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Ownership Structure And Return On Assets Of Listed Firms In Nigeria

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ABSTRACT:

This study investigated the effect of ownership structure on the return on assets of firms listed on the Nigerian Exchange Group. Data on four components of ownership structure (institutional ownership, ownership concentration, foreign ownership, and managerial ownership) and Return on Assets (ROA) were extracted from published financial statements of 79 firms for a period of eleven years (2010 to 2020). Data on the Debt to Equity ratio was also extracted and used to control for financial leverage in the study. An ex post facto research design was adopted, while panel data Generalized Method of Moments Regression was used in analyzing the data based on the outcome of various data screening and diagnostic tests. The results revealed that institutional ownership, managerial ownership, and ownership concentration had significant effects on the return on assets (ROA), while foreign ownership had no significant effect on the return on assets of listed firms in Nigeria. The study concludes that ownership structure components substantially influence the ROA of listed firms in Nigeria and recommends encouraging institutional ownership as it has a significant positive trade-off on the return on assets of listed firms in Nigeria

KEYWORDS: *Ownership structure, Institutional ownership, Ownership concentration, Return on assets, Leverage, Listed firms*

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INTRODUCTION

Firms use several approaches to structure their ownership, and the type of ownership structure adopted must agree with the company's vision (Kangai, 2019). Predominantly, the vision of most firms is growth in revenues. Return on assets (ROA) is used as a measure of growth or changes in revenues. According to Hargrave (2022), return on assets is a financial ratio that indicates how profitable a company is about its total assets. Corporate managers, analysts, and investors can use returns on assets to determine or evaluate the financial health of the firm (Birken & Curry, 2021). ROA is commonly expressed as a percentage using a company's net income and average assets. A higher ROA means a company is more efficient and productive at managing its balance sheet to generate profits, while a lower ROA indicates room for improvement.

Furthermore, an increase in return on assets of a firm will boost the income of its employees, bring better quality products for its customers, and have better environment-friendly production units. Consequently, higher returns will mean more future investments, generating employment opportunities and enhancing citizens' income. Return on assets is the dependent variable of the study.

On the other hand, ownership structure is an important corporate governance mechanism (Denis & McConnell, 2002). Nahila and Amarjeet (2016) argue that ownership structure, being a system within corporate governance to accomplish improved performance of a firm, has been considered to influence firm performance for many years. The ownership structure is defined by the distribution of equity about votes and capital, as well as the identity of the equity owners (Saseela &Thirunavukkarasu, 2017). As opined by Thomsen and Conyon (2012), ownership structure consists of two distinctive features: Ownership concentration, which depicts if a firm is owned by one or few large owners (concentrated) or by multiple smaller owners (dispersed/diffused), and ownership identity, referring to the type of owner such as individuals/families, institutions or other firms.

The causal link between ownership structure and return on assets of listed entities in Nigeria has been considered a significant concern amongst firms, investors, policymakers, and economists. This connection has been the subject of an important and ongoing debate in the corporate finance literature, which began with Berle and Means (1932), who identified an inverse correlation between the diffuseness of shareholdings and a firm's profitability. This view was later challenged by Demsetz (1983), who argues that a corporation's ownership structure should be considered an endogenous outcome of decisions that reflect the influence of shareholders and trading on the market for shares. Ownership structure proxies include institutional ownership, ownership concentration, foreign ownership, and managerial ownership. The foregoing argument has been recognized as a dominant issue of controversy and debate in the corporate finance literature (Nnabuife *et al.*, 2017).

Firms' funding structures with a preponderance of debt capital have inherent financial risks that such entities are bound to leverage on. Thus, investigations on the causal link between ownership structure components and the profitability proxy are bound to be affected by leverage introduced in this study as a control variable. Financial leverage is the degree to which a company uses fixed-income securities, such as debt and preferred equity (Mutunga & Owino, 2017). The fundamental motivation for this study is to provide additional proof regarding how ownership structure influences the return on assets of listed firms in the Nigeria Exchange Group for the period 2010-2020by, focusing on the conflict arising on incentives due to institutional, foreign, and managerial ownerships and ownership concentration participation on corporate Governance structure. There are divergent views on how the structure of corporate ownership affects return on assets. The prevailing and persistent lack of consensus in the form of inconsistencies, inconclusiveness, and conflicting empirical findings among various scholars has made further investigations on the subject matter more compelling. Hence, in this study, we aimed to determine the causal relationship between ownership structure and the Return on assets (ROA) of listed firms in Nigeria. The study examined the nexus between institutional ownership, ownership concentration, foreign ownership, and managerial ownership on ROA.

LITERATURE REVIEW

Theoretical Framework

Firms, economists, policymakers, and investors are ultimately eager to know whether ownership structure affects corporate return on assets and how (Andow & David, 2016). The fundamental insight into the issues dates back to Berle and Means (1932), who argue that the separation of ownership and control of modern corporations naturally reduces management incentives to maximize corporate efficiency. This view was later modernized by Jensen and Meckling (1976) and subsequently became known as "agency theory," often used as "a theory of the corporate ownership structure" and the guiding framework for ownership performance studies. The crux of the theory is that self-interested managers (agents) can engage in decision-making and attitudes that may be inconsistent with maximizing the value of shareholders (principals). Two kinds of agency costs exist – agency costs of equity and debt. The conflicts between managers and shareholders lead to agency costs of equity, and the conflicts between shareholders and debt–holders lead to agency costs of debt (Andow & David, 2016). Usually, managers are interested in accomplishing their targets, which may differ from the firm's value. The owners may try to monitor and control the managers' behaviors. These monitoring and control actions result in agency equity costs, ultimately leading to a reduced return on assets. When lenders provide money to a firm, the interest rate is based on the firm's risk; managers might be tempted to transfer value from creditors to shareholders. These monitoring and control actions also result in agency debt costs. This theory contains ingredients vital to the study of ownership structure and the return on assets of listed firms and is, therefore, considered apt for the study. It takes its position regarding how conflicts of interest may result in future poor performance of the firms, how ownership structure is viewed as an essential instrument for corporate governance to sort out the problem of conflicts of interest between shareholders and managers, and how ownership concentration has the potential to reduce the agency problem, thereby improving the return on assets of the firm.

Institutional ownership and return on assets

Institutional ownership is a tool used to mitigate the impact of agency problems where large individual shareholders make decisions for their interests at the expense of minority stockholders (Kirimi *et al.*, 2022). Institutional ownership is described as other institutions' ownership of huge stock in a firm (Cornett et al., 2008). Such institutions may include pension funds and insurance. This ownership is associated with a high return on assets as a result of high-quality management and improved corporate governance (Lin & Fu, 2017 & Galego *et al.*, 2019). Institutional investors are essential factors in corporate governance mechanisms well recognized by their ability to monitor management and create an atmosphere of discipline in the organization (Eluyela *et al.*, 2020). Ping and Wing (2011) noted that institutional investors help boost corporate performance through an atmosphere of discipline and the ability to monitor management effectively. Besides the foregoing role, institutional investors participate in board meetings and influence decisions. Institutional investors' roles, if effectively and efficiently carried out, will minimize agency costs and positively influence firms' return on assets (Shleifer & Vishny, 1997).

Ownership concentration and return on assets

According to Onuora *et al.* (2022), ownership concentration refers to an ownership fraction or stake in a firm held by shareholders with a continuing interest or significant stake. According to Florackis *et al*. (2009), this fraction is the cumulative amount (in percent) of shares of all shareholders with an ownership stake of 5 or more percent. Ownership concentration or large shareholders have the incentive and ability to monitor and control management decisions (Florackis *et al*., 2009). They use their significant stake in tackling firm agency problems by reducing conflicts between managers and the organization. This they do by being more proactive in monitoring and protecting their investments.

Foreign ownership and return on assets

Foreign ownership describes a structure where one or more foreign persons have the authority or ability to establish or direct the firm's general policies or day-to-day operations (Onuora *et al*. (2022). Foreign investors can be effective monitors of managers in emerging markets because foreign investors demand higher standards of corporate governance. Foreign ownership comes with more experience and knowledge in the supporting adoption of new corporate governance practices (Meng *et al*., 2019). Foreign ownership is a salient monitoring tool to protect a firm's profits and shareholders' wealth (Al-Jaifi, 2017). If foreign investors assume the role of active monitors, agency problems will be minimized, and firms' return on assets is expected to increase as foreign ownership increases.

Managerial ownership and return on assets

Managerial ownership can also be referred to as directors' or insider ownership. It is the proportion of shares that the executives own. As explained by the agency theory, managerial ownership is one of the techniques used to reduce agency problems. According to Jensen and Meckling (1976), managerial ownership is applied to improve the value of the firm attained through increased financial performance. The separation of ownership and control is a subject of concern to many researchers as empirical studies show mixed findings on the relationship between managerial ownership and return on assets. According to the convergence-of-interests hypothesis, increased managerial ownership can reduce agency problems drastically (Jensen & Meckling, 1976). However, the entrenchment hypothesis proposed that a higher level of management ownership in a firm decreases the firm's performance associated with more executive voting power to control strategic decision-making (Demsetz, 1983).

Empirical Review

Abedin *et al.* (2022) examined the impact of Institutional Ownership and Firm Performance: Evidence from an Emerging Economy in Bangladesh. Using the Ordinary Least Square (OLS) estimation technique based on a sample of 180 listed firms from 2008 to 2018. The results indicate that both domestic and foreign institutional investors positively affect firm performance measured by Tobin's Q and Return on Asset (ROA). Onuora *et al*. (2022) investigated the relationship between ownership structure and financial performance of quoted non-financial firms in Nigeria. Ownership structure was measured using institutional ownership, concentrated ownership, foreign ownership and block ownership while firms' performance on the other hand was represented by return on equity (ROE). The statistical test of parameter estimates was conducted using the OLS regression model. *Ex Post Facto* design was adopted, and data for the study were obtained from the published annual financial reports of all the consumer goods firms quoted on Nigerian Exchange Group (NGX) with data from 2012-2021. The findings of the study indicate that institutional ownership, concentrated ownership, foreign ownership, and block ownership have significant and positive influences on firms' performance measured by return on equity (ROE). Alkurdi *et al*. (2021) examined the impact of

the ownership structure on firm performance in Jordan. The study employed the multiple-regression model and fixed regression effect to analyze the data. The sample included all Jordanian first market firms listed on the Amman Stock Exchange (ASE) from 2012 to 2018. The paper's findings reveal a positive and significant relationship between institutional ownership and accounting measures, Return on Assets (ROA), and market measure Tobin's Q (TQ). Other ownership structure types, such as concentration of ownership, also affect ROA and TQ. Meanwhile, managerial ownership shows a negative relationship with ROA. Daniel *et al*. (2021) assessed the impact of ownership structure on the financial performance of listed pharmaceutical firms in Nigeria from 2010 to 2019. The sample size of the population is seven (7) pharmaceutical firms listed on the Nigerian Stock Exchange as of 31st December 2019. The study used generalized least square random effect multiple regression techniques to analyze the data. The independent variables used are institutional ownership, block shareholding, and managerial ownership, while ROA measures financial performance. It was established that institutional ownership was found to have a positive and significant impact on ROA. Similarly, managerial ownership and firm size were positive but not statistically significant. Finally, the study found that block shareholding has an insignificant negative impact on ROA.

In addition, Suleiman and Nasamu (2021) examined the effect of ownership structure on the financial performance of listed oil and gas companies in Nigeria from 2006-2019. Secondary data was extracted from the financial reports and accounts of the sample companies. Robust OLS, as the best estimator of the regression model, was used to analyze the data extracted. The findings revealed that foreign ownership positively impacts the financial performance of oil and gas companies in Nigeria. Kerim et al. (2021) investigated the ownership structure and financial performance of listed manufacturing companies in Nigeria. The Return on Asset was used as a proxy for the effect of the ownership structure variables on the company's financial performance. A sample of 35 listed manufacturing companies was used for the study. The data was collected and analyzed from nine annual reports and accounts of selected sample manufacturing companies. The study found that institutional ownership positively and significantly impacts financial performance. Orbunde *et al*. (2021). Studied the effect of ownership structure on the financial performance of listed deposit money banks in Nigeria. The expo-facto research design was adopted, relying on secondary data from the listed firms' annual reports. Purposive sampling techniques were employed to select 13 firms out of 15 deposit money banks in Nigeria for the 2011-2020 financial year. Panel regression estimation was used, which is a fixed effect by the Hausman test, which was analyzed using E-views 10. The finding shows that managerial ownership and institutional ownership positively affect the capital adequacy of deposit money banks in Nigeria. The study concludes that managerial ownership and institutional ownership have significantly positively affected financial performance and substantially increased the performance of listed deposit money bank banks in Nigeria.

Furthermore, Al-Farooque *et al*. (2020) investigated the effects of corporate board and audit committee characteristics and ownership structures on the market-based financial performance of listed firms in Thailand. They applied GMM (generalized method of moments) as the baseline estimator approach and ordinary least squares and fixed effects for robustness checks on a sample of 452 firms listed on the Thai Stock Exchange from 2000-2016. They found that ownership structures, particularly ownership concentration and family ownership, appear to have no significant influence on market-based firm performance, while managerial ownership exerts a positive effect on performance.Hideaki and Naoki (2020) studied institutional ownership and firm performance under stakeholder-oriented corporate governance in Japan. The study's sample included large listed firms of the TOPIX 500 in Japan during 2010-2016. Performance was measured by Tobin's q and ROA using regression analysis techniques to test the role of institutional investors in stakeholder-oriented corporate governance. Studies showed that institutional or foreign shareholders' monitoring role functions effectively in Japanese corporations.

Alhassan and Mamuda (2020) examined the effect of ownership structure on the financial performance of quoted financial firms in Nigeria. Data were collected from the financial statements of 38 financial firms quoted in the Nigerian Stock Exchange (NSE) from 2010 to 2019. The technique employed by the study was ex-post facto to examine the effect of ownership structure on the financial performance of financial firms quoted in NSE. The study used descriptive statistics, correlation, and multiple regression methods for model estimation through the panel data method. The collected data were subjected to pooled General Least Square, Random, and Fixed Effects regression models to test the study's hypotheses. In this study, ownership structure is represented by institutional ownership, managerial ownership, and ownership concentration as independent variables. Firms' financial performance as the dependent variable was represented by book value per Share. This study found that ownership structure has a positive significant effect on the financial

performance of the quoted financial firms, except ownership concentration has a negative effect.Wang et al. (2019) conducted a study on Ownership Concentration, Identity, and Firm Performance: Evidence from China's Listed Firms. The study explored data from Chinese listed companies from 2007–2017, hypotheses were tested, and findings revealed that ownership concentration positively affects firm performance and corporate ownership leads to higher firm performance than financial ownership. The study shows that firms in China benefit more from foreign ownership than firms with only domestic ownership.

Finally, Balagobei and Velnampy (2017) studied the Ownership Structure and Financial Performance of Listed Beverage Food and Tobacco Companies in Sri Lanka. The sample consists of 10 listed beverage, food, and tobacco companies in Sri Lanka. The study collected data from secondary sources, and hypotheses were examined using Pearson's correlation and regression analysis. The results showed that ownership concentration and foreign ownership structure positively correlate with the financial performance of listed beverage, food, and tobacco companies; in contrast, institutional ownership structure is not significantly correlated with financial performance. It was also found that foreign ownership structure significantly impacts financial performance.

METHODOLOGY

The study adopted *an ex post facto* research design. The *ex-post facto* design was considered appropriate because the data collected on the variables existed prior to the study's commencement and will not be manipulated by the researcher. The population of the study is comprised of listed firms across 10 sectors of the economy in determining return on assets as a core driver of profitability in Nigerian firms. As of 31st December 2021, one hundred and fifty-seven (159) companies were listed in the NGX Plc. The number of firms effectively used as the sample size for the study was scaled down to seventy-nine (79), representing approximately 49.7% of the study population. Piroska (2021) opined that an excellent minimum sample size is usually 10% as long as the population does not exceed 1000. The main criteria adopted for the selection of firms are: the firms selected from each sector must have a complete data set on all the variables for the period covered by the study; furthermore, firms that have been over-flogged in previous studies are also excluded from the study. The study employed a stratified sampling technique in selecting the sample due to the small population of listed firms in NGX and what the eventual sample would result, which negates the use of a standard sampling method.

Measurement of the Study Variables

Table 1 reports how the variables used in the study were measured.

Table 1: Operational Measurement of Study Variables

S/N	*Variables*	*Type*	*Measurement*	*A priori expectation*	*Source/reference*
1.	Return on Assets (ROA)	Dependent variable	Profit after tax to total Assets	Neutral	[Eissa, *et al* (2018)]
2.	Ownership Concentration (OC)	Independent variable	Percentage of firm equity held by large shareholders	+	Alkurdi, et al (2021); Onuora, Fabian, & Joshua, (2022).
3.	Institutional Ownership (IO)	Independent variable	Percentage of firm equity held by institutional investors	+	Kao *et al*. (2019)
4.	Managerial Ownership (MO)	Independent variable	Percentage of firm equity held by management and directors of the company	-	Al-Sa'eed, (2018)
5.	Foreign Ownership (FO)	Independent variable	Percentage of firm equity held by foreign individuals and institutions	+	Meng *et al*. (2019)
6.	Leverage (LEV)	Control variable	Debt to Total Equity	-	Ahmed & Duellman 2007

Source: Author's compilation (2023)

Model Specification

Based on the nature of the hypotheses formulated and the outcome of various data screening/pre-estimation tests conducted, the Panel Generalized Method of Moments (GMM) Regression was considered appropriate for estimating the study parameters. The panel GMM model with instrumental variables and transformation at both First Differences and Orthogonal Deviation is specified as follows:

$$ROA_{it} = \beta_1 ROA(-1)_{it} + \beta_2 OC_{it} + \beta_3 IO_{it} + \beta_4 MO_{it} + \beta_5 FO_{it} + \beta_6 LEV_{it} + \mu_{it} \quad 1$$

Instrument Specification =@DYN(ROA(-2) OC(-1) IO(-1) MO(-1) FO(-1) LEV(-1) 2

Where,

ROA_{it} = Return on assets of firm *i* in year *t*

$\beta_1 ROA(-1)_{it}$ = Lag of dependent variable (ROA) of firm *i* in year *t*

OC_{it} = Ownership concentration of firm *i* in year *t*

IO_{it} = Institutional ownership of firm *i* in year *t*

MO_{it} = Managerial ownership of firm *i* in year *t*

FO_{it} = Foreign ownership of firm *i* in year *t*

LEV_{it} = Leverage of firm *i* in year *t*

β_1 to β_6 = the coefficients (rate of change) in the predictor or exogenous variables.

εt = Stochastic error term

Models (1) and (2) are the Panel dynamic models used to estimate the parameters for testing hypotheses 1 to 4.

The study used descriptive and inferential (panel data Generalized Method of Moments) techniques to analyze the data collected. Various data screening and diagnostic tests were conducted to verify and ensure that the data collected met the fundamental assumptions that the inferential statistical technique is subject to. The descriptive analysis used to describe the nature of the data indicated that all the variables failed to meet the normality assumption. Again, based on the nature of the Panel data collected (short panel) with a large number of cross-sections (i.e., 79 companies) and a small period (i.e., 11 years covering from 2010 to 2020), the Panel Generalized Method of Moments (GMM) was considered as a suitable estimator and accordingly used. Selection criteria between the first differences and system panel GMM regression approach were carried out by estimating the pooled OLS, the Fixed Effect OLS, and the first differences transformations of the model. The selection criteria indicated that the first difference GMM is preferred as the result shows that this dynamic transformation of GMM is not downward biased.

EViews version 10.0 software was used to run the analysis. In this study, the null hypotheses (H_0) were rejected when the probability value was greater than 5% (i.e., 0.05 confidence level); otherwise, we failed to reject the null hypotheses.

RESULTS AND DISCUSSIONS

Descriptive Analysis

The descriptive analysis of the data collected for the study is shown in Table 2.

Table 2: Descriptive Statistics of the Study Variables

	ROA	IO	FO	MO	OC	LEV
Mean	2.712200	0.489470	0.472350	0.182006	0.557972	4.076322
Median	2.945000	0.520000	0.000000	0.055300	0.580000	0.904150
Maximum	399.1700	1.470000	1.000000	2.549600	1.000000	161803.5
Minimum	-207.6000	0.000000	0.000000	0.000000	0.000000	-231207.7
Std. Dev.	24.62759	0.266882	0.499523	0.258241	0.216661	9726.141
Skewness	5.682181	-0.207867	0.110769	2.714784	-0.432051	-10.08117
Kurtosis	117.0681	2.256232	1.012270	18.83327	2.795033	457.7200
Jarque-Bera	475254.9	26.25788	144.6721	10132.91	28.52410	7492895.
Probability	0.000000	0.000002	0.000000	0.000000	0.000001	0.000000
Sum	2354.190	424.8600	410.0000	157.9808	484.3200	3538.248
Sum Sq. Dev.	525851.2	61.75276	216.3364	57.81908	40.69883	8.20E+10
Observations	868	868	868	868	868	868

Source: Authors' computation with data collected from financial statements of 79 listed companies

Table 2 reveals that the mean value of Returns on Asset (ROA) is 2.712200 for the period covered by the study, indicating that the average value of ROA of the series is 2.7%. The low percentage of the mean value of ROA implies that the firms have a lower preference for the measurement metric. The standard deviation (Std. Dev.) indicates the dispersion from or spread in the series from their mean values. Leverage has the highest dispersion of 9726.141, followed by Return on Assets (ROA) of 24.62759. However, Institutional Ownership (IO), Foreign Ownership (FO), Managerial Ownership (MO), and Ownership Concentration (OC) have low dispersion from their means of 0.266882, 0.499523, 0.258241, and 0.216661, respectively.

Skewness, which depicts the asymmetry of the distribution around the mean, reveals that ROA, FO, and MO have a long right tail (positive Skewness), while IO, OC, and Lev have a long left tail (negative skewness). The peakness or flatness of the distribution of the series is indicated by Kurtosis. Statistics reveal that ROA, MO, and LEV are not generally distributed as their values exceed the acceptable 3 and are thus presumed to be peaked (leptokurtic) relative to the normal, while IO, FO, and OC with values less than 3 are presumed to be flat (playtykurtic) relative to the normal.

The statistical significance for the Jarque-Bera statistics (JB) of all the variables is less than 0.05. Hence, we reject the null hypothesis that the series are typically distributed. Thus, the series failed to meet the normality assumption, even after transformation processes were carried out. This indicates uncertainty in the trend of the distribution of the data set collected for the study and makes using a linear model inappropriate. Again, the panel data is a short panel with the period (11 years covering from 2010 to 2020) less than the number of cross-sessions (79 listed companies). These data set features call for an appropriate dynamic model/estimation technique (the GMM) that can take care of these problems in the estimation process.

Generalized Method of Moments (GMM) Estimates

Three regressions were estimated to select the most appropriate Panel Dynamic method of GMM between the First Differences and System Approach – the Pooled OLS, the Fixed Effect OLS, and the First Differences transformation. The choice is based on the comparative value of the coefficients of the lag of the dependent variable in the three estimates. Extract from the result as shown in Table 3.

Table 3: Selection Criteria between First Differences and System Panel GMM Regression for ROA Model

Regression Approach	***ROA(-1) Coefficient***	***Remarks***	***Decision***
Pooled OLS	0.402233	Upper bound	1st Differences GMM is preferred since 0.567361 ***is not lower than*** 0.219120
Fixed Effect OLS	0.219120	Lower bound	
1st Differences GMM	0.567361	System GMM is preferred if ROA (-1) Coefficient from 1st Diff. GMM **<** lower bound coefficient; otherwise, 1st Differences GMM is used.	

Source: Authors' computation with data collected from financial statements of 79 listed companies

Since 0.567361 (1st Difference Coefficient of the lag of the Dependent Variable - ROA (-1) is higher than 0.219120 (Fixed Effect Coefficient of the lag of the dependent variable), First Difference GMM is preferred as the result shows that this dynamic transformation of GMM is not downward bias.

Effect of Ownership Structure on Returns on Assets (ROA)

Table 4 summarizes the GMM test results of the effect of ownership structure on ROA based on the first difference GMM transformations.

Table 4 provides results to evaluate the validity of the entire model using the J-statistic of 41.80307. The probability of the J-statistic is reported as 0.566223, further indicating that the model is valid and can be relied upon in predicting the effect of ownership structure on return on assets. The results also show that IO, OC, and MO significantly influence return on assets at a 5% level, with IO and OC exacting positive effects while MO negatively correlated with ROA. FO indicated no significant effect on the ROA of the listed companies investigated.

Table 4: GMM Test Results of the Effect of Ownership Structure and ROA based on 1st Differences Transformation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.567361	0.019470	29.14000	0.0000
IO	93.37808	9.568080	9.759333	0.0000
OC	47.19748	25.91771	3.821051	0.0461
FO	-1.468860	30.77619	-0.047727	0.9619
MO	-49.97951	4.566755	-10.94421	0.0000
LEV	-0.000140	0.000154	-0.909284	0.3636
Effects Specification				
Cross-section fixed (first differences)				
Mean dependent var	0.390905	SD dependent var		28.47027
SE of regression	35.17516	Sum squared resid		770833.0
J-statistic	41.80307	Instrument rank		51
Prob(J-statistic)	0.566223			

Source: Authors' computation with data collected from financial statements of 79 listed companies

The beta coefficient value for IO of 93.37808 implies that a unit increase in the number of institutional owners will lead to about a 93.4% increase in the return on assets of the listed firms in Nigeria if other factors are held constant. In the same vein, a unit increase in ownership concentration (OC) will result in a 47.2% increase in the level of returns on assets of the firms. On the contrary, a unit increase in FO and MO resulted in a decrease of 1.5% and 49.98% in the returns on assets of the firms investigated.

An estimation test to check for the possible existence of an autocorrelation problem in the model was conducted using the Arellano Bond Serial Correlation test, and the results are shown in Table 5.

Table 5: Arellano-Bond Serial Correlation Test on ROA Model

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-1.024008	-120472.663135	59521.830349	0.1430
AR(2)	-0.939961	-49015.941154	52146.798258	0.3472

Source: Authors' computation with data collected from financial statements of 79 listed companies

The values of m-statistic for both AR (1) and AR (2) of -1.024008 and -0.939961 are found to be insignificant at a 5% level (p-values of 0.1430 and 0.3472 are both > 0.05). Accordingly, the null hypothesis that proposes the absence of serial correlation is not rejected, and we conclude that there are no serial correlation problems in the series.

The Orthogonal Deviations transformation option of GMM was also executed, and the results are reported in Table 6.
The probability of the J-statistic is reported as 0.128498, which affirms the model's validity as supporting evidence to the results obtained using the first differences transformation. The effect of IO, OC, and MO on ROA is significant as obtained under the first differences transformation, just as FO and MO sustained negative association with ROA as obtained in the first differences transformation. Except for FO, which was earlier reported to have no significant influence on ROA, all other results on the components of ownership structure are analogous with the results obtained using the first differences transformation.

Table 6: Results of Panel GMM Estimation based on Orthogonal Deviations Transformation for ROA Model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA(-1)	0.358897	0.007942	45.19005	0.0000
IO	41.23069	4.430887	9.305292	0.0000
OC	-22.82205	6.898273	-3.308372	0.0010
FO	-17.08066	2.545861	-6.709187	0.0000
MO	-32.73355	2.168952	-15.09187	0.0000
LEV	-8.44E-05	9.80E-05	-0.861119	0.3895
Effects Specification				
Cross-section fixed (orthogonal deviations)				
Mean dependent var	-0.699869	SD dependent var		25.70023
SE of regression	26.67969	Sum squared resid		443455.1
J-statistic	54.74674	Instrument rank		51
Prob(J-statistic)	0.128498			

Source: Authors' computation with data collected from financial statements of 79 listed companies

The robustness test results accord with primary estimates and further strengthen the argument that the resulting estimates presented using the first differences transformation in Table 4 could be relied upon in testing $H0_1$ to $H0_4$ formulated for this study.

Test of hypotheses and Discussion of findings

Testing for the Effect of Institutional Ownership on Return on Assets of Listed Firms in Nigeria.
The null hypothesis is restated as follows:
$H0_1$: *The influence of Institutional ownership on the Return on Assets of listed firms in Nigeria is insignificant.*
Results in Table 4 indicate that the t-statistic for Institutional Ownership of 9.759333 is significant at a 5% level ($P = 0.0000 < 0.05$). Accordingly, $H0_1$ is rejected, with the conclusion that institutional ownership significantly affects returns on assets of listed firms in Nigeria. This finding is consistent with the *a priori* expectation that increases in institutional ownership investment should stimulate growth in return on company assets, implying that dominance of institutional ownership in a firm's capital structure is likely to increase the ROA of the entity. This finding is in line with the findings of Onuora et al. (2022), Alkurdi *et al*. (2021), and Daniel *et al*. (2021). This is justified because institutional owners have access to huge capital for investment and are much more conscious of injecting controls on their investments to achieve better performance. On the contrary, few other researchers found an insignificant and negative influence of institutional ownership on financial performance (Umar & Binta, 2022 and Rosyeni & Muthia, 2019)
Testing for the Effect of Ownership Concentration on Returns on Assets of Listed Firms in Nigeria.

The null hypothesis is restated as follows:
$H0_2$: *The effect of ownership concentration on the Return on Assets of listed firms in Nigeria is not significant*.
Results in Table 4 indicate that the t-statistic for Ownership Concentration of 3.821051 is significant at a 5% level ($P = 0.0461 < 0.05$). Accordingly, the result supports the rejection of **$H0_2$**, with the conclusion that the effect of ownership concentration on returns on assets of listed firms in Nigeria is statistically significant. This result conforms to the a priori expectation that the higher the stake of ownership concentration in a firm, the better the performance. This means that when large shareholders dominate the board structure of a firm, the return on assets will increase. The finding agrees with the findings of several researchers: Alkurdi *et al*. (2021) and Bolagobei & Velnampy (2017). The finding is justified because ownership concentration has good knowledge of the firm and incentive and ability to monitor and control management decisions (Florackis *et al*., 2009). Therefore, concentrated shareholders use their significant stake in reducing conflicts between managers and the organization by being more proactive in monitoring and protecting their investments, thereby improving the firm's return on assets. The ownership concentration result contradicts Ismail and Ali's (2020) and Alhassan and Amudaa's (2020) findings, which observed a negative association with the performance proxy.

*Testing for the Effect of Foreign Ownership on Returns on Assets of Listed Firms in Nigeria***.**

$H0_3$: *Foreign ownership has no significant effect on the Return on Assets of listed firms in Nigeria.*

Results in Table 4 indicate that the t-statistic for Foreign Ownership of -0.047727 is not significant at the 5% level (P = 0.9619 > 0.05). Accordingly, we accept **$H0_3$** and conclude thatForeign Ownership has no significant effect on the Return on Assets of listed firms in Nigeria. This result does not conform to *a priori* expectation as it was expected that foreign ownership should enhance the firm's financial performance. This implies that the dominance of foreign ownership in a firm's capital structure decreases the entity's return on assets. The finding agrees with the studies by Hamza and Suman (2018). The non-significant and negative effect of foreign ownership on return on assets occurred because some foreign owners may have abandoned their monitoring roles for various reasons, such as insecurity in some parts of Nigeria, thereby allowing managers to misrepresent information for their interests. The finding disagrees with the results of some researchers who found a significant and positive association with return on assets (Suleiman &Nasamu, 2021; Tanui *et al.,* 2021).

Testing for the Effect of Managerial Ownership on Returns on Assets of Listed Firms in Nigeria.

$H0_4$: *Managerial ownership does not significantly influence the Return on Assets of listed firms in Nigeria.*

The reference test result in Table 4 shows that the t-statistic for Managerial Ownership of -10.94421 is significant at a 5% level (P = 0.000 < 0.05). On this basis, $H0_4$ is rejected with the conclusion that Managerial ownership significantly influences the Return on Assets of listed firms in Nigeria. This result is in tandem with *a priori* expectation because the entrenchment hypothesis proposed that a higher level of management ownership in a firm decreases the firm's performance associated with more voting power by executives to control strategic decision-making (Demsetz, 1983). The result concurs with those of Umar and Binta (2022). It indicates that an increase in managerial ownership will significantly decrease the return on assets of listed firms in Nigeria. This may not be unconnected with the enormous voting power of executives to control strategic decision-making. Some of these decisions could be sub-optimal, that is, in consideration of self rather than the firm's overall interest or financial performance. The result is also contrary to the findings of Hamza &Suman (2018), who found a negative and non-significant effect; Daniel et al. (2021) observed a positive and non-significant effect.

CONCLUSION AND RECOMMENDATIONS

This study empirically investigated the ownership structure and return on assets of listed firms in Nigeria using the Generalized Method of Moments. The findings of the study are summarized as follows: that institutional ownership significantly affects return on assets of listed firms in Nigeria. That the effect of ownership concentration on the return on assets of listed firms in Nigeria is statistically significant. Findings also indicate that Foreign Ownership has no significant effect on the Return on Assets of listed firms in Nigeria and that Managerial ownership significantly influences Return on Assets of listed firms in Nigeria.

The study concluded that institutional ownership, ownership concentration, and managerial ownership all significantly affect the return on assets of listed firms in Nigeria, while foreign ownership is not significant and recommended that Institutional ownership should be increased in firms for better performance. This is because they are more profit-oriented. Therefore, the more the proportion of institutional shareholders in a firm, the better the performance of the firm. Also that firms should consider increasing ownership concentration as it is an effective leverage for the firm because greater ownership concentration can reduce agency problems in the firm and enhance performance. Furthermore, the study also recommends that firms should discourage foreign investors to invest in their firms as higher levels of foreign ownership would lead to poor firm performance hence diminish the performance of the firm. Finally, less attention should be placed on managerial ownership by firms as higher percentage of shareholdings can greatly recede the return on assets of the firm.

REFERENCES

Abedin, S. H., Haque, H., Shahjahan, T. & Kabir, M. N. (2022). Institutional ownership and firm performance: Evidence from an emerging economy. *Journal of Risk and Financial Management* 15: 567. https://doi.org/10.3390/ jrfm15120567.

Ahmed, A. S. & Duellman, S. (2007). Accounting conservatism and board of director characteristics: an empirical analysis. Available at SSRN: https://ssrn.com/abstract=887301 or http://dx.doi.org/10.2139/ssrn.887301 .

Al Farooque, O., Buachoom, W., & Sun, L. (2020). Board, audit committee, ownership and financial performance. Emerging trends from Thailand. *Pacific Accounting Review*. *32*(1):54–81. https://doi.org/10. 1108/PAR-10-2018-0079.

Alhassan, I. & Mamuda, A. U. (2020). Ownership structure and financial performance of quoted financial firms in Nigeria. *International journal of accounting research.5* (4): 116–124.

Al-Jaifi, H. A. (2017). Ownership concentration, earnings management and stock market liquidity: Evidence from Malaysia. Corporate Governance: *The International Journal of Business in Society*; *17*(3): 490–510. https://doi.org/10.1108/CG-06-2016-0139.

Alkurdi, A., Hamad, A. K., Thneibat, H. & Elmarzouky, M. (2021). Ownership structure's effect on financial performance: An empirical analysis of Jordanian listed firms. *Cogent Business and Management. 8*(1): 1–22. https://doi.org/10.1080/23311975.1939930.

Al-Sa'eed, M. (2018). The impact of ownership structure and dividends on firm's performance: Evidence from manufacturing companies listed on the Amman stock exchange. *Australasian Accounting, Business and Finance Journal. 12*(3): 107–126. https://doi.org/10.14453/aabfj.v12i3.7

Andow, H. A., & David, B. M. (2016). Ownership structure and the financial performance of listed conglomerate firms in Nigeria. *The Business and Management Review*, *7*(3)

Balagobei, S., &Velnampy, T. (2017). Ownership structure and financial performance of listed beverage food and tobacco companies in Sri Lanka. *International Journal of Accounting and Financial Reporting*. 7(2), 2162-3082.

Berle, A. A., & Means, G. C. (1932). *The Modern Corporation and Private Property*. New York, Macmillan.

Birken, E. G., & Curry, B. (2021). Understanding return on assets (ROA). Retrieved from *forbes.com/advisor/inv.*

Cornett, M. M., Marcus A. J., &Tehraniam H. (2008). Corporate governance and pay-for-performance: the impact of earnings management. *Journal of Financial Economics*. *87*(2): 357–375. https://doi.org/10.1016/j.jfineco.2007.03.003.

Daniel, S., Nuraddeen, U., & Ahmad, A. (2021). Impact of ownership structure on financial performance of listed pharmaceutical firms in Nigeria. *Journal of Conflict Resolution andSocial Issues, 2*(1), 69-88.

Demsetz, H. (1983). The structure of ownership and the theory of the firm, *The Journal of Law & Economics*. *26*(2): 375–390. https://www.jstor.org/stable/725108.

Denis, D. K., & McConnell, J. J. (2002). International corporate governance: A survey. Available on: ba.tuck.dartmouth.edu/ccg/PDFs/2002 Conference.

Eissa, A. A., Mosab, I. T., Najib, H. S. F. & Faozi, A. A. (2018). Bank-specific and macro-economic determinants of profitability of Indian commercial banks: A panel data approach. *Cogent Economics & Finance*; *6*(1). https://doi.org/10.1080/23322039.2018.1548072.

Eluyela, D. F., Okere, W., Otekunrin, A. O., Okoye, J. N., Festus, A., & Ajetunmobi, O. (2020). Institutional investors ownership and financial performance: Examining the nexus in Nigerian deposit money banks. *Research in World Economy*. *6*(11): URL: https://doi.org/10.5430/rwe.v11n6p177.

Florackis C., Kostakis A., & Ozkan A. (2009). Managerial ownership and performance. *Journal of Business Research*, *62*.

Galego, A., Mira, N., & Silva, J. V. (2019). Ownership, productivity and firms' life-cycle. *European Journal of Family Business. 8*(2): 139–150. https://doi.org/10.24310/ejfbejfb.v8i2.5228.

Hamza, S. & Suman, S. (2018). The impact of ownership structure on firm performance: A study on Bombay stock exchange in India. *International Journal of Business Management*. *6*(1), 2289-4519.

Hargrave, M. (2022). Return on Assets (ROA): Formula and 'good' ROA defined. Corporate Finance, Financial Ratios. Investopedia

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Kangai, M. M. (2019). Effect of ownership structure on financial performance of commercial banks in Kenya. Unpublished Master of Science in Finance project. University of Nairobi.

Kao M., Hodgkinson L., & Jaafar A. (2019) Ownership structure, board of directors and firm performance: Evidence from Taiwan. *Corporate Governance*. *19*(1): 189–216. https://doi.org/10.1108/CG-04- 2018-0144.

Kerim, A., James, S. O., Badara, M. S., & David, O. O. (2021). Ownership structure and financial performance on listed manufacturing firms in Nigeria. *Gusau Journal of Accounting and Finance,2*(3), 1-12.

Kirimi, P. N, KariukiI, S. N., & Ocharo, K. N. (2022). Ownership structure and financial performance: Evidence from Kenyan commercial banks. *PLoS ONE*, *17*(5): e0268301. https://doi.org/10.1371/journal.pone.0268301

Lin, Y. R., & Fu, X. M. (2017). Does institutional ownership influence firm performance? Evidence from China. *International Review of Economics & Finance, Elsevier*. *49*(C): 17–57. https://doi.org/10.1016/j.iref.2017.01.021.

Meng, Y., Clements, M. P. & Padgett, C. (2019). Independent directors, information costs and foreign ownership in Chinese companies. *Journal of International Financial Markets, Institutions and Money*. *53*(1): 139–157. https://doi.org/10.1016/j.intfin.2017.09.016.

Mutunga, D.,&Owino, E. (2017). Moderating role of firm size on the relationship between micro factors and financial performance of manufacturing firms in Kenya. *Journal of Finance and Accounting*, *1*(1), 14 - 27.

Nahila, N., &Amarjeet, K. M. (2016). The Effect of ownership structure on firm profitability in India: A panel data approach. *International Journal of Economics and Finance; 8*(6).

Nnabuife, N., Igomu, J. A., Apochi, S., Adah, A. A., & Igomu, I. (2017). Ownership structure and financial performance of selected banks in Nigeria: 2000 – 2015. *International Journal of Business and Management Invention (IJBMI)*. ISSN (Online): 2319 – 8028

Onuora, J. K. J., Fabian, O., & Joshua, N. G. (2022). Ownership structure and financial performance of quoted non-financial firms in Nigeria: An independent and joint effectanalysis. *International Journal of Banking and Finance Research. 8*(1), 2672-4979.

Orbunde, B., Lambe, I., & Onuigbo, N. C. (2021). Effect of ownership structure on financial performance of listed deposit money banks in Nigeria. *Bingham International Journal of Accounting and Finance (BIJAF),2*(2).

Panigrahi, S. K., Zainuddin, Y., & Azizan, A. (2014). Comparing traditional and economic performance measures for creating shareholders value: a perspective from Malaysia. *International Journal of Academic Research in Accounting, Finance and Management Science*. *4*(4): 280–289. https://doi.org/10. 6007/IJARAFMS/v4-i4/1345.

Ping, Z., & Wing, C. (2011). Corporate governance: A summary review on different theory approaches. *International Research Journal of Finance and Economics, 68*(1), 7-13.

Piroska, B. B. (2021). Practical tools for International Development. https://tools4dev.org/resources/how-to-choose-a-sample-size/

Rosyeni, R. & Muthia, R. L. (2019). Ownership structure, capital structure and firm performance: A case in Indonesia. *Advances in Economics, Business and Management Reseach*. (97)

Saseela, B. & Thirunavukkarasu, V. (2017). A Study on Ownership Structure and Financial Performance of Listed Beverage Food and Tobacco Companies in Sri Lanka. *International Journal of Accounting and Financial Reporting.*

Shleifer, A. & Vishny, R. W. (1997). A survey of corporate governance. *The Journal of Finance, 52*(2), 737-783.

Suleiman, M., & Nasamu, G. (2021). Ownership structure and financial performance of listed oiland gas companies in Nigeria. *Journal of International Money, Banking and Finance,2*(1), 109-134.

Tanui, P. J., Katana, H., Alosi, G., Khahenda, L., & Adhiambo, V. E. (2021). Ownership structure and financial performance of listed firms in Kenya: Mediation role of corporate diversification. DOI: https://doi.org/10.47631/jareas.v2i2.222

Thomsen, S., & Conyon, M. (2012). Corporate governance: Mechanisms and systems: McGraw Hill.

Umar, F. A., & Binta, A. N. (2022). Impact of ownership structure on cash holdings of listed deposit money banks in Nigeria. *Journal of Economic Studies (JES), 19*(1).

Wang, H., Wu, J., Yang, Y., Li, R., & Liu, Y. (2019). Ownership concentration, identity and firm performance. Evidence from China's listed firms. *Article of Emerging Markets Finance and Trade,* 3653–3666