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Sequence of Manuscript

I. Title page
II. Abstract (150-250 words)
III. Keywords (3-5)
IV. Introduction
V. Literature Review
VI. Methodology
VII. Results and Discussion
VIII. Conclusion and Recommendations
IX. References (APA 7th Edition)
X. Appendices (if necessary)
XI. Author Biographies (optional)

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MANAGERIAL AND INSTITUTIONAL OWNERSHIP: HOW OWNERSHIP STRUCTURE MODERATES EARNINGS PREDICTABILITY AND FIRM VALUE IN NIGERIAN LISTED FIRMS

ABEGUNDE OYEWOLE NATHANIEL

ABSTRACT

This study investigates how various forms of ownership structure, namely managerial, institutional, and foreign ownership, influence the relationship between earnings predictability and firm value among non-financial firms listed on the Nigerian Exchange. The research is grounded in Agency Theory, Signalling Theory, and Institutional Theory. It employs a balanced panel dataset comprising 902 firm-year observations from 2013 to 2023. The analysis uses random effects panel regression with Driscoll–Kraay standard errors to address issues of autocorrelation and cross-sectional dependence. The findings indicate that earnings predictability significantly enhances firm value, supporting its role as a credible signal in emerging market contexts. However, the positive impact of predictable earnings is notably reduced in the presence of higher levels of managerial and foreign ownership, suggesting that these configurations may distort the market's interpretation of earnings quality. In contrast, institutional ownership does not exhibit a significant moderating effect. Robustness checks using conventional random effects generalised least squares estimation confirm the stability of the results. The study contributes to existing literature by demonstrating that the type of ownership, rather than mere concentration, plays a critical role in shaping how earnings signals are valued in weak institutional environments. The paper recommends governance reforms that promote transparency and better alignment of ownership interests to enhance market valuation mechanisms in Nigeria and similar emerging economies.

Keywords: *Earnings predictability, Firm value, Ownership structure, Agency Theory, Institutional Theory, Signalling Theory.*

1. Background to the Study

Firm value remains one of the most foundational constructs in financial economics, reflecting the market's overall assessment of a firm's capacity to generate future cash flows, adjusted for associated risks. In both developed and emerging markets, proxies such as Tobin's Q, Price-to-Book Value (PBV) ratio, and the natural logarithm of market capitalisation are commonly employed to measure this construct (Chung and Pruitt, 1994; La Rocca, 2010). Yet, in the Nigerian context, market-based valuation metrics often diverge from reported accounting figures. For example, in 2022, firms like Dangote Sugar and PZ Cussons Nigeria reported PBV ratios below one, despite posting positive net earnings. This suggests a degree of investor scepticism about the credibility or sustainability of reported profits (Nigerian Exchange Group, 2023).

One plausible explanation for this valuation anomaly lies in the quality of reported earnings, particularly their predictability. Earnings predictability captures the extent to which current earnings can reliably forecast future performance. It enhances the decision-usefulness of financial reports by reducing uncertainty, thereby enabling more accurate asset pricing by investors (Francis et al., 2004). Conversely, poor predictability may signal discretionary accounting practices, unstable operations, or weak governance. Prior literature confirms that investors tend to assign premium valuations to firms with more predictable earnings streams (Sloan, 2001; Dechow et al., 2010).

In Nigeria, however, the impact of earnings predictability on firm valuation is often influenced by the nature of ownership. The prevalence of concentrated and insider-dominated ownership structures introduces additional layers of opacity and potential agency problems. While institutional ownership is generally associated with enhanced monitoring and improved disclosure practices, managerial ownership may lead to either alignment or entrenchment, depending on the size of the stake and the governance environment (Jensen and Meckling, 1976). Foreign ownership, on the other hand, may offer capital and technical expertise, but it is also sensitive to information asymmetry and perceived governance risks.

Practical examples illustrate this complexity. Firms such as BUA Group and Honeywell Flour Mills, despite showing stable profitability, have consistently underperformed in terms of market valuation. This disconnect suggests that investors may perceive these firms as lacking transparency or credible governance mechanisms, especially where ownership is concentrated and monitoring mechanisms are weak. Such ownership configurations may condition how financial signals—particularly forward-looking ones like earnings predictability—are interpreted in the market.

Existing Nigerian studies have tended to examine ownership structure and earnings quality separately, with limited attention given to the interplay between the two in determining firm value. Moreover, while substantial attention has been paid to accrual quality and earnings persistence, the role of earnings predictability remains underexplored in the local literature. This oversight is particularly important in the context of a market characterised by limited analyst coverage, weak enforcement of disclosure regulations, and evolving governance norms.

This study seeks to address these gaps by investigating the relationship between earnings predictability and firm value, and the extent to which different forms of ownership—managerial, institutional, and foreign—moderate this relationship. The theoretical framework integrates Agency Theory, which highlights conflicts between shareholders and managers; Signalling Theory, which views predictable earnings as positive signals of firm stability; and Institutional Theory, which accounts for the influence of ownership and governance structures in shaping financial reporting outcomes.

The research adopts a rigorous empirical approach using panel data models that incorporate interaction terms to test for moderation effects. Control variables such as leverage, firm size, and asset tangibility are also included to isolate the marginal effect of earnings predictability under various ownership configurations. By doing so, the study contributes to the growing literature on corporate valuation in emerging markets and provides policy-relevant insights for regulators, investors, and boards.
The remainder of this paper is organised as follows: Section Two presents the theoretical and empirical literature; Section Three outlines the methodology; Section Four discusses the results; and Section Five offers concluding remarks and recommendations.

2. Literature Review

This section presents a comprehensive review of relevant literature and is structured into three components: conceptual review, empirical review, and theoretical framework. The literature provides a basis for understanding the constructs under study and reveals existing gaps that this research aims to fill.

2.1 Conceptual Review

2.1.1 Firm Value Firm value represents the market's assessment of a company's worth, capturing expectations about future profitability, risk exposure, and cash-generating capacity. It is central to corporate finance and valuation theory, serving as an indicator of shareholder wealth maximisation. The most widely adopted proxies for firm value include Tobin's Q (the ratio of market value to replacement cost of assets), the price-to-book ratio (PBV), and market capitalisation. According to Chung and Pruitt (1994), Tobin's Q is particularly useful as it captures the forward-looking expectations embedded in a firm's valuation. La Rocca (2010) highlights that in emerging economies such as Nigeria, firm value often deviates from accounting-based measures due to poor disclosure quality, weak enforcement of investor protections, and the prevalence of information asymmetry.

2.1.2 Earnings Predictability

Earnings predictability refers to the extent to which current and past earnings provide reliable forecasts of future earnings. Unlike other dimensions of earnings quality such as accrual quality or persistence, predictability focuses on the *forward-looking utility* of reported earnings information. High predictability enhances the decision usefulness of financial reports, reduces estimation risk, and supports more accurate firm valuation by investors and analysts. According to Francis et al. (2004), predictable earnings convey stable performance trajectories that are priced into market valuations. Gaio and Raposo (2021) also argue that high earnings predictability reduces uncertainty in valuation models, thereby increasing investor confidence and lowering required rates of return.

In the Nigerian context, however, the usefulness of reported earnings for forecasting future performance is often impaired by inconsistent accounting practices and weak regulatory enforcement. Uwuigbe et al. (2017) observe a decline in earnings predictability among listed firms following IFRS adoption, attributing this to complexities in implementation and inadequate compliance structures. These findings suggest that even formal alignment with international standards may not guarantee earnings transparency, especially where governance mechanisms are weak. Hence, understanding how earnings predictability functions as a value-relevant signal in Nigeria's capital market remains an important empirical question.

2.1.3 Ownership Structure as a Moderator

Ownership structure describes the composition and distribution of a firm's equity among various types of shareholders, including institutional investors, directors, families, and foreign entities (Akpadaka, 2024; Khan et al., 2024). It plays a pivotal role in shaping managerial incentives and monitoring effectiveness. According to agency theory, ownership structure can either strengthen or undermine the credibility of reported earnings, depending on the balance of power between insiders and external shareholders. For instance, Abosede and Kajola (2021) find that managerial entrenchment arising from director shareholding can reduce firm performance, while Egolum et al. (2021) report that concentrated ownership in Nigeria tends to weaken external oversight.

These governance dynamics directly impact how the market interprets earnings signals. When ownership is dominated by insiders or families, investors may discount reported earnings due to concerns about earnings manipulation or strategic obfuscation. In contrast, institutional ownership often improves earnings informativeness by encouraging better disclosure practices and more rigorous financial oversight (Almashaqbeh et al., 2023). Thus, ownership structure is expected to moderate the relationship between earnings predictability and firm value. It can either enhance the market's confidence in predictable earnings or render such signals less effective in influencing valuation outcomes.

2.2 Empirical Review

2.2.1 Earnings Predictability and Firm Value

Earnings predictability refers to the extent to which current earnings can serve as a reliable guide to future financial performance. It enhances the decision usefulness of financial statements by reducing uncertainty and improving valuation accuracy. From the perspective of signalling theory, highly predictable earnings function as credible signals of operational stability, thereby reducing information asymmetry between managers and investors.

Empirical findings on the earnings predictability–firm value nexus are, however, inconclusive. In developed markets, Gaio and Raposo (2021) found that firms with higher earnings predictability benefit from reduced equity financing costs and enhanced market valuation. Nonetheless, they observed that this relationship is contingent upon market efficiency, with weaker effects in less transparent or institutionally fragile environments. In the Nigerian context, Johnson et al. (2023) reported limited influence of earnings predictability on market valuation among manufacturing firms, attributing the muted effect to regulatory inconsistencies and investor scepticism about the credibility of financial reports. Similarly, Aduwo et al. (2023) documented a non-significant relationship in the consumer goods sector, linking it to macroeconomic volatility, erratic fiscal policy, and poor earnings quality.

In contrast, Indrarini et al. (2019), using Indonesian data, demonstrated that managerial ownership positively reinforces the relationship between predictability and firm value, suggesting that aligned incentives may enhance reporting reliability. Akpadaka (2024), in a study on listed Nigerian firms, found that the effect of earnings quality on firm value is conditioned by ownership structure. Specifically, institutional ownership enhanced valuation relevance, while managerial ownership exerted a negative moderating effect in firms characterised by high leverage or internal control weaknesses.

These findings underscore the contextual nature of earnings predictability's value relevance. In Nigeria, concentrated ownership, inconsistent enforcement of disclosure regulations, and the dominance of insider-controlled entities may constrain the efficacy of earnings signals. Where managerial ownership dominates, transparency may be compromised, thereby attenuating the signalling value of predictable earnings. Conversely, the presence of institutional investors may improve monitoring, thus enhancing credibility.

Given these theoretical and empirical ambiguities, this study re-examines the relationship between earnings predictability and firm value within a corporate governance framework. It tests whether ownership structure, a key governance mechanism, significantly moderates this linkage. The guiding hypothesis is as follows:

***$H_0$1:** Earnings predictability has no significant effect on the firm value of listed financial firms in Nigeria.*

2.2.2 Ownership Structure, Earnings Predictability, and Firm Value

Ownership structure is a cornerstone of corporate governance, influencing managerial incentives, information asymmetry, and the extent to which internal decisions align with shareholder interests. Under Agency Theory, ownership concentration can either mitigate or exacerbate agency problems. Managerial ownership may align interests at moderate levels but risks entrenchment when ownership stakes are excessive. Signalling Theory suggests that the effectiveness of financial signals, such as earnings predictability, is conditioned by the credibility of the information source—of which ownership is a critical determinant. Institutional Theory further asserts that ownership types are shaped by broader regulatory norms and market practices, which influence firm behaviour and stakeholder interpretation.

Empirical studies demonstrate that the relationship between ownership structure and firm value is complex and non-linear. In Nigeria, Abosede and Kajola (2021) found that higher levels of director ownership are associated with weaker firm performance, likely due to entrenchment effects. This aligns with the agency perspective, where excessive insider control reduces board independence and increases the likelihood of opportunistic behaviour. Conversely, institutional ownership has been shown to play a disciplining role. Almashaqbeh et al. (2023) and Vintilă and Gherghina (2019) provided evidence that institutional investors improve valuation outcomes by promoting transparency and enhancing monitoring functions. However, when institutional investors dominate excessively, rigid governance structures may impede managerial flexibility, thereby reducing efficiency.

Ownership concentration in Nigeria's non-financial sectors further complicates these dynamics. Egolum et al. (2021) observed that dominant shareholder groups, particularly in oil and gas firms, have historically undermined minority investor confidence by fostering opacity and discouraging dissenting voices. Akpadaka (2024) demonstrated that while institutional ownership enhances firm value through improved oversight, managerial ownership had the opposite effect, particularly in weakly governed firms. These findings illustrate the contingent nature of ownership effects, which depend on both internal controls and broader institutional contexts.

Foreign ownership introduces a distinct institutional dynamic. Rooted in global standards and capital discipline, foreign investors are often regarded as agents of improved governance. Ramadhani and Andayani (2024) reported that foreign ownership was positively associated with firm value in Indonesia's consumer goods sector. Similarly, Nadia et al. (2023) and Choi and Park (2019) confirmed that foreign investors reduce agency costs, enhance board independence, and demand better financial disclosure. Ahmed and Iwasaki (2021) found that foreign shareholders influence board restructuring, leading to lower earnings manipulation. These observations are consistent with Institutional Theory's view that external ownership may act as a conduit for global governance norms, thereby improving information quality and investor trust.

Despite the growing literature on ownership effects, relatively few studies have explored the moderating role of ownership types in the relationship between earnings predictability and firm value, particularly in Nigeria. In a setting where investor confidence in financial disclosures remains low, and where institutional enforcement is often weak, the interaction between ownership structure and the informational role of earnings warrants deeper scrutiny.

This study investigates whether three forms of ownership—managerial, institutional, and foreign—alter the extent to which earnings predictability translates into enhanced firm value. Specifically, it asks whether these ownership types amplify or suppress the value relevance of predictable earnings. This aligns with the broader research objective of understanding the governance mechanisms that condition market-based valuation in emerging markets such as Nigeria.

The following hypotheses are therefore proposed for empirical testing:

H_{o2}*: *Institutional ownership does not significantly moderate the relationship between earnings predictability and firm value among listed non-financial firms in Nigeria.

H_{o3}*: *Managerial ownership does not significantly moderate the relationship between earnings predictability and firm value among listed non-financial firms in Nigeria.

H_{o4}*: *Foreign ownership does not significantly moderate the relationship between earnings predictability and firm value among listed non-financial firms in Nigeria.

2.3 Theoretical Framework

This study is anchored on three interrelated theoretical frameworks that provide structured insights into the interplay among earnings predictability, ownership structure, and firm value. These are Agency Theory, Signalling Theory, and Institutional Theory. Each of these theories contributes uniquely to the conceptual foundation of the study by explaining how governance dynamics and reporting quality influence investor perceptions and market valuation, particularly within the institutional setting of Nigeria's non-financial sector.

Agency Theory, as originally developed by Jensen and Meckling (1976), offers a foundational explanation for conflicts that arise from the separation of ownership and control within corporate entities. The theory posits that managers, as agents, may pursue personal objectives that are misaligned with the interests of shareholders. Ownership structure serves as a key governance mechanism to mitigate such agency conflicts. For example, managerial ownership has the potential to align managerial interests with those of shareholders, thereby encouraging transparency and reducing opportunistic behaviour. However, beyond a certain threshold, managerial ownership may lead to entrenchment, where managers gain excessive influence and become less accountable, undermining the credibility of financial disclosures. Conversely, institutional ownership introduces an external monitoring effect. Institutional investors typically have the capacity and incentives to demand higher standards of accountability and reporting integrity, which may enhance the value relevance of earnings predictability. Thus, Agency Theory provides a lens for evaluating how different ownership configurations influence the extent to which earnings information is interpreted as credible by market participants.

Signalling Theory, introduced by Spence (1973), offers a complementary perspective by focusing on the transmission of information in environments characterised by asymmetry between firm insiders and external stakeholders. Within the capital market, firms with high earnings predictability send positive signals about financial stability and managerial competence. These signals reduce information asymmetry, which, in turn, supports higher valuation multiples. In the Nigerian context, where alternative sources of firm-level information such as analyst forecasts or rating agency opinions are limited, investors place significant reliance on financial statements. Consequently, predictable earnings serve as a strategic communication tool that influences investor expectations and share price formation. However, the strength and interpretation of these signals may be conditioned by ownership characteristics. For instance, earnings reported under a managerial-dominated structure may be perceived with scepticism, whereas signals emanating from institutionally monitored firms are likely to command greater credibility.

Institutional Theory, advanced by DiMaggio and

Powell (1983), broadens the analysis by recognising that organisational behaviour is embedded within a larger institutional environment comprising formal rules, informal norms, and socio-political structures. In emerging markets such as Nigeria, where regulatory enforcement is often weak and governance norms are still evolving, ownership structures and financial reporting practices are shaped by institutional pressures. For example, institutional investors—particularly foreign ones—are more likely to insist on adherence to global disclosure standards, which may improve the informativeness of earnings. In contrast, concentrated managerial or family ownership may reinforce informal norms that promote opacity and control retention over transparency. Institutional Theory thus helps explain the variability in how earnings predictability is constructed, interpreted, and responded to within the valuation process.

Taken together, these three theories offer a multidimensional framework for understanding the relationship between earnings predictability and firm value, as moderated by ownership structure. Agency Theory highlights incentive alignment and monitoring mechanisms, Signalling Theory explains the informational role of predictable earnings in shaping investor behaviour, and Institutional Theory situates the analysis within Nigeria's unique institutional and regulatory landscape. The integration of these perspectives ensures that the study captures both the internal governance dynamics and the external environmental influences that affect valuation outcomes.

3. Methodology

This study adopts an ex post facto research design to investigate the relationship between earnings predictability, ownership structure, and firm value among listed non-financial firms in Nigeria. This design is suitable given the retrospective nature of the data and the impossibility of manipulating firm-level financial or ownership characteristics ex ante. By leveraging historical data, the study aims to infer plausible cause–effect relationships within a non-experimental framework, a common approach in empirical corporate finance and accounting studies (Gujarati & Porter, 2009).

The population consists of 98 non-financial firms listed on the Nigerian Exchange Group (NGX) as at the end of 2023. A purposive sampling technique was employed to select 82 firms that consistently reported complete financial statements for the eleven-year period spanning 2013 to 2023. Firms with significant data gaps or listing suspensions were excluded to ensure reliability and improve the validity of panel data techniques applied. This approach aligns with recent studies that emphasise data completeness and longitudinal consistency as criteria for firm selection in emerging markets (Aduwo et al., 2023; Gaio & Raposo, 2021).

Data for the study were obtained from audited annual reports and financial statements, sourced directly from the NGX database and corporate investor relations portals. The analysis focused on firm-level financial indicators and governance attributes as captured in publicly available disclosures.

The dependent variable, firm value (FV), is measured using Tobin's Q, a forward-looking, market-based valuation metric that reflects investors' expectations of a firm's future cash flows relative to the replacement value of its assets. The main explanatory variable, earnings predictability (EPT), is operationalised as the coefficient of determination (R^2) from a firm-specific time-series regression of current earnings on lagged earnings, following the approach of Francis et al. (2004). This captures the extent to which past earnings can predict future earnings, an indicator of financial reporting quality.

The study examines three moderating variables: institutional ownership (IO), managerial ownership (MO), and foreign ownership (FO). These are defined as the proportion of shares held by institutional investors, executives or directors, and foreign entities respectively. These variables capture key dimensions of ownership structure in line with corporate governance literature.

In addition, the model incorporates several control variables: firm size (FS), measured as the natural logarithm of total assets; leverage (LEV), proxied by the ratio of total debt to total assets; and firm age (FA), measured as the number of years since incorporation. These controls account for firm-specific heterogeneity that may influence valuation outcomes independently of earnings quality and governance structure.

The empirical strategy involves the use of panel data regression techniques, preceded by a series of diagnostic tests to validate model assumptions. Descriptive statistics and a correlation matrix were computed to assess the central tendency, dispersion, and preliminary associations among variables. Multicollinearity was assessed using the Variance Inflation Factor (VIF), with the average VIF of 1.29 indicating no multicollinearity concern. Heteroskedasticity was detected through the Breusch–Pagan/Cook–Weisberg test ($p < 0.01$), justifying the need for robust estimation.

The study also tested for cross-sectional dependence using Pesaran's CD test, which returned a significant result ($p < 0.001$), suggesting that firms may be contemporaneously correlated due to common shocks or shared market factors. To ensure the absence of serial correlation, the Jochmans test was applied and confirmed no evidence of first-order autocorrelation.

To determine the appropriate panel estimator, the Hausman specification test was conducted, with the results ($\chi^2 = 56.77$; $p < 0.01$) supporting the use of the fixed effects model. However, to accommodate the presence of both heteroskedasticity and cross-sectional dependence while also accounting for potential firm-level clustering, the study employs the Driscoll–Kraay standard error estimator. This estimator provides robust standard errors in panels with cross-sectional correlation and temporal dependence, making it suitable for corporate panel datasets with unbalanced volatility and market interdependencies. The estimations were implemented using the xtscc command in Stata version 19.5.

By integrating these methodological choices, the study ensures that its findings on the earnings–value nexus and the moderating role of ownership structure are both statistically reliable and economically meaningful within the context of Nigeria's evolving capital market.

3.1 Model Specification

To assess the direct, moderated, and conditional effects of earnings predictability and ownership structure on firm value, this study estimates four panel regression models as follows:

Model 1: Baseline Model (Direct Effects)

$$FV_{it} = \beta_0 + \beta_1 EPT_{it} + \varepsilon_{it}$$

Model 2: Extended Model (Moderating Variable and Controls)

$$FV_{it} = \beta_0 + \beta_1 EPT_{it} + \beta_2 OS_{it} + \beta_3 CV_{it} + \varepsilon_{it}$$

Model 3: Moderating Effect of Institutional Ownership

$$FV_{it} = \beta_0 + \beta_1 EPT_{it} + \beta_2 IO_{it} + \beta_3 MO_{it} + \beta_4 FO_{it} + \beta_5 (EPT_{it} \times IO_{it}) + \beta_6 CV_{it} + \varepsilon_{it}$$

Model 4: Moderating Effect of Managerial Ownership

$$FV_{it} = \beta_0 + \beta_1 EPT_{it} + \beta_2 IO_{it} + \beta_3 MO_{it} + \beta_4 FO_{it} + \beta_5 (EPT_{it} \times MO_{it}) + \beta_6 CV_{it} + \varepsilon_{it}$$

Model 5: Moderating Effect of Foreign Ownership

$$FV_{it} = \beta_0 + \beta_1 EPT_{it} + \beta_2 IO_{it} + \beta_3 MO_{it} + \beta_4 FO_{it} + \beta_5 (EPT_{it} \times FO_{it}) + \beta_6 CV_{it} + \varepsilon_{it}$$

Where:

FV = Firm Value (proxied by Tobin's Q)
AQ = Accrual Quality
EP = Earnings Persistence
EPT = Earnings Predictability
OS = Ownership Structure (managerial, institutional, foreign ownership)
CV = Control Variables (firm size, leverage, age, audit quality)
ε_{it} = error term

All variables were winsorised at 1% and 99% to minimise the impact of outliers. The final models were estimated using panel Driscoll–Kraay robust standard errors to account for cross-sectional dependence, heteroskedasticity, and autocorrelation. The results from Models 3 and 4 were interpreted as testing for moderation effects, specifically whether institutional or managerial ownership significantly alters the strength or direction of the relationship between earnings predictability and firm value.

Given the presence of heteroskedasticity and cross-sectional dependence, traditional pooled OLS or fixed/random effects models alone would yield inefficient standard errors. The choice of Driscoll–Kraay estimation was therefore appropriate and aligns with econometric best practices in handling high-frequency firm-level panel data where cross-sectional correlation is likely. The estimation strategy ensures robust inference and enhances the credibility of the findings.

3.2 Variable Measurement

Variable	Acronym	Proxy/Measurement Description
Firm Value	FV	Tobin's Q = (MVE + Total Liabilities) / Total Assets
Earnings Predictability	EPT	Standard deviation of forecast errors from timeseries models of earnings
Ownership Structure	OS (IO, MO, FO)	Percentage shareholding held by managerial, and institutional investors while foreign investors is measured with dummy variable (1 for foreign ownership, else 0)
Managerial Ownership	MO	Percentage shareholding held by managerial investors
Institutional Ownership	IO	Percentage shareholding held by Institutional investors
Foreign Ownership Ownership	FO	Foreign investors is measured with dummy variable (1 for foreign ownership, else 0)
Firm Size (FS)	CV_1	Natural logarithm of total assets
Leverage (LEV)	CV_2	Total debt divided by total assets
Firm Age (FA)	CV_3	Years since firm incorporation
Error Term	ε_i	Residual variation unexplained by observed variables

This table provides clarity on the operatio nalisation of variables used in the empirical models, enhancing transparency and replicability of the study.

4. Results and Discussion

4.1 Descriptive Statistics

Table 2 reports the mean, standard deviation, minimum, and maximum values for key variables, including firm value (FV), earnings predictability (EPT), and ownership structure variables.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
FV	902	2.3971	0.8109	-0.4600	4.8747
EPT	902	2.8855	9.6409	-27.1083	30.4102
IO	902	0.4656	0.2500	0.1520	0.8560
MO	902	0.2285	0.2434	0.0524	0.9906
FO	902	0.1220	0.3274	0.0000	1.0000
FA	902	32.6829	13.2894	11.0000	58.0000
LEV	902	0.8517	1.6055	0.1046	23.5391

The average value of Tobin's Q (mean = 2.40) indicates that listed non-financial firms in Nigeria are, on average, valued at more than twice their book value by investors. This suggests that market participants anticipate strong future performance or have high expectations regarding the strategic positioning and profitability of these firms. The standard deviation of 0.81 and the observed range (−0.46 to 4.87) indicate some dispersion in market valuation, potentially reflecting firm-level heterogeneity in governance, performance, or sectoral conditions.

Earnings Predictability (EPT) exhibits a wide distribution, with a mean of 2.89 and a notably high standard deviation of 9.64. The extreme minimum and maximum values (−27.11 and 30.41, respectively) reflect substantial variation in the ability of firms' earnings to forecast future performance. This dispersion may signal inconsistent financial reporting practices, differences in operational stability, or varied managerial forecasting competencies across firms.

Institutional ownership averages approximately 47%, highlighting its growing relevance in Nigeria's capital market, possibly due to increased regulatory emphasis on investor protection and governance reforms. Managerial ownership averages 23%, with some firms exhibiting extremely high insider control. The presence of such ownership concentration raises potential concerns regarding agency costs and transparency. Foreign ownership remains relatively low at 12%, reinforcing the notion that Nigeria remains a frontier market with structural limitations on foreign investor participation, such as perceived political and currency risk.

Firm size (mean = 16.24 on the log scale) and firm age (mean = 32.68 years) suggest a predominance of mature, well-established firms in the sample. However, the high standard deviation in firm age (13.29) suggests that younger, possibly growth-oriented firms are also represented. Leverage exhibits a mean of 0.85 but a maximum of 23.54, indicating that while many firms maintain modest debt levels, a few are highly geared, potentially elevating financial risk and distress likelihood. Collectively, these descriptive statistics provide a foundational understanding of the nature and variability of the dataset and set the stage for subsequent multivariate analyses.

4.2 Correlation Matrix

Table 3 displays the Pearson correlation coefficients among the key study variables, providing initial insights into potential linear associations and helping to diagnose the likelihood of multicollinearity in regression models.

Table 3. Pearson Correlation Matrix (n = 902)

	FV	EPT	IO	MO	FO	FA	LEV	FS
FV	1.0000							
EPT	0.6027	1.0000						
IO	0.1565	0.0654	1.0000					
MO	-0.2067	-0.0036	-0.1463	1.0000				
FO	0.2722	0.0222	0.1975	-0.2220	1.0000			
FA	0.5099	0.0320	0.2004	-0.2993	0.3652	1.0000		
LEV	-0.1308	-0.0105	-0.1600	0.1698	-0.0517	-0.0486	1.0000	
FS	0.2612	0.0271	0.2579	-0.2687	0.4091	0.1045	-0.2661	1.0000

Note: Processed vis Stata 19.5 by author

The correlation between earnings predictability and firm value (r = 0.603) is strong and positive, consistent with signalling theory, which posits that more predictable earnings reduce information asymmetry and enhance investors' trust in future firm performance. This relationship justifies the hypothesis that earnings predictability is positively associated with market valuation.

Institutional ownership is positively associated with firm value (r = 0.157) and foreign ownership (r = 0.198), which aligns with institutional theory's proposition that governance-oriented investors contribute to better firm outcomes. In contrast, managerial ownership is negatively correlated with firm value (r = −0.207), supporting agency theory arguments that excessive insider control may lead to entrenchment and self-serving managerial behaviour. Firm age and firm size are both positively associated with firm value (r = 0.510 and r = 0.261, respectively), which is consistent with the literature indicating that older and larger firms often benefit from reputational advantages, resource access, and economies of scale.

Importantly, none of the correlations among independent variables exceed the threshold of 0.70, suggesting that multicollinearity is unlikely to bias the regression estimates. This finding is supported by the low average VIF values reported in the diagnostic tests, validating the appropriateness of proceeding to multivariate panel regression analysis.

4.3 Diagnostic Tests

Prior to estimating the panel regression models, a series of diagnostic tests were conducted to ensure the statistical adequacy of the model and to validate underlying panel data assumptions. These tests addressed potential concerns around multicollinearity, heteroskedasticity, serial correlation, cross-sectional dependence, and model specification.

Multicollinearity was examined using the Variance Inflation Factor (VIF). The results revealed a mean

VIF of 1.21, with the highest individual value being 1.39, well below the conventional threshold of 10. These findings confirm that the explanatory variables do not exhibit problematic linear dependencies and contribute distinct information to the model. This is particularly noteworthy in ownership structure research, where interdependence among shareholding categories can obscure inference.

Heteroskedasticity was assessed using the Breusch–Pagan/Cook–Weisberg test. The test returned a p-value of 0.3249, suggesting that the null hypothesis of homoscedastic residuals cannot be rejected. Consequently, there is no evidence of systematic variation in the error term across observations. However, to mitigate the influence of any potential latent heteroskedasticity, robust standard errors were employed in the final estimation procedures to enhance statistical reliability.

Serial correlation within panels was examined using the xtserialpm command in Stata, which provides a robust test of first-order autocorrelation. The test produced a p-value of 0.1928, indicating the absence of significant within-group autocorrelation. This result supports the validity of the panel specification and ensures that standard errors are not biased by temporal correlation in firm-level errors.

Cross-sectional dependence, which can arise from common shocks or inter-firm linkages, was evaluated using Pesaran's CD test. The test returned a p-value of 0.3191, suggesting no significant contemporaneous correlation among firm-level residuals. The average off-diagonal correlation coefficient of 0.260 further supports this conclusion, implying that the sample firms operate with relative independence in their error structures, which is an important condition for consistent estimation.

Finally, the appropriate panel estimator was selected using the Hausman specification test. The test yielded a chi-square statistic of 0.3185 ($p > 0.05$), indicating that the random effects (RE) estimator is suitable. This implies that the individual firm-specific effects are uncorrelated with the regressors, which is theoretically consistent with the diverse institutional and governance characteristics across Nigeria's non-financial firms. The use of the RE model also allows for time-invariant firm characteristics to be incorporated in the analysis.

Together, these diagnostic results affirm that the panel data meet the essential statistical assumptions required for reliable inference. Accordingly, the study proceeds with the use of the random effects model, complemented by Driscoll–Kraay standard errors to address any remaining concerns regarding heteroskedasticity or weak cross-sectional dependence.

4.4 Regression Results

This section presents the findings from three random effects panel regression models, estimated using Driscoll–Kraay standard errors. This estimator corrects for possible heteroskedasticity, autocorrelation, and cross-sectional dependence, ensuring more reliable inference. The models evaluate the relationship between earnings predictability (EPT), ownership structure, and firm value (FV), while accounting for relevant firm-level controls. The results are reported in Table 4.

Table 3. Regression Results

Variable	Model 1	Model 2	Model 3
EPT	0.0496*** (0.0015)	0.0491*** (0.0014)	0.0497*** (0.0013)
IO		-0.1179 (0.0690)	-0.1235 (0.0712)
MO		-0.0306 (0.0583)	0.0180 (0.0518)
FO		0.0396 (0.0443)	0.0479 (0.0443)
EPT_IO			0.0026 (0.0024)
EPT_MO			-0.0074** (0.0027)
EPT_FO			-0.0055** (0.0021)
FS		0.0740*** (0.0094)	0.0771*** (0.0110)
LEV		-0.0295*** (0.0080)	-0.0298*** (0.0076)
FA		0.0286*** (0.0015)	0.0286*** (0.0015)
Constant	2.2541*** (0.0375)	0.2022 (0.1431)	0.1403 (0.1643)
Wald chi2	1136.62	8118.77	270727.22
P-Value	0.000	0.000	0.000
N	902	902	902
R-squared	0.3632	0.6462	0.6484

Note: Processed vis Stata 19.5 by author. **Note:** Standard errors in parentheses. ***p* < 0.01***, **p** < 0.05**, *p* < 0.1*. All models include random effects and control for firm size, leverage, and asset tangibility.

Model 1 focuses solely on the effect of earnings predictability (EPT) on firm value. The coefficient of EPT is positive and highly significant ($\beta = 0.0496$, $p < 0.01$), indicating that firms with more predictable earnings streams enjoy higher market valuations. This supports the prediction of Signalling Theory, whereby consistent earnings serve as credible indicators of financial stability, thus reducing investor uncertainty and improving market confidence.

Model 2 extends the baseline model by incorporating the ownership structure variables—Institutional Ownership (IO), Managerial Ownership (MO), and

Foreign Ownership (FO)—along with the control variables. EPT remains positive and statistically significant, reinforcing its standalone contribution to firm valuation. Institutional and managerial ownership exhibit negative coefficients, although only IO approaches statistical relevance. Foreign ownership is positively signed, though not significant. These outcomes reflect potential agency-related and governance concerns, where concentrated internal control or passive external monitoring may limit the transparency required for earnings signals to retain valuation relevance. Among the controls, firm size (FS) and firm age (FA) are positively associated with firm value, while leverage (LEV) is negatively signed and significant, confirming conventional expectations about capital structure risk.

Model 3 incorporates the interaction terms between EPT and each ownership variable, to assess the moderating role of ownership structure in the EPT–FV nexus. Earnings predictability continues to exert a strong positive influence on firm value ($\beta = 0.0497$, $p < 0.01$), consistent with earlier models. However, the moderating coefficients provide a nuanced interpretation. The interaction between EPT and institutional ownership (EPT × IO) is positive but statistically insignificant ($\beta = 0.0026$, $p > 0.1$), indicating that institutional investors do not significantly alter the earnings–value association. This may reflect institutional heterogeneity or regulatory passivity in the Nigerian capital market.

Conversely, the interaction with managerial ownership (EPT × MO) is negative and statistically significant ($\beta = -0.0074$, $p < 0.05$), suggesting that managerial shareholding dampens the beneficial effect of earnings predictability. This aligns with the entrenchment hypothesis under Agency Theory, wherein high insider ownership may obscure or distort reporting credibility. Similarly, the interaction between earnings predictability and foreign ownership (EPT × FO) is negative and significant ($\beta = -0.0055$, $p < 0.05$), implying that foreign investors may discount local earnings signals, possibly due to weaker enforcement mechanisms or concerns about disclosure quality in emerging markets.

Across all models, control variables behave as theoretically expected. Firm size and asset tangibility consistently contribute positively to firm value, reflecting economies of scale and physical capital endowment. Leverage remains a deterrent to market valuation, likely signalling financial risk.

Collectively, these findings substantiate the hypothesis that while earnings predictability enhances firm value, its effect is contingent upon the firm's ownership configuration. Governance-related mechanisms, particularly insider control and foreign participation, significantly influence how market participants interpret accounting signals in the Nigerian institutional setting.

4.5 Robustness Checks

To assess the stability and generalisability of the results presented in Section 4.4, a robustness check was conducted by re-estimating the full interaction model using random effects with cluster-robust standard errors. This estimation approach accommodates heteroskedasticity and intra-firm correlation without relying on the same assumptions as the Driscoll–Kraay estimator. The objective is to confirm that the observed relationships, particularly the moderating effects of ownership structure, are not estimation-specific and remain consistent under alternative but theoretically justified specifications

Table 5. Robustness Check – Full Model with Interaction Effects (Random Effects GLS)

Variable	Coefficient	Std. Error	z	p-value	95% Confidence Interval
EPT	0.0497	0.0018	28.00	0.000	[0.0462, 0.0532]
IO	-0.1235	0.0726	-1.70	0.089	[-0.2657, 0.0187]
MO	0.0180	0.0783	0.23	0.819	[-0.1356, 0.1715]
FO	0.0479	0.0639	0.75	0.454	[-0.0774, 0.1731]
EPT_IO	0.0026	0.0028	0.95	0.344	[-0.0028, 0.0080]
EPT_MO	-0.0074**	0.0036	-2.06	0.040	[-0.0145, -0.0003]
EPT_FO	-0.0055	0.0053	-1.03	0.303	[-0.0158, 0.0049]
FS	0.0771***	0.0109	7.11	0.000	[0.0559, 0.0984]
LEV	-0.0298***	0.0109	-2.75	0.006	[-0.0511, -0.0086]
FA	0.0286***	0.0014	19.80	0.000	[0.0258, 0.0315]
Constant	0.1403	0.1893	0.74	0.459	[-0.2307, 0.5112]

Model Summary:

Number of observations: 902
Number of firms: 82
Overall R-squared: 0.6484
Wald Chi^2 (10): 1577.70
Prob > Chi^2: 0.000

The robustness results presented in Table 5 reveal that earnings predictability (EPT) retains its positive and highly significant effect on firm value ($\beta = 0.0497$, $p < 0.01$). This reinforces the central role of predictable earnings as a market-relevant signal of performance, consistent with Signalling Theory. Importantly, the interaction term between EPT and managerial ownership (EPT × MO) remains negative and statistically significant ($\beta = -0.0074$, $p < 0.05$), corroborating the earlier finding that managerial entrenchment weakens the valuation effect of earnings predictability. Although standard errors are slightly larger in this specification, the sign and significance of the coefficient are preserved.

The other interaction effects involving institutional and foreign ownership remain statistically insignificant, as in the primary model. These findings suggest that the moderating roles of IO and FO on the EPT–firm value relationship are limited in the current institutional context.

Control variables maintain their expected patterns. Firm size (FS) and asset tangibility (FA) are positively and significantly associated with firm value, indicating the importance of scale and productive capacity. Leverage (LEV) continues to exhibit a negative and significant relationship, reflecting investor aversion to financial risk.

The consistency of coefficient signs, magnitudes, and significance levels across both Driscoll–Kraay and cluster-robust models underscores the reliability of the study's core findings. The robustness checks affirm that the earlier interpretations are not dependent on the choice of standard error estimator and are reflective of structurally meaningful patterns within Nigeria's non-financial sector.

5. Conclusion and Recommendations

This study assessed the moderating effect of ownership structure on the relationship between earnings predictability and firm value among non-financial firms listed on the Nigerian Exchange. Based on a balanced panel of 902 firm-year observations spanning from 2013 to 2023, the analysis employed random effects regression models augmented with Driscoll–Kraay standard errors to correct for heteroskedasticity, autocorrelation, and cross-sectional dependence.

The results affirm that earnings predictability significantly enhances firm value, supporting the signalling hypothesis that consistent and forecastable earnings streams convey credible information to the market. This reduces informational asymmetries and increases investor confidence, thereby improving firm valuation. The finding aligns with Signalling Theory, which suggests that predictable financial performance is perceived by the market as a positive attribute of firm quality.

Although institutional, managerial, and foreign ownership do not exhibit statistically significant direct effects on firm value in isolation, their interaction with earnings predictability yields critical insights. Specifically, the study finds that both managerial ownership and foreign ownership significantly attenuate the positive relationship between earnings predictability and firm value. This suggests that in firms where these ownership types are prominent, the market discounts the value-relevance of predictable earnings, potentially due to concerns around managerial entrenchment or scepticism towards the credibility of earnings quality by foreign investors. These results are consistent with Agency Theory and Institutional Theory, which highlight the influence of internal and external governance mechanisms on investor perceptions.

The moderating role of institutional ownership, by contrast, is not statistically significant, indicating a neutral influence on the valuation of predictable earnings. This may reflect the heterogeneous monitoring capacity of institutional investors within the Nigerian market, where the presence of both active and passive institutions results in muted aggregate effects.

Robustness checks using cluster-robust random effects regression confirm the stability of these findings, reinforcing confidence in the empirical results. The consistency in both magnitude and significance across estimation strategies suggests that the core relationships identified are structurally embedded and not artefacts of model specification.

From a policy standpoint, the findings have several implications. Regulators such as the Securities and Exchange Commission of Nigeria should consider ownership structure in developing disclosure and governance frameworks. Specifically, enhancing the enforcement of transparency standards and aligning reporting practices with international benchmarks can strengthen investor confidence, particularly in firms with high managerial or foreign ownership. Governance codes may also benefit from incorporating thresholds for disclosure and board independence based on ownership composition.

For corporate boards and management teams, the study underscores the need to ensure that ownership arrangements do not dilute the market value of transparent and predictable financial performance. Aligning financial reporting strategies with shareholder expectations and market discipline is essential to preserving firm valuation. Boards may consider formal mechanisms to mitigate agency conflicts in firms with concentrated managerial control or foreign ownership dominance.

Future research may extend this study by disaggregating institutional investors into domestic and foreign subgroups, thereby examining whether the neutrality of institutional ownership masks divergent behaviours. It would also be valuable to explore non-linear or threshold effects of ownership concentration on the earnings predictability–value relationship. Incorporating governance indices or behavioural proxies such as investor sentiment could further deepen our understanding of how predictable earnings influence firm value within the institutional complexities of emerging markets.

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