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## **Corporate Governance Characteristics and Financial Performance of Deposit Money Banks in Nigeria**

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### **Abstract**

This study investigates the relationship between Corporate Governance (CG) characteristics and financial performance (proxied by return on equity-ROE) of Deposit Money Banks (DMBs) in Nigeria. Data were retrieved from the annual reports and accounts of the 15 DMBs listed on the Nigerian Stock Exchange (NSE) spanning from the year 2012-2016. For analysis purpose, the Panel Corrected Standard Errors (PCSEs) regression is used. In addition, quantile regression model is also used as a robustness check on the consistency of the result of the PCSEs regression. The study finds that board independence, board ownership, and risk management disclosure have a significant positive impact on ROE. Whereas, board meeting and multiple-directorship have a significant negative effect on ROE. However, board size has a negative, but an insignificant influence on ROE. Still, the result of the quantile regression shows partly consistency of the relationship between the variables used at various quantiles (0.25, 0.50, and 0.75). This finding remains indispensable to various corporate stakeholders and to literature. The study concludes by presenting suggestions for future research.

**Keywords:** Corporate Governance, Board Nigerian Stock Exchange, Effect

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### **Introduction**

It has become crystal clear that the major thought-provoking matter of concern to most corporate managers is how to increase shareholders' wealth through the enrichment of firm performance. However, to achieve greater firm performance and long-term value of stakeholders, it is presumed that an effective corporate governance (CG) must be in practice (Cohen, Krishnamoorthy & Wright, 2002), since it (CG) epitomizes a checkmate on the corporate managers err in maximizing shareholders' value (Shawtari, Salem, Hussain, Alaeddin, & Thabir, 2016). Generally, Shahwan (2015) argues that the appraisal and determination of effective corporate governance rely on diverse principles that

comprised of the board of directors' structures and disclosure and transparency among others. As such, corporate board of directors is regarded as the most influential mechanism of CG saddled with the responsibility to oversee activities of the executives (Al-Manaseer, Al-Hindawi, Al-Dahiyat, & Sartawi, 2012), but the boards remain ineffective which leads to the failure of many corporations in both developed and developing nations (for illustration, dot-com bubble in 1997 in East Asia, Enron, WorldCom, etc.) (Kakanda, Basariah, & Chandren, 2016; Kakanda *et al.*, 2017).

Nevertheless, there is an increased demand for the disclosure of risk management practice of public firms by numerous stakeholders. For instance, the Organization for Economic Co-operation and Development [OECD] (2015) reports that companies that have compound risks should provide a familiar reporting system, involving direct reporting of risk management to their board of directors. Buckby, Gallery, and Ma (2015) assert that there is a unanimous accord on the need to have an effective disclosure of firms' risk management practices, which is expected to increase firm performance (Kakanda *et al.*, 2017; Nahar, Jubb, & Azim, 2016).

Even so, the issue of corporate failures has likewise occurred in Nigeria due to ineffective application of corporate governance, where corporate board members neglect their functions, presence of inadequate disclosure in reporting of risk and its related activities, and inadequate risk management frameworks especially in the DMBs (Sanusi, 2010). Consequently, the Nigerian Code of Corporate Governance (NCCG) of 2009 was revised by the Nigerian Securities and Exchange Commission (SEC) in 2011 to overcome the issues associated with the application of CG in the publicly trading companies in Nigeria which is expected to boost firm performance (Kakanda *et al.*, 2017). Hence, this study intends to explore the effect of CG characteristics on performance of DMBs in Nigeria based on the revised CG code of 2011, specifically focusing on characteristics of the board and disclosure of risk management practice and procedures using Panel Corrected Standard Errors (PCSEs) regression and quantile regression methods.

## **Literature Review and Hypotheses Development**

In order to examine the relationship between CG characteristics and firm performance, numerous studies have been conducted in both developed and emerging economies (for instance, Shawtari *et al.*, 2016; Vafeas, 1999). Yet, the findings from these studies remain unsettled as a result of mixed findings on the association between CG characteristics and firm performance due to either difference in; system of governance, context (economic, social, and legal systems), culture (behaviour on corporate boards), and methodological propositions (measurements differences) (Kakanda *et al.*, 2016; Rebeiz, 2015; Shawtari *et al.*, 2016).

Based on the foregoing statement, this study is built on the premise of differences in the CG structure as well as estimation approach that may probably generate dissimilar results. Specifically, to the Nigerian case, existing literature (for example, Sanda, Mikailu, & Garba, 2010) have explored the relationship between CG and firm performance with less attention to the reviewed code of CG of the year 2011, and most of their results remain inconclusive and fragmented. Thus, this study attempts to offer evidence on the relationship between CG and firm performance based on the NCCG 2011 alongside a different methodological approach of estimation. For this reason, two dimensions of CG are considered here; (1) the board characteristics (board meetings, multiple directorships, board independence, board size, and board ownership); and (2) risk management disclosure.

First of all, a board meeting is considered as the fundamental medium through which essential information is obtainable by the board of directors to discharge their various functions (Das & Dey, 2016). In consideration to agency theory, it is presumed that with frequency meetings, directors exhibit significant abilities in terms of counselling, penalizing, and overseeing management actions, hence enhancing the performance of firms (Jensen, 1993; Lipton & Lorsch, 1992; Vafeas, 1999). Equally important, the NCCG 2011 has required all publicly trading companies in Nigeria to meet at least once every quarter so as to effectively perform their oversight function and monitor management's actions.

Empirically, Arora and Sharma (2016) report that board meeting has a significant positive impact on the performance of quoted firms in India. More so, Liang et al. (2013) examine the impact of board characteristics on performance and asset quality of banks in China. The study finds that board meeting has a positive and significant effect on asset quality and performance (ROA and ROE) of banks. In addition, others that found a positive relationship between board meeting and firm performance are not limited to Al-Najjar (2014), Anderson, Mansi, and Reeb (2004), Arslan, Karan, and Eksi (2010), and Khan and Javid (2011). In contrast, Guest (2009) whose study examined the effect of board size on the performance of UK listed firms found that board size has a significant negative effect on firm performance measured by profitability, share returns and Tobin's Q. In the same line, O'Connell and Cramer (2010) also found that board size has a negative impact on performance after assessing the association between board characteristics and performance of listed firms on Irish Stock Market (ISM) Ireland. Therefore, based on the assumption of agency theory and extant literature, it is expected that the higher the frequency of board meeting the better the firm performance, hence, the following hypothesis:

H1. There is a positive association between board meeting and firm performance

Furthermore, multiple-directorship is a situation where a director sits on the board of two or more firms. Previous studies have argued that serving on various companies' boards by directors enable them to gain more expertise and skills required to effectively discharge their responsibilities for a better organizational outcome (Field, Lowry, & Mkrтчyan, 2013). Theoretically, resource dependence theory argues that directors holding multiple positions on several boards rely on external resources that assist the firm in having access to external linkages and resources that can ensure effective and efficient business operations which finally enhances firm performance (Kiel & Nicholson, 2003). Equally, proponents of resource dependence theory argue that directors serving on boards of more than one company will have more experience and become valuable to organizational success (Boyd, 1990). This indicates that directors with multiple directorships will provide the firm with the resources it requires which may help to boost financial performance.

Elyasiani and Zhang (2015) found that multiple-directorship has a positive relationship with the performance of banks in the United States. Relatively, Kapoor and Goel (2017), report that board expertise has a significant positive association with firm performance and earnings quality in India. On the other hand, Nwonyuku (2016) reports that multiple-directorship has a significant negative association with the performance of companies in the Nigerian food and beverages sector. To this like, Hauser (2013) found that when directors serve on less board, it will reduce their workload thereby increasing earnings and market value. That is multiple directorships leads to a decrease in earnings and market value. Nevertheless, the NCCG 2011 does not specifically stipulate the maximum number of companies' boards on which a director can serve but has advised publicly trading

companies to be rational in appointing of directors with multiple directorships. Therefore, on the basis of resource dependence theory alongside reviewed related literature, this study hypothesized that:

H2. There is a negative association between multiple-directorship and firm performance

Besides, literature has documented that an independent board is one that is occupied by a majority number of nonexecutive directors (Fama & Jensen, 1983), which is in a better position to function effectively by overseeing the activities of the management that may favourably influence firm performance. Agency theory attributes an important role to boards in governance and organizational structures of a particular large corporation (Bathala & Rao, 1995). In addition, agency theory supports the involvement of non-executive directors in controlling and overseeing any abnormal activities by the management which reduces agency costs and finally enhances firm performance (Le, Walters, & Kroll, 2006). Concurrently, in line with the NCCG 2011, publicly trading companies in Nigeria should have a board comprising of both executive and nonexecutive directors (a majority) for the independence of the board. This means that the NCCG 2011 is in support of the agency theory assumption that boards of firms should have more outside directors than executive directors.

Ali, Liu, and Niazi (2017) found that board independence (board composition) has a significant positive effect on firm performance in Pakistan. Further, the study by Chechet, Yancy Jnr., and Akanet (2013) who utilized OLS on data retrieved from fourteen (14) listed Deposit Money Banks (DMBs) in Nigeria for the period of 2005 to 2011, found that board composition has a significant positive effect on firm performance as proxied by ROA. Consistently, Harvey Pamburai, Chamisa, Abdulla, and Smith (2015) investigate the association between CG mechanisms and performance (ROA, Economic Value Added, and Tobin's Q) of three hundred and seventy-four (374) sampled listed firms in South Africa, where the result indicates that board independent (represented by the proportion of non-executive directors) has a significant positive effect on performance. On the other hand, Farhan, Obaid, and Azlan (2017) document that board independence (composition of non-executive directors on the board) has a significant negative effect on the performance of quoted firms in the United Arab Emirate (UAE). Furthermore, Narwal and Jindal (2015) report that board composition (represented by the proportion of Non-executive directors) is not significantly related to profitability (performance) of the textile industry in India. As such, this study arrives at the following hypothesis:

H3. There is a positive association between board independent and firm performance

Moreover, Kent and Stewart (2008) contend that larger boards lead to diversity that would assist corporations to safeguard their resources and lessen uncertainties in environments, enhance directors' oversight function, and guarantee effective decisions by management. Consistent with agency theory perspective, a larger board size ensures an effective and efficient monitoring of management which reduces the power of the CEO on corporate board of directors and therefore enhances firm performance (Singh & Harianto, 1989). While on the basis of resource dependence theory which aims at provision of intangible resources by the board of directors to the firm (Hillman & Dalziel, 2003), so as to enhance firms' performance (Kiel & Nicholson, 2003), the size of boards is expected to contribute to better operations and performance of companies. This presumption is

supported by Pfeffer (1972) who finds that size of the board of directors is directly related to firm's environmental needs, and firms that have larger interdependence need a significant ratio of outside directors. However, the NCCG 2011 requires publicly trading companies in Nigeria to have a minimum board size of 5 members.

Empirically sense, Sohail, Rasul, and Fatima (2017) document that board size has a significant positive effect on return on assets (ROA) in Pakistan banks. In Nigeria, Ogege and Boloupremo (2014) found that board size has a significant and positive relationship with the performance of banks. Return on assets (ROA) and return on equity (ROE) are used as proxies for financial performance variables. The authors collected data from fifteen (15) listed banks in Nigeria for the 2012 accounting period. Similarly, a study in Nigeria by Joe Duke and Kankpang (2011) document board size has a significant positive relationship with firm performance (ROA and profit margin) of forty (40) randomly selected firm quoted on the Nigerian Stock Exchange over a period of five (5) years. In contrast, using a sample of seventy-seven (77) firms listed on the Irish Stock Exchange for the period ended December 2001, O'Connel and Cramer (2010) report that board size has a significant negative relationship with performance as proxied by ROA, stock market returns, and financial Q. Therefore, based on the extant literature, theory postulates, and the NCCG 2011 presumption, this study hypothesized that:

H4. There is a positive association between board size and firm performance

In regards to board ownership, it has been proclaimed that when the board of directors acquired ownership (stocks) in a firm they serve, their oversight function on the management intensifies and may be more effective in monitoring actions of the managers (Shawtari et al., 2016). Likewise, proponents of agency theory have argued that board ownership serves as a medium of controlling agency problems because the larger percentage of shares owned by the top executives of a firm, the more probability of them to make decisions inconsistent with wealth maximization objective of the shareholders, as they are concurrently optimizing their own wealth (Jensen & Meckling, 1976). In empirical sense, Bhagat and Bolton (2013) document that board ownership has a positive relationship with the performance of firms in the U.S. In the same vein, Mohd, Latif, Kamardin, and Adam (2016) found that board ownership has a significant positive influence on the performance (return on equity) of Malaysian listed firms (excluding financial and utility firms). For this reason, this study suggests the resulting hypothesis:

H5. There is a positive association between board ownership and firm performance

In consideration of risk management disclosure, the proponents of agency theory have maintained that the disclosure of information on a firm's risk lessens monitoring costs (Hemrit & Arab, 2011), which enables more incentive package for corporate managers to provide relevant information in their annual reports (Depoers, 2000). Moreover, agency theory suggests that in a joint-stock company, there is a divergence of interests between managers and shareholders (Jensen & Meckling, 1976), in which the shareholders require effective corporate governance to oversee the activities of corporate managers and improve accountability (O'Sullivan, 2000). In this effect, the disclosure of corporate policy stems from the board of directors, and the boards prepare annual reports because the disclosure policy of the company is expected to be influenced by the governance arrangements (Gul & Leung, 2004). By the same token, the NCCG 2011 has required companies in Nigeria to



ensure adequate disclosures of their risk management practices for the reason that it may improve their performances.

Despite the limited empirical studies on the relationship between risk management disclosure and firm performance, yet, the study by Nahar et al. (2016) reveals that risk governance (including disclosure) has a significant positive association with firm performance (return on assets, return on equity, Tobin's Q, and buy-and-hold returns). In the same vein, voluntary risk management disclosure in Malaysian firms is positively and significantly related to the firm value (Abdullah, Abdul Shukor, Mohammed, & Ahmad, 2015). For the purpose of the study, the authors conducted a content analysis of a sample of 395 companies listed on Bursa Malaysia for the year 2011. Firm value is proxied by the market to book value of equity ratio, Tobin's Q, and market capitalization. Hence, this study proposes the following hypothesis:

H6. There is a positive association between risk management disclosure and firm performance

## Research Methodology

To achieve the objective of this study, data were obtained from the annual reports of the fifteen (15) Deposit Money Banks (DMBs) listed on the Nigerian Stock Exchange (NSE) for the period 2012-2016 (75 firms-year observations). DMBs are those banks that engaged in the purely commercial banking services including; acceptance of public deposits, granting of loans, and providing other investment products. DMBs were selected for the purpose of this study because of the uniqueness in their operations and the strict law guiding them (for instance, all DMBs must have a minimum liquidity of twenty-five billion Naira [N25b], equivalent to \$8.2 million with the apex bank in Nigeria, and have active branches in all the thirty-six (36) states in Nigeria). Moreover, DMBs play a significant role in the Nigerian economy in terms of supplying of funds from the surplus to the deficit sector of the economy and most of the corporate failures occurred in the Nigerian banking industry. However, to empirically test the hypotheses developed in this study, the following multivariate model is used which was analysed using STATA package version 14:

$$ROE_{it} = \beta_0 + \beta_1 BMT_{it} + \beta_2 MDR_{it} + \beta_3 BID_{it} + \beta_4 BSZ_{it} + \beta_5 BOW_{it} + \beta_6 RMD_{it} + \beta_7 AST_{it} + \beta_8 LEV_{it} + \beta_8 FAG_{it} + \varepsilon$$

In essence, the definition of the study variables (as presented in the model), as well as their measurements, are provided in Table 1 as thus:

**Table 1**  
*Summary of the study variables and their measurements*

S/N	Variable			Source	Expected Sign
	Acronym	Name	Measurements		
1	ROE	Return on Equity	Net income divided by owners' equity	Gentry and Shen, (2010).	<i>Dependent Variable</i>

2	<b>Independent Variables:</b>				
	BMT	Board meeting	Number of meetings held during an accounting period	Vafeas (1999)	+
3	MDR	Multiple directorship	Average number of directorships hold by members of board of directors to total number of directors.	Elyasiani and Zhang (2015).	-
4	BID	Board independence	Proportion of nonexecutive directors to total directors on a board	Akbar (2015); Al-Najjar (2014)	+
5	BSZ	Board size	Total number of directors on a company's board	Imam and Malik (2007)	+
6	BOW	Board ownership	Proportion of ownership held by directors	Shawtari <i>et al.</i> (2016)	+
7	RMD	Risk management disclosure	Dummy variable measured as "1" if risk management framework is disclosed, "0" otherwise	Kakanda <i>et al.</i> (2017); Nahar <i>et al.</i> (2016)	+
8	<b>Control Variables:</b>				
	AST	Asset tangibility	Book value of noncurrent assets to total assets	Maury and Pajuste (2005)	+
9	LEV	Leverage	Proportion of total debts to total assets	Haniffa and Cooke (2002)	-
10	FAG	Firm age	Number of years from incorporation	Arora and Sharma (2016)	+

## Results and Analysis

### Descriptive Statistics

Table 2 presents the descriptive statistics (minimum, maximum, mean standard deviation, 0.25, 0.50, and 0.75 quantiles) for the study variables combined with the skewness and kurtosis statistics for data normality check. From Panel A on Table 2, the average performance (ROE) of DMBs in Nigeria is 11%(0.11) and ranging from -3%(-0.03) (loss) to 35%(0.35). Based on quantile, ROE stood at 3%(0.030), 7%(0.07), and 19%(0.19) for 0.25, 0.50 (median), and 0.75 quantiles respectively in the period under review. This shows that DMBs in Nigeria are averagely performing well, even though with some incurring losses. As shown in Table 2, the average number of BMT is 6 times, and it ranges from 3 to 13 meetings, while the 0.25, 0.50 (median), and 0.75 quantiles are 5, 6, and 8 times respectively, indicating adherence to the requirement of the NCCG 2011.

**Table 2**

*Descriptive Statistics (Obs=75)*

Panel A: Continuous variables									
Variables	Min	Max	Mean	Std. Dev	0.25 Quantile	0.50 Quantile	0.75 Quantile	Skewness	Kurtosis
ROE	-0.03	0.35	0.11	0.11	0.03	0.07	0.19	0.90	2.36
BMT	3	13	6.35	2.02	5	6	8	0.99	4.09
MDR	0.19	0.46	0.30	0.06	0.26	0.30	0.33	0.24	3.01
BID	0.35	0.92	0.62	0.11	0.56	0.59	0.67	0.97	4.01
BSZ	7	20	14.28	2.59	13	15	16	-0.30	2.85
BOW	0	0.23	0.08	0.08	0	0.05	0.15	0.46	1.63
AST	0.01	0.05	0.03	0.01	0.02	0.03	0.04	-0.58	2.95
LEV	0.01	0.99	0.74	0.30	0.82	0.85	0.89	-1.93	4.95

FAG	11	70	32.87	14.76	24	26	45	1.09	3.21
<i>Panel B: Dichotomous variable</i>									
Variable	Disclosure	Perc. (%)	No disclosure	Perc. (%)	Cum. Freq.	Cum. Perc. (%)			
RMD	58	77.33	17	22.67	75	100.00			

Note: ROE=Return on Equity; BMT=Board Meeting; MDR=Multiple Directorship; BID=Board Independence; BSZ=Board Size; BOW=Board Ownership; AST=Asset Tangibility; LEV=Leverage; FAG=Firm Age; RMD=Risk Management Disclosure

MDR shows an average of 30%(0.30), and ranges from 19%(0.19) to 46%(0.46), while 0.25, 0.50, and 0.75 quantiles have 26%(0.26), 30%(0.30), and 33%(0.33) respectively. On the overall, there is a high presence of BID in the Nigerian DMBs having a mean of 62%(0.62), ranges from 35%(0.35) to 92%(0.92) and all the quantiles are above 50%. The mean for BSZ is 14, and it ranges from 7 to 20 members, and all the quantiles exceed 10 members. As revealed in Table 2, BOW ranges from 0 to 23%(0.23), mean of 8%(0.08), whereas 0.25, 0.50, and 0.75 quantiles have 0, 5%(0.05), and 15%(0.15) respectively. All these indicate an adequate adherence to the NCCG 2011 by the DMBs. Meanwhile, AST, LEV, and FAG have mean scores of 3%(0.03), 74%(0.74), and 32years respectively. However, under Panel B, the result shows that there is an adequate RMD by the sampled firms having a *disclosure* frequency of 58(77.33%) and *no disclosure* of 17(22.67%). Nevertheless, based on the skewness and kurtosis statistics that range from -1.93 to 1.091 and 1.63 to 4.95 respectively, the data in this study is not different from normal (Kline, 2011).

### Result of Correlation Analysis

The correlation between the study variables is presented in Table 3. The result indicates that firm performance (ROE) has a significant negative relationship with LEV, a negative but insignificant relationship with BSZ, BOW, and RMD, while displaying a positive but insignificant association with BMT, MDR, BID, AST, and FAG. Moreover, there is no issue of multicollinearity among the independent variables since they have correlation coefficients below 0.90 (Tabachnick & Fidell, 2007). The Pearson correlation matrix is displayed in Table 3 as thus:

**Table 3**

*Correlation matrix for the variables used in the study (Obs=75)*

Variables	1	2	3	4	5	6	7	8	9	10
1 ROE	1	.09	.18	.18	-.10	-.13	-.10	.13	-.27**	.03
2 BMT		1	-.18	-.23*	.123	-.20	-.02	.36***	.07	-.16
3 MDR			1	.54***	-.30***	-.21	-.30***	-.20*	-.26**	.18
4 BID				1	-.57***	-.20*	-.18	-.44***	-.72***	-.07
5 BSZ					1	.09	.20*	.39***	.45***	.09
6 BOW						1	-.06	-.01	.15	-.17
7 RMD							1	.13	.11	.01
8 AST								1	.57***	.13
9 LEV									1	.32***
10 FAG										1

Note: \*\*\*, \*\*, and \*: Correlation is significant at the 0.01, 0.05, and 0.1 levels (two-tailed) respectively.

### Result of Multivariate Analysis



To test the hypotheses developed in this study, the Panel Corrected Standard Errors (PCSEs) regression model is utilized as delineated in Table 4. Though, several multivariate diagnostics tests were carried out and satisfied, only that the Wooldridge test signifies that the data has a serial correlation problem ( $F=6.11$ ,  $p<0.05$ ), hence, the need for a Panel Corrected Standard Errors (PCSEs) regression to solve for the identified problem (Beck & Katz, 1995; Reed & Ye, 2011).

From the result of PCSEs regression in Table 4, the model explains 39%(0.39) of the variation in ROE ( $R^2=0.39$ ) and the model is significant as well ( $wald\chi^2 =203.41$ ,  $p<0.01$ ). The result also depicts that BMT has a significant negative effect on ROE ( $\beta=-0.04$ ,  $p<0.01$ ), hence, does not support hypothesis 1. The plausible reason for this result might be that directors do not concentrate on performing their assigned functions, but on other day-to-day personal businesses (Lipton & Lorsch, 1992). Moreover, another reason for the negative impact of the board meeting on ROE might be due to the high administrative cost attached to meetings of corporate boards. In essence, this statement can be confirmed with the result of the descriptive statistics in Table 2 where board meeting has a maximum value of 13 times, this high frequency of board meetings is likely to consume high administrative costs which may negatively influence the performance of DMBs in Nigeria. Similarly, MDR has a significant negative influence on ROE ( $\beta=-0.03$ ,  $p<0.05$ ), therefore, supported hypothesis 2 of this study. This portrays that additional directorships may result in the busyness of directors in carrying out their assigned functions, which may lead to a negative influence on performance (Shawtari et al., 2016). More so, the result is in line with the expectation of the NCCG 2011 which advised publicly trading companies in Nigeria to take caution in appointing directors with multiple directorships. Basically, when directors have multiple directorships, they will be eager to discharge all their responsibilities with the various firms concurrently. This may lead to the busyness of the directors and ultimately make them discharge a half-way responsibility which is not commensurate to the payment they received, where the firms involved finally suffer the consequence in terms of the negative effect on their performances.

**Table 4**  
*Result of Panel Corrected Standard Errors (PCSEs) Regression*

Variables	Expected signs	Coefficients	t-stats (p-value)	Collinearity Statistics	
				VIF	1/VIF
Intercept	?	1.21	4.59(0.000) ***		
BMT	+	-0.04	-8.06 (0.000) ***	1.08	0.93
MDR	-	-0.03	-2.37 (0.018) **	1.24	0.80
BID	+	0.74	2.83 (0.005) ***	1.09	0.92
BSZ	+	-0.02	-0.33 (0.743)	1.11	0.90
BOW	+	0.28	1.70 (0.089) *	1.15	0.87
RMD	+	0.05	1.98 (0.048) **	1.06	0.95
AST	+	0.01	0.05 (0.960)	1.45	0.69
LEV	-	-0.17	-2.33 (0.020) **	1.21	0.83
FAG	+	-0.39	-1.47 (0.142)	1.20	0.83
Mean VIF				1.18	

N	15
Observations	75
Wald chi (9)	203.41***
R <sup>2</sup>	0.39
Hettest $\chi^2$ (p-value)	0.32(0.573)
RAMSEY Reset Test -- F (p-value)	0.39(0.763)
Wooldridge Test -- F (p-value)	6.11(0.017)

Note: ROE=Return on Equity; BMT=Board Meeting; MDR=Multiple Directorship; BID=Board Independence; BSZ=Board Size; BOW=Board Ownership; AST=Asset Tangibility; LEV=Leverage; FAG=Firm Age; RMD=Risk Management Disclosure; VIF=Variance Inflation Factor; 1/VIF=Tolerance; Hettest=Heteroscedasticity Test; RAMSEY Reset test=A test for omitted variables; Wooldridge Test=A test for serial correlation; \*\*\*, \*\*, and \* = significant at the 0.01, 0.05, and 0.10 levels (two tailed) respectively.

Per contra, the BID has a significant positive impact on ROE ( $\beta=0.74$ ,  $p<0.01$ ), which supports hypothesis 3 and is consistent with the expectation of the NCCG 2011. Regarding BSZ, the result shows that it has an insignificant negative relationship with ROE ( $\beta=-0.02$ ,  $p>0.1$ ). As such, this result does not support hypothesis 4 and has contradicted the assumption of the NCCG 2011. The reason for this might be due to appointing board members that lack adequate experience in solving organizational problems or the decisions of the board members is influenced by the chief executive officer if he is powerful. Meanwhile, BOW shows a significant positive influence on ROE ( $\beta=0.28$ ,  $p<0.1$ ). The result has also provided a support to hypothesis 5, signifying that the higher the ownership by directors, the better the performance, since the directors would not want their stocks to shrink, thereby making them perform their functions more effectively in ensuring the betterment of the firm.

Considering RMD, the result from Table 4 shows that it has a significant positive influence on ROE ( $\beta=0.05$ ,  $p<0.05$ ) as expected by the hypothesis in this study and the assumption of the NCCG 2011. This result indicates that when companies disclose their risk management practices, they may gain more confidence from investors and viewed as ‘transparent’, which may ultimately boost their performance. For the control variables, AST has a positive but insignificant influence on ROE ( $\beta=0.01$ ,  $p>0.1$ ), while LEV has a significant, but negative impact on ROE ( $\beta=-0.17$ ,  $p<0.05$ ). For FAG, it has a negative, but an insignificant relation with ROE ( $\beta=-0.39$ ,  $p>0.1$ ).

#### Robustness Check

In order to check for the consistency of the PCSEs regression result on the relationship between CG characteristics and firm performance across various scales, a robustness check in terms of quantile regression was conducted on three different quantiles (0.25, 0.50, and 0.75). This is based on the premise that the relationship between CG characteristics and firm performance may not be homogenous across units (firms) as measured by most prior studies using Ordinary Least Square (OLS) regression, but possibly heterogeneous (that is the impact may be on upper or lower bounds) (Shawtari *et al.*, 2016). For this purpose, the following quantile regression model is formulated:

$$ROE^{(q)}_{it} = \beta_0^{(q)} + \beta_1^{(q)}BMT_{it} + \beta_2^{(q)}MDR_{it} + \beta_3^{(q)}BID_{it} + \beta_4^{(q)}BSZ_{it} + \beta_5^{(q)}BOW_{it} + \beta_6^{(q)}RMD_{it} + \beta_7^{(q)}AST_{it} + \beta_8^{(q)}LEV_{it} + \beta_8^{(q)}FAG_{it} + \varepsilon^{(q)}$$

From the quantile regression result in Table 5, it is apparent that the models for 0.25, 0.50, and 0.75 quantiles possess explanatory power of the variations in ROE as shown by their R<sup>2</sup> values of 16.2%(0.162), 20.6%(0.206), and 30.6%(0.306) for the three

various quantiles respectively. Nonetheless, the  $R^2$  values depict that the explanatory power of the models seems higher in the upper bounds, hence, a justification to argue that high-profitable firms are more intense in the application of CG and their performance would be boosted simultaneously.

**Table 5**  
*Result of Quantile Regressions(QR)*

Variables	Quantiles		
	Q (0.25)	Q (0.50)	Q (0.75)
Intercept	0.85 (1.09)	0.82 (3.08)***	0.57 (2.35)**
BMT	<b>-0.01</b> <b>(-1.88)*</b>	<b>-0.02</b> <b>(-3.47)***</b>	<b>-0.03</b> <b>(-5.36)***</b>
MDR	-0.12 (-0.27)	-0.21 (-1.33)	<b>-0.34</b> <b>(-2.45)**</b>
BID	-0.37 (-0.86)	-0.31 (-1.32)	0.32 (1.41)
BSZ	-0.06 (-0.43)	-0.07 (-1.21)	0.07 (1.64)
BOW	-0.32 (-1.16)	<b>-0.06</b> <b>(-1.85)*</b>	<b>0.02</b> <b>(2.03)**</b>
RMD	-0.04 (-0.63)	0.02 (1.49)	-0.01 (-0.21)
AST	0.01 (0.24)	0.01 (0.61)	0.01 (0.69)
LEV	-0.02 (-0.09)	-0.03 (-0.46)	-0.17 (-1.42)
FAG	-0.03 (-1.04)	-0.01 (-1.06)	-0.22 (-1.34)
Adj. R <sup>2</sup>	0.162	0.206	0.306
N	15	15	15
Observations	75	75	75

Note: *t* statistics in parentheses (); \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ . Values in **bold** are significant results consistent with those of the Panel Corrected Standard Errors (PCSEs) Regression model.

Additionally, the result shows that there is no heterogeneity over the different quantiles on the relationship between BMT and ROE. At lower bound (0.25 quantile), the coefficient is significantly negative at 10%(0.10), while at the 0.50 and 0.75 upper levels, the coefficients are negative and significant at 1%(0.01) which are all consistent with the PCSEs result. This means that the influence of BMT on the performance of DMBs in Nigeria remain the same across companies with lower and higher performances. To MDR which its coefficient only shows a significant negative at the upper bound (0.75 quantiles) at 5%(0.05 significant level) consistent with the PCSEs result.

However, the result from Table 5 illustrates that board ownership (BOW) is heterogeneous in its relationship with performance across various quantiles because at 0.25 quantile, it shows a significant negative effect on ROE ( $\beta = -0.06$ ,  $p < 0.10$ ), whereas at the 0.50 quantile, it has a negative, but insignificant effect ( $\beta = -0.04$ ,  $p > 0.10$ ). Contrarily, BOW has a significant positive impact on ROE at the 0.75 quantiles ( $\beta = 0.02$ ,  $p < 0.01$ ). This specifies that BOW in DMBs is only significant on the performance of large companies (Q

0.75) among them. On the other hand, the remaining variables have no significant effect on ROE across the quantiles.

## Conclusions

This study investigates the relationship between CG characteristics and firm performance. The result of this study shows that CG characteristics have both significant and insignificant positive and negative effect on ROE of DMBs in Nigeria. Notwithstanding, the quantile regression result shows that there is a presence of heterogeneity across various quantiles in the relationship between CG characteristics and performance of DMBs in Nigeria. Therefore, the finding of this study is indispensable to both regulators of CG code in Nigeria and corporate managers since the study shows the level of application of the NCCG 2011 in DMBs and has made a contribution to the literature in terms of methodological approach.

Despite the contributions made by this study, yet, it has some setbacks associated with it that include: small sample (15 firms), concentrates on banking sector alone, and uses only accounting-based measure (ROE). Therefore, future researchers can fill the gap in this study by considering other sectors and market-based performance measures like return on marketing investment (ROMI) and return-on-marketing-objective (ROMO) among others.

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