Do board characteristics and risk management disclosure have any effect on firm performance? Empirical evidence from deposit money banks in Nigeria

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Abstract:
This study examines the relationship between board characteristics, risk management disclosure and performance of Deposit Money Banks (DMBs) in Nigeria. Data were obtained from the annual accounts and reports of the 15 DMBs listed on the Nigerian Stock Exchange (NSE) covering 2012 to 2016. For the purpose of testing the relationship between the dependent variable (return on asset [ROA]) and the explanatory variables in this study, Random Effect (RE) regression model was employed. The study finds that board size, board composition, and risk management disclosure have a significant positive effect on ROA, whereas, board meeting has a significant negative influence on ROA. Moreover, the study documents that board expertise has a negative, but an insignificant association with ROA. The finding of this study is essential to both corporate authorities and other corporate stakeholders in Nigeria. The study concludes by providing an agenda for future research in a similar domain.

JEL Classifications: G, G32, L25

Keywords: Board characteristics, risk management disclosure, firm performance, Deposit Money Banks, Nigerian Code of Corporate Governance


1. Introduction

The role of corporate board of directors alongside disclosure of risk management practices on firms' performance has gained considerable attention from investors, policymakers, and researchers due to global economic crisis and numerous corporate failures in both developed and emerging economies (for instance, Enron; dot-com bubble in 1997 in East Asia) (Carlon, Loftus, & Miller, 2003; Jones, Li, & Cannella Jr, 2015; Kakanda, Basariah, & Chandren, 2016; Kakanda et al., 2017; Marn & Romuald, 2012). To this effect, the issue of corporate catastrophes that arose from global economic disaster was severe for the reason that it was connected to financial institutions (who are the key players in the stock market of every economy) (IMF, 2009), and many financial firms have seized to exist, merged, or been acquired due to their disdain towards the fundamental procedures of risk management and control (Karatzias, 2011). Thus, inadequate disclosures of corporate activities (including risk management practices) have a substantial
influence on the investors’ aptitude to examine corporate entities and their related risks (Abraham & Shrives, 2014).

Notwithstanding, performance is a crucial mechanism in ascertaining the perpetuity or otherwise of a corporate entity (Kakanda, Bello, & Abba, 2016). As such, the profitability combined with the perpetual succession of a firm exclusively relied on an effective established corporate governance (Barbu & Bocean, 2007) which is presumed to improve prolonged shareholders’ value (Cohen, Krishnamoorthy, & Wright, 2002). To this end, Carpenter and Westphal (2001) argue that research increased on corporate governance (hereinafter, CG) is devoted to the influence of board members on relevant organizational results, since the presence of appropriate boards warrants an effectual CG that ultimately affects firm performance. All the same, Carlon et al. (2003) report that financial distress together with stress from professional bodies portrays the need for clear and expressive annual reports. Equally, the Institute of Chartered Accountants in England and Wales [ICAEW] (2011) recommends corporate entities to produce a transparent annual report that will delineate information on risk management of which various users of accounting information would find it beneficial when making decisions.

However, in relation to the milieu of financial disaster, the Nigerian capital market also experienced its corporate collapse (for instance, the case of Savannah Bank Plc, Societe Generale Bank Ltd etc.) along with less effective CG that results to poor firm performance and paints doubt on the effectiveness of the existing Nigerian Code of CG (NCCG) of 2003 (Akpan, 2007; Kakanda et al., 2017; Mmadu, 2013). Further, the existence of a weak CG enveloped by inadequate information disclosure and limited frameworks for risk management of Deposit Money Banks (DMBs) (purely commercial banks) has significantly accrue to the financial crisis in the Nigerian economy (Sanusi, 2010). Consequently, the Nigerian Stock Exchange (NSE) has reviewed the former NCCG 2003 and issued a new code in 2011, requiring all listed companies to disclose their activities on risk management which is presumed to have an influence on firm performance. Therefore, the purpose of this study is to examine the effect of board characteristics and risk management disclosure on the performance of listed DMBs in Nigeria.

2. Literature review and hypothesis development

Risk Academic literature on the association between board characteristics and firm performance is puzzled and remain unsettled due to Ontological (differences in economic, social, and legal systems where organizations operate) methodological (differences in measuring performance [market or accounting]), and behavioural (differences in culture of various boardrooms) complexities (Aram & Cowen, 1983; Rabeiz, 2015). Nevertheless, firms’ boards of directors are saddled with the obligation to oversee managers’ activities on behalf of the shareholders (Uadiale, 2010).

In this regard, agency theory assumes that there exists a conflict of interest between shareholders (resource providers) and their agents (managers), in which the managers may ignore the wealth maximization objective of the shareholders (Masson, 1971). As such, it is presumed that board of directors will mitigate the existing conflict of interest between shareholders and managers and to ensure that the profitability, as well as the wealth expansion objectives of the shareholders, are attained (Zahra & Pearce, 1989). Corporate boards have numerous characteristics which are but limited to; board size, board composition, CEO duality, board culture, board diversity (education, tenure, age), and board expertise (Brennan, 2006; Kakanda et al., 2017). Hence, the characteristics of the board selected for this study include size, composition, meetings, and expertise.
2.1. Board size and firm performance

Board size is considered as one of the significant dimension of board characteristics, and it is the overall number of directors (executive and nonexecutives) serving on the board of a company (Vafeas, 1999). It has been argued that larger board leads to diversity that would assist firms in safeguarding their resources and as well, lessen the uncertainties in their operating environment and ensure effective management decision (Dahya & McConnell, 2005). On the basis of agency theory, a larger board size ensures effective oversight of management activities that condenses the power of the CEO on the board, hence, increasing firm performance (Singh & Harianto, 1989).

Empirically, Fidanoski, Mateska, & Simenovski (2013) using simple OLS regression model, investigate the relationship between board size, board composition, and CEO qualities on the performance (return on assets [ROA] and Cost-Income Ratio) of 15 sampled banks in Macedonia. They found that board size (for both supervisory and managing board) is positively related with ROA, while the size of the Managing board has a significant and positive relations hip with Cost-Income Ratio. Moreover, using simple OLS regression model on a sample of 15 listed banks in Nigeria for the year 2012, Ogege & Boloupremo (2014) report that board size has a significant positive association with performance (ROA, and return on equity [ROE]).

However, findings on the relationship between board size and firm performance remain inconclusive because apart from the reported positive relationship, other studies document negative relationship. For instance, O’Connel and Cramer (2010) assessed the association between board characteristics and performance of 77 sampled companies listed on Irish Stock Market (ISM). Using simple OLS, the study finds that board size has a significant relationship with performance (proxied by ROA, stock market returns, and financial Q). Consequently, this study hypothesized that:

H1  Board size has a positive relationship with firm performance.

2.2. Board composition and firm performance

Board composition is the proportion of nonexecutive directors to the overall number of directors on a board (Marn & Romuald, 2012). A board dominated by outside directors (nonexecutives) is presumed to have more independence, expertise, and objective judgement, which may in due course enhance the performance of a firm (Fama & Jensen, 1983). The proponents of agency theory argue that a board with a significant number of nonexecutive directors stands a better chance to operate in the best interest of the shareholders and improve performance via an effective oversight on the management functions (Hermalin & Weisbach, 1988). To this effect, applying Partial Least Square-Structural Equation Model (PLS-SEM) on a sample of 100 nonfinancial firms operating on the Karachi Stock Exchange (KSE) from 2006 to 2011 to examine the relationship between CG and performance, Ali, Liu, and Niazi (2017) found that board composition has a significant positive effect on firm performance. Other scholars that document similar findings are Agrawal & Knoeber (1996), Ali & Nasir (2014). Contrastingly, some studies found board composition to be negatively related to firm performance. Farhan, Obaid, & Azlan (2017) found that board composition has a significant negative effect on the performance (ROA and Tobin’s Q) of quoted firms in the United Arab Emirate (UAE), after using 72 companies as the sample for the period of 2010 to 2013 and multiple regression approach for analysis purpose. Further, with the use of simple OLS regression on a sample of 20 listed companies in Malaysia for 2006 to 2010 to examine the relationship between CG and firm performance, Marn & Romuald (2012) report that board composition has no significant impact on performance (Earnings per Share [EPS]). Hence, this study hypothesized that:
2.3. Board meeting frequency and firm performance

The board meeting is a significant resource for enhancing board of directors’ effectiveness (Conger, Finegold, & Lawler, 1998), and it is the basic medium via which the directors obtained vital information required to carry out their functions (Das & Dey, 2016). Relatively, the more frequency of board meetings, the more likely of a firm to attain high performance (Lipton & Lorsch, 1992). On the basis of agency theory, the corporate board of directors showcase substantial abilities in counselling, penalizing, and overseeing management actions, hence, enhancing firm performance where there is a higher frequency of meetings (Lipton & Lorsch, 1992). Justifiably, Liang, Xu, & Jiraporn (2013) studied that impact of board characteristics on performance and asset quality in 50 largest banks in China covering the period of 2003 to 2010. By employing simple OLS regression model, the study finds that board meeting frequency has a significant positive impact on asset quality and performance (ROA and ROE).

Furthermore, Barisua, Torbira, & Lenee (2012) report that board meeting has a significant positive effect on the performance (EPS) of banks in Nigeria. Their study utilizes 21 Deposit Money Banks (DMBs) in Nigeria for the period of 2005 to 2009 and analyzed the data obtained using simple OLS regression. In a link to this, Kayani, Khan & Javid (2011), Mangena & Pike (2005) found a positive association between the frequency of board meeting and firm performance.

On the other hand, using OLS regression and Two-Stage Least Square (2SLS) on a sample of 307 firms in Cyprus for the period of 1990-1994, Vafeas (1999) finds that frequency of board meeting has a negative relationship with firms’ value (ROA and Market-to-book value ratio [MTB]). Recently, Hassan, Naser, & Hijazi (2016) found that board meeting frequency has a significant negative influence on the performance (ROA, ROE, Tobin’s Q, and market value to book value) of 27 nonfinancial sampled companies listed on Palestinian Stock Exchange for the period of 2010 to 2012. Therefore, this study hypothesized that:

H3 Board meeting frequency has a positive relationship with firm performance.

2.4. Board expertise and firm performance

Expertise denotes the great skill or knowledge in a particular field or hobby. An expert can be described as one having an elongated or concentrated experience through education and practice in a given field. Yatim (2010) argues that board expertise is imperative in ensuring that the oversight function of the board is successfully carried out. In the same vein, it has been argued that directors that sit on the board of more than one company will enable them to acquire more skill, knowledge, and become more expertise in carrying out their oversight functions on managers’ activities (Kakanda et al., 2017; Nadarajan, Chandren, Bahaudin, Mohammed Elias, & Mohd Nawi, 2015), which will aid in improving firm performance (Fama & Jensen, 1983; Field, Lowry, & Mkrtchyan, 2013). In essence, Elyasiani & Zhang (2015) assess the relationship between multiple directors and performance and risk of 116 sampled bank holding companies in the U.S. After analyzing the data obtained using a 3SLS technique, the result shows that multiple directorships (board expertise) is positively related to performance (ROA, Tobin’s Q, and Earnings Before Interest and Tax [EBIT]).

In contrary report to the positive findings, Nwonyoku (2016) who used OLS regression model, examined the relationship between CG and profitability of 8 sampled firms in the Nigerian food and beverages industry for the period of 2004 to 2014, finds that there is a
significant negative relation between board skill and competence, and financial performance represented by ROE and net asset per share (NA/S). In addition, Hauser (2013) reports that multiple directorships (board expertise) have a negative effect on the performance of S&P 1500 companies (thereby having a sample of 22,465 firm-years from 1996 to 2011) in the U.S. Therefore, this study suggests the following hypothesis:

H4 Board expertise has a positive relationship with firm performance.

2.5. Risk management disclosure and firm performance

Shareholders are entitled to be furnished sufficiently about the extraordinary and periodic information disclosure on activities of a company (IFC, 2010). This disclosure is usually in the annual accounts and reports of companies that serve as a medium of communication between the company’s (management) and stakeholders for their decision making. Moreover, the OECD (2015) recommends that companies that have complex or huge risks (both financial and otherwise), should provide a familiar reporting system, involving direct reporting of risk management to the board of directors who are acting on behalf of the shareholders. Nonetheless, Abraham, & Shrives (2014) suggest that inadequate corporate disclosures have a significant effect on the investor's ability in evaluating public companies and the risks associated with them. Even though there is no consensus on the extent and manner of communicating risk management by corporations, but there is a unanimous agreement on the need to have an effective disclosure of firms’ risk management practices (Buckby, Gallery, & Ma, 2015).

Equally important, the NCCG (2011) has required the board of directors of companies quoted on the Nigerian Stock Exchange (NSE) to ensure sufficient disclosure of the risk management practices and procedures of their firms as this will in a long way assist in boosting organizational outcomes. In like manner, agency theory postulates that disclosure of information on corporate risk reduces monitoring costs (Hemrit & Arab, 2011), which ensures that information is provided in the annual reports of companies (Depoers, 2000). Analytically, Buckby et al. (2015) used thematic content analysis of annual reports to examine how quoted companies in Australia disclose their risk management practice. The study uses OLS regression in analyzing the data its obtained from top 300 companies for the month of June 2010. Finding from the study reveals that there is an extensive deviation by companies in the disclosure practices and less conformity with principle 7 of the Australian principles and recommendations of corporate governance.

Furthermore, Amran, Manaf Rosli, & Che Haat Mohd Hassan (2008) conduct an exploratory study of risk reporting in Malaysia. Using multiple regression on a sample of 100 quoted companies in Bursa Malaysia for the year 2005, the study identifies that there is no adequate disclosure of risk management by Malaysian companies. In Nigeria, Dabari & Saidin (2015), who employed logistic regression model, examined the level of implementing Enterprise Risk Management (ERM) in the Nigerian banking industry through collecting data from 722 managers of 361 branches of 21 banks in Nigeria. The finding discloses that ERM is implemented by some banks and yet to be implemented by others. A study by Nahar, Jubb, & Azim (2016) utilizes multiple regression model and report that there is a significant relationship between risk governance (disclosure, risk management committee existence, and number of risk management committees) and performance (ROA, ROE, Tobin’s Q, and buy-and-hold returns) of 30 sampled Australian banks covering the period of 2006 to 2016. Hence, this study suggests the following hypothesis:
3. Methodology

3.1. Sample and data collection

For the purpose of this study, data were obtained from the annual reports and accounts of the 15 Deposit Money Banks (DMBs) listed on the Nigerian Stock Exchange (NSE) spanning from the year 2012 through 2016. The year 2012 was selected as the initial year because the review of the NCCG takes place in the year 2011, hence, its full implementation kick-starts in the year 2012. However, the multivariate model to empirically test the hypotheses of this study is provided below, and STATA package version 14 is used in analyzing it.

\[
ROA_{it} = \beta_0 + \beta_1 BSZ_{it} + \beta_2 BCOMP_{it} + \beta_3 BMT_{it} + \beta_4 BEXP_{it} + \beta_5 RMD_{it} \\
+ \beta_6 LEV_{it} + \beta_7 FAG_{it} + \beta_8 ASTAN_{it} + \varepsilon
\]

3.2. Dependent variable

The dependent variable for this study is firm performance. However, in measuring performance, some studies (for instance, Amba, 2013; Marn & Romuald, 2012; Vance, 1978) use accounting-based performance measures (like ROA, ROE, net profit margin etc.), whereas others (for instance, Vafeas, 1999) use market-based performance measures (like market-to-book value ratio, price earnings ratio, Tobin’s Q, etc.). Case in point, this study dwells on accounting-based performance measure as proxied by return on assets (ROA) following other studies like; Saibaba & Ansari (2013), Yermack (1996) and Zeitun & Tian (2007) among others. In this regard, ROA is measured as the profit after tax divided by total assets (PAT/TA).

3.3. Independent variables

The independent variables in this study as used in the developed hypotheses include board size, board composition, board meeting frequency, board expertise and risk management disclosure. For the purpose of this study, board size is measured as the number of directors on a company’s board (Imam & Malik, 2007; Kakanda et al., 2017; Vafeas, 1999). Board composition is measured as the proportion of nonexecutive directors to the overall directors on a board (Akbar, 2015; Al-Najjar, 2014; Kurawa & Kabara, 2014). However, board meeting frequency is measured as the number of meetings held by a company’s board during an accounting period (Al-Ghamdi, 2012; Jackling & Johl, 2009; Karamanou & Vafeas, 2005; Vafeas, 1999). To board expertise, it is established as the number of directorships of a nonexecutive director (Elyasiani & Zhang, 2015; Yatim, 2010). Nevertheless, risk management disclosure is measured based on a risk management disclosure index developed by Kakanda et al. (2017) and Wong (2012). The full description of the disclosure index is provided in Table 1.
3.4. Control variables

Control variables play an important role in quantitative research, and they are variables that a researcher controlled for so as to determine the true impact of the independent variable(s) (IVs) on the dependent variable(s) (DVs) (Creswell, 2013). As a regard, some features of firms are considered to have an impact on performance and may likely distort result in determining relationships between CG and firm performance (Aljifri & Moustafa, 2007). For this reason, firm leverage (LEV), firm age (FAG), asset tangibility (ASTAN) are controlled for in this study. LEV is measured as the proportion of total debts to total assets (TD/TA) (Haniffa & Cooke, 2002; Harris & Raviv, 1991), FAG is measured as the number of years a firm in being in existence (Arora & Sharma, 2016; Mayur & Saravanan, 2017), while ASTAN is the book value of noncurrent assets to total assets (NCA/TA) (Akintoye, 2008; Maury & Pajuste, 2005).

### Table 1. Risk Management Practices Disclosure Index

<table>
<thead>
<tr>
<th>Name of company</th>
<th>S/n</th>
<th>Risk management item category</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.g., X company</td>
<td>1</td>
<td>Governance structure related to risk management.</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Risk management committee responsibility and function explanations.</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>Description of risk management policies and firm’s objectives</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Audit committee responsibility and function explanations.</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Capital/market risk disclosure (example, risk of interest rate, foreign exchange rate, liquidity, stock, credit etc.)</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Environmental risk disclosure (health and safety, erosion of brand name, and corporate social responsibility).</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Operational risk and other risks disclosure (customer satisfaction, product and service failure, stock obsolescence and shrinkage, etc.).</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
<td>0/1</td>
</tr>
</tbody>
</table>

Source: Adapted from Kakanda et al. (2017) and Wong (2012).

However, in respect to the measurement of risk management disclosure, Table 1 provides the measurement for risk management disclosure based on a risk category index from 1 to 7 for each accounting period spanning from 2012 to 2016 so as to have a panel data for the aggregate disclosure. Under each category, a score of ‘0’ means no disclosure, while ‘1’ is disclosure, and the overall score for risk management disclosure is 7 if all the risk item categories are disclosed. Effectively, this method will dismiss any chance of research bias that may be present in some items when different values are provided. More so, the method will ensure that the allocation of a rating score is made only to a particular item of risk category and not word counts. In a nutshell, an aggregate score of ‘1-2’ is weak disclosure, ‘3-4’ is moderate disclosure, ‘5-6’ is strong disclosure, and above 6 is very strong disclosure. However, it is pertinent to state that in collecting data on risk management disclosure of firms, various methods of content analysis are being used by numerous studies. For instance, Deegan, Rankin, & Voght (2000), Elshadindy & Neri (2015), and Linsley & Shriives (2005) applied quantitative content analysis by counting a number of words and sentences. While Beattie, McInnes, & Fearnley (2004), Beretta & Bozzolan (2004), and Wong (2012) applied categories in analyzing the contents of
corporate annual reports. Therefore, this study has followed the latter studies in analyzing the contents of the sampled firms’ annual reports. Crystal clear, the study employed categories in assessing disclosure of risk management in the DMBs in Nigeria.

4. Discussion of results

4.1 Descriptive statistics

The descriptive statistic for the study variables is presented in Table 2 including the mean, median, standard deviation, minimum and maximum scores, alongside skewness and kurtosis values for data normality test. It has become apparent from Table 2 that the mean value of performance (ROA) for DMBs in Nigeria from 2012-2016 is 18.5%(0.185), and ranging from 1.4%(0.014) to 65.9%(0.659) with a median of 9.4%(0.094). This is an indication that DMBs in Nigeria are judiciously utilizing the resources at their disposals in generating returns for their shareholders. Howbeit, with a minimum ROA of 1.4%, it portrays that there are some companies among the DMBs that have lower performance, while some are comparatively performing better with a maximum ROA of 65.9%. Through the standard deviation of 0.196, it clearly indicates that there is no wide variation in terms of performance (ROA) amongst the DMBs in Nigeria.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Observations</th>
<th>Mean</th>
<th>Median</th>
<th>SD</th>
<th>Min.</th>
<th>Max.</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA</td>
<td>75</td>
<td>0.185</td>
<td>0.094</td>
<td>0.196</td>
<td>0.014</td>
<td>0.659</td>
<td>0.621</td>
<td>5.710</td>
</tr>
<tr>
<td>BSZ</td>
<td>75</td>
<td>14.28</td>
<td>15</td>
<td>2.587</td>
<td>7</td>
<td>20</td>
<td>-0.857</td>
<td>3.906</td>
</tr>
<tr>
<td>BCOMP</td>
<td>75</td>
<td>0.618</td>
<td>0.590</td>
<td>0.114</td>
<td>0.35</td>
<td>0.917</td>
<td>0.969</td>
<td>4.001</td>
</tr>
<tr>
<td>BMT</td>
<td>75</td>
<td>6.345</td>
<td>6</td>
<td>2.023</td>
<td>3</td>
<td>13</td>
<td>0.988</td>
<td>4.090</td>
</tr>
<tr>
<td>BEXP</td>
<td>75</td>
<td>0.297</td>
<td>0.30</td>
<td>0.057</td>
<td>0.188</td>
<td>0.455</td>
<td>0.238</td>
<td>3.008</td>
</tr>
<tr>
<td>RMD</td>
<td>75</td>
<td>5.507</td>
<td>6</td>
<td>1.120</td>
<td>3</td>
<td>7</td>
<td>-0.628</td>
<td>2.924</td>
</tr>
<tr>
<td>LEV</td>
<td>75</td>
<td>0.741</td>
<td>0.853</td>
<td>0.295</td>
<td>0.001</td>
<td>0.995</td>
<td>1.091</td>
<td>3.206</td>
</tr>
<tr>
<td>FAG</td>
<td>75</td>
<td>32.867</td>
<td>26</td>
<td>14.756</td>
<td>11</td>
<td>70</td>
<td>-1.926</td>
<td>4.949</td>
</tr>
<tr>
<td>ASTAN</td>
<td>75</td>
<td>0.031</td>
<td>0.033</td>
<td>0.013</td>
<td>0.007</td>
<td>0.053</td>
<td>-0.581</td>
<td>2.951</td>
</tr>
</tbody>
</table>

Source: Authors' analysis.

Additionally, Table 2 provides the descriptive statistics of the explanatory variables in this study. Regarding board size (BSZ), it ranges from 7 to 20, a median of 15, and an average size of 14 members, which is in line with the requirements of the NCCG 2011. The composition of nonexecutive directors on the board (BCOMP) varies between 35%(0.35) to 91.7%(0.917), a median of 59%(0.59), and a mean of 61.8%(0.618). This signifies that the boards of most DMBs in Nigeria are being dominated by nonexecutive directors. Concerning the frequency of board meetings (BMT), it has a minimum of 3, maximum of 13, a median of 6, and an average of 6 meetings in a year. This has shown an adequate adherence by the DMBs to the NCCG 2011 which requires publicly trading companies in Nigeria to hold meetings in each quarter. Besides, the more frequency of meetings the better for a company's outcomes (Lipton & Lorsch, 1992).

Relating to board expertise (BEXP), Table 2 indicates that it ranges from 18.8%(0.188) to 45.5%(0.455), and with a median and mean of 30%(0.30) and 29.7%(0.297) respectively, indicating that DMBs in Nigeria have relatively less presence of directors with multiple directorships on their boards. To risk management disclosures (RMD), the result from Table 2 portrays that there is a strong disclosure of risk management practices and procedures by DMBs, since the scores range from 3 (moderate disclosure) to 7 (very strong disclosure), and a median of 6 and mean of 5.5 (strong disclosure). For the control
variables, leverage (LEV) varies from 0.1%(0.001) (low) to 99.5%(0.995) (high), and a mean of 74.1%(0.741) (high), showing that DMBs in Nigeria are highly geared which indicates an alarming cause of outsiders dominating the capital structure of the banks. To firm age (FAG), the average years is 32, a minimum of 11 and a maximum of 70. While asset tangibility (ASTAN) a mean of 3.1% (0.031), minimum of 0.7%(0.007) and a maximum of 5.3%(0.053), that is having fewer tangible assets compared to the total assets of the firms.

With respect to the skewness and kurtosis values which are indicators of normality of data show that the data in this study is not different from normal, for the reason that none of the skewness scores is greater than 3 and kurtosis score greater than 10 (Kline, 2011).

### 4.2 Result of Pearson correlation analysis

In order to determine the extent and the direction of the relationship between all the variables in this study, Pearson correlation was employed and the result is delineated in Table 3. The result reveals that ROA has a significant positive correlation with board size (BSZ), board composition (BCOMP), and risk management disclosure (RMD) while having a significant negative correlation with the frequency of board meeting (BMT), leverage (LEV), and firm age (FAG). However, ROA has a negative, but the insignificant correlation with board expertise (BEXP) and asset tangibility (ASTAN). Equally important, there is no high correlation between the explanatory variables, hence, an indication of the absence of multicollinearity.

**TABLE 3. PEARSON CORRELATION ANALYSIS**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ROA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 BSZ</td>
<td>0.295**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 BCOMP</td>
<td>0.264**</td>
<td>-0.565***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 BMT</td>
<td>-0.325***</td>
<td>0.127</td>
<td>-0.234***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 BEXP</td>
<td>-0.011</td>
<td>-0.285**</td>
<td>0.534***</td>
<td>-0.180</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 RMD</td>
<td>0.397***</td>
<td>0.085</td>
<td>-0.095</td>
<td>0.136</td>
<td>-0.226</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 LEV</td>
<td>-0.372***</td>
<td>0.118</td>
<td>-0.069</td>
<td>-0.162</td>
<td>0.178</td>
<td>-0.116</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 FAG</td>
<td>-0.591***</td>
<td>0.494***</td>
<td>-0.617***</td>
<td>0.074</td>
<td>-0.264**</td>
<td>-0.063</td>
<td>0.318***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 ASTAN</td>
<td>-0.218</td>
<td>0.025</td>
<td>-0.610***</td>
<td>0.242**</td>
<td>-0.198*</td>
<td>-0.031</td>
<td>0.106</td>
<td>0.697***</td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors' analysis.

Note: ***, **, and * - significant at 1%, 5%, and 10% levels respectively.

### 4.3 Multivariate regression result

The regression model utilized for testing the hypothesis developed in this study is the Random Effect (RE) model as shown in Table 4. However, several diagnostics tests were conducted before finally selecting the RE model. Case in point, heteroscedasticity using Born & Breitung (2016) method was applied and which shows that the variance of the error term is constant (homoscedastic) (HR-stat=1.12, p>0.05). Moreover, the result of RAMSEY reset test confirms that the model has been correctly specified (F=1.85, p>0.05). Likewise, based on the result of Wooldridge test, the variables have no serial correlation (autocorrelation) (F=1.437, p>0.05). The Breusch-Pagan Lagrange Multiplier (LM) test of selecting between the pooled Ordinary Least Square (OLS) model and the RE model favours the latter ($\chi^2 =6.19$, p<0.05). Fairly, the result of F-test favours the
Fixed Effect (FE) model against the pooled OLS model ($F=2.12$, $p<0.05$), whereas, the Hausman test favours the RE model against the FE model ($\chi^2 = 7.97$, $p>0.05$).

**Table 4. Random effect panel regression result for ROA**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Expected signs</th>
<th>Coefficients</th>
<th>t-stats (p-value)</th>
<th>Multicollinearity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>?</td>
<td>0.217</td>
<td>5.22 (0.000)**</td>
<td></td>
</tr>
<tr>
<td>BSZ</td>
<td>+</td>
<td>0.011</td>
<td>1.88 (0.060)*</td>
<td>1.09</td>
</tr>
<tr>
<td>BCOMP</td>
<td>+</td>
<td>0.057</td>
<td>2.15 (0.032)**</td>
<td>1.07</td>
</tr>
<tr>
<td>BMT</td>
<td>+</td>
<td>-0.005</td>
<td>-5.08 (0.000)**</td>
<td>1.07</td>
</tr>
<tr>
<td>BEXP</td>
<td>+</td>
<td>-0.059</td>
<td>-1.41 (0.157)</td>
<td>1.27</td>
</tr>
<tr>
<td>RMD</td>
<td>+</td>
<td>0.008</td>
<td>3.75 (0.000)**</td>
<td>1.07</td>
</tr>
<tr>
<td>LEV</td>
<td>+</td>
<td>-0.076</td>
<td>-6.33 (0.000)**</td>
<td>1.15</td>
</tr>
<tr>
<td>FAG</td>
<td>+</td>
<td>-0.002</td>
<td>-1.51 (0.132)</td>
<td>1.24</td>
</tr>
<tr>
<td>ASTAN</td>
<td>+</td>
<td>0.003</td>
<td>0.23 (0.816)</td>
<td>1.37</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td></td>
<td></td>
<td></td>
<td>1.17</td>
</tr>
<tr>
<td><strong>VIF</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald chi (8)</td>
<td>78.92***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R²</td>
<td>0.659</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hettest - HR-stat (p-value)</td>
<td>1.12 (0.263)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAMSEY Reset Test - F (p-value)</td>
<td>1.85 (0.140)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wooldridge Test - F (p-value)</td>
<td>1.437 (0.237)</td>
<td></td>
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</tr>
<tr>
<td>LM Test - $\chi^2$ (p-value)</td>
<td>6.91 (0.0043)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>F-Test - F (p-value)</td>
<td>2.12 (0.026)</td>
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<tr>
<td>Hausman Test - chi2 (8) (p-value)</td>
<td>7.97 (0.437)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Authors’ analysis.

Notes: VIF - variance inflation factor; 1/VIF - tolerance; Hettest - heteroscedasticity test; RAMSEY reset test; a test for omitted variable; Wooldridge test - a test for serial correlation; LM test - Lagrange multiplier test for selecting between OLS and random effect model; F-test - a test for selecting between OLS and fixed effect model; Hausman test - a test between random effect model and fixed effect model; ***, **, and * - significant at 1%, 5%, and 10% levels respectively.

From the regression result in Table 4, it appears that the value of $R^2$ is 0.659, indicating that the model explains 65.9% of the variation in performance of DMBs in Nigeria. The same result also reveals that the model as a whole is significant (wald$\chi^2 =78.92$, $p<0.01$), indicating the validity and fit of the model utilized. In consideration of the hypothesis testing, the regression result depicts that the following explanatory variables have a significant positive association with firm performance (ROA): board size (BSZ) ($\beta=0.011$, $p<0.1$); board composition (BCOMP) ($\beta=0.011$, $p<0.05$); and risk management disclosure (RMD) ($\beta=0.011$, $p<0.01$). Hence, this result supports hypotheses 1, 2, and 5 of this study. With regards to the relationship between BSZ and ROA, the result is consistent with the agency theory and the findings of Ogege & Boloupremo (2014). This means that the larger the board size, the better the performance of DMBs in Nigeria. Regarding BCOMP and ROA, the result is also steady with the agency theory and the findings of Agrawal and Knoeber (1996) and Ali & Nasir (2014). Here, a higher proportion of nonexecutive directors on a board may increase firm performance. With consideration to RMD and ROA, the significant positive relationship obtained is in line with the expectation of the NCCG 2011 and the finding of Nahar et al. (2016). This means that firms that disclosed their risk management practices stand a better chance of accruing higher performance.
Contrastingly, there is only one explanatory variable that has a significant negative impact on firm performance viz: frequency of board meeting (BMT) ($\beta$ = -0.005, $p$ < 0.01). This result does not support hypothesis 3 and the assumption of agency theory. In the same vein, the result is consistent with findings of Vafeas (1999) and Hassan et al. (2016) while contradicting the findings of Barisua et al. (2012) and Kayani et al. (2011). The reason for this negative relationship may stem from the fact that during the meetings, the directors spend much time in performing day-to-day tasks rather than performing their oversight function on the management’s effectiveness (Lipton & Lorsch, 1992). In addition, as the frequency of board meeting goes high, the cost (for instance, refreshments, travelling fares, and remuneration of directors) of holding such meetings increases (Vafeas, 1999) which may finally affect performance. Per contra, board expertise (BEXP) has a negative, but an insignificant influence on ROA ($\beta$ = -0.059, $p$ > 0.1). This finding does not support hypothesis 4 and has contradicted the finding of Elyasiani & Zhang (2015) who documents a positive relationship between board expertise (multiple directorships) and firm performance. The reason for this result may be that the directors of DMBs with multiple directorships are busy trying to discharge their responsibilities in other boards on which they served. This may make their services less effective since they will not have full concentration on attaining the objective of a specific board.

For control variables, leverage (LEV) has a significant negative influence on ROA ($\beta$ = -0.076, $p$ < 0.01), that is the higher the leverage the lower the performance of DMBs in Nigeria. On the other hand, firm age (FAG) has a negative, but insignificant effect on ROA ($\beta$ = -0.002, $p$ > 0.1), while asset tangibility (ASTAN) has a positive, but insignificant impact on ROA ($\beta$ = 0.003, $p$ > 0.1).

### 5. Conclusion

Albeit, previous studies have documented the relationship between board characteristics and firm performance, yet, the findings remain inconclusive because of differences in economic and social settings, measurements, and organizational culture (Rabeiz, 2015). Moreover, there are various research on risk management disclosure but have paid less attention to linking it with firm performance. Therefore, this study has contributed to literature by examining the relationship between board characteristics, risk management disclosure and performance of Deposit Money Banks (DMBs) in Nigeria based on agency theory and the NCCG 2011. The study finds that board size (BSZ), board composition (BCOMP), and risk management disclosure (RMD) have a significant positive effect on the performance (ROA) of DMBs in Nigeria. Whereas, the frequency of board meeting (BMT) has a significant negative influence on performance (ROA). The result of this study further reveals that board expertise (BEXP) has a negative, but an insignificant association with performance (ROA) of DMBs in Nigeria. Specifically, the outcome of this study has provided an important information to the policy makers regarding the effectiveness of the NCCG 2011 through the disclosure of risk management practice of DMBs and via scanning some of the board characteristics (frequency of board meeting and board expertise) that have a negative relationship with performance. This may assist the regulators to the code of CG in Nigeria to review or to provide mechanisms to strengthen the existing NCCG. Moreover, policymakers will find the findings of this study indispensable because they can know the extent of the applications of NCCG in DMBs and its effectiveness. This may in a long way assist them in making various decisions as it may serve as an evaluation of management effectiveness.

However, despite the contributions of this study, it has some limitations. First, the study only concentrates on banks while there are other financial service firms (for instance, insurance firms, mortgage institutions etc.) operating in the Nigerian financial service industry. This may make the generalization of results difficult. Second, the proxies for board characteristics covered in this study may not be the only factors that influence the
Risk management disclosure: Empirical evidence from deposit money banks in Nigeria. Third, the study only dwells on one accounting-based performance measure (ROA) without considering others like ROE and net profit margin (NPM) etc. alongside ignoring market-based performance measures like Market-to-book value ratio to mention but a few. Hence, a room for future research is available to extend this study by considering other nonbanks financial service firms or nonfinancial firms. Moreover, future research can conduct a similar study by including other proxies of CG mechanisms like risk management committee structure, audit committee structure, Chief Executive Officer’s (CEO) characteristics and relate with firm performance (considering both accounting and market-based performance measures).

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References


