

# The Effect of Ownership Structure on Firm Performance: A Case Study of Listed Deposit Money Banks in Nigeria

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**Abstract**— Nigeria Deposit Money Bank (DMEs) are attracting foreign investment in the form of equity capital. However, there are concern about whether the structure of ownership of these banks can affect their performance. This study analysed the effect of ownership structure on the performance of listed deposit money banks in Nigeria for the period 2018 to 2022. The study used a sample of thirteen selected Deposit Money Banks out of fourteen Deposit Money Banks listed on the Nigeria Exchange Group and data were generated from their annual financial statement. The study employed a panel data estimation technique. The evidence showed that both managerial and institutional ownership had a significant positive effect on the performance of Deposit Money Banks in Nigeria, suggesting that higher managerial and institutional ownership would result in an increase in firm performance. It was concluded that ownership structure increases performance of listed banks in Nigeria.

**Keywords**— Ownership structure, firm performance, managerial ownership institutional ownership.

## I. INTRODUCTION

Market globalization has compelled enterprises in Nigeria to enhance their professionalism, leading to a distinction between ownership and management. While this may significantly contribute to attaining favorable corporate goals for enterprises, it also engenders a conflict of interest between the principle (owner) and the agent (managers), possibly leading to agency difficulties. The design of the ownership structure ensures that managers act ethically and make decisions that benefit stakeholders, thereby enhancing the firm's performance. The solid ownership structure underpins the faith of lenders. An effective ownership structure may substantially influence the strategic choices made by management, such as external finance and financing costs. Consequently, ownership structure factors, such as managerial and institutional ownership, can directly impact company performance, and there is a connection between ownership structure and agency costs. The ownership structure has increasingly been a focal point of management study. The examination of the impact of the separation of ownership and control has emerged as a compelling topic (Andow & David,

2016). Theoretically, the principal-agent dilemma occurs when asset owners depend on agents for their use. The primary aim of shareholders is to optimize the return on their invested resources by entrusting comprehensive investment management to expert managers (Rosyeni & Muthia, 2019). Nevertheless, shareholders may have limited influence over them due to elevated monitoring, contractual, and information-gathering expenses, as well as increased transaction costs. Corporate governance aims to prevent managers (agents) from engaging in suboptimal actions or behaviors that undermine the maximization of value for the owners, a phenomenon known as management entrenchment. According to Kajola, Apelogun, and Owuru (2017), managers (agents) may opt for various initiatives that may not meet the shareholders' required rate of return, but they align with their personal expectations nonetheless. Increased management ownership correlates with improved performance since the owner/manager has more incentives to boost share value (Okewale, Mustapha & Aina, 2020). Conversely, institutional ownership serves as an additional corporate governance mechanism that influences agency costs (Eluyela, Okere, Otekunrin, Okoye, Festus & Ajetumobi, 2020). The literature extensively cites the impact of institutional ownership on performance (Soufeljil, Sghaier, Kheireddine, & Mighri, 2016). Institutional investors significantly reduce external monitoring expenses by disseminating additional information on the firm to other shareholders. Furthermore, Muhammad, Nik Mohd, Wan, and Abdalrahman (2019) assert that they significantly impact choices about their substantial investments in firms.

The banking industry undeniably plays a crucial role in the economy via intermediation and the allocation of cash. It is essential to identify the owners and key stakeholders and to evaluate how their ownership levels influence sector performance.

This study conducted an experimental examination of existing literature on ownership structure and its influence on the financial performance of specific businesses. For instance, research has been conducted in both developed and emerging nations (Sinnavaia A, 2020; Aliandxin, 2020; Al-Favooque, Buachoom, and Sun, 2020; Kirimi Kanuki and Ocharo, 2022).

The results of these studies were contradictory, making them unsuitable for extrapolation to Nigerian deposit money banks. A thorough review of the literature shows that many studies in Nigeria have looked at the link between ownership structure and financial performance. These studies include those by Lawal, Agbi, & Mustapha (2018), Musa, Ahmed & Umar (2020), Fakile & Adigbole (2019), Alhassan & Mamuda (2020), Nwokediuko & Onyimba (2023), Kirimi, Kariuki & Ocharo (2022), Tnushi, Yahaya & Agbi (2023), Kase (2021), Isa, Muhammed, Ibrahim & Ibrahim (2023), Babalola, Obademi, & Amah (2023), Akhor & Acti (2020), and Osazee & Efosa Sa'adatu (2023). Nevertheless, few studies have examined the impact of ownership structure on the financial performance of publicly listed deposit money banks in Nigeria during the COVID-19 outbreak, despite their significant contribution to the Nigerian economy. This research examined the post-COVID-19 epidemic era to assess the impact of COVID-19 on bank owners' capacity to affect their performance. Moreover, the majority of research in this domain did not conduct rigorous testing to enhance the validity and reliability of the statistical inferences drawn from their findings. Nonetheless, the present research performs Hausman, Heteroskedasticity, and Lagrangian tests, among others.

The investigation continues to focus on whether there is a significant correlation between the ownership structure and the performance of deposit money institutions in Nigeria, and whether such a relationship is desirable. This research examines the ownership structure and financial performance of publicly listed deposit money banks in Nigeria. The duration included five (5) years, from 2018 to 2022. The recent increase in activity within deposit money institutions determined the chosen era.

## II. LITERATURE REVIEW

### 2.1 Conceptual framework

Muhammad, Muhammad, Adman, Intesham, Muhammad, and Muhammad (2017) defined ownership structure as the governance of a company and the distribution of equity related to voting rights and capital, which can originate from financial institutions, government entities, individuals, and management. Financial literature has thoroughly explored the correlation between ownership structure and performance. Does managerial ownership and institutional ownership influence the financial performance of firms? Discourse and literature have sought to address these concerns.

Lawal, Agbi, and Muatapha (2018) define managerial ownership as the percentage of a firm's equity that belongs to its management. The purpose of managerial ownership is to motivate managers to align their interests with the business's. Managerial ownership significantly influences a company's financial success. Previous research demonstrated conflicting outcomes regarding the relationship between management ownership and corporate success. Shao (2019), Kirimi, Kariuki, and Ocharo (2022), Alfavooque, Buachoom, and Sun (2020), and Rosyeni and Muthia (2019) contended that the risk-averse disposition of certain managers leads them to

eschew risky projects, thereby jeopardizing the firm's growth trajectory and often resulting in diminished organizational performance. Some previous research indicates that in firms with significant management ownership, managers possess the authority to invest in initiatives that are both highly hazardous and potentially more rewarding, resulting in improved financial performance for the company. Managerial ownership is a crucial factor influencing company performance since it incentivizes managers to enhance organizational performance and optimize efficiency (Alfarooque, Buachoom, and Sun, 2020; Alhassan and Mamuda, 2020; Kase, 2021). The natural logarithm of the equity that managers hold as shareholders in a company quantifies managerial ownership. Conversely, institutional ownership is a significant factor influencing corporate performance. The literature underscores that financial organizations like banks, deposit money banks, and other entities hold an ownership interest in a company under institutional ownership (Osazee and Sa'adatu, 2023). Consequently, institutional investors are often professionals who use their expertise and experience to oversee management, ensuring alignment between their interests and those of the firm. Institutional investors choose a feasible project to allocate their capital in order to maximize returns and profitability. They also play a crucial role in corporate governance by enhancing the oversight of managerial performance (Ichiro & Satoshi, 2022). The natural logarithm of equity that diverse institutions hold as investors in the company quantifies institutional ownership. Financial performance assesses the efficiency with which a corporation utilizes its resources. It evaluates the degree of achievement of financial objectives. It thus assesses the efficacy with which a corporation utilizes its assets to generate profits in both the short term and the long term. Financial performance metrics serve as a suitable instrument for evaluating performance for several reasons. The primary reason is that profit immediately influences the long-term goals of the purely financial business. The second point is that selected financial performance metrics provide a comprehensive perspective on an organization's performance (Fakile & Adigbole, 2019). This research employed Tobin's Q as a measure of financial success. Often used as a prospective market-based indication of a firm's financial success, this financial performance metric targets a specific customer (Ugwoke & Sergius, 2019).

### 2.2 Theoretical Framework

The theoretical basis for the study of the link between ownership structure and business performance/value is agency theory, which posits a fundamental conflict between shareholders and firm management (Mishelle, 2021). Leaders and management prioritize expansion and stability over increasing shareholder profits in the contemporary corporation (Fakile & Adigbole, 2019).

The agency theory serves as a theoretical framework in management and finance literature for organizing connections between shareholders and managers, as well as elucidating the behaviors of principals and agents (Rosyeni & Muthia, 2019). According to Kajola, Apelogu, and Owuru (2017), the fundamental premise of agency theory is that managers will

act in their own self-interest at the expense of shareholders, leading to the primary conclusion that they cannot fully optimize the firm's performance/value because they possess information that allows them to appropriate wealth for themselves. Incentive monitoring or regulatory intervention may address this conflict of interest (Kajola, Apelogun, & Owuru, 2017). The transaction and incentive mechanisms proposed in the literature to address expenses associated with management transactions or agency costs include pay schemes, stock ownership, and similar strategies. The company's expenses also include monitoring fees for pet projects, free cash flow allocation, and executive development, among others. The objective of an effective ownership structure is to minimize costs and enhance business performance and value. Overseeing management is crucial to prevent the implementation of policies that are detrimental to the company's development. The responsibility for this monitoring role lies with the board, whose makeup mirrors the company's ownership structure.

### 2.3 Empirical Review

Isa, Muhammed, Ibrahim, and Ibrahim (2023) conducted an empirical analysis of the influence of ownership structure on the dividend policy of publicly listed deposit money banks in Nigeria from 2014 to 2020. The yearly financial statements of DMBs provided the data. The panel data regression analysis results show that management and foreign ownership have a minor beneficial influence on dividend payout ratios. In contrast, institutional ownership had a detrimental effect on dividend distribution, while ownership concentration demonstrated a large adverse impact. The report advised that banks promote management alignment to enhance governance with an emphasis on long-term value.

Sinnarajah's (2020) research examined the influence of ownership structure on the dividend policy of publicly listed firms in Sri Lanka, concentrating on the banking, finance, and insurance sectors during a five-year period from 2011 to 2015. The research used institutional ownership, concentrated ownership, foreign ownership, and dividend per share as proxies for ownership structure and dividend policy, respectively. The panel data analysis indicated a substantial negative correlation between institutional ownership and dividend per share, a positive correlation between foreign ownership and dividend per share, and an insignificant positive link between concentrated ownership and dividend per share. Furthermore, return on equity, business size, and future growth potential do not exhibit a strong correlation with dividend per share.

Babalola, Obademi, and Amah (2023) examined the impact of ownership structure on corporate performance in Nigeria from 2011 to 2021. The researchers obtained data from the annual reports of the firms. The Chief Executive Officer, board members, and block shareholders represent the ownership structure. The panel data regression analysis results indicated that CEO ownership has a considerable positive impact on returns on assets, while board and block ownership have a minor influence on the value of listed consumer products in Nigeria. The research recommended allowing

block owners to leverage their expertise and experience to help enterprises achieve their goals.

Al-Farooque, Buachoom, and Sun (2020) used the generalized system method of moments (GSMM) to examine the influence of corporate board and audit committee attributes on business performance from 2000 to 2016. The research used TQ and stock returns as proxies for business performance, whereas block and management ownership represented ownership structure. Results indicated that block ownership did not significantly affect TQ and stock returns. Conversely, management ownership had a favorable and considerable influence on TQ, but its effect on stock returns was negligible.

Osazee and Efosa Sa'adatu (2023) conducted an empirical analysis of the impact of ownership structure on the profitability of banks in Nigeria. The panel data regression methodology was utilized from 2006 to 2018. The research used board ownership, institutional ownership, foreign ownership, and executive officer ownership as proxies for ownership structure, and measured performance by return on assets (ROA). The findings indicated that I.O., F.O., and CEO ownership exhibit a positive and substantial correlation with ROA, but board ownership negatively affects performance as measured by ROA. The report recommended limiting the ownership of boards and senior management stakes in the banks' ownership structure to improve effective corporate governance in Nigeria's banking industry.

Kirimi, Kariuki, and Ocharo (2022) conducted an empirical analysis of ownership structure and financial performance, focusing on Kenyan commercial banks from 2009 to 2020. The regression analysis revealed substantial evidence that ownership arrangements account for variations in the financial performance of commercial banks. The findings demonstrated a negative correlation between institutional ownership and NPM, a negative link between management ownership and both NPM and EPS, a negative relationship between institutional ownership and ROA, and a negative nexus between foreign ownership and EPS. The research suggested that commercial banks should diversify their ownership structure to improve financial performance.

Kase (2021) similarly examined the relationship between ownership structure and profitability of deposit money banks in Nigeria. The research employed managerial, institutional, and foreign ownership as surrogates for ownership structure, while ROA served as a performance indicator. The annual reports of some banks were used to do panel multiple regression analysis. The results showed that management and foreign ownership have a big effect on the profits of Nigerian listed deposit money banks, but institutional ownership doesn't have a big effect on the profits of listed DMBs. The report advised against management ownership in Deposit Money Banks (DMBs) in Nigeria.

Tnushi, Yahaya, and Agbi (2023) examined the ownership structure and dividend policy of publicly listed banks in Nigeria. Using a strong Tobit regression method, the findings showed that institutional shareholdings, ownership concentration, and foreign shareholdings all have positive and significant effects on dividend policy. On the other hand,



management shareholding has a negative and significant effect. We determined that management shareholding would deter the dividend payment policy of deposit money banks listed in Nigeria, while institutional shareholdings would promote the dividend payment policy in these banks.

Nwokediuko and Onyimba (2023) used the Granger causality regression method to analyze the relationship between ownership structure and bank performance in Nigeria from 2000 to 2019. The findings indicate a causal association between ownership structure, as represented by director and institutional ownership, and bank performance, as measured by ROE.

Alhassan and Mamuda (2020) examined the impact of ownership structure on the financial performance of publicly listed financial institutions in Nigeria from 2010 to 2019. We analyzed the data from the firms' annual reports using pooled generalized least squares and random and fixed effects regression models. The results indicated that ownership structure, as measured by institutional and managerial ownership, positively and significantly influences the financial performance of publicly listed financial organizations, but ownership concentration has a negative impact. The research thus advised that to improve financial performance, financial organizations in Nigeria should augment management equity ownership.

Additionally, Peerbhai Gumede, Shabangu, Gumede, Ndhlowu, and Hlomela (2021) examined the influence of ownership structure on the dividend policy of 89 companies listed on the Johannesburg Stock Exchange All Share Index (ALSI) from 2010 to 2019. The research examines three ownership arrangements using a panel regression model, including both fixed and random effects models. Findings indicated that institutional shareholders dominate the ownership landscape of these organizations. The FE model indicated that management and foreign ownership structures do not significantly correlate with the dividend policy of South African enterprises. Conversely, a negative correlation exists between institutional ownership and dividend policy. These findings contradict the conventional assumptions of agency theory, which suggest that substantial owners use elevated dividends to limit accessible profits, thereby benefiting managers. Conversely, institutional investors in South Africa seem to diligently monitor management performance. Oyedokun et al. (2020) conducted research examining the relationship between ownership structure and the value of publicly traded consumer goods firms in Nigeria from 2010 to 2018. The panel regression study showed that management ownership had a negative impact on firm value, while institutional, foreign, and concentrated ownership had a positive influence. The report advises decreasing CEO stock ownership to enhance the value of Nigeria's publicly listed consumer products firms.

Mesut (2020) examined the correlation between institutional ownership and firm value during a thirteen-year period, from 2006 to 2018. The results of the panel regression analysis indicated a robust correlation between business value and institutional ownership. A new poll indicates that investors choose firms with superior market performance. We

conducted the present study in Nigeria, primarily focusing on publicly listed deposit money institutions. Kornelia and Jerome (2021) conducted an empirical study on management ownership, but found it ineffective. The empirical relationship between the firm's Tobin's Q and management ownership is consistently negative, as shown by a literature review methodology. We specifically conducted this research in Nigeria, focusing on the listed deposit money institutions.

Okewale, Mustapha, and Aina (2020) conducted an analysis examining the relationship between ownership structure and financial performance of Nigeria's publicly listed food and beverage industries from 2010 to 2018. The analysis using regression, fixed effect, and random effect models revealed a slight positive influence of management ownership on ROE. Private ownership greatly influenced ROE. The research indicated that the ownership structure of food and beverage manufacturing firms in Nigeria significantly influenced their financial performance. The present analysis used Tobin's Q criteria, concentrating on enterprises listed among deposit money institutions. Falade, Nejo, and Gbemigun (2021) demonstrated the interconnection between managerial ownership and company value in their empirical research of Nigerian listed manufacturing enterprises, which they conducted through the lens of dividend policy. The panel pool methodology and Hausman test findings indicated a partial mediation effect of management ownership, dividend payment, and leverage ratio on corporate valuations. The study's results indicate that management ownership and dividend payment policies enhance firm value, with the latter indirectly influencing value via increasing managerial ownership. The report recommends that companies reevaluate their dividend policies and strongly advises management to get extra long-term financing for planned capital expenditures. For this research, we conducted a survey of the specified deposit money banks. Andhika (2021) employed multivariate linear regression and moderated regression analysis to investigate the effects of institutional ownership, leverage, company size, and profitability on firm value, with profitability serving as a moderating variable. The findings indicated that firm value was unaffected by institutional ownership, negatively impacted by leverage, and positively influenced by profitability. Researchers identified a significant inverse link between heightened indebtedness and diminished corporate valuations. Institutional ownership did not influence these results. Leverage had a substantial negative association with diminished company values. We carried out the present study in Nigeria, focusing on publicly listed deposit money institutions.

### III. METHODOLOG

The study employed an ex-post facto research approach, which enables the collection of historical multi-dimensional data to comprehensively establish the relationship between ownership structure and the performance of deposit money institutions in Nigeria. We selected this sector because of its potential volatility, which could have an impact on the entire financial system and the broader economy. The target audience comprises the fourteen (14) publicly listed and

regulated deposit money banks in Nigeria. The research deliberately selected thirteen (13) listed deposit money banks from a total of fourteen (14) insurance businesses, taking into account their size and market values, data availability, and observational sufficiency. We sourced time series data (2018-2022) from secondary materials derived from the annual reports and financial statements of publicly listed deposit money banks in Nigeria. We deemed the duration suitable as it provides a five-year timeframe for acquiring pertinent data and formulating inferences. We performed a multiple regression analysis in line with the findings of Andow and David (2016). We used panel data to analyze temporal variations in variables and inter-subject variances in variables. This research used the multiple regression approach due to its efficacy and efficiency in assessing the statistical association between several independent variables and a single dependent variable. The study used a number of regression models based on the panel structure of the cross-sectional and time series data. These models included the Fixed Effect (FE) Model, the Random Effect (RE) Model, and the pooled Ordinary Least Squares (OLS) Model. This research used the Hausman specification test to determine the right interpretation among OLS, FE, and RE results. Furthermore, we conducted supplementary tests for heteroskedasticity, autocorrelation, and multicollinearity to uphold the classical assumptions of OLS and the study's overall model (Andow & David, 2016). The study's model using balanced panel data, derived from the research of Lawal, Agbi, and Muatapha (2018), is provided as follows:

$$PERF_{it} = \beta_0 + \beta_1 MO_{it} + \beta_2 IO_{it} + \beta_3 SIZE_{it} + \mu_{it}$$

Where:

PERF = Firm performance of firm I in year t

MO = Managerial Ownership i in year t

IO = Institutional Ownership I in year t

$\beta_1 - \beta_3$  Coefficient of explanatory variable I in year t

B3 = Firm Size i in year t

B0 = Constant or Intercept

$\mu$  = Error Term

i = Individual Firm identifier

t= Time

#### IV. RESULTS AND DISCUSSION

##### 4.1 Descriptive Statistics

The research presents the descriptive statistics of all variables used in examining the impact of ownership arrangements on the performance of publicly listed enterprises in Nigeria. The dependent variable is Tobin's Q, while managerial and institutional ownership represent ownership patterns. The control variables were leverage, firm age, and company size. The descriptive data indicate that the mean firm value, as measured by Tobin's Q, was 0.8104, with a minimum value of -2.3855 and a high of 2.999. The standard deviation was 0.8458. It indicates a negative skewness of -1.0120. The share price was 38.23 naira, while the minimum was 0.20 naira. The peak share price reached 1517.995. The average business size was 20.6719, while the highest firm size was 22.6864. The firm's size fluctuates by 1.0014, suggesting

minimal variation across the enterprises. The firm's leverage indicates an average debt-to-equity ratio of 83.03%, with a minimum of 0.0012. The mean age of the listed companies was 40 years, with the oldest business being 102 years and the youngest firm 5 years old. Managerial ownership is 5.1033, while institutional ownership averages 153.966. The company size was the only variable that did not follow a normal distribution.

TABLE 1: Descriptive Statistics

	TQ	SIZE	MO	LEV	IO	AGE
Mean	0.810440	20.67199	5.103390	0.830521	153.9666	40.48315
Median	0.823541	20.69456	0.761090	0.853143	43.21659	28.00000
Maximum	2.999972	22.68641	139.3122	2.032676	3243.436	102.0000
Minimum	-2.385558	18.67825	-19.99920	0.001222	-32.58384	5.000000
Std. Dev.	0.845822	1.001422	17.30022	0.290893	378.2152	26.84980
Skewness	-1.012052	-0.174053	5.806890	0.042233	6.440427	0.987533
Kurtosis	6.745912	2.386849	42.95456	10.57695	51.56099	2.828168
Jarque-Bera	67.22781	1.822821	6420.040	212.9225	9360.153	14.57527
Probability	0.000000	0.401957	0.000000	0.000000	0.000000	0.000684
Observations	89	88	89	89	89	89

##### Pairwise Correlation Analysis

Table 2 displays the pairwise association among the explanatory factors. The independent variables consist of size, MO, LEV, IO, and AGE. Size had a modest negative connection with MO. SIZE also exhibits a weak positive correlation with IO. Nevertheless, the SIZE report indicates a slight positive association with leverage. Furthermore, MO and IO had a favorable correlation. Nonetheless, size did not demonstrate a meaningful association with the firm's age. The research will evaluate the extent of collinearity among the variables using the variance inflation factor. This will serve as a sufficient condition for the examination.

TABLE 2: Correlation Matrix

Correlation	TQ	SIZE	MO	LEV	IO	AGE
Probability	1.0000					
TQ	-----					
SIZE	0.7070	1.0000				
	0.0000	-----				
MO	-0.1272	-0.2193	1.0000			
	0.2375	0.0400	-----			
LEV	-0.3126	0.3206	-0.0066	1.0000		
	0.0030	0.0023	0.9510	-----		
IO	-0.2888	-0.3317	0.2929	0.1001	1.0000	
	0.0063	0.0016	0.0056	0.3534	-----	
AGE	-0.0501	-0.1375	-0.1021	-0.0179	0.2160	1.0000
	0.6428	0.2011	0.3434	0.8681	0.0433	-----

##### Unit Root Test for the Variable

The Levin-Lin-Chu test statistics are used to look at the unit root features of individual variables. This is because panel estimation has improved and it is now known that panel data can show mean reversion with either a shared unit root or separate panel unit roots. The results shown in Table 3 demonstrate that all variables exhibit p-values below 0.05 at

the specified level. This indicates that the variables are stationary at a level and integrated at order zero. The investigation may proceed to assess the association among the variables using a panel least squares model.

TABLE 3: Panel Unit Root

Variables	Levin, Lin & Chu t		PP - Fisher Chi-square		Remarks
	LLC-statistics	p-value	statistics	p-value	
AGE	-3.9251	0.0000	6.59574	0.0370	I(0)
IO	-21.4427	0.0000	46.6114	0.0002	I(0)
LEV	-4.66430	0.0000	28.5999	0.0435	I(0)
MO	-26.2403	0.0000	45.3767	0.0004	I(0)
SIZE	-6.91049	0.0000	45.1803	0.0004	I(0)
TQ	-15.3451	0.0000	45.7620	0.0003	I(0)

Variance Inflation Factor

The goal is to enhance the evaluation of collinearity by using the correlation analysis results. A post-estimation test of the variance inflation component was done to see if the model's assumption of no multicollinearity was broken. A significant degree of collinearity results in an understatement of the standard error of the variables, hence impacting the study's inferences. The VIF result must be below 10 to mitigate the issue of multicollinearity. The VIF results in Table 4.4 show that the model doesn't have any multicollinearity problems because all of the independent variables have VIF values less than 10.

TABLE 4: Variance Inflation Factors

Variance Inflation Factors		
Variable	Coefficient Variance	Centered VIF
SIZE	0.001617	1.342625
MO	4.72E-06	1.155837
LEV	0.020037	1.177859
IO	1.10E-08	1.317692
AGE	1.83E-06	1.093640
C	0.655396	NA

The regression estimate underwent the Hausman test for model specification. The outcome of the Hausman test demonstrates the rejection of the random effects assumption. Once it was found that the fixed effect model better reflected the model assumptions, post-estimation tests were done to see if the residuals broke the assumptions of homoskedasticity and no autocorrelation. The results of the serial correlation and heteroskedasticity tests indicate that the estimated model is robust and statistically efficient. The Hausman test indicates that the fixed effects model is superior to the random effects model. Table 5 demonstrates that the explanatory factors together accounted for 86.80% of the overall variance in business performance. Table 5 demonstrates that management ownership has a considerable positive influence on business performance, shown by a coefficient of 0.2402 (t-value of 2.4003) at a 5% significance level. This implies that an increase in management ownership will result in enhanced business performance. The age of a business indicates that older companies tend to have worse performance relative to smaller enterprises. The age report exhibits a coefficient value of -0.0300 and a t-value of -3.0699. Leverage had an inverse

correlation with business performance. The coefficient of -1.8492 and t-value of -5.7116 indicate that an increase in company leverage would adversely affect their performance. The firm's size shows a favorable correlation with performance. It reports a coefficient value of 0.7334 and a t-value of 8.1482.

TABLE 5: Regression Estimate

Eq Name:	EQ01L	EQ01F	EQ01R
Method:	Pooled OLS	Fixed Effect	Random Effect
Dep. Var:	TQ	TQ	TQ
MO	0.3042 [1.3994]	0.2402 [2.4003]*	0.3042 [2.3721]**
IO	0.0110 [1.0517]	0.0102 [1.5649]	0.0110 [1.5264]
AGE	0.0019 [1.3761]	-0.0300 [-3.0699]**	0.0019 [1.0093]
LEV	-1.8104 [-12.7895]**	-1.8492 [-5.7116]**	-1.8104 [-7.8147]**
SIZE	0.7357 [18.2989]**	0.7334 [8.1482]**	0.7357 [10.3102]**
C	-12.9916 [-16.0476]**	-11.6070 [-7.6648]**	-12.9916 [-9.4907]**
Observations:	88	88	88
R-squared:	0.8363	0.8680	0.8363
F-statistic:	83.7908	37.4350	83.7908
Prob(F-stat):	0.0000	0.0000	0.0000
Hausman test	16.2619(p=0.0061)		
Serial correlation test	-0.2894(p=0.7722)		
Heteroskedasticity test	23.4094(p=0.2053)		

Panel Cross-section Heteroskedasticity LR Test				
Equation: UNTITLED				
Specification: TQ SIZE MO LEV IO AGE C				
Null hypothesis: Residuals are homoscedastic				
	Value	df	Probability	
Likelihood ratio	23.40949	9	0.2053	
LR test summary:				
	Value	df		
Restricted LogL	-22.61403	82		
Unrestricted LogL	-10.90928	82		
Unrestricted Test Equation:				
Dependent Variable: TQ				
Method: Panel EGLS (Cross-section weights)				
Date: 11/09/22 Time: 22:38				
Sample: 2011 2020				
Periods included: 10				
Cross-sections included: 9				
Total panel (unbalanced) observations: 88				
Iterate weights to convergence				
Convergence achieved after 26 weight iterations				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
SIZE	0.573837	0.033751	17.00195	0.0000
MO	-0.004756	0.002516	-1.890711	0.0622
LEV	-1.199295	0.110812	-10.82279	0.0000
IO	6.11E-05	5.86E-05	1.043740	0.2997
AGE	-0.001572	0.001534	-1.025320	0.3082

C	-9.971023	0.655923	-15.20151	0.0000
Weighted Statistics				
Root MSE	0.380186	R-squared		0.876395
Mean dependent var	1.442161	Adjusted R-squared		0.868858
S.D. dependent var	1.431545	S.E. of regression		0.393850
Akaike info criterion	0.384302	Sum squared resid		12.71966
Schwarz criterion	0.553211	Log likelihood		10.90928
Hannan-Quinn criter.	0.452351	F-statistic		116.2810
Durbin-Watson stat	0.672269	Prob(F-statistic)		0.000000
Unweighted Statistics				
R-squared	0.758270	Mean dependent var		0.846758
Sum squared resid	12.72126	Durbin-Watson stat		0.896599
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		16.261938	5	0.0061
** WARNING: estimated cross-section random effects variance is zero.				
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	0.733350	0.735743	0.007608	0.9781
MO	0.002402	0.003042	0.000001	0.5891
LEV	-1.849200	-1.810364	0.026706	0.8122
IO	0.000102	0.000110	0.000000	0.8742
AGE	-0.029976	0.001862	0.000211	0.0283
Cross-section random effects test equation:				
Dependent Variable: TQ				
Method: Panel Least Squares				
Date: 11/09/22 Time: 22:40				
Sample: 2011 2020				
Periods included: 10				
Cross-sections included: 9				
Total panel (unbalanced) observations: 88				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-11.60704	1.592234	-7.289780	0.0000
SIZE	0.733350	0.095142	7.707957	0.0000
MO	0.002402	0.002371	1.012853	0.3144
LEV	-1.849200	0.211209	-8.755319	0.0000
IO	0.000102	0.000114	0.891991	0.3753
AGE	-0.029976	0.014578	-2.056343	0.0433
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.280949	R-squared		0.868012
Mean dependent var	0.846758	Adjusted R-squared		0.844824
S.D. dependent var	0.777751	S.E. of regression		0.306374

Akaike info criterion	0.616891	Sum squared resid	6.946021
Schwarz criterion	1.011013	Log likelihood	13.14321
Hannan-Quinn criter.	0.775673	F-statistic	37.43500
Durbin-Watson stat	1.287545	Prob(F-statistic)	0.000000

Discussion of Findings

This research revealed that management ownership significantly and positively influences bank performance, as assessed by Tobin's Q. The fluctuations in management ownership of a bank, whether a rise or reduction, will enhance business performance. The findings of this study align with the research conducted by Ichiro and Satoshi (2022), Alfarooque, Buachoom, and Sun (2020), Alhassan and Mamuda (2020), and Kase (2021), which demonstrated that management ownership positively influences business performance. The minimal percentage of managerial share ownership results in managers receiving limited benefits from the policies and risks associated with their roles; however, this contrasts with the findings of Ali, Tahira, Amir, Ullah, Tahir, Shan, Khan, and Tang (2022), as well as Kirimi, Kariuki, and Ocharo (2022), and Alfavoque, Buachoom, and Sun (2020). Furthermore, the data indicate a significant correlation between institutional ownership and bank performance. The results indicate that an increase in the proportion of shares held by institutional owners positively influences the performance of banks listed on the Nigeria Exchange Group. Compared to other study factors, this variable is the most effective one. Agency theory posits that institutional shareholders have considerable influence over firms, enabling them to affect the firms' activities. Institutional shareholders evaluate managers' performance as noted by Rosyent and Muthua (2019). This aligns with the findings of Aribaba, Aseniga, and Egbewole (2022), as well as Osazee and Sa'adatu (2023), who affirm the beneficial impact of ownership structure on company performance; however, it contradicts the conclusions of Ali, Tahira, Amir Ullah, Tahir, Shah, Khan, and Tang (2022), Kirimi, Kariuki, and Ocharo (2022), and Kase (2021).

V. CONCLUSION AND RECOMMENDATION

The research used a panel data estimate method to analyze the impact of ownership structure on the performance of publicly listed banks in Nigeria. The research also examined the impact of management and institutional ownership on bank performance. The Nigeria Exchange Group provided the data. Tobin's Q served as an indicator of banking performance. The findings indicated that both management and institutional ownership had a strong positive correlation with the performance of listed banks in Nigeria. This outcome indicates that elevated management and institutional ownership correlate with enhanced bank performance. This conclusion implies that banks may enhance their performance by elevating their ownership levels. The findings align with agency theory. The conclusion is that an increase in management and institutional ownership enhances the



performance of listed banks in Nigeria, since it has been determined that such ownership positively influences efficiency. The research sample comprises thirteen quoted deposit money institutions on the Nigeria Exchange Group (NXG) as of December 31, 2022, using a purposive sampling approach. We gathered the data for this research based on a significant correlation with company performance. The research indicates that companies should develop effective methods to enhance their ownership structure for improved performance.

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