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THE EFFECTS OF BOARD SIZE AND CEO DUALITY ON FIRMS' CAPITAL STRUCTURE: A STUDY OF SELECTED LISTED FIRMS IN NIGERIA

Uwuigbe Olubukunola Ranti

Department of Accounting, School of Business College of Development Studies Covenant University, Nigeria

ABSTRACT

This study examined the effects of board size and CEO Duality on the capital structure of listed firms in Nigeria. To achieve the objectives of this study, a total of 40 listed firms in the Nigerian stock exchange market were selected and analyzed for the study. The choice of the selected firms arises based on the capital structure and the equity ownership structure of the listed firms. Also, the corporate annual reports for the period 2006-2011 were used for the study. The paper was basically modeled to examine the effects of board size and CEO Duality on the capital structure of listed firms operating in the Nigerian stock exchange market using the regression analysis method. The study in its findings observed that there was a significant negative relationship between board size and the capital structure of the selected listed firms. In addition, the study observed that there was a significant positive relationship between CEO duality and the capital structure of the selected listed firms in Nigeria. The paper therefore concludes that firms having smaller board size, due to weaker corporate governance tend to use more amount of debt to reduce agency problems.

Keywords: Nigeria, Corporate Governance, Board Size, CEO Duality, Capital Structure

INTRODUCTION

Salient to a firm are its financial decisions relating to the choice between shareholders' equity and debt. It is one of the most significant areas in corporate finance that can affect the whole operations of a firm. The capital structure of a firm is basically the financial framework which consists of the debt and equity used to finance the firm. It is the specific combination of its debt and shareholders' equity for funding its operation activities. According to Shapiro and Balbirer (2000), capital structure is the combination of debt and equity financing used by company to finance the purchase of its asset. Thus, it is considered to be one that discusses the composition with which a company is financed, either by own or loan capital. Saad (2010) opined that the capital structure of firms

involves the way in which firms' finances their assets through the combination of equity, debt, or hybrid securities. It is in fact a mixture of a company's debts (long-term and short-term), common equity and preferred equity. One of the basic motives of capital structure management is to reduce the cost of capital to maximize the shareholders' wealth. However, prior researches are yet to find the optimum level of capital structure to balance the cost and benefits. Basically, the financial decisions affecting the capital structure of firms are very essential in commercial organizations, since these decisions are necessary in increasing the investors' return.

On the other hand, corporate governance has remained debatable issue among academic researchers and policy makers for the last few decades especially in the context of firm's financial structure. Corporate governance according to Shleifer and Vishny (1997) is described as the process through which supplier of capital wants certain amount of fair return on their investment. It is the philosophy and mechanism that entails the processes and structure which facilitate the creation of shareholder value through management of the corporate affairs in such a way that ensures the protection of the individual and collective interest of all the stakeholders. Sound corporate governance principles according to Shleifer and Vishny (1997) are the foundation upon which the trust of investors and lenders is built. It is the principals that provide basic protection rights to all stakeholders of firms. La Porta *et al.* (2000) however describes it as the set of rules and regulations through which outside investors protect themselves from the insiders' expropriation. Insiders in this context involve the mangers of the firm and controlling shareholders. Corporate governance exists to provide checks and balances between shareholders and management and thus to lessen agency problems. Hence, organisations with better governance quality should incur less agency conflicts. Due to strong impacts of controlling shareholders to the management decisions, conflicts of thoughts and preferences occur between the shareholders and the management. A comprehensive review of related literature reveals that although there are series of related prior empirical studies in this area of research from developed economies; however, the same cannot be said of developing economies since most empirical works in this area of research have mostly focused on the impact of corporate governance on firm's performance or examined the influence of ownership structure on firm value. Hence, this study investigates the effects of board size and CEO Duality on the capital structure of listed firms in Nigeria. To gain more insight into this paper, the paper has been organized as follows. Following the introduction in section 1 is section 2 which presents an in-depth review of related relevant literatures and hypotheses development. While section 3 focused on the research methodology adopted for the study; section 4 and 5 discusses the findings and the conclusion of study.

Scope of Study

This study basically examines the effect of board size and CEO Duality on the capital structure of listed firms in Nigeria. To accomplish this objective, the annual report for the period 2006 -2010

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.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

There have always been controversies among finance scholars when it comes to the issue of capital structure. So far, researchers have not yet reached a consensus on the optimal capital structure of firms by simultaneously dealing with the agency problem. Evidence from prior literatures such as (Friend and Lang, 1988; Berger *et al.*, 1997; Abor, 2007) show that corporate governance has been identified as one contributing factor to firm's financial decisions which will in the long run have an impact on the financial condition and performance of a firm. However, empirically results on the relationship between corporate governance and capitals structure appear to be mixed and inconclusive. According to Pfeffer and Salancick (1978) and Lipton and Lorsch (1992), there is a significant relationship between capital structure and board size. Similarly, findings from Wen *et al.* (2002) and Abor (2007) also show that there is a positive relationship between board size and financial leverage (capital structure). Their findings suggest that large board size which are more entrenched due to superior monitoring by regulatory bodies, pursue higher leverage to raise company value. Another reason is that larger board membership could result in difficulty in arriving at a consensus in decision making. These conflicts arising from bigger board size have the tendency of weakening corporate governance resulting in high leverage. Berger *et al.* (1997) also observed that firms with larger board of directors generally have low gearing levels. They argued that larger boards exert pressure on managers to follow lower gearing levels and enhance firm performance.

Also, Fosberg (2004) argued that duality leadership firms have high debt to equity ratio. A possible explanation for this is duality leadership reduces problems related to separation of ownership and control. Therefore, CEO duality companies have high accessibility to external financing. Similarly, Faleye (2004) opined that Sri Lanka's uncertain environment, high managerial ownership and small board size makes Sir Lankan firms more likely to have CEO duality. This dual leadership may reduce information asymmetry problems and lead to higher access to external debt. In line with this result, Abor (2007) observed that listed companies pursue high debt policies with CEO duality.

Coles *et al.* (2008) finds a positive relationship between board size and debt ratio in the US context. One possible explanation for this is firms with a high-debt ratio may have greater advising requirements. Furthermore, this is in line with Anderson *et al.* (2004) who explain that firms with larger boards have lower costs of debt. Moreover, based on agency theory, Jensen (1986) and Wen

et al. (2002) find a positive relationship between board size and leverage ratio. They further explained that larger boards that are more entrenched due to effective monitoring pursue higher leverage to raise company value. Abor and Biekpe (2007) examine the relationship between corporate governance and capital structure decisions of Ghanaian Small and Medium Enterprises by using multivariate regression analysis. The results provide evidence about negative relationship between board size and leverage ratios and SMEs with larger boards generally have low level of gearing.

On the other hand, Hussainey and Al-Nodel (2009) finds a positive relationship between board size and capital structure. They argued that large boards follow a policy of higher levels of gearing to enhance firm value especially when these are entrenched due to greater monitoring by regulatory authorities. It is also argued that larger board may find difficulty in arriving at a consensus in decision which can ultimately affect the quality of corporate governance and will translate into higher financial leverage levels. In summary, it is observed that studies by Mehran (1992), Berger *et al*. (1997), Abor and Bikpie (2005) and Hassan and Butt (2009) showed a negative influence of board of directors size on debt to equity ratio (DER) as a measure of capital structure. In contrast, Jensen (1986) and Hussainey and Al-Nodel (2009) found that board of directors size has a positive influence on DER so that the larger the board of directors size the higher the leverage level. Other studies (Wiwattanakantang, 1999; Wen *et al.*, 2002; Al-Najjar and Hussainey, 2009a; Al-Najjar and Hussainey, 2009b) found that the size of board does not have a significant influence of firm's debt to equity ratio (DER).

Despite the importance of the link between corporate governance and firms financial structure, available empirical evidence are not really convincing on how corporate governance variables affects the financial structure of listed firms. In addition, it is observed that while corporate governance characteristic in every country is different depending on the culture which shapes the corporate governance mechanism; studies that investigate the influence of corporate governance mechanism on firm's capital structure in developing economies like Nigeria are limited. Thus the need for this study arises.

Development of Hypotheses

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

1) ***H_o:*** *There is no significant positive relationship between board size and the capital structure of listed firms in Nigeria.*
2) ***H_o:*** *There is no significant positive relationship between CEO duality and the capital structure of listed firms in Nigeria.*

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. Also, the choice of annual reports is due to the fact that annual reports are readily available and accessible. However, using the judgmental sampling technique; a total of 40 listed firms operating in high profile industries in the Nigerian Stock Exchange were selected. This represents 20.5% of the total population. This is consistent with the propositions of Krejcie and 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.

Model Specification

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

$DER_{it} = f(BDSIZE_{it}, CEODUAL_{it,} e_{it})$……(1)

This can be written in explicit form as:

$DER_{it} = \beta_0 + \beta_1 BDSIZE_{it} + \beta_2 CEODUAL_{it} + e_{it}$ ……(2)

Where:

DER_{it} = *DER represents the debt to equity ratio of the selected firms. (It*

$BSIZE_{it}$ = *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).*

e = *Stochastic or disturbance term.*

t = *Time dimension of the Variables*

β_0 = *Constant or Intercept.*

β_{1-2} = *Coefficients to be estimated or the Coefficients of slope parameters.*

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

Discussion of Findings

Findings from our descriptive statistics as presented in table (1) shows that while the debt to equity ratio of (DER) of the selected listed firms have an approximate mean value of about .50425; on the other hand, board size (BSIZE) and CEO duality (CEODUAL) had mean values of 10.5 and .15 respectively.

The 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 (-0.3955). 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) result for CEO duality (CEODUAL) as it relates to firms debt to equity ratio to be (0.4648). This result invariably indicates that there is a significant positive correlation between CEO duality and the capital structure of the selected listed firms.

To investigate the existence of multicollinearity, the variance inflation factors (VIFs) for eachof the explanatory variables are computed as reported in Table (4). According to Belsely (1991) and Field (2000), this test is necessary because multicollinearity can affect the parameters of a regression model. More so, Adeyemi and Fagbemi (2010) opined that a tolerance value less than 0.1 indicate a serious multi-colinearity problem between the independent variables. Nevertheless, in this study, all the values are greater than 0.10. Therefore, there is no issue of multi-colinearity between the independent variables in this study. In addition, the VIF for the variables in this study are less than ten (10), a number that is used as a rule of thumb as an indicator of multicollinearity problems. Thus, these results support the lack of presence of multicollinearity in the research model. To this end, 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 (3) present an adjusted R^2 value of about 0.58796. This in a nutshell means that the value of the dependent variable can be explained by 59% 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 board size and CEO duality. Nevertheless, the F- test statistics as presented in table (2) 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 and CEO duality) are significantly associated with the dependent variable. Similarly, a review of the regression analysis results for the sampled firms shows that the outcomes are consistent with our initially stated a priori expectations (i.e. $b_1 < 0$ and $b_2 > 0$). 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 0.017 and -2.50 respectively. Hence, we accept the null hypothesis and reject the alternative hypothesis. This result is in consonance

with the findings of Mehran (1992), Berger *et al.* (1997), Abor and Bikpie (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); Coles *et al.* (2008), Hussainey and Al-Nodel (2009) and Jiraporn *et al.* (2009) were a significant positive relationship was observed between board size and debt ratio.

On the other hand, results on the relationship between CEO duality and debt to equity ratio indicate that consistent with our a priori expectations; there is a significant positive relationship between CEO duality and the debt to equity ratio of the selected listed firms. This is evident in the probability and t-statistics values of 0.004and 3.09respectively. Thus, the alternate hypothesis is accepted while the null hypothesis is rejected. 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.

CONCLUSIONS

Noting the fact that the capital structure decisions of a firm is one of most fundamental concern that managers of firms have to face, this study basically examined the effects of board size and CEO duality on the capital structure of listed firms in Nigeria. The study used two hypotheses in testing the relationship between mechanism of corporate governance and firms' capital structure. In each of the hypothesis, debt ratio was used as the criterion for capital structure in representing the dependent variable. On the hand, board size and CEO duality (proxied by BSIZE and CEODUAL) respectively were used to represent the independent variables. The results obtained from testing the hypotheses indicate that there is a significant negative relationship between board size and the capital structure of listed firms in Nigeria. Also, the study also observed that there is a significant positive relationship between CEO duality and the capital structure of the selected listed firms in Nigeria. Thus, the study concludes that firms having smaller board size, due to weaker Corporate Governance tend to use more amount of debt to reduce agency problems. In addition, boards of directors in Nigeria are careful and conservative as well as tending to be less speculative for short-term interest.

This study is however limited by the fact that only two corporate governance variables were considered in the study. Other variables such as managerial ownership, board composition etc could be considered for future research.

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APPENDICES

Appendix-1. Summarized Averaged Ceoduality and Audsize

S/N	Selected Firms	21	ConoilPlc
1	Ashaka Cement Plc	22	Eterna Oil and Gas Company Plc
2	Nigerian Ropes Plc	23	Mobil Oil Nigeria Plc
3	Dangote Cement Plc	24	OandoPlc
4	Lafarge WAPCO Nigeria Plc	25	Ecobank Nigeria Plc
5	CCNN PLC	26	First Bank of Nigeria Plc
6	Nigerian Wire Industries Plc	27	United Bank for Africa Plc
7	Portland Cement & Products Nig. Plc	28	Zenith bank Plc
8	Guinness Nigeria Plc	29	Cadbury Nigeria Plc
9	Nigerian Bottling Company Plc	30	Flour mills of Nigeria plc
10	Nigerian Brewery	31	Honeywell Flour Mills Plc
11	CAP Nigeria Plc	32	7-up Bottling Company Plc
12	IPWA Plc	33	Nestle Nigeria Plc
13	Paints & Coatings Manufacturers Nig. Plc	34	National salt company (Nigeria) plc
14	Premier Paints Plc	35	Costain (West Africa) plc
15	African paints (Nigeria) plc	36	Julius Berger Nigeria Plc.
16	Berger paints plc	37	ArbicoPlc
17	African Petroleum Plc	38	Japaul Oil and Maritime Services Plc
18	Total Nigeria plc	39	Incar Nigeria Plc
19	AfroilPlc	40	PS Mandrides& Company Plc
20	Beco Petroleum Products plc		

Source: Computed from Annual Report and Corporate Websites (2006-2010)

Apendix-2. Statistical Results

Table-1. Descriptive Statistics of Variables

Variables	*Observations*	*Mean*	*Std. Dev*	*Min.*	*Max*
DER	*40*	*.50425*	*.6993656*	*.01*	*2.94*
BSIZE	*40*	*10.5*	*2.136376*	*6*	*15*
CEODUAL	*40*	*.15*	*.3616203*	*0*	*10*

Table-2. Correlations Matrix for Sampled firms

	DER	*BSIZE*	*CEODUAL*
DER	*1.0000*		
BSIZE	*-0.3955* *0.0115*	*1.0000*	
CEODUAL	*0.4648* *0.0025*	*-0.1328* *0.4141*	*1.0000*

Table-3. Anova

	SS	df	MS
Model	6.28437851	2	3.14218925
Residual	12.790999	37	.345702675
Total	19.0753775	39	

Table-3. Regression Analysis

DER	Coefficients	Std. Err.	t	P > |t|	[95% Cof.	Interval]
BSIZE	-1112262	.0444634	-2.50	0.017	-.201376	-.0211348
CEODUAL	.8116853	22626804	.3.09	0.004	.2794443	1.343926
_CON	1.550372	.4827453	3.21	0.003	.572237	2.528507

No. of obs	40
F (2, 37)	9.09
Prob > F	0.0006
R-squared	0.2932
Adj R-squared	0.58796

Table-4. Variance Inflation Factor

Variables	VIF	1/VIF
DER	1.02	0.982375
CEODUAL	1.02	0.982375
Mean VIF	1.02	