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CORPORATE BOARD SIZE, RISK MANAGEMENT AND FINANCIAL PERFORMANCE OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT: *This study examined the effect of corporate board size, risk management on financial performance of listed deposit money banks in Nigeria for the period of 2011-2016. The population of the study is fifteen (15) listed deposit money banks in Nigeria out of which a sample of fourteen (14) were used for the study due to the accessibility and availability of data. Corporate board size and risk management as the independent variable was proxy with numbers of board of directors, liquidity risk, credit risk and operating risk, while the return on equity(ROE) and earnings per share (EPS) were used to proxy financial performance. Data were collected from secondary source through the annual report and account of the banks for the period under study and the data was analysed using multiple panel regression techniques. The findings reveal that board size, credit risk and operating risk are significant negative effect on return on equity (ROE) and earnings per share (EPS) respectively. The study also shows that liquidity risk is negative and insignificant effect on ROE and EPS of the study banks in Nigeria. It is recommended among others that the banks should regulate their risk management practices and ensure they minimize the non-performing loan as it has been found empirically to reduce the quality of the firm's financial performance. They should also reduce their operational cost for better performance.*

KEYWORDS: Corporate board size, risk management, financial performance, banks, Nigeria

INTRODUCTION

The Central Bank of Nigeria Code of Corporate Governance 2006 is geared towards ensuring accountability of the Board and Management to the Stakeholders of the Bank so as to promote the long-term sustainability of the Bank. The board of banking industry set up various committees of which board risk management committee is inclusive to overseeing the overall risk management of the bank. The risk management is becoming an integral part for the success of almost every organization, especially for the financial sector because of their high-risk businesses, and this risks are associated with every client in the business and their own risk (Res, Sa, & Gemechu, 2016).

There is no clear consensus in the literature reviewed as to whether increased level of board members contribute positively to company financial performance (Cobus, Michael & Chris, 2015). Bank's performance is used to measure bank's overall financial health over a given period of time (Yahaya & Lamidi, 2015). According to Barbosa and Louri (2005) firms' performance as the outcome of how well a firm accomplished its business goals. Measuring of

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banks' financial performance is one of the management strategic functions aimed at satisfying the interest of shareholders and other stakeholders in a bank.

Financial institutions are exposed to a variety of risks among them; interest rate risk, foreign exchange risk, political risk, market risk, liquidity risk, operational risk and credit risk (Yimka, Taofeek, Abimbola, & Olusegun, 2015). Also in the variety of risk are solvency risk, legal/regulatory risk, counterpart risk, reputational risk, strategy risk(Audu, 2014) among others. According to (Yousfi, 2014) risk is an essential part of business, because enterprises cannot function without taking risks as business grows through risk taking. Hence, risk is related with opportunities and threat, which may harmfully affect an action or expected outcome (Audu, 2014). Therefore, Risk management in financial institutions has undoubtedly attracted more attention from the regulators, practitioners, and also academics over the last decade.

liquidity risk the potential loss arising from the bank's inability either to meet its obligations or to invest fund increases in assets as they fall due without incurring unacceptable costs or losses. This is a risk encounter by bank as result of inability to meets its financial obligation to various stakeholders such as their customer. Credit risk refers to the delay of repayment on loan agreement or the inability to pay debts by the borrower, which can affect a bank's liquidity position (Djan, Stephen, Bawuah, & Halidu, 2015). Operational risk is explained as the risk of loss resulting from inadequate or failed internal systems or from external events (Pakhchanyan, 2016). This operational risk refers to as operational expenses that reduce the profitability of banks. The justification for the used liquidity risk, credit risk and operational risk is due challenges face by deposit money banks in Nigeria in terms shortage of liquidity in the banks due to operation of treasury single account (TSA) by federal government of Nigeria which has also reduce the credit limit of banks to their customer.

Commercial banking businesses are risky ventures, hence risk-taking is an inherent element of banking operations thus making profit as one of the ways of rewarding shareholders for successful risk taking in business (Soyemi, 2014). Major bank failures have occurred due to unidentified risks within the banks. Many of these highly improbable events such as the turmoil in global commodity markets, witnessed in the second half of 2014 brought their full weight to bear on the Nigerian economy in 2015. This scenario has lead to depression in naira, high inflation rate and exchange rate and fall in oil price by 66.8% in international market (NBS, 2016). Deposit money banks represent the major players in an economy; its risk management practices are crucial issues that need to examine.

The justification of this research study is because most previous studies only focus on a single risk management performance measurement for instance, in the study of (Muriithi & Waweru, 2017), (Otieno & Nyagol, 2016) uses only liquidity risk, (Yimka et al., 2015), (Iwoye, 2012) uses only credit risk (Pakhchanyan, 2016), (Luís et al., 2011) uses only operational risk, among others. The single risk financial performance measure, may actually not give better performance measurement. From the foregoing review of relevant literature, most of the literature reviewed indicated that previous researchers only concentrated on liquidity risk and credit risks leaving out the components of operational risk. From survey of current relevant literature in 2016, it has been found that there are no studies specific to Nigeria on the link of board size, risk management and performance of listed deposit money banks in Nigeria. The studies also differs from others because 2016 data was employed recognizing the current year in the banking sector. This study has a wider scope by covering additional important variables of board size and operational risks as part of the independent variables and EPS as dependent

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which were not included by previous studies. For instance, the studies of; kamau, & Njeru, (2016), Arif Hussain, Ihsan & Hussain, (2016), Iqbal, Chaudry, qbal, & Zia ud Din, (2015) only focus on risk management variables.This makes the study more comprehensive. This study therefore intended to fill these pertinent gaps in literature.

Accordingly, the main problem of this research can be summarized in the following question: what are the different types of risks faced by listed deposit money banks in Nigeria? For prompt answer to this question, the study therefore assesses the effect of corporate board size and risk management on financial performance of listed deposit money in Nigeria. The rest of the study is structured into four sections. Section two discusses the literature, and section three the methodology, while section four cover the discussion and analysis. Concluding remarks were made in section five.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Performance of banks is of vital importance for investors, stakeholders and economy at large. For investors the return on their investments is highly valuable, and a well performing business can bring high and long-term returns for their investors (Mirza & Javed, 2013). Furthermore, financial performance of a firm will boost the income of its employees, bring better quality products for its customers, and have better environment friendly production units.

This study aims at examining the effects of corporate board size, risk management on performance. There are different types of performance measure which includes financial, operational and market performance. Studies have measure performance in different ways, ROE is refer to as financial performance measure, return on assets (ROA) is operational performance (Danoshana and Ravivathani, 2013) and Tobin's Q is measure as market performance (Kiel and Nicholson, 2003). Therefore the current study aims at using return on equity (ROE) and earning per share (EPS) to measure performance. This is because the objective of the study is the access the financial performance measure. Thus, Risk management is the identification, assessment and prioritization of risks followed by coordinated and economical application of resources to minimize, monitor, and control the probability and/or impact of unfortunate events (Njogo, 2012).

Risk management variables that is used in this study include: liquidity risk, credit risk, and operational risk, this is because most studies only focus on a single risk management performance measurement for instance, in the study of (Muriithi & Waweru, 2017), (Otieno & Nyagol, 2016) uses liquidity risk, (Yimka et al., 2015), (Iwoye, 2012) uses credit risk (Pakhchanyan, 2016), (Luís et al., 2011) uses operational risk, among others. The single risk financial performance measure, may actually not give better performance measurement. Liquidity risk is the potential loss arising from the bank's inability either to meet its obligations or to invest fund increases in assets as they fall due without incurring unacceptable costs or losses. Credit risk refers to the delay of repayment on loan agreement or the inability to pay debts by the borrower, which can affect a bank's liquidity position (Djan, Stephen, Bawuah, & Halidu, 2015). Operational risk is explained as the risk of loss resulting from inadequate or failed internal systems or from external events. (Pakhchanyan, 2016). Furthermore, Board size the total number of both the executive and non executive directors and they monitor the activities and performance of the bank through several committees among which board risk management committee (CBN corporate governance code).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Corporate Board size and Financial Performance

Board size was measured as the number of directors in the firm (Kukah, M. A, Amidu, M & Abor, J.Y, 2016) .The size of the board of directors is one of the mechanisms of corporate governance structure. This study considers board size as a variable that can influence corporate governance structure and bank performance. Numerous scholars articulate board size and banks' performance with mixed result. For instance, (Garba,& Abubakar, 2014) argued that increase in the size of the board does not have any significant impact on firm performance. On the other hand Akpan & Amran, (2014), Zayed, (2017) revealed that large board size is beneficiary to the company in terms of attracting resources and contributions to the financial performance of the company. Past studies such as Monks and Minow (2004) revealed that larger board put more time and resources to oversee management action. Researchers proposed that boards with small size enhance the monitoring abilities of management (Khanchel, 2007; Yermack, 1996). They found that monitoring ability has a negative association to the size of the board. Studies have found different results when examined board size.

In supporting small size view, Jensen (1993) argued that when board size increase above seven or eight the efficiency of board decreases and CEO of the company lose control on the board. According to Agency theory, firms with the large size of the board usually have more value. This is because the management of companies whose size of the board is large have less CEO domination, have more efficient monitoring which increases the overall firm performance (Fitriya and Locke, 2012; Singh and Harianto, 1989). Since the influence of the size of the board on the performance of the bank show inconsistent results. This study assumed that firms with the large board have a broad range of access to the resources and have effective management monitoring and expertise. Consequently, the study will empirically test the hypothesis below

Ho_4: Board size has no significant effect on financial performance of listed deposit money bank in Nigeria.

Risk management

Liquidity Risk and Financial Performance

Liquidity Risk is a risk of insufficient liquid assets to meet payouts from policies (surrender, expenses, maturities, etc.), forcing the sale of assets at lower prices, leading to losses, despite company being solvent (kamau, & Njeru, 2016). According to (Yousfi, 2014), view liquidity risk as the potential loss arising from the bank's inability either to meet its obligations, or incurring unacceptable costs or losses due to the fund invested to increase its assets as they fall due.

Previous studies such as Arif Hussain, Ihsan & Hussain, (2016) assess the effect of risk management on the performance of both large banking institutions and small banking institutions from 2005-2014 and random effect OLS regression was used to analyze the data. It was also concluded that liquidity risk is one of the key drivers of profitability in large banks of Pakistan. In addition, Iqbal, Chaudry, qbal, & Zia ud Din, (2015) examine the impact of liquidity risk on firm specific factors; A case of four Islamic bank of Pakistan over the period 2000-2013. Their findings reveal that profitability is negatively co integrated with liquidity risk, exist strong positive significance of return on assets on liquidity risk. Also,

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Dezfouli, Hasanzadeh &. Shahchera (2014) examined the effectiveness of liquidity risk on banks profitability of eighteen Iranian banking system for the period of 2005-2011. and using the following proxies for liquidity (Non-Performing loans) ratios, liquidity ratios, liquidity gap ratio, capital ratio) while performance was proxy with return on asset and return on equity. The study revealed that there is a significant relation between liquidity risk and performance. Similarly, Ail et al., (2013) examined the effect of liquidity risk on the performance of commercial banks of Iran during the years 2003 to 2010. The results revealed that liquidity risk will cause to weaken the performance of bank. (Hamza, 2017) revealed that liquidity ratio (LR) have significant impact on return on assets (ROA). Base on the above argument and in line with the shiftability theory of liquidity, the study hypothesizes that:

Ho_1: Liquidity risk has no significant effect on financial performance of listed deposit money bank in Nigeria.

Credit Risk and Financial Performance

Credit risk refers to the delay of repayment on loan contract or the inability of a borrower to pay its debts, which can cause cash flow problems and affect a bank's liquidity position (Djan, Stephen, Bawuah, & Halidu, 2015). Credit risk arises whenever a lender is exposed to loss from a borrower, counterparty, or an obligator who fails to honour their debt obligation as they have contracted (Luy, 2010). Credit risk is the biggest risk faced by banks and financial intermediaries (Gray, Cassidy, & RBA., 1997). The indicators of credit risk include the level of bad loans (Non- performing loans), problem loans or provision for loan losses (Jiménez & Saurina, 2006).

Studies conducted by (Hamza, 2017) assessed the impact of credit risk management on performance of commercial banks in Pakistan. The findings revealed that credit risk management is inversely associated with bank performance. The result revealed that Non-performing loan ratio (NPLR) variables have significant impact on return on assets (ROA). Similarly, Olamide et al., (2015) study the effect of risk management on bank's financial performance in Nigeria. The Ordinary least square Regression was employed. The study observed that there exist a negative non-significant relationship between risk management proxies of credit risk variables (Non performing loan ratio, capital ratio and Loan to Total Deposit) and bank's performance as captured with return on equity. Samuel, (2015) examined the effect of credit risk on commercial banks performance. The result shows that the ratio of loan and advances to total deposit negatively relate to profitability though not significant at 5% and that the ratio non-performing loan to loan and advances negatively relate to profitability at 5% level of significant.

Gizaw et al., (2015) examine the impact of credit risk on profitability of 8 commercial banks in Ethiopia for the year (2003-2004). The data were analyzed using panel data regression model and the result showed that credit risk measures: non-performing loan, loan loss provisions and capital adequacy have a significant impact on the profitability of commercial banks in Ethiopia. Furthermore, study conducted by Poudel,(2012) examine the impact of credit risk management on financial performance of 31 commercial banks in Nepal from 2001 - 2011. This study try to explore various parameters pertinent to credit risk management such as; default rate, cost per loan assets and capital adequacy ratio. The regression result revealed that all the credit risk parameters have an inverse impact on banks' financial performance. The study hides on the credit market theory and hypothesizes that:

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Ho_2: Credit risk has no significant effect on Financial Performance of listed deposit money bank in Nigeria.

Operating Risk and Financial Performance

Operational risk is defined as the risk of loss resulting from inadequate or failed internal processes or from external events. This type of risk generates operational losses and the losses incured are a cost to the bank. Hence, the pricing and the consequent measurement of the operational risk capital charge has to be adequate to cover for these losses. Operation risk is now accepted as a major risk contributor to losses in the financial institutions as seen in Baring bank and Daiwa bank in America that collapsed as a result of malfunctioning of their operation (Leavoy, 2015).

Yousfi, (2014) assessed the impact of risk management practices on Jordanian Islamic banks' performance. He used operational risk (efficiency, income and cost) as explanatory variables while return on assets (ROA) and return on equity (ROE), are utilized as dependent variables for the period of fifteen years from 1998 to 2012. The results reveal that operational risk management practices have a negative and significant statistical impact on performance. kamau, & Njeru, (2016) conducted a study on determinant of financial performance of six (6) Listed Insurance Companies in Kenya for the period 2012-2015 and found that operational risks have negative effect on the financial performance. Soyemi, (2014) examine the risk management practices and financial performance: evidence from the Nigerian deposit money banks (DMBs) in the 2012 financial year. The study used secondary data gathered through content analysis of the selected banks' annual reports. The findings revealed that operating risk variables significantly accounted for variations in the financial performance in both models. Another study by (Hoseininassab et al., 2013) examine the effects of Risk Parameters on banking system efficiency. Fifteen (15) banks were selected over the last six years (2005-2011). The study used two popular models: parametric (SFA) method economic basis and nonparametric (MEA) method mathematical optimization basis to evaluate bank efficiency. The results showed that each of the operational risks indicator and their specific coefficient, significantly affect on efficiency. The study supported by Extreme value theory and hypothesizes that:

Ho_3: Operational risk has no significant effect on Financial Performance of listed deposit money bank in Nigeria.

Theoretical Framework

This study is therefore underpinned by agency theory, stakeholder theory, Extreme value theory, and Credit market theory.

Extreme value theory

Extreme value theory by Leonard Tippet in the 1950's is the theory of modeling and measuring events which occur with very small probability. This theory expand the knowledge of operational risk management as it indicate the securitization of risk and alternative risk transfer highlight the convergence of finance at the product level. Several studies have used this theory among them are (makokha et al., 2016), (kamau, F & Njeru, 2016) that conduct a study on the effect of operational risk management practices on the financial performance.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Credit Market Theory

A model of the neoclassical credit market postulates that the terms of credits clear the market. If collateral and other restrictions (covenants) remain constant, the interest rate is the only price mechanism. With an increasing demand for credit and a given customer supply, the interest rate rises, and vice versa. It is thus believed that the higher the failure risk of the borrower, the higher the interest premium (Ewert, 2000). The theory is supported in the study by (Samuel, 2015) on the effect of credit risk on the performance of commercial banks in Nigeria.

The Shiftability Theory of Liquidity

The Shiftability theory liquidity replaced the commercial loan theory and was supplemented by the doctrine of anticipated income. Formally developed by Harold G, Moulton in 1915, the shiftability theory held that banks could most effectively protect themselves against massive deposit withdrawals by holding, as a form of liquidity reserve, credit instruments for which there existed a ready secondary market. The liquidity shiftability theory provides for explicit understanding of how the liquidity risk affects the financial performance using liquidity coverage and net stable funding ratios as stated by new Basel III framework. The analysis of this study provides the information as to whether liquidity maintained by the commercial banks affect the returns to the shareholders (Muriithi, 2016).

METHODOLOGY

The population of this study consists of all the fifteen (15) listed Deposit Money Banks as contained on Nigeria stock exchange as at 2017 and the sample size is fourteen (14). Skye bank was excluded in the study due to accessibility and availability of data for the study. Data were obtained from secondary sources through the annual report and account of the study bank from 2011 to 2016. Multiple regression techniques were used for the analysis through the use of STATA 13. Multiple linear model is built. The model encapsulates the contribution of board size, liquidity risk, credit risk and operational risk on financial performance given as;

$ROE_{it} = \beta 0 + \beta 1BS_{it} + \beta 2LR_{it} + \beta 3CR_{it} + \beta 4OR_{it} + \varepsilon$ ----------1

$EPS_{it} = \beta 0 + \beta 1BS_{it} + \beta 2LR_{it} + \beta 3CR_{it} + \beta 4OR_{it} + \varepsilon$----------2

Where: ROE= Return on equity, EPS= Earning Per Share, BS = Board size, LR= Liquidity risk, CR= Credit risk, OR= Operational risk, Є =is the error component for company i at time t assumed to have mean zero E [Є it] = 0, β0= Constant, β= 1, 2,…4 are parameters to be estimate; i = Banks, i = 1. . . 15; and t = the index of time periods and t = 1. . . 5.

Measurement of Variables:

Dependent Variables

This study aims at examining the effects of corporate board size, risk management on financial performance, to do so the study used return on equity (ROE) and earning per share (EPS) to measure financial performance (Danoshana and Ravivathani, 2013). Return on equity (ROE) is measure as; profit after tax/total equity and Earnings per share (EPS) is measure as; net profit after tax attributable to equity holders / number of outstanding ordinary shares.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Independent Variables

The independent variables which include (corporate board size) and is measured using the number of board of directors. The risk management variables which include: liquidity risk, credit risk and operational risk. The liquidity risk is measure as the ratio of loan and advance to total deposit of the bank. More so, credit risk is explain as the ratio non performing loans to total loans and the operational risk which is measure as the ratio of operating cost (expenses) to operating income

RESULT AND DISCUSSIONS

The descriptive statistics, correlation matrix and then the summary of Regression Result are presented and analyzed in this study.

Table 4.1: Descriptive Statistics of the variables

Variables	Minimum	Maximum	Mean	Std. Dev.
ROE	-3.9432	0.308	0.0268238	0.4986466
EPS	-14.06	4.12	0.5765559	1.953011
Board Size	6	20	15	2.729616
Liquidity Risk	0.3157	1.0635	0.6602548	0.1584148
Credit Risk	0.002	0.2018	0.0405119	0.0375789
Operating Risk	0.08047	2.58554	0.747343	0.2816468

Source: stata $_{13}$ out put result

Table 4.1 above indicates that the average value of return on equity (ROE) and earnings per share are 0.0268238 and 0.5765559 which signifies that the average financial performance of listed banks in Nigeria are 2% and 57% with a standard deviation of 0.4986466 and 1.953011 respectively and the minimum and maximum values of ROE -3.9432 and 0.308, and for EPS is -14.06 and 4.12 respectively. Board size shows a minimum and maximum value of 6 and 20 respectively, the average mean value of board size is 15 with a standard deviation of 2.729616. Hence, standard deviation result which shows a highly deviated size may have significant impact on the financial performance.

Table 4.1 indicates that on average the liquidity risk (LR) during the period of the study is 0.6602548 with standard deviation of 0.1584148. The minimum and maximum values of liquidity risk are 0.3157 and 1.0635 respectively. Furthermore, the credit risk has an average score of 0.0405119, which indicates the ratio of bank non performing loan to total loan at 4%, this implied that there is low rate of non performing customer. It further shows a standard deviation of 0.0375789, the minimum value of 0.0002 and a maximum value 0.2018. This explains that some banks have high level of nonperforming loan to total loan and some others do not. Finally, the operating risks of the banks show minimum and maximum values of 0.08047 and 2.58554 respectively. This implies that for the banks to achieve financial performance, their operating expenses to income should not exceed 0.08047. The average operational risk of the banks is 0.747343. This shows that any value below 0.747343 will result to loss by banks with a standard deviation of 0.2816468.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Correlation Matrix

Variables	ROE	EPS	BS	LR	CR	OPR
ROE	1.0000					
EPS						
	0.2411*	1.0000				
BS	0.0272					
LR	-0.0667	-0.1595	1.0000			
	0.5468	0.1473				
CR			-0.3207	1.0000		
	0.2511*	0.2703*	0.0029			
OPR	0.0213	0.0129				
			0.0739	-0.4371*		
	-0.5387*	-0.5138*	0.5039	0.0000	1.0000	
	0.0000	0.0000				
			-0.0468	-0,3889	0.5135*	
			0.6726	0.0003	0.0000	
	-0.4559*	-0.7281*				
	0.0000	0.0000				1.0000

Source: stata $_{13}$ out put result

Table 4.2 above show a correlation matrix of the dependent and independent variables in this study, ROE and EPS is positive and significant related to liquidity risk (r=0.2511, p-value=0.0213 and r=0.2709, p-value=0.0129) respectively. Furthermore, ROE and EPS are significantly negative related to credit risk and operating risk at 1% level of significant. More so, Liquidity risk is reported to be negative significant related with credit risk at 1% level (r= -0.4371 and p.value of 0.0000). In addition, credit risk is significant and positive related to operating risk (r= -0.5145, p-value of 0.0000) at 1% level of significant. The results show that these four independent variables can be together in the same model because none the value is above 0.8, meaning that there is no multicollinearity problem (Gujarati, 2004).

Regression Results

Robustness Tests

Table 4.3 below indicate that multicolinearity test and that VIF are constantly smaller than 10 and VIF less than 1 respectively indicating absence of muticolinearity. Furthermore, the result obtained from the heteroscedasticity test conducted in this study for both ROE (model one) and EPS (model two), (chi-square= 419.94, p-value = 0.0004 and chi-square=63.09, p-value=0.0000) respectively indicating the present of heteroscedasticity. Therefore, the study decided to conduct fixed and random effect test which will take care of the individual differences within units.

Model One: $ROE_{it} = \beta_0 + \beta_1 BS_{it} + \beta_2 LR_{it} + \beta_3 CR_{it} + \beta_4 OR_{it} + \varepsilon$ ----------1

In table 4.3 shows that the result of the Hausman test revealed a Chi2 value of 78.22 with p-value of 0.0000 which is statistically significant at 1% level. This implies that the test considered the fixed effect as the most appropriate estimator. Also, findings reveal that (R^2 overall is 0.2868) indicating that 29% variation of Return on equity (ROE) is predicted by

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joint contribution of board size, liquidity risk, credit risk and operating risk. The rest of 71% is explained by other corporate board composition and risk management variables that were not included in this research model.

Model Two : EPSit= β0 + β1BSit+ β2LRit + β3CRit + β4ORit + ε ----------2

Table 4.3 below shows the result of the Hausman test of Chi2 value of 2.42 with p-value of 0.6594 which is insignificant at 5% level. This implies that the test considered the random effect as the most appropriate estimator. More so, (R^2 overall = 0.5983) 60% variation of Earning per share (EPS) is predicted by joint contribution of board size, liquidity risk, credit risk and operating risk. The rest of 40% is explained by other variables that were not included in this research model.

Table 4.3

	Model one (Fixed Effect Multiple Regression Results)			**Model two (Effect Multiple Regression Results)**			**Collineraity statistics**	
Variables	**Coeff**	**T-value**	**P-value**	**Coeff**	**T-value**	**P-value**	**VIF**	**1/VIF**
Board size	-0.063819	-2.46	0.016	-0.104085	-1.64	0.101	1.16	0.862511
Liquidity risk	-0.476031	-1.34	0.186	-1.841908	-1.86	0.063	1.49	0.669946
Credit risk	-9.259277	-5.63	0.000	-9.969856	-2.24	0.025	1.48	0.676367
Operating risk	-0.286229	-1.54	0.127	-5.152084	-9.80	0.000	1.47	0.679884
Constant	1.860851	3.36	0.001	7.564865	5.15	0.000		
Mean VIF							1.40	
R^2 overall	0.2868			0.5983				
F-Statistics	13.54		0.0000	150.72		0.0000		

Source: stata $_{13}$ output result* Significant at 5%

ROE= 1.860851–0.0638196BS - 0.4760316LR - 9.259277CR- 0.2862297OPR --------(1)

Hypothesis 1: Board size has no significant effect on financial performance. The result in table 4.3 revealed that board size has a negative and significantly effect on the return on equity (ROE). The beta coefficient is -0.0638196 and p-value of 0.0165 which is significant at 5% level. The implication of this finding is that the bigger the board size of the banks the lesser the quantum of returns to shareholders. The result provided a basis for rejecting the hypothesis, which states that board size has no significant effect on financial performance. The finding is contrary with the findings of (Garba,& Abubakar, 2014).

Hypothesis 2, Liquidity risk has no significant effect on return on equity. It was found that the beta coefficient (β) of -0.4760316 and ρ= 0.186. The null hypothesis was accepted and concluded that company liquidity risk has no significant negative effect on return on equity. This implies that when liquidity increase by 1% will lead to a decrease in the returns on shareholder fund by 47%. The result suggested that the banks in Nigeria should reduce its concentration on loan and increase customer deposit through marketing strategy. This finding is aligned with the study of (Muriithi & Waweru, 2017).

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Hypothesis 3, credit risk has no significant effect on the Return on equity. The credit risk has a beta coefficient of -9.259277 with p-value of 0.000, therefore credit risk has a significant negative effect on return on equity. The studies therefore reject the null hypothesis. This implies that for every 1% increase of credit risk (ie non-performing loan), return on equity of the banks will decrease by 9.2%. The result of study is supported by the study of Yousfi, (2014),

Hypothesis 4: Operating risk has no significant effect on the return on equity. The beta coefficient is -0.2862297 with a p-value of 0.127 concludes that operating risk has a negative and insignificant effect on return on equity. The study therefore accepted the null hypothesis and. This implies that for every 1% increase in operating risk, returns on equity of the banks will reduces by 29%. This study contradicts the finding of Meshack & Mwaura, (2016).

EPS= 7.564865–0.1040851BS - 1.841908LR - 9.969856CR- 5.152084OPR --------(2)

Hypothesis 1: Board size has no significant effect on the earnings per share (EPS). The result revealed that board size has a negative and insignificantly effect on the EPS. The beta coefficient of the variables is -0.1040851 and the p-value of 0.101. The implication of this finding is that the bigger the size of the board, the lesser the earnings per share to ordinary shareholders. The result provided a basis for accepting the hypothesis, which states that board size has no significant effect on EPS. The finding is contradicting the findings of Zayed, (2017).

Hypothesis 2, Liquidity risk has no significant effect on earnings per share (EPS). The beta coefficient (β) of -1.841908 and ρ= 0.063, which reveal that liquidity risk has a negative but significant effect on EPS at 10% level of significant. This implies that when liquidity increase by 1%, the EPS to ordinary shareholder of the banks reduce by 1.8%. The studies therefore reject the null hypothesis at 10%. The result suggested that the banks in Nigeria should reduce its concentration on loan and increase customer deposit through marketing strategy. This finding is aligned with the study of (Hussain, Ihsan, & Hussain,2016).

Hypothesis 3, credit risk has no significant effect on earnings per share (EPS). The credit risk has a beta coefficient of -9.969856 with p-value of 0.025. The study therefore rejects the null hypothesis and concludes that credit risk has negative and significant effect on EPS. This implies that for every 1% increase of credit risk (ie non-performing loan), EPS of the ordinary shareholder decrease by 9.9%. The study is therefore supported by the study of (kamau & Njeru, 2016).

Hypothesis 4: Operating risk has no significant effect on earnings per share (EPS). The results of the study reveal a coefficient value of -5.152084 with p-value of 0.000. this implies that operating risk is negative and significant influencing the EPS at 1% level. The studies therefore reject the null hypothesis. This implies that for every 1% increase of operating risk of banks in Nigeria, EPS to ordinary shareholder of the banks will decrease by 5.2%. Sutrisno, (2016) is supported in his study.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this study, board size and credit risk has a negative and significant effect on ROE. Furthermore, liquidity risk, credit risk and operational risk is significantly and

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

negative influencing the EPS of the study bank. The operating risk affect the EPS negatively but significant at 1%. This implies that that high expenses rate incurred by banks will lead to reduction in the quantum of profit to the shareholders of the banks. Also the credit risk position of the banks reduces the banks financial performance.

The study recommends that there is need for the management of listed deposit money bank to control their board size, risk management attributes because the study revealed it effect on the financial performance. Furthermore, banks should discourage unnecessary expenses especially when such expenses will not yield any returns and maintain a good liquidity position. Banks in Nigeria to reduce their board size as it were found that there was a significant negative effect on ROE of the listed deposit money banks in Nigeria.

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APPENDIX I

Table 3.2: Sample Banks for the period 2011 to 2016

1. Access Bank Plc	8. Stanbic IBTC Bank Limited
2. Diamond Bank Pls	9. Sterling Bank
3. Ecobank Nigeria Plc	10. United Bank for Africa
4. Fidelity Bank Plc	11. Union Bank Of Nigeria Plc
5. First Bank Of Nigeria Plc	12. Unity Bank Plc
6. First City Monument Bank Plc	13. Wema Bank Plc
7. Guaranty Trust Bank Plc	14. Zenith Bank Plc

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

Appendix II

```
  ___  ____  ____  ____  ____ (R)
 /__    /   ____/   /   ____/
___/   /   /___/   /   /___/   13.0   Copyright 1985-2013 StataCorp LP
  Statistics/Data Analysis             StataCorp
                                       4905 Lakeway Drive
     MP - Parallel Edition             College Station, Texas 77845 USA
                                       800-STATA-PC        http://www.stata.com
                                       979-696-4600        stata@stata.com
                                       979-696-4601 (fax)

3-user 8-core Stata network perpetual license:
       Serial number:  501306208483
         Licensed to:  lasisi
                       kaduna

Notes:
      1.  (/v# option or -set maxvar-) 5000 maximum variables
      2.  New update available; type -update all-

Checking for updates...
(contacting http://www.stata.com)
host not found
http://www.stata.com did not respond or is not a valid update site
unable to check for update; verify Internet settings are correct.

. *(8 variables, 84 observations pasted into data editor)

. summarize roe eps bs lr cr opr

    Variable |        Obs        Mean    Std. Dev.       Min        Max
-------------+---------------------------------------------------------
         roe |         84    .0268238    .4986466    -3.9432       .308
         eps |         84    .5765559    1.953011     -14.06       4.12
          bs |         84    14.58333    2.729616          6         20
          lr |         84    .6602548    .1584148      .3157     1.0635
          cr |         84    .0405119    .0375789      .0002      .2018
-------------+---------------------------------------------------------
         opr |         84     .747343    .2816468     .08047    2.58554

. pwcorr roe eps bs lr cr opr, sig star(5)

             |      roe      eps       bs       lr       cr      opr
-------------+------------------------------------------------------
         roe |   1.0000
             |
             |
         eps |   0.2411*  1.0000
             |   0.0272
             |
          bs |  -0.0667  -0.1595   1.0000
             |   0.5468   0.1473
             |
          lr |   0.2511*  0.2703* -0.3207*  1.0000
             |   0.0213   0.0129   0.0029
             |
          cr |  -0.5387* -0.5138*  0.0739  -0.4371*  1.0000
             |   0.0000   0.0000   0.5039   0.0000
             |
         opr |  -0.4559* -0.7281* -0.0468  -0.3889*  0.5135*  1.0000
             |   0.0000   0.0000   0.6726   0.0003   0.0000
```


ISSN 2053-4086(Print), ISSN 2053-4094(Online)

```
. regress roe bs lr cr opr
```

Source	SS	df	MS	Number of obs =	84
				F(4, 79) =	10.10
Model	6.98368437	4	1.74592109	Prob > F =	0.0000
Residual	13.6541356	79	.17283716	R-squared =	0.3384
				Adj R-squared =	0.3049
Total	20.63782	83	.248648434	Root MSE =	.41574

roe	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
bs	-.0121148	.018001	-0.67	0.503	-.0479448	.0237152
lr	-.182615	.3502614	-0.52	0.604	-.8797929	.514563
cr	-5.619348	1.483594	-3.79	0.000	-8.572368	-2.666327
opr	-.4676458	.1964976	-2.38	0.020	-.8587645	-.0765271
_cons	.9012121	.4737702	1.90	0.061	-.0418038	1.844228

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roe

         chi2(1)      =   419.94
         Prob > chi2  =   0.0000

. estat vif
```

Variable	VIF	1/VIF
cr	1.49	0.669946
lr	1.48	0.676367
opr	1.47	0.679884
bs	1.16	0.862511
Mean VIF	1.40	

```
. regress eps bs lr cr opr
```

Source	SS	df	MS	Number of obs =	84
				F(4, 79) =	30.45
Model	192.027607	4	48.0069017	Prob > F =	0.0000
Residual	124.555161	79	1.57664761	R-squared =	0.6066
				Adj R-squared =	0.5866
Total	316.582768	83	3.81425022	Root MSE =	1.2556

eps	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
bs	-.1642497	.0543681	-3.02	0.003	-.2724667	-.0560326
lr	-2.050712	1.057891	-1.94	0.056	-4.156392	.0549685
cr	-11.07841	4.480886	-2.47	0.016	-19.99739	-2.159429
opr	-4.813026	.5934799	-8.11	0.000	-5.994318	-3.631733
_cons	8.371644	1.430924	5.85	0.000	5.523462	11.21983

```
. estat hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of eps

         chi2(1)      =    63.09
         Prob > chi2  =   0.0000

. estat vif
```

Variable	VIF	1/VIF
cr	1.49	0.669946
lr	1.48	0.676367
opr	1.47	0.679884
bs	1.16	0.862511
Mean VIF	1.40	

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

```
. xtset firms year
       panel variable:  firms (strongly balanced)
        time variable:  year, 2011 to 2016
                delta:  1 unit

. xtreg roe bs lr cr opr, fe

Fixed-effects (within) regression               Number of obs      =        84
Group variable: firms                           Number of groups   =        14

R-sq:  within  = 0.4507                         Obs per group: min =         6
       between = 0.1357                                        avg =       6.0
       overall = 0.2868                                        max =         6

                                                F(4,66)            =     13.54
corr(u_i, Xb)  = -0.4362                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          bs |  -.0638196    .025905    -2.46   0.016    -.1155406   -.0120986
          lr |  -.4760316   .3558724    -1.34   0.186    -1.186554    .2344906
          cr |  -9.259277   1.643915    -5.63   0.000    -12.54146   -5.977095
         opr |  -.2862297   .1852953    -1.54   0.127    -.6561838    .0837244
       _cons |   1.860851   .5544697     3.36   0.001     .7538165    2.967886
-------------+----------------------------------------------------------------
     sigma_u |  .32602532
     sigma_e |  .34827638
         rho |  .46703721   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(13, 66) =     3.58              Prob > F = 0.0003

. estimates store fixed

. xtset firms year
       panel variable:  firms (strongly balanced)
        time variable:  year, 2011 to 2016
                delta:  1 unit

. xtreg roe bs lr cr opr, re

Random-effects GLS regression                   Number of obs      =        84
Group variable: firms                           Number of groups   =        14

R-sq:  within  = 0.4344                         Obs per group: min =         6
       between = 0.1989                                        avg =       6.0
       overall = 0.3241                                        max =         6

                                                Wald chi2(4)       =     48.18
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         roe |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          bs |  -.0308723    .020603    -1.50   0.134    -.0712534    .0095088
          lr |  -.3367519   .3428486    -0.98   0.326    -1.008723    .3352191
          cr |  -7.461517   1.517854    -4.92   0.000    -10.43646   -4.486578
         opr |  -.3517016   .1842182    -1.91   0.056    -.7127628    .0093595
       _cons |   1.264509    .492761     2.57   0.010     .2987148    2.230302
-------------+----------------------------------------------------------------
     sigma_u |  .19350663
     sigma_e |  .34827638
         rho |  .23588585   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimates store random

. hausman fixed random

                 ---- Coefficients ----
              |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
              |    fixed        random       Difference          S.E.
--------------+----------------------------------------------------------------
          bs  |  -.0638196    -.0308723       -.0329473         .015703
          lr  |  -.4760316    -.3367519       -.1392797        .0953938
          cr  |  -9.259277    -7.461517       -1.797761        .6313284
         opr  |  -.2862297    -.3517016        .0654719          .01995
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       78.22
                Prob>chi2 =      0.0000
```


ISSN 2053-4086(Print), ISSN 2053-4094(Online)

```
. xtset firms year
       panel variable:  firms (strongly balanced)
        time variable:  year, 2011 to 2016
                delta:  1 unit

. xtreg eps bs lr cr opr, fe

Fixed-effects (within) regression               Number of obs      =        84
Group variable: firms                           Number of groups   =        14

R-sq:  within  = 0.6806                         Obs per group: min =         6
       between = 0.3876                                        avg =       6.0
       overall = 0.5827                                        max =         6

                                                F(4,66)            =     35.16
corr(u_i, Xb)  = -0.1032                        Prob > F           =    0.0000

------------------------------------------------------------------------------
         eps |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          bs |  -.0561285   .0761376    -0.74   0.464    -.2081421    .0958851
          lr |  -1.767962   1.045948    -1.69   0.096    -3.856266    .3203408
          cr |  -9.510252   4.831647    -1.97   0.053    -19.15695    .1364433
         opr |  -5.240565   .5446035    -9.62   0.000    -6.327901   -4.153229
       _cons |    6.86418   1.629648     4.21   0.000     3.610483    10.11788
-------------+----------------------------------------------------------------
     sigma_u |  .90316648
     sigma_e |  1.0236228
         rho |  .43772679   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(13, 66) =     4.07              Prob > F = 0.0001

. estimates store fixed

. xtset firms year
       panel variable:  firms (strongly balanced)
        time variable:  year, 2011 to 2016
                delta:  1 unit

. xtreg eps bs lr cr opr, re

Random-effects GLS regression                   Number of obs      =        84
Group variable: firms                           Number of groups   =        14

R-sq:  within  = 0.6784                         Obs per group: min =         6
       between = 0.4383                                        avg =       6.0
       overall = 0.5983                                        max =         6

                                                Wald chi2(4)       =    150.72
corr(u_i, X)   = 0 (assumed)                    Prob > chi2        =    0.0000

------------------------------------------------------------------------------
         eps |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          bs |  -.1040851   .0633725    -1.64   0.101     -.228293    .0201228
          lr |  -1.841908   .9907415    -1.86   0.063    -3.783726    .0999094
          cr |  -9.969856   4.453381    -2.24   0.025    -18.69832   -1.241389
         opr |  -5.152084    .525887    -9.80   0.000    -6.182804   -4.121365
       _cons |   7.564865   1.468914     5.15   0.000     4.685845    10.44388
-------------+----------------------------------------------------------------
     sigma_u |  .82239247
     sigma_e |  1.0236228
         rho |  .39227216   (fraction of variance due to u_i)
------------------------------------------------------------------------------

. estimates store random

. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
          bs |  -.0561285    -.1040851        .0479566        .0422002
          lr |  -1.767962    -1.841908        .0739458        .3353196
          cr |  -9.510252    -9.969856        .4596043        1.874089
         opr |  -5.240565    -5.152084       -.0884801        .1415482
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(4) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =         2.42
                Prob>chi2 =       0.6594
```


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