Board Structure and Asset Quality Of Listed Deposit Money Banks In Nigeria

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Abstract. *Board Structure (Board Size and Board Independence) of banks is an essential ingredient for ensuring healthy financial intermediation as well as effective management of banks' asset quality. However, the asset quality of banks in Nigeria continues to deteriorate even amidst various efforts by regulatory authorities to sanitize the Nigerian banking industry. It is on the strength of this backdrop that this study examined the impact of Board structure (Board size and Independence) on the asset quality NPL and LDR) of listed deposit money banks in Nigeria for a period of 10 years (2008-2017). Data for the study were quantitatively retrieved from the annual reports and accounts of the fifteen (15) studied banks. Various robustness tests were carried out to ascertain; the existence of multi-collinearity or otherwise, fitness of the model and to establish the appropriate regression analysis that befits the study. Descriptive statistics, correlation and OLS Robust regression were used to describe and analyze the data. It was found that board structure proxies showed no significant impact on Asset Quality. The study therefore recommended among others that; board independent directors should be encouraged to take their responsibilities seriously in order to help improve banks' asset quality.*

Keywords. *Board Structure, Asset Quality, Board Independence, Board Size, Non Performing Loan, Deposit Money Banks*

INTRODUCTION

All over the world organizations continuously strive to improve the mode, structure, process and architecture of their operations in order to grow the organization and remain competitive. Achieving this requires good corporate governance particularly where ownership is separated from management especially in the banking industry where funds are mobilized from surplus sectors to deficit sectors of the economy through financial intermediation. The relationship between corporate governance and corporate performance has received tremendous attention from both academics and practitioners as a result of continuous corporate failure across the globe which threatened investors' confidence.

Demaki (2011) posited that the crisis that rocked United States of America Energy Corporation (ENRON) in 2001 and the crash in the sub-prime mortgage institution which led to the global financial crisis were all due to corporate governance failure. Alfaki (2007) added that, the East Asian financial crisis was as a result of poor corporate governance in the financial system and that the crisis had some painful economic and social implications on the region.

According to Ahmad (2013), the contagious financial crisis which started in America, spread to other parts of the world and Africa, particularly Nigeria was not speared as the crisis unleashed untold financial distress on many 'too big to fall' financial institutions.

This position was further alluded to by the Securities and Exchange Commission (SEC) in 2003, that financial sector lacks corporate governance as a result of the fact that, only 40% of quoted companies in the Nigeria

Stock Exchange (SEC) including banks have recognized code of corporate governance. Consequently, the commission in 2003 rolled out code of best practices to guide the operations of quoted companies. The continuous failure of financial institutions in Nigeria as a result of poor application or non-existence of effective corporate governance mechanisms and its multiplier effects on the real sector of the economy remain unhealthy for a developing nation like Nigeria (Daniya, Adeyeye, Ndibe & Dokochi, 2016).

According to Mohammed (2012), poor application of corporate governance has adverse effects on asset quality as managers continue to give loans without following the laid down rules. Also, among several factors which account for continuous distress and poor performance in banks, asset quality remains the hall-mark (Abdulatif, et al., 2014).
Ben, Olufemi, Patrick, and James (2010) reported that, the Central Bank of Nigeria between August and October, 2009 dismissed eight (8) chief executives and executive directors of some Nigerian banks due to issues related to poor asset quality resulting from failure to observe corporate governance principles, having conducted investigation to ascertain the soundness or otherwise of financial institutions in Nigeria. The report of the investigation revealed that, banks that were found culpable have acted in manners detrimental to the interest of depositors and shareholders.

In order to sanitize the banks and salvage them from total collapse owing to increasing rate poor asset quality, the Central Bank of Nigeria (CBN) came up with various institutional arrangements aimed at protecting investors and depositors of their hard earned investment from the ungodly practices of managers and directors of banks in Nigeria. According to Olayinka (2010), prominent among the institutional arrangement was the issuance of code of corporate governance in 2006 to complement the existing corporate governance code and the provisions of the 2006 code of corporate governance were considered indispensable in achieving viable and successful banking practice in Nigeria.

Since the issuance of the code of corporate governance, several researchers have examined its effects on corporate performance especially in the banking industry. Existing literature on corporate governance concentrated on measuring various aspects of banks' performance. However, asset quality being a vital aspect of bank operational activities has not been given the desired attention in the literature.

In order to enhance the quality of assets of banks and maintain healthy agency relationship, the structure of the board which has to do with board size and board independence is indispensable (Ping-Fu, 2014). It is on the strength of this background that this study examined the impact of Board Structure on the asset quality of deposit money banks listed on the Nigeria stock exchange.

Based on the foregoing, this study has the primary objective of examining the impact of Board Structure on asset quality of listed deposit money banks in Nigeria. Other specific objectives are:
To determine the impact of Board Size on the Asset Quality of deposit money banks in Nigeria and to ascertain the impact of Board Independence on Asset Quality of deposit money banks in Nigeria.

This paper is structured into five parts: Introduction as above, Review of relevant literature, Methodology, Results and Discussion and Conclusion/ Recommendations.

LITERATURE REVIEW
This segment of the study will review relevant literature in the area of corporate governance with particular emphasis on board structure and asset quality of deposit money banks. Issues to be discussed herein will be done conceptually, theoretically and empirically.

The Concept of Asset Quality of Banks
A stable banking system is required for efficient financial intermediation. Banks unlike manufacturing companies sell credit, and it is through the sale of credit that profit

is made via interest charged on loans. Loans and advances represent an important assets owned by the banks. Hence, the need to effectively manage it is core to achieving the objective of any bank (Mabvure, Gwangwava, Faitira, Mutibvu & Kamoyo, 2012).

As banks continue to trade on credit/loan, they are always vulnerable to risk of default from borrowers (Mabvure et al., 2012). Among the risks faced by banks, credit risk plays a major role in bank's financial performance when the "product" (Loan) it sells fails to yield income. Hence, the bank is meant to face high level of non-performing loans which further deteriorates its asset quality (Drehman, Soresen & Stringa 2008). Kolapo, Ayeni and Oke (2012), Mabvure et al. (2012), Sekar and Balachandran (2014), Sonia and Monik (2014) and Abdullatif, Freeman and Michael. (2014) explained that asset quality is a function of loan portfolio quality of banks which is measured by its non-performing loan (NPL). In defining non-performing loan, they explained that a loan is said to be non-performing when the interest and the principal remain unpaid for three months or ninety (90) days. In other words, it is a loan that is 90 days or more delinquent in both repayment of interest and the principal.

When loans are adjudged non-perfuming, it will reduce income generating potential of banks. Sekar and Balanchandran (2014) further added that 'good banks can be ruined by bad loans. Monika (2014) also stated that non performing asset is a virus affecting the banking sector as it affects liquidity, profitability and truncate survival.

The chief source of loan default as posited by Keeton (cited in Addulatif et al., 2014) is information imbalance in credit market. As a result of information asymmetry banks are likely to give loans to high risk clients simply because they can afford high loan prices required by the banks. When such high risk borrows invest in high and uncalculated risky ventures, the chance of loan default is aggravated. According to Abdulatif et al. (2014), management failure to observe or follow strictly the code of corporate governance is endemic in the Nigerian financial institutions

and this has led to the continuous decrease in asset quality of banks

Measurements of asset quality

There are various ways through which the asset quality of banks is measured and according to (Ping-Fu 2014), the essence is to establish the degree of risk that banks, shareholders and customers are expose to as a result of loan default. He therefore indentified key measures of asset quality of banks to include: Non-performing loans, Loan to deposit ratio and non performing loan to asset ratio. According to Eduardus, Hereindito, Putu and Supriyatna (2007) the Central Bank of Nigeria (CBN) requires that banks should maintain the level of non-performing loan below 5%, while loan to deposit ratio is to be kept below 85%. Banks with lower ratio of loans to total assets have better asset quality than banks with higher ratio of loans to total assets (Khalid, 2012).

Board Structure of Nigerian Banks

The board structure of corporate organizations is central to realizing the goals of corporate governance practice. Semiu and Eyasan (n.d.) contends that while the chief role of the board of directors is to ensure and provide high level counseling and oversight to management, corporate internal control problems often emanate from the board of directors. He further added that the size, composition and separation of the functions of the chief executive officer and that of board chairman are designed to achieve effective board practice. The board structure of Nigerian banks used in this study are Board size and Board Independence.

Board Size

The code of corporate governance (2006) specified that board size should not exceed twenty (20) members. The choice of board size therefore is at the whim and caprice of the banks. However, a number of arguments have been put forward by scholars as to which (Small board size or large board size) leads to effective and efficient board practice. Yermack (as cited in Kajola, 2008) and

Sanda, Mikailu and Garba (2005) argued that small board size is more effective than larger board size. The reasons adduced for this view are in two folds. First, small board size fast-tracks decision making process and reduce obstacles to positive change. The second reason in favor of small board size is that directors hardly challenge the policies of the top management and that this problem tends to be on the rise with the increase in the number of directors.

Uwuigbe (2011) placed his argument in favor of small board size by explaining the adverse effect of large board size on the value of the firm. He posited that large board size affects the value of firm negatively because of high agency cost among members of the board and concluded that small boards are highly efficient in decision making with reduced agency cost, which lead to effective corporate governance practice.

Corporate governance literature also revealed arguments in favor of large board size. Zahra and peace (as cited in Uwuigbe, 2011) explained that larger board has a wide range of expertise that facilitates better decisions and as a result of the board's collective strength, irrational decision of the CEO can be resisted. Subscribing to this submission, Lubabah and Bawa (2013) opined that the CEO's inability to influence the board can increase board's effectiveness in monitoring managers and reducing irregularities within the organization. John (2010) added that larger board size enhances ethical practice in an organization. It is very clear from the arguments that there is no balanced position as to what constitutes efficient board size. To this end, one can argue that since corporate governance is aimed at reducing agency problems, a moderate, effective and less expensive board size will lead to the realization of the required practice.

Board Independence

Board Independence is another variable that explained the board structure of an organization. The composition of the board or board independence is the way in which a board is arranged. The 2006 code of corporate governance emphasized that the number of non-executive directors on the board should be more than the number of executive directors. The implication of this is that more outside directors are required on the board to propel it towards realizing the goal of the board. Mansur and Ahmad (2013) opined that shareholders wealth is affected by the proportion of outside directors sitting on the board. In the same vein, Terzungwe and Simon (2013) posited that firms with greater proportion of independent directors are assigned higher bound and credit rating respectively.

Demaki (2011) argued that directors who are independent of the management have ways of taming the activities of the management to suit the interest of the company. Enhanced directors' independence is unarguably appealing because directors with ties to the firm will find it difficult to refuse the excessive pay package of the directors and bring to bear the ideas that lead to effective monitoring of the management (Kajola, 2008).

Sanda et al, (2005) suggested that unlike inside directors, independent or outside directors are better able to challenge the chief executive officer on matters that may have adverse affects on the organization. In recognition of the importance of outside directors a minimum of three (3) independent directors are required to sit on the board of organizations in UK while two-third of independents directors are required in US firms (Bhagat & Black, as cited in Sanda et al. 2005). Lubaba and Bawa (2013), John (2010) and Bernard, Husong and woochang (2012), argued that firms with more independent directors have lower incidence of accounting fraud and earnings management.

Nasir, Najeeb and Saqlain (2014) argued that top managers are faced with dynamic checking and are compelled to bring the full weight of good corporate governance into corporate management when their performance is measured or cheeked by outside directors. With the knowledge, vision and expertise of independent directors, management is unlikely to be misguided in the implementation of its fiduciary functions

which will go along ways in mitigating agency problem between the management and shareholders.

Despite the enormous arguments in favour of independent directors other scholars such as Bawa and Lubabah (2013) and Adeusi, Akeke, Aribaba and Adebisi (2013) are of the opinion that outside directors can worsen the performance of organizations since most of them are appointed on political affiliation rather than on the basis of merit. They further added that outside directors increase agency cost since they have to be compensated for their services. There are mixed reactions from scholars regarding the composition of the board. However, while board composition is a recipe for good corporate governance, selection and appointment of independent board members should reflect merit, competence and experience of individuals to be appointed.

Conceptual Framework

Relevant concepts with respect to board structure and asset quality of deposit money banks have been reviewed. It has been established that the nature of banking practice is not same with the operation of manufacturing companies. Banks, in the ordinary course of their business continue to sell loans in order to make profit via interests charged on loans and as such, are faced with high level of risk through loan administration (Abdulatif, et al., 2014). It is the high level of loan default that leads to bank distress which makes it difficult for many banks to live up to the expectation of the depositors and shareholders (Hifza & Aqeel, 2014). While the structure of the board is expected to influence the quality of assets of the studies banks, the study also envisaged other factors other than board structure (Firm size and Age) to have influence on banks' asset quality. The relationship between the dependent and independent variables as well as the control variables for the study is depicted in the framework below.
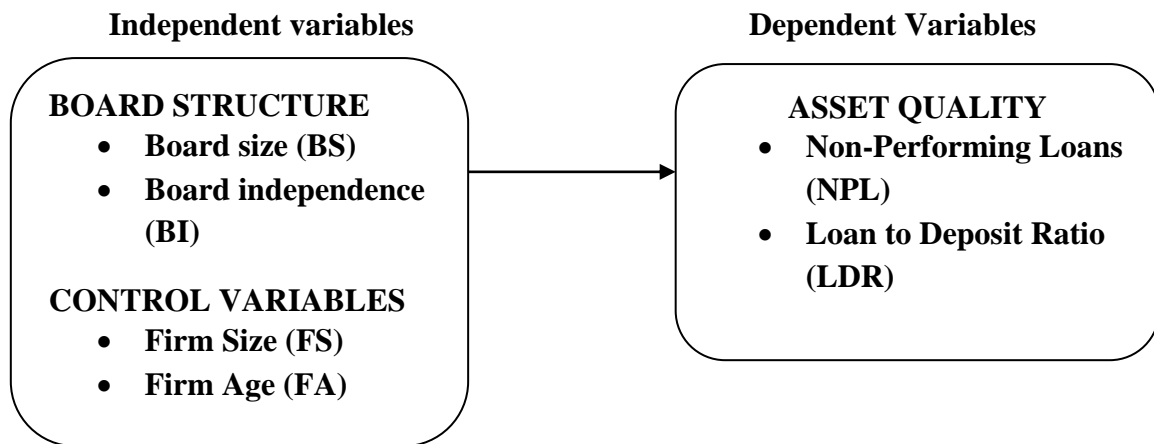
Independent variables   **Dependent Variables**

BOARD STRUCTURE
- **Board size (BS)**
- **Board independence (BI)**

CONTROL VARIABLES
- **Firm Size (FS)**
- **Firm Age (FA)**

ASSET QUALITY
- **Non-Performing Loans (NPL)**
- **Loan to Deposit Ratio (LDR)**

Figure 1. Authors' construct

Theoretical Framework

Smith 1976 was the earliest known economist that addressed the theoretical issues of the role of board of directors in the governance of firms (Eyesan & Semiu, 2013). Smith further observed that as a result of the fact that managers control resources other than theirs, it should not be expected that they will watch over the business with anxious vigilance as possibility of negligence abound which is the direct consequence of separation of ownership from control which is very common in modern corporation (Sanda, et al., 2005). There is therefore the need to explain the theoretical underpinning of owners' and managers' relationship in organizations. Theories which underpin corporate governance

practice in organizations include and not limited to the following:

The Stewardship Theory

Akingunola, Olusegun and Adedipe (2013), explained that managers are good stewards who diligently work to attain high level of profit, ensure appealing returns to shareholders and who continuously propel the organization towards realizing its desired objectives. This theory is based on the assumption that managers are motivated by achievement. Non-executive directors on the board serve this purpose better. Managers recognize the importance of the structure that empowers the steward by offering maximum control of the organization which is built on trust (Uwuigbe, 2011).

In furtherance to this position, Khalid (2012) posited that for managers to protect their reputations as experts in decision making process, they are unreservedly inclined to operating the firm in a manner that satisfies all performance indicators. Stewardship theory according to Muth and Donaldson (as cited in Uwuigbe, 2011) is a sociological theory which is alternative to agency theory that serves as prediction about the structure of effective boards for optimal performance. There is still a reservation as to whether managers quest to run the organization well (Stewardship) is to the well being of stakeholders or not. An organization can be effectively and efficiently managed by applying the principles of corporate governance to enhance the asset quality of banks, but the multiplier effect of the benefit accruing to the organization will not be felt proportionately by the owners and other stakeholders.

The Stakeholders Theory

This theory states that the firm is a system operating within a larger system of the society which provides the required legal and market infrastructure for the firm to thrive. The purpose of the firm in this case is to serve the general public who may have direct or indirect relationship with the firm. The management and the provision of information should be directed to satisfying the interest of all shareholders. Stakeholders' theory sees the existence of firms to be solely for the creation of wealth and value for various stakeholders (Akingunola, et al., 2013).

The theory further states that there should be a provision of enhanced ownership-like incentives for all the participants who contribute in any form towards the effective running of the organization (Segun, Temitope & Bolanle, n.d.). The interests of various parties in an organization vary from one stakeholder to the other. For instance, while equity holders may welcome investments in high yielding but risky projects, such investments may threaten the interest of debt holders particularly when a firm is struggling on the edge of bankruptcy. In banks , there are various interest groups such as shareholders, depositors, borrowers, host community, independent directors whose interests may need to be protected and having multiple interests to confront with can ignite conflict as managers would not have clear focus on individuals whose contributions and activities are of great importance to bank.

Agency Theory

Agency theory is rooted in economic theory and has dominated the corporate governance literature. The theory sees shareholders as the principals and managers as agents. Sanda et al. (2005) explained further that the presence of information asymmetry can make agents to pursue interest that may be detrimental to the interest of the principal. The process of aligning these two interests can ignite conflict between the two interest groups. According to Muhammad, Sheila, Hafiz and Ahmad (2011), there are two factors that give prominence to agency theory. First, the theory is simple conceptually and it reduces every corporation to include only two participant owners; (shareholders) and managers. Second, there is a notion that human beings are self-interested and have the tendency to pursue self financial enhancement goals at the expense of the owners. Agency theory therefore explains the relationship between owners and managers and that managers should continuously protect

the interest of absentee owners (Mansur and Ahmad 2013).

The theoretical framework of this research relies on both Agency and stakeholders' theories respectively because it allows managers to have clear focus on individual whose interest they serve. Also, the nature of banks make it possible for myriad of individuals to various interest in the operations of the bank, hence, stakeholders' theory remain extremely relevant in explaining the subject matter of this study.

Review of Empirical Studies

The relationship between Board Structure and asset quality of banks are reviewed under each variable (Board Size and Board Independence).

Board Size and Asset Quality

Javad and Sheikh (n.d.) examined the efficacy of bank governance measures in improving the quality of assets of banks in Bangladesh. The study covered a period of ten years (1999-2008) and was carried out on 15 sampled commercial banks. Corporate governance was measured by board size and other corporate governance variables while Asset quality (non performing loan) was used to measure efficiency. Both descriptive and regression analyses were used to analyze the data retrieved from the annual financial statement of the sampled banks. The study concluded that there is a significant positive relationship between board size and non performing loans of the sampled banks. From their analyses, it was reported that an additional increase in board size will aggravate non performing loan by 3.7% which will worsen banks' asset quality.

Also, Wei-Kang, Wen-Min and Yi-Ling (2012) examined the role of corporate governance on Bank Holding Companies (BHC), evidence from U.S. commercial banks. The study used Board size and other corporate governance variables as independent variables, CAMEL rating was used to assess the performance of the banks and descriptive statistics, correlation and regression analysis were employed in establishing the relationship between corporate governance mechanisms

and some performance variables which include asset quality. It was found that, board size has significant positive impact on asset quality. The findings of this study revealed that the proportion of non-performing loan to total loan, non-performing to total asset will continue to increase thereby worsening the asset quality of banks as a result increment in board size. This position is same as the finding of Rong et al. (n.d.) who also found a positive significant relationship between board size and non-performing loans.

Lorne and Wang (2013) assessed the relationship between credit risk of banks and corporate governance structure of some U.S. commercial banks using cumulative loan default probability and risk taken behavior as dependent variables while board size and other corporate governance variables were used as independent variables. It was found that a significant positive relationship exists between default rate and board size. This shows that larger board size may heighten the rate of non-performing loan thereby worsening the asset quality of banks.

This finding is in line with the finding of ping-fu (2014) who examined the effect of corporate governance in the financial performance to Asian banks through multiple linear regression analysis. Board Size and board meetings were used as proxies for corporate governance while non-performing loan among other variable were used as proxies for measuring asset quality. The study concluded that there is a negative and significant relationship between board size and non performing loan. This means that an increase in board size will reduce non performing loan thereby improving the asset quality of the banks.

Ravi and Martin (2013) examined the effects of corporate governance on the efficiency of Nepalese Commercial Banks using 29 out of 31 banks in Nepal for a period of 7 years (2005-2011).various corporate governance variables were used to establish relationship with non-performing loan of the sampled banks. Data for the study were retrieved from the annual financial statements of the banks and regression analysis was used

to establish the relationship between the dependent and independent variables. The study found a negative significant relationship between board size and non performing loan which shows that larger board size decreases the rate of non-performing loan (NPL) and which invariably improves efficiency.

On the other hand, Terzungwe and Simon (2013) carried out investigative study on the impact of corporate governance on non performing loan of banks in Nigeria. The study utilized data from the financial statements of 14 quoted banks and multivariate regression analysis was used to establish the relationship between corporate governance variables non-performing loans. The study found no significant relationship between board size non-performing loans. By implication, board size cannot be relied upon to check the rising rate of non-performing which exist in Nigerian banks.

Board Independence and Asset Quality

Wei-Kang, et al. (2012) examined the role of corporate governance on Bank Holding Companies (BHC), evidence from U.S. commercial banks. CAMEL rating was used to assess the performance of the banks and descriptive statistics, correlation and regression analyses were employed to establish the relationship between corporate governance mechanisms and some performance variables which include asset quality measured by non-performing loans. It was found that, board independence (board independence) has significant positive impact on asset quality. The findings of this study revealed that the proportion of non-performing loan to total loan, non-performing loan to total asset will continue to increase thereby worsening the asset quality of banks as a result increment in the proportion of independent directors on the board.

Also, the study by Liag, Pisun and Jiraporn (n.d.), on Board Characteristics and Chinese banks' performance used a sample of 50 largest Chinese banks between 2003 and 2010. Asset quality was used as dependent variable measured by non-performing loans, while board size and board composition were used as proxies for board characteristics. They found a positive significant relationship between board composition and asset quality.

Lorne and Wang (2013) examined the relationship between credit risk of banks and corporate governance structure of some U.S. commercial banks the relationship between corporate governance and bank loans default rate was established using regression analysis and it was found that board independence has significant positive relationship with default rate. This shows that, higher proportion of independent directors on the board worsens banks' default rate thereby deteriorating the asset quality of the sampled banks.

On the contrary to the above conclusions, there are also findings that support higher proportion of independent directors. For instance, Wei, et al. (2011) found in their study that higher percentage of outside director on the board leads to better asset quality as there is a negative significant relationship between the proportion of independent directors and bank asset quality.

Ravi and Martin (2013) also found a negative significant relationship between non-performing loans and board independence. This finding is premised on the fact that independent directors have proficiency to assist managers on loan administration and recovery process and as such, increment in board independence will mitigate the rate of non-performing loan in banks.

Terzungwe and Simon (2013) concluded that there is no significant relationship between board independence and asset quality of banks in Nigeria and as such independent directors cannot be relied upon to check the rising rate of non-performing which exist in Nigerian banks.

Control Variables and Asset Quality

The relationship between control variables and asset quality are reviewed below:

Firm Size and Asset Quality

Wei-Kang et al. (2012) examined the role of corporate governance on Bank Holding Companies (BHC), evidence from U.S. Commercial Banks. CAMEL rating was used

to assess the performance of the banks and descriptive statistics, correlation and regression analyses were employed to establish the relationship among the variables for the study. They found no significant relationship between firm size and asset quality. The implication of this finding is that firm size does not determine the quality of asset of banks.

On the other hand, Muhammed et al. (2011) and Bill et al. (2012) in their respective studies found a significant negative relationship between firm size and asset quality (non-performing loans). This implies that larger firms have been able to use their sizes to reduce the rate of loan default in banks, non-performing loans and cushion the effect of loan defaults than smaller firms.

Firm Age and Asset Quality

Firm age is the number of years a bank has been in existence since listed on the Stock Exchange. It is expected that older banks should be able to use their long term experience to enhance the asset quality of their banks. The study by Wei-Kang et al. (2012) which examined the role of corporate governance on Bank Holding Companies (BHC), evidence from U.S. revealed a contrary finding as they found a significant positive relationship between firm age and asset quality. It therefore shows that, it is not how old a firm is that determine the quality of its asset as relatively new firms may have better asset quality than older firms.

METODOLOGY

This study employs *ex-post facto* research design using panel data for the periods under study (2008-2017). *Ex-post facto* research design allows for multi dimensional data about past events to be studied in order to ascertain the causes and effects of the phenomenon. The study uses ex-post facto research design because it aims at examining the impact of Board Structure on asset quality of listed deposit money banks in Nigeria which requires data from published financial statements (past records) of the banks.

Population and Sample Size

The study used all the banks listed on the Nigeria Stock Exchange as at December, 2017 as population of the study. This is because the study is concerned with listed deposit money banks in Nigeria. It is believed that only listed banks would comply fully with the requirements of CBN code of corporate governance. As at December 2017, there are fifteen (15) banks quoted on the Nigeria Stock Exchange.

The study's sample size consists of all banks that were listed on or before 2008 and remain listed up till December, 2017. Using this filter, all the banks were meet up with the requirement and were all taking as the sampling frame for the study.

Sources and Methods of Data Collection

The choice of source of data for a study depends solely on the variables being examined. This study seeks to examine the relationship between board structure and asset quality of listed deposit money banks in Nigeria. The required data will be quantitatively extracted from the published annual accounts and reports of the banks under study covering a period of 10 years (2008-2017). This method of data collection (quantitative) is adopted because it suits the research design for this study which requires the study of past events in establishing the relationship between board structure and asset quality of deposit money banks in Nigeria.

Variables Specification and Measurement

For the purpose of achieving the objective of this study, three categories of variables were employed. These are: (i) Dependent variables (NPL and LDR), Independent Variables (BS and BI) and Control Variables (FS and FA). These variables are explained below.

Dependent Variables
The dependent variables are:

Non-Performing Loans Ratio (NPL)

This is the amount of total loans and advances that has been in default with respect to the repayment of both the principal and

interest for 90 days and beyond. In measuring Non-Performing loans the measurement used by Ravi and Martin (2013) will be adopted which is the total amount of loan in default divided by total loans and advance.

Loan to Deposit Ratio (LDR)

This ratio tests the proportion of banks' deposits that have been used to finance loans and advances. Banks with higher loan to deposit ratio may find it difficult to meet depositors' need for cash and this situation may become worse when a larger proportion of the loan is non-performing. In measuring LDR, this study took a clue from Kolapo and Ayeni (2012) who measured loan to deposit ratio as total loans and advances divided by total deposit.

Independent Variables

Independent variable used in this study is board structure proxied by both board size and board independence.

Board Size (BS)

This is the total number of directors sitting on the board of each bank which in line with the code of corporate governance should not be more than 20 members. This study will examine the extent to which asset quality will be affected by the size of the board. In line with Ravi and Martin (2013) board size will be measured by the total number of directors on the board at the end of each year.

Board Independence (BI)

The code of corporate governance specified that an effective board should have more independent directors. Going by this specification, board independence is the number of non- executive directors on the board and it is measured as the ratio of outside directors (non executive directors) to total board size at the end of the year. Ravi and Martin (2013) and Ahmad (2013) also used the same method to measure board independence.

Control Variables

Control variables will be introduced into the model for this study to account for other factors that may likely affect asset quality which are not captured by the corporate governance proxies. Two control variables (Firm size and Age of the firm) will be included in the model for this study.

Firm Size (FS)

Firm size will be measured by the natural log of the total assets of each bank. Using this measurement, the study follows Muhammad et al. (2013).

Firm Age (FA)

Age of the firm will be considered by adopting the measurement used by Ishaq (n.d.) who measured firm's age by the number of years after being listed on the Nigeria stock exchange.

Summary of all the variables as well as the measurement for each variable is shown in the Table 1.

Table1 1. Showing variables and applicable measurements

Dependent Variables	Measurements
Non-Performing Loan	Ratio of non-performing loan to total loans and advances
Loan to deposit ratio	Total loan divide by total deposit
Independent variables	
Board Size (BS)	Total number of director sitting on the board
Board Independence (BI)	Number of non-executive directors divide by total number of directors
Control variables	
Firm Size (FS)	Natural logarithm of each bank's total assets

Dependent Variables	Measurements
Firm Age (FA)	Number of years passed after listing on the Nigeria Stock Exchange

Source: Generated by the Authors' 2018

Method of Data Analysis

The study employed various robustness tests to ensure that data set are free from errors capable of invalidating the findings of this study. To this end, Variance Inflation Factor (VIF) test was carried out on the variables to check for the existence of multi-collinearity. Also, heteroscedasticity test was conducted as a form of diagnostic test for the model. There is presence of heteroscedasticity when there is unequal variability in the variables across the range of values of the predictor variable(s). Where the probability value of heterocedasticity test is less than 5%, then there is presence of heteroskedasticity which will require Ordinary Least Square Robust regression to correct the unequal variability of the predictor variables. Finally, Hausman specification test was conducted to ascertain which between Fixed Effect Method (FEM) and Random Effect Method (REM) of Generalized Least Square (GLS) regression analysis was more appropriate for the analysis. All the analyses will be done with the aid of Stata version 11.

Descriptive statistics was used to summarize the data and describe the phenomenon associated with the variables, while correlation analysis was used to establish the relationship between the variables, ascertain the predictive power of the independent variables and check the existence of multi-collinearity. According to Gujarati and Porter (as cited in Ajoka, Iyoha & Obigbemi, 2014), the threshold for the identification of multi-collinearity is a correlation coefficient of 0.8 and this level of correlation can be harmful for the regression as it reduces the reliability and the predictive power of the variables.

Finally, the outcome of Hausman specification test favoured the use Random Effect GLS but the result of the heteroskedasticity test revealed that the data are heteroskedastic which the study resolved through OLS Robust regression. To this end, OLS robust regression results were presented interpreted for the study.

Model Specification

This study adopts and modifies the econometric model used by Daniya, et al. (2016) which is given as follows:

$$Y_{it} = a_0 + \beta_1 CG_{it} + \beta_2 C_{it} + e_{it} \text{------------}(1)$$

Where:

Y_{it} Represents bank performance variable in time t;

a_0 Is the constant term. It is a partial slope or multiple regression co-efficient that explains the rate of change in the dependent variable as a result of increasing or decreasing the value of the independent variable by one more unit while holding other variables constant.

CG_{it} Is a vector of corporate governance variables

C_{it} Is a vector of control variables

e_{it},   Is the error term

The model is modified thus;

$$Y_{it} = a_0 + \beta_1 CG_{it} + \beta_2 C_{it} + e_{it} \text{------------}(2)$$
$$Y_{it} = a_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 FS_{it} + \beta_4 FA_{it} + e_{it} \text{---------------}(3)$$

All independent as well as the control variables respectively have been inputted into the model. Since the dependent variable for the study is Asset Quality, this study replaced Y_{it} (performance with AQ_{it} (Asset Quality)

$$AQ_{it} = a_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 FS_{it} + \beta_4 FA_{it} + e_{it} \text{-----------------}(4)$$

The dependent variable (AQ) has been introduced into the function. Hence the model for this study is developed. However, this will further be modified to incorporate the two

proxies for Asset Quality (NPL and LDR). This gave birth to two regression models as stated below.

$$NPL_{it} = a_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 FS_{it} + \beta_4 FA_{it} + e_{it} \text{-----------------(5)}$$

$$LDR_{it} = a_0 + \beta_1 BS_{it} + \beta_2 BI_{it} + \beta_3 FS_{it} + \beta_4 FA_{it} + e_{it} \text{-----------------(6)}$$

Where: NPL=Non-Performing Loans, LDR = Loan to Deposit Ratio, BS=Board Size, BI= Board Independence, FS= Firm Size, FA= Firm Age

RESULTS AND DISCUSSIONS
The results of the analyses are presented and discussed as follows

Robustness Tests
The presence or otherwise of munti-collinearity was ascertained via Variance Inflation Factor (VIF) test which was conducted on the predictor (independent) variables. The result of the test shows a mean VIF of 1.14 which is less than the threshold of ten (10) established by Gujarati (2004) and this showed absence of multi-collinearity. Also, the result of the Hausman specification test revealed that the variables are correlated with a Chi-Square probability value of 0.5565 which .

is above 5%. Consequent upon the outcome of Hausman test, Random Effect (RE) method of GLS regression is considered suitable for the study. However, the result of the hetroskedasticity test which also helped to determine the fitness of the regression model revealed that the data set are heteroskedastic owing to chi-square probability of 0.0111 and 0.0000 for both models. The presence of heteroskedsticity requires the use of Robust Ordinary Least Square (OLS) regression to correct the unequal variability in the predictor variables. To this end, the study therefore, deemed Robust OLS regression fit for the study owing to the presence of heteroskedasticity.

Descriptive Statistics
The results of the summary statistics for the variables are shown in Table 2. This helped to provide detailed understanding of the nature and behavior of the data upon which analysis was carried out. Various statistical measures used to describe the data include; measures of central tendency (Mean), measure of dispersion (standard deviation) which ascertained the level of spread and distribution of the variables as well as the minimum and maximum values for each dependent and independent variables respectively

Table 2. Descriptive Statistics of the Variables

Variables	OBS	Mean	Standard Deviation	Minimum	Maximum
NPL	150	0.5873006	0.5510927	0.0005906	2.763587
LDR	150	0.1789775	0.255381	0.0001298	2.441722
BS	150	14.45714	2.160374	9	20
BI	150	0.5946397	0.105704	0.3636364	1
FS	150	27.04467	1.407145	18.9757	30.01667
FA	150	19.57143	13.44701	9	44

Source: Generated from the annual reports of DMBs through 'stata'

Table 2. Shows the number of observations across the variables to be 150 which confirms that the study covers fifteen (15) listed deposit money banks for a period of ten (10) years.

From table 2, the average NPL is 0.5873 which depicted a rising rate of non-performing loan and the result of the measure of dispersion showed that banks vary greatly in their rate of NPL. The average Loan to Deposit Ration of

Nigerian banks is 0.1789775 which revealed that about 18% of depositor's deposit on the average is advance to customers as loans. However, this vary greatly among banks giving the standard deviation value of 0.255381.

The average board size of deposit money banks in Nigeria is fourteen (14) with a minimum board size of nine (9) and a maximum board size of twenty (20). The maximum board size is in line with the maximum number of director required to sit on the board of each bank by the 2006 code of corporate governance. The standard deviation of 2.160 shows that bank vary slightly in the choice of number of directors on the board within the periods under study.

With respect to board independence, the mean value of 0.595 shows that about 60% board members consists of non-executive directors. This is consistent with the requirement of the 2006 code of corporate governance (the number of non-executive directors should be more them the executive directors). This shows a good board representation.

Banks size measured by the natural log of each bank's total asset has a mean value of twenty seven (27) with a minimum value of approximately nineteen (19) and a maximum
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value of thirty (30). The standard deviation value of 1.407 shows that banks have relatively varying values of total assets. The average total asset size of the studied banks is close to the maximum value and this boost could be the resultant effect of the 2005 consolidation exercise by the Central Bank of Nigeria (CBN).

The age of banks in Nigeria measured by the number of years of each bank since listed on the Nigerian stock exchange shows an average age of 19.57 and considering the minimum age of nine (9) years and a maximum age of forty four (44) years, it is clear that some banks in Nigeria are still in their infant stage and they vary greatly in their respective ages as indicated by the standard deviation value of 13.4470.

Correlation Matrix

Table 3. presents the correlation coefficients of the Dependent Variables (NPL and LDR,), Independent Variables (Board Size, Board Independence) and Control Variables (Firm Size and Firm Age). This is necessary to establish the relationship between the explanatory and the explained variables respectively

Table 3. Correlation Matrix of Dependent and Independent Variables.

	NPL	LDR	BS	BI	FA	FS
NPL	1.0000					
LDR	-0.0608	1.0000				
BS	-0.0621	0.0092	1.0000			
BI	0.1092	0.1030	-0.1602	1.0000		
FA	0.1039	0.0025	0.2213	-0.1251	1.0000	
FS	-0.0566	0.0316	0.2748	-0.0254	0.2817	1.0000

Source: Generated from the annual reports of DMBs through 'stata'

The result of the correlation as shown in Table 3. shows the correlation coefficients of the variables which range from -1 to 1 with indicative signs (positive and negative) that denote the pattern or direction of relationship. The diagonal correlation coefficients of 1.0000 shows that each variable has a perfect positive linear relationship with itself.

For the correlated variables, the results show that board size and firm size are negatively correlated with Non-Performing

Loan (NPL) while board independence and firm Age have positive correlation with non-performing loan. The negative relationship between the explanatory variables and non-performing loan indicates an inverse relationship which means that an increase in board size, and firm size will reduce the rate of non-performing loan which consequently improves the asset quality of deposit money banks in Nigeria. Also, the correlation result revealed that an increase in board

independence and firm age will aggravate non-performing loan thereby worsening the asset quality of deposit money banks in Nigeria.

The correlation result also reveals the relationship between explanatory variables and loan to deposit ratio. To this end, Board Size (BS), Board Independence (BI), Firm Size (FS) and Firm Age (FA) show positive correlation with loan to deposit ratio. The implication of this is that, an increase in Board Size (BS), Board Independence Firm Size (FS) and Firm Age (FA) will also increase the proportion of depositors' funds used to finance loan which consequently worsens the asset quality of banks in Nigeria.

Generally, the correlation coefficients for each variable show the absence of multicollinearity as the highest correlation coefficient of 0.2817 which is between Firm Size and Firm Age is less than 0.8 threshold. This was further confirmed through VIF test which also revealed absence of multicollineraity. This implies that the explanatory variables have high predictive abilities that can enhance the reliability of regression findings.

Regression Results

Sequel to the outcome of both hausman specification and hetroskedasticity tests respectively, the study presents and discusses the results of Ordinary Least Square (OLS)

Table 4. OLS Robust Result for models one and two respectively.

Var.	NPL	LDR	NPL	LDR
BS	*-0.116*	*0.003*	*-0.019*	*0.001*
	(0.555)	(0.823)	(0.394)	(0.978)
BI	*0.531*	*0.259*	*0.609*	*0.344*
	0.206	(0244)	(0.143)	(0.157)
FS	–	–	*-0.023*	*0.001*
			(0.464)	(0.835)
FA	–	–	**0.007**	0.000
			(0.08)*	(0.453)
R^2	0.014	0.012	0.064	0.033
F stat	1.07	1.03	2.65	1.84
p-val	0.344	0.359	0.010	0.074

Note: The coefficients for each variable are shown in italics while their respective p-values are in parenthesis. Variable that shows significant relationship with asset quality is shown in asterisk. The p-values of variables for the two models are 6% and 3% and they are statistically significant at 1% and 7% respectively as shown by the p-values of 0.01 for NPL and 0.07 for LDR. The regression was carried out in sequence for each model where each independent variable was first regressed with each dependent variable and finally all the dependent variables together with the control variables were regressed against each of the dependent variables.

Board Structure and Asset Quality

The OLS robust result shown in Table 4. also revealed the relationship between board structure (board size and board independence) and asset quality (NPL and LDR). Board size shows a negative relationship with NPL and a positive relationship with LDR. This signifies that an increase in BS will reduce the rate of loan default and increase the amount of depositors' fund used to finance loan. However, the relationship between board size and asset quality is not significant.

Also, there is an insignificant positive relationship between board independence and NPL and LDR. This implies that board independence aggravates non performing loan as well as the proportion of depositors fund used to finance loan and this worsens asset quality of banks. From the above findings, it is clear that there is no significant relationship between board structure and asset quality of banks.

Consequent upon the above findings, where board structure proxies showed insignificant relationship with asset quality proxies, the study therefore conclude that Board Structure has no significant relationship with Asset Quality of deposit money banks in Nigeria.

Firm Size, Age and Asset Quality

Table 4. shows the relationship between the control variables (firm size and firm age) and asset quality (NPL and LDR). The result shows that firm size has a negative and insignificant relationship with NPL and a positive insignificant relationship with LDR. This

shows that bigger banks (asset size) have been able to reduce loan default and improve asset quality but the proportion of depositors' funds used to finance is high among such banks. Firm age has a significant positive relationship with NPL and has no relationship with LDR. This suggests that, an increase in firm age will increase non-performing loan and consequently deteriorates banks' asset quality. The result shows that older banks have not been able to use their years of experience in banking practice to improve asset quality. This position is consistent with the finding of (Wei-Kang et al., 2012).

Conclusions and Recommendations

This study has examined the relationship between board structure of listed deposit money banks in Nigeria vis avis the asset quality using firm size and age respectively as control variables for a period ten (10) years (2018-2017). The results of the study revealed that no bank has board size above the maximum limit of twenty (20) members prescribed by the code of corporate governance. Also the proportion of non-executive directors serving in the boards of banks in Nigeria is higher than those of executive directors. Though banks are at liberty to appoint independent directors, those independent directors have not been able to improve asset quality of banks in Nigeria. This could be as result poor commitment to duty, connivance with the executive directors and lackadaisical attitude towards loan administration. This is apparent from the rising rate of non-performing loan and increased proportion of depositors' funds used to finance loan owing to an increase in board independence. The result of the summary statistics shows that, the proportion of depositors' funds used to finance loan as well as the proportion of non-performing loan to total loans/advances are relatively high. Also, bigger banks have been able to use their sizes to mitigate the rising rate of non-performing loan thereby improving asset quality better than smaller (total assets) banks. Finally, it is evident from the study that the rate of non-performing loan goes higher as banks grow older.

Sequel to the above findings, the following recommendations have been suggested. It hoped that proper implementation and application of these recommendations will go a long way in improving banks' asset quality.

Banks' non executive directors should be encouraged to be committed and dedicated to their responsibilities so as to use their wealth of experience and credibility to effectively monitor the activities of the directors particularly with respect to loan administration.

Older banks should cajoled to use their long years of existence to improve the asset quality via close monitoring of the regulatory authorities coupled with commensurate sanctions for non-compliance.

The average board size of the studied banks should be sustained as it improves the asset quality of banks. However, they have to be motivated to be committed to the service of the banks in order to significantly improve asset quality.

REFERENCES

Abdullatif, A., Freeman, O. & Michael, E. (2014). Does Asset quality persist on bank lending behaviour? Empirical evidence from Ghana, *Global Journal of Management and Business Research*, 13 (4), 12-19.

Adeusi, S., Akeke, N., Aribaba, F. & Adebisi, O. (2013). Corporate governance and firm financial performance: do ownership and board size matter. *Academic Journal of Interdisciplinary Studies, Rome – Italy*, 2 (3). 91-98

Ahmad, B. (2013). Corporate governance and risk exposure of banks in Nigeria, *British Journal of Arts and Social Sciences,* 12(1) 15-22

Ajoka, S., Iyoha, F. and Abigbemi, I. (2014). Effectiveness of audit committee and firm financial performance: An empirical analysis, *Journal of Accounting and*

Auditing: Research and Practice, 4(9), 43-50

Akingunola, R.O. Olusegun B., & Adedipe, (2013). Corporate governance and banks performance in Nigeria (post bank consolidation). *European Journal of Business and Social Sciences,* 2(8), 98-106

Alfaki. M. (2007, September). Global trend in corporate governance and social responsibility. A paper presented at the 31st conference of institute of chartered secretaries and administrators of Nigeria (ICSAN). Sheraton hotels a towers banquette hall, Ikeja.

Anup, A. & Sahiba, C. (2005). Corporate governance and accounting scandals. *The Journal of Law & Economics,* 48 (2), 371-406.

Bawa, A. & Lubabah, M. (2012). Corporate governance and financial performance of banks in the post consolidated era in Nigeria. *International Journal of Science and Humanity Studies,* 4 (2) 29-36.

Ben, E., Olufemi, O., Patrick, S. & James, U. (2010). Poor corporate governance and its consequences On the Nigerian banking sector, *Serbian Journal of Management*, 5 (2), 67-74.

Bernard, S. B., Hasung, J. & Woochan, K. (2012). Does corporate governance predict firms' market values? Evidence from Korea, *Journal of Law, Economics & Organization.* NSE Code of Corporate Governance (2003).

Daniya A., Adeyeye M., Ndibe L. & Dokochi Y. (2016). Corporate Governance and Financial Performance of Listed Deposit Money Banks in Nigeria *IOSR Journal of Business and Management,* 18 (4), 04-11.

Demaki, G.O. (2011). Proliferation of codes of corporate governance in Nigeria and economy development. Business Management Review, 1(6) 54-62.

Drehman, M., Sorensen, S. & Stringa, M. (2008). The integrated impact of credit and interest rate risk on banks: an economic value and capital adequacy perspective, Bank of England working paper no.339

Eduardus, T., Hermeindito, K., Putu, A. & Supriyatna (2007). Corporate governance, risk management, and Bank performance: does type of ownership matter?, Edna working paper no. 34

Eyesan, L. & Semiu, B. (n.d.). Corporate governance and credibility of financial statements in Nigeria. *Journal of Business Systems, Governance and Ethics,* 4(1).

Gujarati D. N. (2004), *Basic Econometrics,* 4th edition, USA, McGraw-Hill,

Hifza, I. & Aqeel, M. (2014). Corporate governance and its impact on performance of banking sector in Pakistan, *International Journal of Academic Research in Applied Science*.

Ishaq, A. S. (n.d.). Corporate governance and financial reporting quality in Nigeria oil marketing industry, A Peper submitted for the 3rd Annual AFRA Conference, Markudi, Benue State.

Bill, F., Iftekhar, H., Michael, K. & Qiang, W. (2012). Corporate board and bank loan contracting, *A discussion paper on bank of Finland Journal.*

Javed A & Sheikh, T. (n.d.). Bank governance effectiveness towards regulatory compliance: evidence from private commercial banks of Bangladesh.

John, O. (2010). Perspectives on corporate governance challenges in a sub-saharan African economy, *Journal of business & policy research*, 5(1).

Kajola, S. (2008). Corporate governance and firm performance: the case of Nigerian listed firms. *European Journal of Economic, Finance and Administrative Sciences.*

Khalid, A. C. (2012). The impact of asset quality on profitability of private banks in India: A case study of JK, ICICI, HDFC & YES banks, *Journal of African Economic Review*, 2(1).

Kolapo, T., Ayeni, R. & Oke, M. (2012). Credit risk and commercial banks' performance in Nigeria: a panel model approach, *Australian Journal of Business and Management Research,* 2(2).

Liang, Q., Pisun, X. & Jiraporn, P. (n.d.). Board characteristics and Chinese bank

performance, retrieved from; www.sciencedirect.com

Lorne, N. and Wang, J. (2013). Default risk estimation, bank credit risk and corporate governance, New York, New York university.

Lubabah, M. & Bawa, A. (2013). Board composition, executive duality and performance of banks in the post consolidated era in Nigeria, *International Journal of Academic Research in Economics and Management Sciences,* 2(1).

Mabvure, T., Gwangwava, E., Faitira, M., Mutibvu, C. & Kamoyo, M. (2012). Non-performing loans in commercial banks: A case of CBZ bank limited in Zimbabwe, *Interdisciplinary Journal of Contemporary Research in Business,* 4(7).

Mohammed, F. (2012). Impact of corporate governance on banks performance in Nigeria, *Journal of Emerging Trends in Economics and Management Sciences*.

Monika, S. & Sonia, N. (2014). Empirical study on non performing assets of bank, *International Journal of Advanced Research in Computer Science and Management Studies,* 2(1).

Muhammad, A., Sheila, H., Hafiz, M. & Ahmed, K. (2011). A panel data analysis on the relationship between corporate governance and bank efficiency, *Journal of Accounting, Finance and Economics,* 1(1).

Nasir, A., Najeeb, M. & Saqlain, L. (2014). The effect of corporate governance on capital Structure decisions – a case of Saudi Arabian banking sector, *Oeconomica.* 10(2)

Olayinka, M. (2010). The impact of board structure on corporate financial Performance in Nigeria, *International Journal of Business and Management*, 5(10). Canada, Canadian center of science and education.

Olayinka, U. (2012). Earnings management and corporate governance in Nigeria, *Research Journal of Finance and Accounting,* 3(3).

Ping-fu, L. (2014). Corporate governance and financial performance of bank in Asian regions and recommendations, *Asian Journal of Finance & Accounting,* 6(2).

Ravi, P. & Martin, H. (2013). Corporate governance and efficiency in Nepalese Commercial banks, *International Review of Business Research Papers,* 9 (4).

Sanda, A., Mikailu, S. & Garba, T. (2005). Corporate governance mechanisms and firm financial performance in Nigeria, *African Economic Research Consortium, Nairobi – Kenya.*

Segun, A., Temitope, O. & Bolanle, R. (n.d.). Corporate governance and bank liquidity: evidence from selected banks in Nigeria, Academia.edu, 16(2), 191-204.

Sekar, V. & Balachandran, V. (2014). Asset quality of Indian banks in 2013-2014 - a big challenge, *International Journal of Advanced Research*.

Semiu, B. & Eyasan, L. (n.d). Corporate governance and the credibility of financial statements in Nigeria, *Journal of Business Systems, Governance and Ethics,* 4(1).

Terzungwe, N. & Simon K. (2013). Impact of corporate governance on non-performing loans of Nigerian deposit money banks, *Journal of Business & Management* 2(3).

Uwuigbe, O. (2011). Corporate governance and financial performance of banks: a study of listed banks in Nigeria A thesis in the department of accounting, submitted To the school of postgraduate studies Covenant university, Ota, ogun state In partial Fulfillment of the requirements for The award of the degree of doctor of philosophy (Ph.d) in accounting

Wei-Kang, W., Wen-Min, L. and Yi-ling, L. (2012). Does corporate governance play an important role in BHC performance: evidence from United States of America, retrieved from www.eslevier.com/locate/ecmod.