Board Structure and Financial Performance of Listed Deposit Money Banks in Nigeria

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Abstract

This study examined the effect of board structure on financial performance of listed deposit money banks in Nigeria. Purposive sampling technique was employed to select six (6) listed deposit money banks quoted on the Nigeria Exchange Group (NGX) for ten financial years (2012-2021). Board size and Board independence served as proxies for board structure and financial performance was proxied by return on asset. Data was extracted from the audited financial statements of the selected banks. Descriptive analysis, Correlation and panel regression with specification on the random model as the preferred model were used in the analysis. The result revealed that board size and board independence positively influenced the financial performance of deposit money banks in Nigeria. The results encourages banks on continued compliance with central bank regulations on board size and also ensure that majority of the directors remain independent and non-executive when it comes to board independence. On the whole the findings of the study suggest that board structure proxied by board size and board independence plays an important role in the performance of listed deposit money banks in Nigeria and as such the study adds to and advances the corpus of research in this area.

Keywords: *Board structure, Board Independence, Panel regression, Financial performance, Return on Asset*

Introduction

The business landscape in Nigeria has seen instances of financial turmoil, particularly due to the failures of Nigerian banks and questionable practices by some bank officials. Consequently, doubts have arisen regarding the reliability of financial reporting. Given the recurring accounting scandals, it's imperative to find ways to curb management's inclination toward manipulative accounting. Corporate governance concerns are frequently highlighted, drawing global research attention. This casts doubt on the integrity and transparency of listed business management systems and their disclosure practices. Board structure typically refers to the arrangement, composition and organization of a governing body or advisory board within an organization. It involves the positions, roles and responsibilities of individuals on the board, as well as the overall framework for decision- making and governance. In the dynamic landscape of banking, the structure of the board of directors plays a crucial role in shaping the financial performance of a bank. Board structure can vary widely depending on the type of organization, its size and its purpose. The composition of the board is considered a key element in mitigating manipulative accounting and agency conflicts. It plays a crucial role in enhancing

organizational performance by establishing strategic objectives and serves as a significant corporate governance tool for enhancing the quality of financial reporting (Haji and Ghazali, 2013). Furthermore, the board's effectiveness in addressing agency problems hinges on the characteristics of its members (Dakhlallh, Rashid, Abdullah, & Dakhlallh, 2019).

Corporate governance serves as a mechanism to regulate speculative behavior among managers, with board structure being a pivotal component. For the purpose of this study, the two subset of board structure component highlighted are board size and board independence. Zabri, Ahmad, and Wah (2016) define board size as the total count of directors comprising the corporate board. The size of the board significantly impacts the reduction of agency problems and the enhancement of decision-making efficiency regarding performance. In line with this, Sun, Stewart, & Pollard (2011) propose that larger boards should focus on supervisory functions to address agency issues, while smaller boards may overlook instances of earnings management. Conversely, Hermalin and Weisbach (2003) posit that excessively large boards may be less effective, potentially leading to increased agency problems due to free-riding behaviors among directors. They argue that overly large boards may veer towards a symbolic role rather than fulfilling their managerial duties. Conversely, very small boards lack the advantage of diverse expertise and opinions that larger boards offer. Moreover, larger boards are more likely to exhibit increased diversity in terms of experience, skills, gender, and nationality (Dalton and Dalton, 2009).

Board independence is the proportion of members of the board who are non-executive directors that influences board oversight, whether independence of board has a positive or negative effect on firm performance has been a subject of significant study. Board independence refers to the degree to which a company's board of directors is free from conflicts of interest and external influences, allowing them to make impartial decisions in the best interest of the company and its shareholders. Independent directors are individuals who do not have any significant financial or personal ties to the company or its management, thereby ensuring that their decisions are not unduly influenced by personal interests or relationships. The concept of board independence is crucial for effective corporate governance as it helps to mitigate agency problems and enhance accountability. Independent directors bring diverse perspectives, expertise, and oversight to the boardroom, which can lead to better decision-making and risk management.

Several studies have highlighted the importance of board independence in corporate governance. For example, research by Maroli and Rao (2019) found a positive relationship between board independence and firm performance in Indian companies, suggesting that companies with more independent boards tend to perform better. Similarly, studies by Kocakulah and Yildirim (2017); Chen and Zhang (2018) have shown that board independence is associated with lower levels of earnings manipulation and fraud. Furthermore, regulatory bodies and governance codes around the world often emphasize the need for board independence. For instance, the Sarbanes-Oxley Act in the United States requires that public companies have a majority of independent directors on their boards, while the UK Corporate Governance Code recommends a balanced mix of independent and non-executive directors. Overall, board independence is a fundamental aspect of effective corporate governance, contributing to transparency, accountability, and shareholder value. Performance refers to the financial and non-financial results of organizations' operations. It serves as a gauge of how well a business allocates its resources and expertise to create income and reach targeted profit margins (Abubakar, Onipe, & Nma, 2021)

Literature Review

Concept of Corporate governance

According to the Organization of Economic Cooperation and Development - OECD (2005), "Corporate Governance is the system by which business corporations are directed and controlled". Corporate governance is seen as a framework that establishes the goals of companies and facilitates the methods for achieving those goals while overseeing performance. The corporate governance structure specifies the distribution of rights and responsibilities among the major stakeholders/participants in the corporation, such as the board, managers, shareholders and even the other stakeholders, and spells out the rules and procedures for making decisions on corporate affairs. By doing this, it also provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance.

Larcker and Tayan (2011) considered corporate governance as the collection of control mechanisms that an organization adopts to prevent or dissuade potentially self-interest managers from engaging in activities detrimental to the welfare of shareholders and other stakeholders. At a minimum, the monitoring system consists of a board of directors to oversee management and an external auditor to express an opinion on the reliability of financial statements. In most cases, however, governance systems are influenced by a much broader group of constituents, including owners of the firm, creditors, labour unions, customers, suppliers, investment analysts, the media, and regulators.

The Government of the day in Nigeria, through its various agencies, developed various institutional arrangements to safeguard investors' hard-earned investments from dishonest management and directors of companies listed on the Nigerian Exchange Group. These institutional frameworks led to the publication of 'The code of corporate governance best practices' in November 2003. The code suggests that a board of directors should oversee how a company conducts business and outsource the day-to-day management of the company's operations to the CEO and other management personnel. The board should see to the appointment of a qualified individual as the CEO and management team, according to the code's best practices. The directors are required to oversee and manage the company's affairs with a strong sense of integrity, dedication to the company, its business strategies, and long-term shareholder value due to their breadth of expertise. The board also performs other supervisory duties.

Corporate Governance aims at increasing profitability and efficiency of organizations and their enhanced ability to create wealth for shareholders, increased employment opportunities with better terms for workers and benefits to stakeholders. Thus, the main tasks of Corporate Governance is to assure corporate efficiency and mitigating arising conflicts providing for transparency and legitimacy of corporate activity, lowering risk for investments and providing high returns for investors and delivering framework for managerial accountability.

The prominence of the board of directors in corporate governance is evident in model definitions of corporate governance which in a nutshell regards corporate governance as the processes and structures by which the business and affairs of an institution are directed and managed in order to improve long-term shareholder value by enhancing corporate performance and accountability while taking into account the interest of other stakeholders. (Tricker, 2009). In the words of Bodaghi and Ahmadpour (2010) corporate governance structure is seen as a philosophy and mechanism that requires a process and structure for creating shareholder value and protecting the interests of all stakeholders. Liem (2016) stated that the corporate

governance structure is to protect the principals' interest through established performance monitoring mechanism, reduce inefficiencies that arise as a result of unethical practices and help eradicate the problem of asymmetric information. Corporate governance mechanism includes monitoring the actions, policies, practices, and decisions of corporations, their agents, and affected stakeholders. It is crucial to emphasize that board structure (BS) is a significant component of the CGS to ensure accountability, transparency, fairness and integrity in decision making processes within the organization. It is also important to enhance company's performance, protect shareholders' interests and maintain public trust in the organization. A few of the structures are problematic when it comes to board meetings, subcommittee composition, diversity, CEO duality, and board size. Institutional share ownership, conflicts of interest, board performance review, and other issues are generally related to CGS. These are operationalized structures that guarantee the stability of business operations and management (Asare, Muah, Frimpong, & Anyass, 2022).

Board Size and Financial Performance

The correlation between board size and financial performance remains a focal point in corporate governance research. Valuable insights have been provided by recent studies into the relationship. McConnel and Servaes (2020) explored the impact of board size on financial performance across different samples of companies. Their findings suggested that larger boards are associated with better financial outcomes connecting this to the increased diversity of skills and perspectives leading to more effective decision making and governance. On the contrary, Klein (2021) argued that smaller boards tend to exhibit higher levels of cohesion and communication, resulting in faster and precise decision making processes. Board size is the number of individuals that constitute the board of directors of a company. The number of individuals that make up the board of directors influences the advisory capacity of the board as well as its monitoring effectiveness. According to Zabri, Ahmad, and Wah (2016) board size is the total number of directors on the corporate board. The authors further stated that the size of the board of directors varies from country to country. Famba, Kong, Kurauone, & Chituku-Dzimiro (2020) noted that the agency theory perspective provides that a firm with a higher number of directors could improve control of management by contributing to firm performance. Board size assumes a critical part in executives' capacity to administer and control the management. The board should be of a sufficient size relative to the scale and complexity of the company's operations and be composed in such a way as to ensure diversity of experience without compromising independence, compatibility, integrity and availability of members to attend meetings. It should comprise a mix of executive and non-executive directors, headed by a chairman. Understanding the relationship between board size and financial performance has significant implications for corporate governance practices. Hence companies must carefully assess their specific needs, industry dynamics and strategic objectives in determining the optimal size of their boards. This paper therefore hypothesized that:

Ho1: Board size has no significant effect on the financial performance of Deposit Money Banks in Nigeria.

Board Independence and Financial Performance

The composition of a company's board of directors particularly the level of independence among its members is a crucial determinant of its governance structure and financial performance. Recent research has tried to unravel the intricate relationship between board

independence and financial outcomes offering valuable insights into this aspect of corporate governance. James (2020) refers to independent director as non-executive who are free from any personal or economic association with the firm and its management. They are directors that has no involvement with the firm other than their position as a director. Board independence refers to the extent to which directors are free from conflict of interest and external influences, allowing them to act in the best interest of shareholders. Independence directors are expected to provide unbiased oversight, enhanced accountability and mitigate agency conflicts between management and shareholders. According to Boshnak (2021), the appointment of independent directors is an important means of minimizing the potential conflict between principals and agents and should thereby improve the value of firms. An independent board is generally composed of members who have no ties to the firm in any way, therefore there is no or minimum chance of having a conflict of interest because independent directors have no material interests in a company. Ying (2015) noted that independent directors perform important monitoring responsibilities in companies. They are viewed as having superior incentives to the inside directors and are more likely to employ their technical, and professional expertise and experiences to provide defence against the behaviours of shareholders and directors.
The percentage of independent non-executive directors to all other directors in a corporation is known as the board independence. This is the proportion of members of the board who are non-executive directors that influences board oversight. The term "board independence" describes the ratio of independent non-executive directors to all other board members. An independent director who has no connection to the company other than their directorship is referred to as an independent non-executive director. There seems to be an assumption that boards with considerable outside directors will make judgments that are different from and possibly better than boards with a majority of insiders that are unable to monitor managers perfectly (Jensen and Meckling, 1976). This paper therefore hypothesized that:
Ho2: Independent directors has no significant effect on the financial performance of Deposit

Money Banks in Nigeria.

Theoretical linkage

This study is anchored on the agency theory. The agency theory as propounded by Jensen and Meckling in 1976, views the board of directors as the agent of the shareholders and as such, there is a need for them (board of directors) to act in the best interest of the shareholders. In this situation the interests of both the parties are often non-aligned which ultimately leads to the agency problem. In this theory, shareholders who are the owners or principals of the company, hires the agents to perform work. Principals delegate the running of business to the directors or managers, who are the shareholder's agents. Agency theory suggests that employees or managers in organizations can be self-interested and may be succumbed to opportunistic behavior and falling short of congruence between the aspirations of the principal and the agent's pursuits. Agency theory explains the problems that occur due to variances between the goals of the principal and the agent. This condition could occur since the owners are not aware of the activities of the managers or are barred by resources from acquiring the information. However, shareholders that desire high current capital growth may be unaware of these plans. It is also possible for the managers not to be interested in venturing into more lucrative concepts for their own individual goals.

The Agency theory is very applicable in this study, this is because in terms of corporate governance, managers and directors are supposed to safeguard the image of the company. The

agents (management) are supposed to implement the wishes of the owners of the company, so that their original intents are upheld. Corporate governance guidelines are supposed to ensure that the managers act in line with the wishes of the owners of the business organizations who by all standards contribute massively to the economic development of the country. The Agency Theory, therefore, insists in the establishment of very strict corporate governance rules, so that managers self-interests will not override the way the firm is run.

Indeed, agency theory can be employed to examine the effect of board structure on the financial performance of selected deposit money banks in Nigeria.

Empirical Review

To further illuminate on the relationship subsisting between board structure and financial performance of listed deposit money banks in Nigeria, we reviewed what researchers have done in this regard so as to refine our approach and maximize the impact of this study.

Aliyu, Onipe and Samuel (2023) evaluates the impact of board composition on the financial results of 14 Nigerian listed banks over the course of five (5) years, from 2018 to 2022. Board meetings, gender, independence, and size act as stand-ins for different aspects of the board. Return on assets is used as a proxy for financial performance. Secondary information was taken from the annual listed banks' accounts and reports. The research design that was used was correlational research design. Panel data regression was the type of regression technique used. The results show that there are no appreciable effects of board meetings, gender diversity, or independence on financial performance. The study also demonstrates a noteworthy positive impact of board size on financial performance. The report suggests that banks with boards comprising more than nine members should lower the number of board members in

Ali, & Monica, (2023) examined how board size and independence influence the financial performance of listed deposit money banks in Nigeria over a twelve-year period from 2010 to 2021. The sample comprised eight out of fourteen listed deposit money banks, chosen through convenient sampling. Data were gathered from the annual reports and accounts of these selected banks and analyzed using descriptive statistics, correlation coefficients, and multiple regressions with STATA software version 13.00. The findings revealed a negative and statistically significant impact of board size on financial performance, while board independence had a positive and significant effect on the Return on Equity (ROE) of listed deposit money banks in Nigeria. Consequently, the study recommends maintaining a board size that facilitates high-quality, active debates while ensuring the acquisition of necessary skills for effective functioning. It suggests avoiding excessively large boards, as they can detrimentally affect financial performance. Additionally, the study proposes increasing the presence of independent non-executive directors on boards, as this promotes enhanced performance within the banking sector.

A study by Agrawal and knoeber (2022) found a positive association between board independence and firm value. In the study it was highlighted that companies with higher proportion of independent directors tend to exhibit superior financial performance as measured by metrics such as return on assets (ROA) and return on equity (ROE). Li and Li (2023) also corroborates this stance with the outcome of their study stating that firms with a more independent board are more likely to engage in innovative activities that could lead to enhanced long term financial performance and competitive advantage. Extant literature argues that non-executive directors can play a significant role in the effective resolution of agency problems

and that their membership on the board can promote more effective decision-making. An independent non-executive director is one who is not employed by the firm and whose only relationship to it is that of a director. There appears to be a presumption that boards with a significant number of outside directors will reach conclusions that are distinct from and perhaps even superior to those reached by boards with a majority of insiders.

Appah (2022) investigated the effects of corporate governance mechanisms on the value of deposit money banks in Nigeria from 2010 to 2020. The results from the multiple regression results disclosed that board independence, the board size, ownership structure, gender diversity and board meetings positively and significantly influence the value of deposit money banks in Nigeria. The study concluded that corporate governance attributes positively and significantly affect the value of deposit money banks in Nigeria. The study made several recommendations amongst others that board sizes should be enhanced as this allows for the appropriate combination of directors. A large board increases the chance of directors having appropriate knowledge, skill and networks. The knowledge, skill and networks of directors may increase the financial performance of an organisation.

Boshnak (2021) studied the corporate governance and financial performance of firms in Saudi Arabia from 2017 to 2019. The study employed ex post facto and correlational research designs. The study used secondary data from the published financial reports of sampled companies. The study dependent variable was financial performance (return on assets, return on equity and TobinQ) and independent variables of corporate governance (board size, board independence, CEO duality, audit committee size, audit committee meeting frequency, ownership concentration) while firm size, firm leverage and firm age were also applied as control variables. The secondary data collected from financial reports were analysed using descriptive statistics, correlation matrix and multiple regression analysis. The study results revealed a negative relationship between board size and financial performance, though Tobin Q showed a significant association; a negative relationship between board independence and financial performance; a positive relationship between a board meeting and financial performance; CEO duality negatively affects financial performance; audit committee size negatively influenced financial performance though the return on assets revealed a significant relationship; audit committee meeting negatively affects financial performance though significant at 5% for return on assets and Tobin Q while return on equity significant at 10%; and ownership concentration positively and significantly affects return on assets and Tobin Q though the return on equity showed no significant relationship.

Musah & Adutwumwaa (2021) examined the influence of various corporate governance structures such as board size, board independence, board gender diversity and CEO duality on the financial performance of rural banks in Ghana. The result shows that there was a positive but statistically insignificant association between CEO duality and ROA and ROE. The study further reveals a positive association between board size and ROA and ROE even though that of ROA was statistically insignificant. Also, board independence was found to be a significant determinant of rural bank financial performance In addition to the above, the study reported a negative association between gender diversity on the boards of the rural bank and ROA and ROE and both associations were statistically significant.

Al-Hamadsheh, Bardai, & Al-Jounaidi,(2020) examined the moderating role of voluntary disclosure on corporate governance and financial performance in Jordan for the period 2012 to 2017. Correlational research design was employed on a target population of 249 companies out of which a sample of 208 was used. The study employed secondary data from the published

financial reports of sampled companies obtained from the Amman Stock Exchange. The dependent variable financial performance (return on asset) and the independent variable corporate governance (audit committee, board committee, board activity, board size, board independence, audit committee size, foreign ownership, government ownership, and institutional ownership). The study utilised voluntary disclosure as a moderator variable. The secondary data obtained from the published financial reports were analysed using multiple regression analysis. The findings revealed a statistically significant relationship between board committee, board activity, the board size, board independence, foreign ownership, audit committee size, and institutional ownership on financial performance (return on asset) while audit committee and government ownership indicate a statistically insignificant relationship with financial performance (return on asset). The study also revealed the mediating role of voluntary disclosure on corporate governance and financial performance of listed companies on the Amman Stock Exchange for the period of 2012 to 2017 in Jordan.

Aktan, Turen, Tvaronaviciene, Celik, & Alsadeh (2018), studied the relationship between corporate governance and performance of the financial firms in the Kingdom of Bahrain. The study covered fifteen (15) financial firms, comprising 13 banks and 2 insurance companies listed on the Bahrain Bourse for the period 2011-2016. The study used annual data of all the listed financial firms. Data was analyzed using multi-co-linearity, pair wise correlation and multiple linear regression analysis was done for the hypotheses of this study to test the relationship The results showed that board size, ownership concentration and auditor‟s reputation had a positive and significant impact on firms‟ return on assets (ROA), whereas the percentage of independent directors and the annual number of board meetings had a negative and significant impact on firms‟ return on equity (ROE). CEO duality was found to not be an important determinant factor of firms‟ performance, as the results suggested that it showed an insignificant effect on ROA, ROE and Stock Prices Returns (SPR). Furthermore, firm size and leverage were found to have negative and insignificant relationship with firm performance.

Datta, (2018) conducted a study on the relationship between corporate governance mechanisms (board size, board composition, board meetings and board audit committee) and performance of the insurance company.. This study found that the corporate governance had an impact on the performance of the insurance sector in Bangladesh. The independent variables of corporate governance (board size, board composition, board meetings and board audit committee) determined 38.20 percent of the performance (ROE) variance. Using Pearson correlation, the results provided evidence of a positive relationship between board sizes and ROE as well as board meetings. The result further revealed that a negative relationship between ROE and board composition. However, the study could not provide any association between the performances of the insurance (ROE) and board audit committee.

Saha (2018) conducted a study to explore the relationship between corporate governance and firm performance by considering the role of board and audit committee. Multiple linear regression analysis was used as the underlying statistical test on the dependent variables, ROA, ROE and TQ to test the association between the independent variables (board size, board independence, size of audit committee and audit committee composition) with firm performance. Homogeneous purposive sampling was used. The sample size of the study was 81 listed companies in DSE. The results of the study signified that board independence ratio and audit committee was statistically significant and had a positive impact on ROA and TQ. But it was not statistically significant in the case of firm performance indicator ROE in this study. In addition, board size was not statistically significant and had a negative correlation

with firm performance due to group dynamics, communication gaps and indecisiveness of larger groups.

Methodology

The study employed a quantitative research design to examine the relationship between board structure and financial performance in Nigerian listed deposit money banks. Specifically, panel study was utilized to analyze data from a defined period (2012-2021). The target population consists of all thirteen (13) Nigerian deposit money banks listed on the Nigerian Exchange Group (NGX) as at 31st December 2021. A purposive sampling technique was used to select 6 banks that have publicly available data on board structure and financial performance over the past five years, ensuring the results are recent and relevant. Data on board characteristics of board size and board independence were collected from the banks' annual reports and other official documents. Financial performance was derived from financial statements and indicators such as Return on Assets.

Model Specification

The models built for the purpose of analysis for this study is as follows;

$ROA = \beta_0 + \beta_1 BOZ + \beta_2 BIND + \mu$ --(1)

Where:

ROA= Return on Asset

BOZ = Board Size

BIND = Board Independence

$\beta 0$= Constant

$\beta 1$ to $\beta 2$ = Estimation parameters

μ = Error term

Measurement of Variables

The variables of the study are measures as described in the table below:

Table 1 Operationalization of Variables

Variables	Symbol	Measurement of Variable
Financial Performance	ROA	Profit before tax / Total assets
Board Size	BOZ	Total number of directors on the board, It includes executive and non-executive directors.
Board Independence	BIND	Proportion of non-executive directors to the total number of directors.

Source: Authors compilation 2024

Analysis and Discussion

Descriptive Statistics

Table 2: The descriptive statistics for the dependent and independent variables

	ROA	BOZ	BIND
Mean	0.052233	14.53333	0.605848
Median	0.050000	14.50000	0.571429
Maximum	0.090000	19.00000	0.916667
Minimum	0.004000	6.000000	0.500000
Std. Dev.	0.018327	2.866916	0.105047
Skewness	-0.390893	-0.341641	1.814603
Kurtosis	3.113883	3.010282	5.747646
Jarque-Bera	1.560395	1.167447	51.80173
Probability	0.458316	0.557818	0.000000
Observations	60	60	60

Source: E-View Output generation

Table 2 presents the descriptive statistics of all the variables. N represents the number of observations and therefore the number of observations for the study is 60. Return on asset (ROA) has a mean of 0.052233 with a deviation of 0.018327. Also, ROA reveals a maximum and minimum value of 0.090000 and 0.004000. The result also reveals that, Board Size (BOZ) reflects a mean of 14.53333 with a deviation of 2.866916. BOZ also revealed a maximum value of 19.00000 and a minimum value of 6.000000. The Table also illustrate that Board Independence (BIND) has a mean of 0.605848 with a standard deviation of 0.105047. BIND reveals a maximum value of 0.916667 and a minimum value of 0.500000.

Normality of the variables was examined using the skewness, kurtosis, Jarques-Bera and probability statistics. According to Kline (2011), the univariate normality of variables can be assumed if the skewness statistic is within the interval (-3.0, 3.0) The data set for all the variables reveal skewness statistic values that are between the range of approximately -3 and +3. This means that all the data values are within the accepted skewness range for normality.

Correlation Analysis

A correlation analysis was carried out to analyze the relationships between the dependent and independent variables as this would assist in developing a prediction model

Table 3

VARIABLES	ROA	BOZ	BIND
ROA	1.000000		
BOZ	0.209852	1.000000	
BIND	-0.367967	-0.523388	1.000000

Source: E-View Output generation

Table 4.2 shows how the variables in the model interact with one another. However, for this study, the emphasis is on the relationship between the dependent variable and the independent variables. According to this table the value of correlation coefficient between ROA and board size (BOZ) of the firm is 0.209852, which shows a positive association between ROA and

board size (BOZ). The table also shows a negative relationship between ROA and BIND, with correlation coefficient -0.367967.

Panel Regression Analysis

For this study**,** the nature of the data collected is that of multiple time periods from different banks capturing both time series and cross sectional dimensions. This makes it valuable to analyse trends, patterns and relationships subsisting between the variables using the panel data analysis in order to provide richer insights into the dynamics of the relationship under study. To further proceed in this analysis, the Hausman test is conducted to identify the preferred model among the two models in the panel analysis that is the random effect model and the fixed effect model.

The Hausman test

This test is a statistical test used to assess the consistency of estimators in panel data models. It helps to determine whether the estimators derived from two different methods that is the fixed effects (FE) and the random effects (RE) models are statistically different from each other and thus which model is more appropriate for the data. The null hypothesis of the Hausman test is that the 'preferred model is the random effect model' implying that the individual specific effects are uncorrelated with the other explanatory variables in the model.

A chi-square statistic is thus calculated computed as the difference between the estimators obtained from the fixed effect and the random effect weighted by the inverse of the covariance matrix of the estimators.

Table 3: Hausman Test Result

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	5.093707	2	0.0783

Source: Output from E-views Estimation

Table 3 displays the result from the Hausman test conducted to determine the preferred model to adopt for this study. From the table it is observed that the p-value of the chi-sq statistic is 0.0783. When compared with the level of significance at 5% (0.05) we conclude that p-value of the chi-sq statistics is greater than the 0.05 significance level and thus we cannot reject the null hypothesis that the random effect model is preferred

Regression Estimates

Table 4: Random Effect Model Estimates

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 03/26/24 Time: 11:27
Sample: 2012 2021

Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BOZ	0.006350	0.002966	2.140979	0.0366
BIND	0.037348	0.093346	0.400103	0.6906
C	-0.077915	0.092319	-0.843974	0.4022
Effects Specification				
			S.D.	Rho
Cross-section random			0.023283	0.2633
Idiosyncratic random			0.038950	0.7367
Weighted Statistics				
R-squared	0.099708	Mean dependent var		0.017299
Adjusted R-squared	0.068119	S.D. dependent var		0.041756
S.E. of regression	0.040309	Sum squared resid		0.092614
F-statistic	3.156402	Durbin-Watson stat		0.747608
Prob(F-statistic)	0.040110			
Unweighted Statistics				
R-squared	0.032343	Mean dependent var		0.036993
Sum squared resid	0.132982	Durbin-Watson stat		0.520662

Source: E-View Output 2024

Table 4 presents the results of regression analysis for board structure and financial performance of listed deposit money banks in Nigeria using the preferred model of random effect as indicated by the Hausman test. The output of the regression model unveils that the coefficient of the constant (C) is -0.077915 which implies that if all other variable is held constant all thing being equal, criterion variable is expected to be increased on the average by about 0.078 units. For the model fitness, the R squared value is used to establish the level of overall fluctuation the independent variables (BOZ and BIND) can collectively cause ROA as the dependent variable. The R squared value 0.099708 which is approximately 0.10 shows that BOZ and BIND cause ROA to fluctuate at approximately 10% this means that 90% fluctuation of the ROA is caused by other factors not considered in this study. The R^2 adjusted value of approximately 0.068119 shows that variation from the sampled result of R square if the other omitted factors are considered will bring about either 6.812% increase or decrease in the level of fluctuation BOZ and BIND can cause ROA to change.

The F-statistics and its probability show that the regression equation is well-formulated explaining that the relationship between the variables combined is statistically significant The Fisher statistic reveals a value of 3.156402 with a probability value of 0.040110 which prove that the overall model is statistically significant. The beta coefficient for BOZ shows a positive

value of 0.006350, which suggests a 1 per cent addition to board size will cause a 0.006350 per cent increase in ROA and statistically significant with a p-value of 0.0366. This indicates that a unit increase in BOZ will lead to a significant difference in the financial performance of the listed deposit money banks. The result further shows a positive but non-significant outcome of BIND on ROA at a 5 per cent level of significance, with a coefficient of 0.037348. This suggests that a unit increase in BIND will increase ROA by 0.037348 units.

Test of Hypothesis

The hypotheses formulated were tested using panel regression analysis.

$H_{0\,1}$: Board size has no significant effect on Return on Assets of listed deposit money banks in Nigeria

The t-statistics value of BOZ is 2.140979 with the probability value of 0.0366 indicates that the relationship between BOZ and ROA is statistically significant at 5% level and there is a positive relationship. This implies that the null hypothesis cannot be sustained and conclude that board size has significant effect on the Return on Assets of listed deposit money banks in Nigeria

$H_{0\,2}$: Board independence has no significant effect on Return on Assets of listed deposit money banks in Nigeria

The t-statistics value of BIND is 0.400103 with the probability value of 0.6906 indicates that the relationship between BOZ and ROA is not statistically significant at 5% level though there is positive relationship. Hence within the specified context of this study there.This implies that the null hypothesis is sustained

Conclusion

The study examined the effect of board structure on financial performance of listed deposit money banks in Nigeria. In light of the test carried out, the following were the outcome of the study: Board Size has a positive and significant effect on Return on Assets of listed deposit money banks in Nigeria. Board independence have a negative and significant effect on Return on Assets of listed deposit money banks in Nigeria . This resonates with the works of Sanyaolu, Adesanmi, Imeokparia, Sanyaolu, & Alimi (2017) and Musah & Adutwumwaa (2021).

Policy Implications

The following policy implications are adduced from the study which is consistent with the findings and the conclusion of the study:

1. This study offers valuable insights into the relationship between board size and financial performance it is observed that board size has a positive and significant relationship with financial performance. Thus, by positive association, companies with a larger board of directors can improve the control and monitoring functions of management decisions, thereby increasing financial performance. The Board of Directors can make firms operate more effectively; reduce the agency cost of the business thereby increasing financial performance.
2. Board independence has a positive association with financial performance of listed deposit money banks in Nigeria though not significant. However, it must be noted that banks that prioritize board independence are more likely to achieve sustainable growth, mitigate risk, and enhance shareholder value. Therefore the study recommends that board

of directors should consist of board members who are competent, experienced and knowledgeable in the field of business operations to enhance financial performance. Regulatory authorities such as FRCN, CAC and SEC should spell out clearly the structure of members in the Board so as to make them perform their duties effectively; emphasis should be towards having independent members with specific industrial experience and financial knowledge.

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