term sources of funds and equity shares including reserves and surpluses of an enterprise. An important decision of a firm is the choice between shareholders' equity and debt. Thus, a firm's financial framework (capital structure) is the specific combination of its debt and shareholders' equity for funding its operation activities. Therefore, financial decisions affecting firm's capital structure are very salient among firms based on the need to increase investors' return on investment and the economic corporation ability to deal with a competitive environment. Hence, the capital structure of a firm is very important since it related to the ability of the firm to meet the needs of its stakeholders.

Corporate governance on the other hand is the mechanism and philosophy that entails the processes and structure which facilitate the creation of shareholder value through the management of an organisation affair to

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ensure the protection of the individual and collective interest of all the stakeholders. According to Keasey et al (1997), it is the process and structure used to direct and manage the affairs of a company towards enhancing business prosperity and corporate accountability with the ultimate objective of realizing long-term shareholder value, whilst taking into account the interest of other stakeholders. It is generally associated with the existence of agency problem and its roots can be traced back to separation of ownership and control of the firm. Agency problems arise as a result of the relationships between shareholders and managers and are based on conflicts of interest within the firm. Hence, corporate governance basically exists to provide the necessary checks and balances between shareholders and management and thus to mitigate agency problems. Hence, firms with better governance quality should suffer less agency conflicts.

Although, many studies such as (Jensen 1986; Mehran 1992; Bathala et al. 1994; Berger et al. 1997; Friend & Lang 1998; Wiwattanakantang 1999; Wen et al. 2002; Anderson & Reeb 2003; Abor & Bikpie 2005; Abor 2007; Hussainey & Al-Nodel 2009; Al-Najjar & Hussaeny 2009) have been conducted to investigate the relationship between corporate governance and the capital structure decisions of firms, yet different results were reported. Therefore, based on the nexus arising from previous studies; the need for an investigation of the relationship between corporate governance variables and the capital structure decisions of listed firms in Nigeria becomes imperative. To this end therefore, motivated by the assumption of the agency theory, this study basically investigated the relationship between corporate governance variables and the capital structure decisions of listed firms in Nigeria.

To gain more insight into this paper, the study has been organized as follows. Following the introduction is the section 2 which presents a detailed review of relevant literatures and hypotheses development. While section 3 focused on the research methodology adapted for the study; section 4 and 5 discusses the findings and the conclusion of study.

SCOPE OF STUDY

This study basically examined the relationship between corporate governance and capital structure decisions of listed firms in Nigeria. However, based on the availability of data for the study, the following corporate governance variables were considered (board size, CEO duality, board composition and managerial ownership) while debt to equity ratio was adopted as the criterion for capital structure. To accomplish this objective, the annual report for the period 2006 -2011 was analyzed. In addition, the study considered a total of 40 listed firms in the Nigerian stock exchange market. The choice of the selected firms' arises based on the capital structure and the equity ownership structure of the listed firms.

2 Literature review and hypothesis development

The impact of corporate governance practice among firms differs from country to country as a result of the differences arising from the social, economic, and regulatory conditions that exit in different countries (Rouf, 2011). Similarly, this is also the case with firms' financial leverage as its impact on the value of firms also differs from country to country due to the dissimilarity in tax brackets and tax laws of different countries. However, corporate governance as a concept is a key factor in improving the value of a firm. It basically indicates how firms are managed, guided and controlled; and deals with supervision, accountability, guidance, and management control. Although, corporate governance is a growing area in the management and finance literature, there have always been controversies among scholars when it comes to the issue of corporate governance and firms financing decisions on capital structure. So far, empirical evidence on the relationship between corporate governance and capitals structure appear to be mixed and inconclusive. According to Aghaee and Chalaki (2009), given the different and inconsistent corporate governance structures in different countries which results from varying social, economic and legal conditions within them, the links between corporate governance and financing decision making are different in financial markets of developed and developing countries.

Berger, Eli and Yermack (1997) examined the relationship between managerial entrenchment and firms' capital structures. Results indicate that entrenched CEOs make efforts to remain away from debt and gearing ratios remain lower in the absence of demand from owners.

Sotu (2003) studied the relationship between capital structure and corporate governance in Malaysia before and after 1997 crisis by using representation costs approach. He concluded that a diffuse ownership corporation leads to a weakened corporate governance system and a higher financial leverage of the firm. He considers the ownership centralization as a factor to reduce interest conflicts between directors and owners. A higher quality of corporate governance system leads to lower representation costs of internal financing. Thus increasing the quality of governance system, external financing is decreased. As a result, there is a negative relationship between corporate governance system's quality and the firm's financial leverage. Also Abor (2007) in a related study examined the relationship between corporate governance and capital structure decisions by taking a sample of 22 firms listed on the Ghana Stock Exchange (GSE) during the six-year period (1998-2003). Abor found that capital structure is positively associated with board size, board composition, and CEO duality, and negatively associated with CEO tenure.

Antoniou et al. (2008) also conducted a study to investigate how firms operating in capital market-oriented economies (the U.K. and the U.S.) and bank-oriented economies (France, Germany, and Japan) determine their capital structure. They found that capital structure of a firm is heavily influenced by the corporate governance practices and exposure to capital markets.

Saad (2010) also observed that while a negative relationship does exist between CEO duality and capital structure of listed firms, a positive relationship was observed between board size and capital structure. Similarly, Rehman et al. (2010)

investigated the relationship between corporate governance and capital structure of randomly selected 19 banks in Pakistan from 2005-2006. They found a positive relationship between board size and capital structure. Also, using the data from Tehran Stock Exchange (TSE) for the period 2005–2010; Vakilifard et al. (2011) found a positive relationship between CEO duality and leverage. They also observed that a negative relationship exit between board size and leverage.

Although the relationship between corporate governance and capital structure has been the subject for an extensive research in developed countries, the same is not true in developing economies like Nigeria. This study therefore tends to fill this gap in literature by examing the relationship between corporate governance and capital structure of listed firms in Nigeria.

2.1 Development of hypotheses

The hypotheses to be tested in this study are stated below in their null form:

1) Ho: There is no significant relationship between board size and the capital structure of listed firms in Nigeria.

2) Ho: There is no significant relationship between CEO duality and the capital structure of listed firms in Nigeria.

3) Ho: There is no significant relationship between board composition and the capital structure of listed firms in Nigeria.

4) Ho: There is no significant relationship between management ownership and the capital structure of listed firms in Nigeria.

3 Research methodology

To achieve the objectives of this study, the annual report for the period 2006-2011 were analyzed. The choice of this period arises based on the series of corporate frauds arising from firms in Nigeria due to poor corporate governance practice. However, using the judgmental sampling technique; a total of 40 listed firms operating in high profile industries in the Nigerian Stock Exchange were analysed. This represents 20.5% of the total population. This is consistent with the propositions of Krejcie & Morgan (1970) where a minimum of 5% of a defined population is considered as an appropriate sample size in making generalization. The choice of the sampled firms was based on the size, market capitalization and the availability of the annual report of the sampled firms. Nevertheless, in testing the research hypothesis, the ordinary least square (OLS) was used in the estimation of the regression equation under consideration.

***Specifications of the Econometric Model*:**

The following model is used to examine the association between independent and the dependent variables of the listed firms in Nigeria.

$$DER_{it}=f(BDSIZE_{it}, CEODUAL_{it}, BCOM_{it}, DEI_{it}, e_{it}) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

This can be written in explicit form as:

$DER_{it}=\beta_{0+}\beta_1 BDSIZE_{it} + \beta_2 CEODUAL_{it} + \beta_{2B} COM_{it} + \beta_2 DEI_{it} + e_{it}$……..*(2)*

Where:

LEV_{it}*=Capital Structure is the dependent variable and it proxied a Leverage (LEV). It is measured as the debt to equity ratio.*

$BSIZE_{it}$*=BOARDSIZE represents the total number of members on the board of directors.*

$CEODUAL_{it}$*=CEODUALITY is a corporate management situation where the CEO also serves as chairman of the board. (i.e., a score of 1if the CEO is also the chairman of the board, otherwise 0).*

DEI_{it}*=Management ownership was measured as the percentage proportion of director's equity interest (DEI) respect to the total stocks.*

$BCOM_{it}$ *=Board composition represents the proportion of non-executive directors on board and it is calculated as the number of non-executive directors divided by total number of directors.*

e	=	*Stochastic or disturbance term.*
t	=	*Time dimension of the Variables*
β_0	=	*Constant or Intercept.*
β_{1-4}	=	*Coefficients to be estimated or the Coefficients of slope parameters.*

The expected signs of the coefficients (i.e. a priori expectations) are such that $\boldsymbol{\beta_1, \beta_3, \beta_4 < 0}$ *while* $\boldsymbol{\beta_2 > 0}$**.**

4 Discussion of Findings

Findings from the descriptive statistics as shown in table (1) indicate that while the debt to equity ratio of (proxied by DER) of the selected firms have an approximate mean value of about .46125; on the other hand, board size (BSIZE), CEO duality (CEODUAL), management ownership (DEI) and board composition (BCOM) had mean values of 10.3, .15, .30325 and .43825 respectively.

Table (1) *Descriptive Statistics of Variables*

Variables	Observations	Mean	Std. Dev	Min.	Max
DER	40	.46125	.714585	.01	2.94
BSIZE	40	10.3	1.976788	8	13
CEODUAL	40	.15	.3616203	0	1
DEI	40	.30325	.2694	0	.71
BCOM	40	.43825	.2346179	.01	.89

Table (2) *Correlations Matrix for Sampled firms*

	DER	BSIZE	CEODUAL	DEI	BCOM
DER	1.0000				
BSIZE	-0.6129 0.0000	1.0000			
CEODUAL	0.4805 0.0017	-0.2080 0.1977	1.0000		
DEI	-0.6503 0.0000	0.5070 0.0008	-0.2841 0.0756	1.0000	
BCOM	-0.6380 0.0000	0.3766 0.0166	-0.4683 0.0023	0.5502 0.0002	1.0000

Table (3) *Anova*

	SS	df	MS
Model	12.9727473	4	3.24318683
Residual	6.94189017	35	.198339717
Total	19.9146375	39	.510631731

Table (4) *Regression Analysis*

DER	Coefficients	Std. Err.	t	P>|t|	[95% Cof.	Interval]
BSIZE	-.1188172	.0422603	-2.81	0.008	-.2046102	-.0330243
CEODUAL	.4149118	.2234156	1.86	0.072	-.038646	.8684695
DEI	-.7424108	.3439828	-2.16	0.038	-1.440733	-.0440887
BCOM	-.7975976	.397871	-2.00	0.053	-1.605319	.0101235
_CON	2.197514	.418236	5.25	0.000	1.348453	.046578
No. of obs	40					
F (4, 35)	16.35					
Prob > F	0.0000					
R-squared	0.6514					
Adj R-squared	0.6116					

Table (5) *Variance Inflation Factor*

Variables	VIF	1/VIF
BCOM	1.71	0.583631
DEI	1.69	0.592211
BSIZE	1.37	0.728719
CEODUAL	1.28	0.779135
Mean VIF	1.51	

Results on the correlation matrix for the listed firms are depicted in table (2). The table presents a correlation coefficient (r) result for board size (BSIZE) as it relates to firm's debt to equity ratio (DER) to be (-0.6129). This outcome invariably

implies that there is a significant negative correlation between board size and the capital structure of the selected listed firms. Similarly, the table also presents a correlation coefficient (r) results for management ownership (DEI) and board composition (BCOM) as it relates to firms debt to equity ratio to be (-0.6503 and -0.6380) respectively. However, the outcome of the correlation coefficient (r) result for CEO duality (CEODUAL) as it relates to firm's debt to equity ratio (DER) as depicted in table (2) was (0.4805). This outcome basically connotes the fact that there is a significant positive correlation between board composition and the capital structure of the selected listed firms.

Table (4) displays the result of the regression model used to test all the stated hypotheses (i.e. H1 -H4). The use of multivariate hypothesis test is based on the assumption of no significant multicollinearity between the explanatory variables. Thus, to investigate the existence of multicollinearity, the variance inflation factors (VIFs) for each of the explanatory variables are computed as depicted table (5). The maximum VIF as reported from table (5) is 1.71, which is lower than ten (10), a number that is used as a rule of thumb as an indicator of multicollinearity problems (Field, 2000; Belsely, 1991). Thus, these results support the lack of presence of multicollinearity in the research model. The results of the regression analysis can, therefore, be interpreted with a greater degree of confidence.

The results for the goodness of fit test as shown in table (4) present an adjusted R2 value of about 0.6116. This in a nutshell means that the value of the dependent variable can be explained by about 65% of the independent variables. This value can be considered sufficient because the capital structure of a firm can also be influenced by other factors beside the corporate governance variables adopted for this study. Nevertheless, the F- test statistics as presented in table (3) shows a p-value that is less than 0.05 (i.e. p-value < 0.05). This outcome suggests clearly that simultaneously the explanatory variable (i.e. board size, CEO duality, management ownership and board composition) are significantly associated with the dependent variable.

Furthermore, a review of the regression analysis results for the sampled firms shows that all the outcomes are consistent with our initially stated a priori expectations (i.e. b1, b3, b4 < 0 and b2 > 0). Empirical findings show that there is a significant negative relationship between board size and the capital structure (proxied by DER) of listed firms. This is evident in the probability and t-values of 0.008 and -2.81 respectively. Hence, we accept the null hypothesis and reject the alternative hypothesis. This result is in consonance with the findings of Mehran (1992), Abor and Biekpe (2005) Berger et al. (1997), Abor (2007) and Hassan and Butt (2009) who argued that larger boards prefer low debt levels. They further opined that larger boards may emphasize owner-manager to employ more equity capital in order to improve firm performance. This outcome implies that larger boards may exert pressure on managers to follow lower gearing levels and enhance firm performance. That is, firms with larger board sizes tend to use lower debt ratios in their capital composition. This outcome however contradicts the findings provided in Jensen (1986); Wen et al. (2002) and Coles et al. (2005) were a significant positive relationship was observed between board size and debt ratio.

Findings for the second hypothesis show that there is a significant positive relationship between CEO duality and the capital structure of listed firms in Nigeria. This is evident in the probability and t-values of 0.072 and 1.86 respectively. This outcome basically implies that CEO duality increases firm's debt usage. This is however in line with the stewardship theory which holds that CEO duality reduces communication conflicts in an uncertain environment and thus creates a clear sense of strategic decision. This result is consistent with the findings of Fosberg (2004) and Abor (2007) where they argued that duality leadership firms have high debt to equity ratio. Thus, CEO duality in a firm basically reduces the problems related to separation of ownership and control and therefore, reduces information asymmetry problems.

Also, findings for the second hypothesis show that there is a significant negative relationship between management ownership (proxied by DEI) and the capital structure of listed firms in Nigeria. This is evident in the probability and t-values of 0.038 and -2.16 respectively. This result is in line with the findings of (Berger et al., 1997; Brailsfors et al., 2002; Fosberg, 2004; Baum et al., 2007) where management ownership was observed to have a negative impact on firms' long-term debt. Nevertheless, this outcome empirically suggests that high managerial discretion limits long-term debt. That is, as the level of managerial ownership increases, firm control passes from external shareholders to the managers and after a certain period of managerial ownership, managerial entrenchment leads to debt avoidance. Moreover, when managers invest larger amounts of their personal wealth in a business they became risk-averse and are reluctant to adopt high debt policies because of the risk of bankruptcy.

Finally, findings for the fourth hypothesis show that there is also a significant negative relationship between board composition and the capital structure of listed firms in Nigeria. This is also evident in the probability and t-values of 0.053 and -2.00 respectively. Thus, based on the role of outside directors as independent people who act to decrease the agency problems in a firm, a company where the proportion of outside directors is high will have a better monitoring level so as to minimize the likelihood of high debt. That is the larger the proportion of outside directors, the tighter the control of debt usage in funding the operation of a company. Since independent directors serve to directly supervise any sub-optimal decisions by the managers, such as decision on company funding resources. Thus managers are actively monitored by independent directors to choose lower leverage in improving performance. In tandem with the methodological juxtaposition, is consistent with the findings of Jensen (1986), Wen et al. (2002) and Al-Najjar & Hussainey (2009) where they argued that due to rigorous monitoring by non-executive directors, managers tend to adopt a lower level of leverage for achieving superior results.

5 Conclusion recommendations

This study basically examined the relationship between corporate governance variables and the capital structure decisions of listed firms in Nigeria. The study

came up with the following findings that are of salient importance to scholars investigating issues relating to firms' capital structure decisions in the Nigerian context. Result from our determination test indicates that 65% change in capital structure decision of firms can be explained by corporate governance variables. The study further revealed that while a positive relationship existed between CEO duality and the capital structure of listed firms in Nigeria; on the other hand, board size, management ownership and board composition had a significant negative impact on firms' capital structure decisions. Thus, based on the findings provided in this study, the study concludes that as the level of managerial ownership increases, firm control passes from external shareholders to the managers and after a certain period of managerial ownership, managerial entrenchment leads to debt avoidance. Moreover, when managers invest larger amounts of their personal wealth in a business they became risk-averse and are reluctant to adopt high debt policies because of the risk of bankruptcy. In addition, the study concludes that management artistry displayed by the board will significantly drive down the gearing position of listed firms in Nigeria. The study therefore recommends that firms should embrace a well established corporate governance structures that will assist them to gain easier access to credit at lower cost.

This study is however limited by the fact that the sample only covers six years data from the Nigerian stock exchange market. Also, only four corporate governance variables were considered in the study. Future research could consider other corporate governance variables not considered in this study.

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Appendix (1): Listed Firms of Selected Listed firms in the Nigerian Stock Exchange Market

S/N	List of selected listed Firms	S/N	List of selected listed Firms
1	Evans Medical Plc	21	Cement Company of Northern (Nigeria) Plc
2	G S K Consumer Plc	22	Ceramic Manufacturers Nigeria Plc
3	May and Baker Nig. Plc	23	African Petroleum Plc
4	Pharma - Deko Plc	24	Chevron Oil Nigeria Plc
5	Guinness Nigeria Plc	25	Mobile Oil Nigeria Plc
6	Nigerian Breweries Plc	26	Conoil
7	Jos International Breweries Plc	27	Oando Plc
8	Champion Breweries Plc	28	Total Nigeria Plc
9	International Breweries Plc	29	BOS Gases Plc
10	Lafarge West African Portland Cement Plc	30	African Paints (Nigeria) Plc
11	Chemical & Allied Products Plc	31	Ecobank Plc
12	D N Meyer Plc	32	First Bank Plc
13	Nigerian - German Chemical Plc	33	Fidelity Bank
14	Okitipupa Oil Palm Plc	34	Access Bank plc
15	Presco Plc	35	First Bank of Nigeria plc
16	Okomu Oil Palm Plc	36	First inland bank plc
17	Ellah - Lakes Plc	37	Guaranty trust bank plc
18	Livestock Feeds Plc	38	Oceanic bank international plc
19	Ashaka Cement Company Plc	39	Berger Paints Plc
20	Benue Cement Company Plc (BCC)	40	BCN Plc