Profitability and the Ownership structure–Dividend Nexus: Quantile Evidence from Listed Deposit Money Banks in Nigeria

Abstract

*This study investigates the influence of ownership structure on dividend payout policy, with profitability as a moderating factor, among listed deposit money banks (DMBs) in Nigeria from 2012 to 2023. Grounded in agency and signalling theories, it examines how managerial, institutional, and foreign ownership affect dividend payout ratios (DPO), and how profitability interacts with these ownership forms to shape dividend behaviour. The novelty of the study lies in its application of quantile regression to the dividend literature in an emerging market context, providing a distributional analysis that extends beyond mean-based models. It also introduces a moderation framework that reveals how profitability conditions the ownership–dividend nexus across payout levels. Using both cross-sectional quantile regression and fixed effects panel quantile regression at the 25th, 50th, and 75th quantiles, the study captures heterogeneity and firm-specific dynamics. Foreign ownership consistently increases DPO, institutional ownership exhibits a negative effect, and managerial ownership is positively associated at lower quantiles. Profitability’s direct effect is significant only in the cross-sectional model. Its interaction with foreign ownership reveals a dampening effect on dividend payouts. Control variables behave as expected. The study advances corporate finance literature by introducing a novel methodological lens and offering context-specific evidence from Sub-Saharan Africa’s banking sector.*

**Keywords:** Dividend Policy, Ownership Structure, Profitability, Quantile Regression, Corporate Governance,

## **1. Introduction**

Dividend policy constitutes a critical decision within corporate finance, especially in highly regulated sectors like banking (Azeem et al., 2023). For banks, dividends function not only as a mechanism for shareholder value distribution but also as a signal of financial strength and managerial confidence (Alhalabi et al., 2023; Arhinful et al., 2025). Dividend distributions are frequently perceived by investors as indicators of firm performance and stability (Munir et al., 2024), a perception particularly salient in emerging economies such as Nigeria, where dividends provide tangible evidence of success amidst macroeconomic volatility and capital market inefficiencies. Banking sector dividend decisions are further complicated by regulatory capital mandates, systemic risk concerns, and the strategic imperative for earnings retention to fund growth (Bechter, 2024). Consequently, dividend payouts reflect strategic trade-offs involving agency issues, market signalling, and regulatory compliance.

The theoretical underpinnings of dividend policy prominently feature agency theory and signalling theory. Agency theory (Jensen and Meckling, 1976) suggests dividends mitigate conflicts by reducing free cash flow available to managers, thereby curtailing discretionary spending and potential expropriation. Within this framework, firm ownership structure critically influences dividend behaviour. Managerial ownership may align insider and shareholder interests, reducing agency costs (Tayeh et al., 2023), while institutional and foreign ownership may exert external monitoring pressure, encouraging higher payouts to satisfy return-seeking shareholders (Al-Matari, 2025). Signalling theory posits that dividend announcements convey private information about future earnings prospects (Nworie et al., 2024). Consequently, profitability, often measured by Return on Assets (ROA), is a central determinant, reflecting both the capacity to pay dividends and managerial confidence in sustained earnings (Dewasiri et al., 2019).

Profitability plays a dual role: as a direct determinant of dividend capacity and as a potential moderator of the ownership-dividend relationship. However, this moderating role is complex and likely heterogeneous across firms with differing dividend profiles. Traditional econometric models, such as Ordinary Least Squares (OLS) and fixed effects regressions, typically estimate average effects assuming homogeneity. This approach may obscure variations in how profitability influences dividend policy across the payout distribution. This study therefore employs quantile regression, enabling the estimation of relationships across the entire spectrum of dividend payouts, thus providing a more nuanced understanding of firm behaviour. This methodology is particularly suited to the Nigerian banking context, characterised by skewed and heterogeneous dividend payout ratios.

The Nigerian banking sector offers a compelling empirical setting. Significant transformations in ownership structure, regulatory oversight, and governance practices followed the 2004-2005 banking consolidation and post-2008 financial crisis reforms. Concentrated ownership is common, with large institutional and foreign investors playing dominant roles. Despite regulatory efforts to enhance transparency and capital adequacy, dividend payout patterns remain inconsistent across the sector. Discrepancies exist between banks paying high, stable dividends and those maintaining conservative or no payouts despite profitability, influenced by ownership incentives, regulatory compliance, and profitability levels. Existing empirical studies on Nigerian dividend policy have predominantly used linear models, insufficiently exploring how profitability interacts with ownership structure across varying payout intensities.

This study addresses a methodological and empirical gap in the dividend policy literature by investigating how profitability moderates the ownership-dividend relationship among listed Nigerian deposit money banks using quantile regression. By focusing on the distributional effects of managerial, institutional, and foreign ownership on dividend payouts, the study reveals how these relationships vary across low, median, and high dividend-paying firms. This novel application of quantile regression introduces a methodological advancement in the context of Nigeria’s banking sector, offering insights that go beyond traditional mean-based approaches. The study also contributes theoretically by extending agency and signalling theories to reflect the regulatory and institutional complexities of emerging markets. By examining the interactive role of profitability, it enhances our understanding of dividend behaviour under varying governance structures. These contributions support both scholarly inquiry and policy discourse, particularly in the areas of investor protection, dividend regulation, and strategic financial management within the banking industry.

The paper proceeds as follows. Section 2 reviews literature on ownership, profitability, and dividends. Section 3 details the methodology, data, variables, and econometric model, justifying quantile regression. Section 4 presents and discusses empirical results, including descriptive statistics and quantile regression interpretations. Section 5 concludes, summarising findings, implications, recommendations, limitations, and future research directions.

## **2. Literature Review**

## **2.1 Theoretical Framework**

This study is grounded in agency and signalling theories, which offer a conceptual lens through which to understand the incentives and constraints shaping dividend decisions in Nigerian deposit money banks. Jensen and Meckling (1976) formalised agency theory, building on Berle and Means (1932), to explain conflicts arising from the separation of ownership and control. In firms where managers hold little equity and ownership is dispersed, managers may underinvest in dividends and instead pursue projects that increase their private control benefits (La Porta et al., 2000; Faccio et al., 2001; Fama & French, 2001). Dividend payouts, therefore, operate as a governance tool to reduce agency costs by limiting funds available for discretionary use. Ownership structure is integral to this function. Empirical studies show that managerial ownership can align managerial and shareholder interests, mitigating agency problems (Vijayakumaran, 2020; Nel et al., 2024; Lubis et al., 2025). However, when managerial ownership becomes excessive, entrenchment may occur, weakening the responsiveness to shareholder pressure for dividends (Alshdaifat et al., 2025; Tawfik et al., 2024).

Institutional ownership is argued to exert a monitoring effect that disciplines managerial behaviour (Hong & Linh, 2022). In emerging markets, such as Nigeria, institutional investors have been shown to encourage firms to pay dividends to uphold reputational and liquidity standards (Yahaya, 2025). In weak governance environments, dividends function as mechanisms to control managerial expropriation (Danni & Qi, 2024; Tran, 2024).

The signalling theory complements this perspective by explaining how dividends are used to convey private information about future earnings. Initially proposed by Bhattacharya (1979) and extended by Miller and Rock (1985), this theory holds that dividends act as credible signals in environments characterised by information asymmetry and limited reliability of earnings reports (AlGhazali et al., 2024; Sinha & Kumar, 2024).

In Nigeria, where delays in financial reporting are common, dividend announcements play a central role in investor decision-making. The effectiveness of these signals is influenced by ownership structure, as institutional and foreign investors are more likely to interpret dividends as reliable indicators of firm value and management competence. Together, these theories suggest that dividend policy is shaped not only by earnings or board discretion but also by the interaction between ownership structure and profitability. Agency theory accounts for variations in governance-driven incentives, while signalling theory underscores the informational role of dividends. Profitability moderates these relationships, influencing how ownership affects dividend policy under differing earnings conditions. This integrated framework enables a more nuanced understanding of dividend decisions, particularly within the regulatory and governance complexities of the Nigerian banking sector.

## **2.2 Empirical Review and Hypotheses Development**

A significant body of literature has explored the determinants of dividend policy, particularly in relation to ownership structure and profitability. However, findings have varied considerably across contexts, ownership categories, and methodological approaches. This section synthesises the empirical findings relevant to this study and develops hypotheses in line with theoretical expectations, while recognising gaps in the literature.

### **2.3.1 Managerial Ownership and Dividend Policy**

Managerial ownership refers to the proportion of a company’s shares held by its executives and board members. According to agency theory (Jensen & Meckling, 1976), when managers are shareholders, they may align their interests with those of other shareholders, potentially supporting dividend payments. However, empirical findings are mixed. Yahaya (2025) found a positive and significant effect of board ownership on dividend payouts in Nigerian non-financial firms, suggesting dividends are used as a signalling and self-benefiting mechanism. Conversely, Ismail and Anridho (2024) and Akilla et al. (2024) reported a negative or insignificant effect of managerial ownership on dividend policy in Indonesian SOEs and Nigerian banks, respectively. These findings support the entrenchment hypothesis (Morck et al., 1988), which posits that beyond a certain ownership threshold, managers prefer to retain earnings to pursue personal projects, thereby reducing dividend payouts. In regulated environments like banking, dividend decisions may be influenced more by prudential norms than ownership structure. Therefore, the relationship between managerial ownership and dividend policy remains context specific.

*Hypothesis 1 (H1): Managerial ownership is negatively associated with dividend payout ratios of listed deposit money banks in Nigeria.*

### **2.3.2 Institutional Ownership and Dividend Policy**

Institutional ownership (IO) plays a pivotal role in shaping dividend policy, particularly in the banking sector where strategic monitoring by institutional investors may mitigate agency conflicts and influence payout decisions. Theoretically, institutional investors are presumed to favour dividend policies that ensure transparency and reduce managerial discretion over free cash flows (Jensen, 1986). However, empirical findings across emerging markets have shown nuanced outcomes.

In the context of Nigeria, Akpadaka et al. (2024) reported a significant positive association between institutional ownership and dividend payout among listed manufacturing firms on the Nigerian Exchange. The authors argue that institutional investors, by virtue of their voting rights and monitoring capabilities, encourage higher dividends as a mechanism for mitigating agency costs. Similarly, Yahaya et al. (2025b) supported the view that institutional investors demand consistent dividend payments to reduce the likelihood of expropriation by insiders. Conversely, in some cases, institutional investors may align with entrenched management, leading to a neutral or even negative influence on dividend policy (Tayachi et al., 2021; Wijaya, 2023). These findings underscore the dual agency perspective where institutional investors can either function as active monitors or as passive allies to management depending on their investment horizon and strategic interest.

***H2:*** *Institutional ownership is positively associated with dividend payout ratios of listed deposit money banks in Nigeria.*

### **2.3.3 Foreign Ownership and Dividend Policy**

Foreign ownership has emerged as a significant determinant of dividend policy, particularly in emerging markets where governance mechanisms are often underdeveloped. Foreign investors are typically more risk-averse and demand transparent financial practices, especially in jurisdictions characterised by weak legal enforcement and high information asymmetry. In such settings, dividends serve as an effective tool to mitigate agency conflicts and reduce the risk of expropriation by insiders (Duqi, 2020; Loncan, 2020). Moreover, regular dividend payments facilitate income repatriation, making the host market more attractive to foreign capital.

Empirical studies have provided substantial support for this argument. In Nigeria and other comparable economies, foreign ownership has been found to positively influence dividend payouts, aligning with both the agency theory and signalling theory (Idris, 2023; Aslam et al., 2023). These investors often demand consistent and substantial dividends as reassurance of managerial discipline and firm performance. However, contrasting evidence exists. For instance, Bataineh (2020), examining Jordanian industrial and service firms, found a negative relationship between foreign ownership and dividend payments, suggesting that in some contexts, foreign investors may prioritise capital gains or reinvestment strategies over immediate returns.

***H3****: Foreign ownership is positively associated with dividend payout ratios of listed deposit money banks in Nigeria.*

### **2.3.4 Profitability and Dividend Policy**

Profitability is widely regarded as a key driver of dividend policy, as profitable firms have greater capacity to distribute dividends. Empirical evidence supports a positive relationship between profitability and dividend payout. Januarsi and Sanusi (2024) found that free cash flow enhances the link between profitability and dividend policy. Similarly, Susilo et al. (2021) reported a significant positive effect of profitability, proxied by ROA, on dividend payments in Indonesian manufacturing firms. Supporting this view in an African context, Akpadaka et al. (2024) observed a strong positive association between ROA and dividend payout among South African manufacturing firms. These findings align with the signalling and pecking order theories, suggesting that higher profitability signals financial strength and encourages greater dividend distribution.

***H4****: Profitability (ROA) is positively associated with dividend payout ratios of listed deposit money banks in* Nigeria.

### **2.3.5 Profitability as a Moderator of the Ownership-Dividend Policy Relationship**

Profitability plays a crucial role not only as a direct determinant of dividend policy but also as a moderating variable that influences how ownership structure affects dividend payout decisions. The agency theory suggests that different forms of ownership exert varying degrees of control over dividend policies. However, this control is conditional on the firm’s internal capacity to generate profits. When firms are highly profitable, the ownership structure may have a diminished effect on dividend payout decisions, as sufficient resources are available to satisfy both investment and dividend interests. Conversely, in periods of low profitability, ownership dynamics become more critical in shaping dividend behaviour.

Empirical evidence supports this moderating role. Karim et al. (2025) demonstrated that profitability moderated the effect of firm growth on dividend policy in Indonesian infrastructure companies. Similarly, Akpadaka et al. (2024b) found that profitability significantly moderated the leverage–dividend relationship in Nigerian and South African manufacturing firms. These studies reinforce the theoretical proposition that profitability can condition the effect of ownership structure on dividend decisions.

*H5: Profitability moderates the relationship between ownership structure and dividend payout ratios of listed deposit money banks in Nigeria.*

## **3. Methodology**

### **3.1 Research Design and Sample**

This study employs an ex post facto research design under the positivist paradigm, suitable for analysing causal and moderating relationships using historical data without manipulating independent variables. The design aligns with the study’s objective of examining the influence of ownership structure and profitability on dividend policy in Nigerian Deposit Money Banks (DMBs) over a twelve-year period (2012–2023), a timeframe shaped by post-crisis reforms and Basel III regulations. The study population includes 15 DMBs listed on the Nigerian Exchange Group as of 2023. Using purposive sampling, 12 banks with complete financial disclosures were selected, while 3 were excluded due to missing data. The final sample comprises 144 firm-year observations. Secondary data were extracted from audited annual financial statements.

Table 1 presents the operational definitions and measurement metrics for all variables used in this study. These variables include the dependent variable (dividend payout ratio), key independent variables (ownership structure proxies), the moderating variable (profitability), and control variables. Each variable is carefully defined and measured in accordance with prior literature and data availability from annual financial statements.

**Table 1:** Definition and Measurement of Variables

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Symbol | Description | Measurement |
| Dividend Payout Ratio | DPO | Proportion of net earnings distributed as dividends | Dividends per Share (DPS) ÷ Earnings per Share (EPS) |
| Managerial Ownership | MGO | Percentage of shares held by directors and executive managers | Managerial shareholding ÷ Total shares outstanding |
| Institutional Ownership | INST | Percentage of shares held by institutional investors | Institutional shareholding ÷ Total shares outstanding |
| Foreign Ownership | FRO | Percentage of shares held by foreign individuals or entities | Foreign shareholding ÷ Total shares outstanding |
| Profitability | ROA | A firm’s ability to generate earnings from its assets | Net Income ÷ Total Assets |
| Firm Size | FSize | Scale of the firm’s total asset base | Natural logarithm of Total Assets (ln(Total Assets)) |
| Growth | GRT | Annual increase in the firm’s asset base | Percentage change in Total Assets from year t–1 to year t |

Source: Authors' compilation

### **3.2 Estimation Techniques and Model Specification**

This study employs quantile regression (QR) to examine how ownership structure and profitability influence the dividend payout ratio (DPO) across different points in its conditional distribution. Unlike mean-based models such as ordinary least squares (OLS), QR estimates the effects at the 25th, 50th, and 75th percentiles, thus capturing heterogeneity that average-level models often obscure. This approach is particularly relevant to Nigerian deposit money banks (DMBs), where DPOs vary considerably due to institutional structures, ownership patterns, and earnings volatility.

Model 1 specifies a cross-sectional QR that incorporates moderation effects. It evaluates the influence of managerial ownership (MGO), institutional ownership (INST), and foreign ownership (FRO) on DPO, as conditioned by return on assets (ROA). Interaction terms between ROA and each ownership variable are included. Firm size (log of total assets) and firm growth (annual change in total assets) serve as control variables. Estimation is conducted using Stata’s qreg command with bootstrapped standard errors.

Model 2 adopts a panel quantile regression with fixed effects (PQR) using the xtqreg command. This specification accounts for time-invariant unobserved heterogeneity, enabling within-firm analysis over the ten-year period. While Model 1 captures between-firm variations, Model 2 identifies dynamic shifts in payout behaviour within individual banks. The estimation model is expressed as follows:

*Qτ(DPOit) = β0(τ) + β1(τ)MGOit + β2(τ)INSTit + β3(τ)FROit + β4(τ)ROAit + β5(τ)(MGO×ROA)it + β6(τ)(INST×ROA)it + β7(τ)(FRO×ROA)it + β8(τ)Controlsit + εit(τ) (1)*where Qτ(DPOit) denotes the τ-th conditional quantile of the dividend payout ratio for firm *i* in year *t*. All explanatory variables are as previously defined. The interaction terms capture the moderating effect of profitability on the relationship between ownership structure and dividend decisions across the conditional distribution of DPO.

## **3.3 Estimation Procedure and Robustness Checks**

This study adopts a two-tier estimation approach to ensure empirical robustness. Model 1 uses cross-sectional quantile regression at the 25th, 50th, and 75th percentiles of DPO to examine how ownership and profitability affect dividend decisions across payout levels. Interaction terms between ROA and ownership variables assess conditional effects. Standard errors are bootstrapped using 500 replications via the bsqreg command to address non-normality and heteroskedasticity. Model 2 applies fixed effects panel quantile regression (xtqreg) to control for time-invariant firm-specific factors, allowing identification of within-firm changes in response to shifts in ownership and profitability. Estimating both models at the same quantiles permits coefficient comparison. Diagnostic checks confirmed model validity. VIF results indicated no multicollinearity. The Breusch–Pagan/Cook–Weisberg test supported robust estimation. Wald tests confirmed joint significance at each quantile. All estimations were conducted in Stata 19.5. The combined use of cross-sectional and panel models strengthens the credibility and internal validity of the findings.

**4. Results and Discussion**

This section presents the empirical findings from the study, structured around descriptive analysis, correlation diagnostics, and model estimation outputs. The estimation follows a twofold strategy: (1) cross-sectional bootstrapped moderated quantile regressions (BMQ25, BMQ50, BMQ75) using *bsqreg*, and (2) panel quantile regression with fixed effects (PQR25, PQR50, PQR75), using *xtqreg*. The results offer nuanced insights into how firm-specific factors influence dividend payout decisions across the conditional distribution of dividend policy, thereby addressing prior methodological limitations and context-specific gaps in Sub-Saharan financial markets.

### **4.1 Descriptive Statistics**

**Table 2: Descriptive Statistics**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  Variable |  Obs |  Mean |  Std. Dev. |  Min |  Max |
|  DPO | 144 | 23.519 | 19.346 | 0 | 84.853 |
|  MGO | 144 | 13.042 | 14.548 | 5.5 | 79.961 |
|  INST | 144 | 36.799 | 17.91 | 25 | 91 |
|  FRO | 144 | 5.193 | 18 | 0 | 67.55 |
|  ROA | 144 | 1.744 | 1.69 | -9.532 | 5.617 |
|  Fsize | 144 | 17.658 | .812 | 15.869 | 19.496 |
|  GRT | 144 | 12.253 | 26.269 | -193.6 | 92 |

**Source:** Processed data through StataNow 19.5 by authors (2025)

Table 2 summarises the key features of the variables used in the regression models. The mean dividend payout ratio (DPO) is 23.52%, with a standard deviation of 19.35%, indicating moderate dispersion among banks’ payout behaviours. Managerial ownership (MGO) averages 13.04% with a minimum threshold set at 5.5% to eliminate near-zero distortions. Institutional ownership (INST) also displays a wide distribution (mean = 36.80%; std. dev. = 17.91%) with a floor of 25%, reflecting substantial block-holder influence in the sample. Foreign ownership (FRO) has a mean of 5.19% but exhibits significant variation (std. dev. = 18.00%), suggesting a skewed distribution with some banks hosting substantial foreign investors. Return on assets (ROA), the moderating variable, ranges from -9.53% to 5.62% with an average of 1.74%, capturing divergent levels of profitability across firms. Firm size, proxied by the natural logarithm of total assets, is relatively stable (mean = 17.66), while GRT (percentage change in total assets) has a mean of 12.25% but is highly dispersed (std. dev. = 26.27), with some extreme negative values indicating contraction in certain banks. These patterns suggest the presence of heterogeneity in ownership structures, financial performance, and payout policies, justifying the use of quantile regression techniques to explore conditional effects across the distribution.

### **4.2 Correlation Matrix**

**Table 3: Matrix of correlations**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  Variables |  (1) |  (2) |  (3) |  (4) |  (5) |  (6) |  (7) |
|  (1) DPO | 1.000 |
|  (2) MGO | -0.232 | 1.000 |
|  (3) INST | -0.240 | 0.040 | 1.000 |
|  (4) FRO | 0.343 | -0.136 | 0.291 | 1.000 |
|  (5) ROA | 0.373 | -0.388 | -0.123 | 0.213 | 1.000 |
|  (6) Fsize | 0.345 | -0.429 | -0.313 | -0.180 | 0.295 | 1.000 |
|  (7) GRT | -0.027 | -0.040 | -0.219 | -0.039 | 0.125 | -0.081 | 1.000 |

**Source:** Processed data through StataNow 19.5 by authors (2025)

Table 3 presents the Pearson correlation matrix. The dividend payout ratio (DPO) is positively associated with foreign ownership (r = 0.343), return on assets (r = 0.373), and firm size (r = 0.345), suggesting that more profitable, larger banks with foreign investors are likely to distribute higher dividends. In contrast, DPO is negatively correlated with managerial ownership (r = -0.232) and institutional ownership (r = -0.240), consistent with theoretical arguments that entrenched managers and institutional block-holders may favour earnings retention. Multicollinearity appears minimal, as inter-variable correlations among predictors remain modest. Notably, the highest correlation between any two independent variables is between ROA and Fsize (r = 0.295), far below critical multicollinearity thresholds. This is corroborated by subsequent variance inflation factor (VIF) diagnostics. The negative correlation between ROA and MGO (r = -0.388) hints at a potential agency conflict in less profitable firms, while ROA’s positive association with DPO reinforces its role as a key driver of payout policy.

### **4.3 Diagnostic Tests**

Pre-estimation diagnostics were conducted to assess multicollinearity and heteroskedasticity, which could bias standard errors and undermine inference quality in regression models. The Variance Inflation Factor (VIF) test indicates no multicollinearity concerns, with all VIF values well below the critical threshold of 10. The highest VIF observed is 1.54 for firm size, and the mean VIF is 1.32, confirming that the explanatory variables are not excessively correlated. The Breusch–Pagan/Cook–Weisberg test for heteroskedasticity returned a chi-squared statistic of 1.43 (p = 0.2317), suggesting that the null hypothesis of constant variance cannot be rejected. This implies that classical homoskedasticity assumptions hold under OLS. Nevertheless, given the non-normal distribution and potential conditional heteroskedasticity in financial data, quantile regression techniques are still appropriate and theoretically justified for further analysis.

### **Regression Results and Discussion**

This section presents and interprets the results of the quantile regression models as shown in Table 4, focusing on the role of ownership structure and profitability in shaping dividend payout behaviour. Results are discussed by variable group, aligned with hypotheses H1–H5, and reflect the outcomes from both Model 1 and Model 2.

**Table 4:** Quantile Regression Results (Models 1 and 2)

|  |  |  |
| --- | --- | --- |
|  | **Model 1(τ = 0.25, 0.50, 0.75)** | **Model 2(τ = 0.25, 0.50, 0.75)** |
| Variable | (BMQ25) | (BMQ50) | (BMQ75) | (PQR25) | (PQR50) | (PQR75) |
| MGO | 0.097(0.068) | 0.073(0.131) | 0.141(0.175) | 0.225 \*\*(0.099) | 0.178 \*\*(0.087) | 0.050(0.142) |
| INST | -0.336 \*\*\*(0.064) | -0.348 \*\*\*(0.102) | -0.464 \*\*\*(0.169) | -0.155(0.125) | -0.153(0.108) | -0.148(0.178) |
| FRO | 1.876 \*\*\*(0.506) | 1.756 \*\*\*(0.133) | 1.680 \*(0.168) | 1.454 \*\*\*(0.226) | 1.452 \*\*\*(0.196) | 1.444 \*\*\*(0.321) |
| ROA | 3.539 \*\*\*(1.153) | 3.721 \*(2.239) | 4.264 \*(2.523) | -1.513(2.070) | -2.024(1.799) | -3.407(2.948) |
| MGO\_ROA | -0.101 \*\*\*(0.024) | -0.071(0.091) | -0.099(0.083) | -0.011(0.035) | -0.006(0.030) | 0.008(0.050) |
| FRO\_ROA | -0.486 \*\*\*(0.148) | -0.423 \*\*\*(0.070) | -0.453 \*\*(0.142) | -0.420 \*\*\*(0.081) | -0.408 \*\*\*(0.070) | -0.376 \*\*\*(0.116) |
| INST\_ROA | 6.124 \*(3.408) | 2.559(4.504) | 6.956(8.029) | 5.066(3.460) | 5.020 \*(2.989) | 4.896(4.905) |
| Fsize | 5.507 \*\*\*(1.016) | 8.467 \*\*\*(2.937) | 3.840(3.613) | 4.237(3.021) | 2.844(2.653) | -0.922(4.336) |
| GROWTH | -0.008(0.031) | -0.037(0.092) | -0.145(0.101) | -0.019(0.051) | -0.033(0.044) | -0.070(0.072) |
| Intercept | -80.715 \*\*\*(17.459) | -125.749 \*\*(52.360) | -32.152(68.164) |  |  |  |

Note: Standard errors are in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

### **4.4.1 Ownership Structure and Dividend Payouts**

The analysis of ownership structure and dividend payout reveals nuanced relationships across quantiles and model specifications. Managerial ownership (MGO), contrary to Hypothesis 1 which anticipated an inverse relationship, exhibited a consistently positive influence on dividend payout ratios across all quantiles. Though statistically insignificant in the cross-sectional model (Model 1), the fixed effects model (Model 2) revealed significance at the 25th and 50th quantiles, suggesting that MGO may align managerial incentives with shareholder interests particularly among low and median dividend-paying banks. Institutional ownership (INST), expected under Hypothesis 2 to exert a positive influence, showed significant negative effects in Model 1 across all quantiles, but this association became statistically insignificant in Model 2. This indicates that the adverse effect may be attributed to between-firm variation rather than within-firm dynamics.

In contrast, foreign ownership (FRO) strongly supported Hypothesis 3 by exhibiting consistently positive and significant coefficients across all quantiles and models, reinforcing the role of foreign investors as advocates of regular dividends in markets characterised by weak governance. Regarding profitability (ROA), its effect was positive and significant in Model 1, aligning with signalling and free cash flow theories, but turned negative and insignificant in Model 2, suggesting the presence of unobserved heterogeneity. The moderating role of ROA (Hypothesis 5) yielded mixed results. The interaction between ROA and MGO showed a significant negative effect at the 25th quantile in Model 1, implying that profitability may reduce the incremental effect of MGO on payouts among lower-paying firms. The moderating effect of ROA on INST was weak and inconsistent, showing limited significance. Unexpectedly, ROA significantly and consistently weakened the positive relationship between FRO and dividend payouts across both models and all quantiles, suggesting that foreign investors may prioritise stable returns over performance-linked dividends.

**4.5 Control Variables and Their Effects**

Firm size showed a positive and significant effect on dividend payouts in Model 1, especially at the 25th and 50th percentiles, indicating that larger banks are more likely to distribute dividends. However, this influence weakened in Model 2, becoming insignificant at the upper quantile, suggesting that size matters more for cross-sectional differences than for within-firm changes. Growth, proxied by asset expansion, consistently demonstrated a negative association with dividends across both models, though often statistically insignificant. This pattern supports life cycle and residual dividend theories, which argue that high-growth firms prioritise reinvestment over payouts. Overall, the control variables reinforce the idea that firm-specific characteristics significantly shape dividend policy, while profitability’s interaction with ownership structure adds further complexity to the dividend-setting behaviour of Nigerian banks.

### **4.6 Robustness Assessment Using Panel Quantile Regression**

This section presents the robustness of findings using fixed effects panel quantile regression (Model 2), which controls for unobserved firm-level heterogeneity. While results from Model 1 and Model 2 are broadly aligned, Model 2 refines key insights. Notably, foreign ownership maintains a strong, positive, and statistically significant effect on dividend payout across all quantiles, indicating persistent influence within firms over time. In contrast, the negative effect of institutional ownership observed in Model 1 becomes insignificant, suggesting that it may stem from cross-sectional variation rather than intra-firm dynamics. Similarly, profitability (ROA) loses significance and reverses direction, weakening its direct explanatory power under fixed effects. Importantly, the interaction between profitability and foreign ownership remains negatively significant in both models, confirming its robust moderating role. However, the moderation by managerial and institutional ownership weakens. These results underscore the importance of accounting for firm-specific factors in dividend policy research within emerging markets.

## **5. Conclusion and Recommendations**

This section evaluates the robustness of the study’s key findings using the fixed effects panel quantile regression model (Model 2), which accounts for unobserved firm-specific characteristics that remain constant over time. Unlike Model 1, which captures broad cross-sectional associations, Model 2 provides insights into within-firm dynamics, thereby strengthening the credibility of the results.

A major point of consistency across both models is the effect of foreign ownership on dividend payouts. Model 2 confirms that foreign ownership continues to exert a strong and statistically significant positive influence across all quantiles. This reinforces the conclusion that foreign investors play a consistent role in shaping dividend policy, likely due to their preference for transparency, predictable returns, and shareholder value in emerging markets. The persistence of this effect, even when firm-level fixed effects are controlled, highlights the robustness of the relationship.

Conversely, the negative relationship between institutional ownership and dividend payout observed in Model 1 loses statistical significance in Model 2. This suggests that the earlier results may have been driven by differences between firms rather than by consistent within-firm patterns. The implication is that institutional investors’ influence on dividend policy may be context-dependent, possibly reflecting strategic reinvestment preferences rather than consistent pressure for cash distribution.

Similarly, the direct impact of profitability (ROA) on dividend payouts, which was positive and significant in Model 1, disappears in Model 2. The coefficient not only becomes statistically insignificant but also reverses in sign, highlighting the importance of accounting for firm-specific effects. This shift implies that the initial positive association could be spurious, driven by between-firm variation rather than genuine within-firm dynamics.

Interaction terms between profitability and ownership types provide further insight. Notably, the interaction between ROA and foreign ownership remains significantly negative across quantiles in both models. This finding confirms the robustness of the moderating role of profitability: higher profitability dampens the dividend-enhancing effect of foreign ownership. However, the moderating effects of profitability on managerial and institutional ownership weaken considerably in Model 2, with most coefficients becoming statistically insignificant. This suggests these interactions may be more variable across firms than stable over time within individual firms. The robustness checks confirm the stability of some core findings, especially those relating to foreign ownership and its interaction with profitability. At the same time, they reveal that certain relationships identified in cross-sectional analysis do not persist when firm-level fixed effects are introduced. This reinforces the methodological strength of panel quantile regression in isolating persistent influences on dividend policy.

Despite the methodological rigour of this study, some limitations remain. The analysis is restricted to listed deposit money banks in Nigeria, which may limit the generalisability of the findings to other sectors or SSA markets. Also, while quantile regression captures distributional heterogeneity, potential endogeneity between ownership structure and dividend decisions was not fully addressed. Future research may consider dynamic quantile models or apply instrumental variable techniques to account for such biases. Additionally, incorporating governance quality, ownership concentration, or macroeconomic instability as moderating factors could enrich understanding. Expanding the dataset to include unlisted or pan-African banks would further test the robustness and broader applicability of the findings.

## **References**

Akilla, A. E., Adeleke, E. O., Ogundele, O. S., & Anisulowo, T. A. (2024). Ownership structure and dividend policy of selected deposit money banks in Nigeria. *Adeleke University Journal of Business and Social Sciences, 4*(2), 208–211.

Akpadaka, O. S., Farouk, M. A., & Dang, D. Y. (2024). How Do Profitability and Institutional Ownership Drive Value through Dividend Policy? Evidence from Nigeria. *Accounting and Finance Research*, *13*(2), 129. <https://doi.org/10.5430/afr.v13n2p129>

Akpadaka, O. S., Farouk, M. A., Dang, D. Y., & Fodio, M. I. (2024b). Does profitability moderate the relationship between the leverage and dividend policy of manufacturing firms in Nigeria and South Africa? *Journal of Risk and Financial Management, 17*(12), 563. <https://doi.org/10.3390/jrfm17120563>

AlGhazali, A., Al-Yahyaee, K. H., Fairchild, R., & Guney, Y. (2024). What do dividend changes reveal? Theory and evidence from a unique environment. *Review of Quantitative Finance and Accounting*, *62*(2), 499-552.

Alhalabi, T., Castro, V., & Wood, J. (2023). Bank dividend payout policy and debt seniority: Evidence from US Banks. *Financial Markets, Institutions and Instruments*, 32(5), 285–340. <https://doi.org/10.1111/fmii.12183>

Al-Matari, E. M. (2025). Ownership structure and earnings management: The role of environmental sustainability as moderator variable. A further analysis. Saudi evidence. *Cogent Business & Management*, 12(1). <https://doi.org/10.1080/23311975.2025.2504131>

Alshdaifat, S. M., Alharasis, E. E., Ab Aziz, N. H., Bataineh, I., & Al Amosh, H. (2025). Governance in crisis: do different types of ownership influence firm performance in GCC countries amid Covid-19? *Cogent Business & Management*, *12*(1). <https://doi.org/10.1080/23311975.2025.2463576>

Arhinful, R., Obeng, H. A., Mensah, L., & Mensah, C. C. (2025). Signaling Sustainability: The impact of sustainable finance on dividend policy among firms listed on the London Stock Exchange. *Business Strategy and the Environment*. Advance online publication. <https://doi.org/10.1002/bse.70020>

Aslam, H., Masood, A., ul Hassan, N., & Shahbaz Yaqub, M. (2023). Dividend Policy and Ownership Concentration: An Empirical Analysis of the Non-Financial Sector of Pakistan. *Asian Finance Research Journal (AFRJ)*, *5*(1). Retrieved from <https://journals.uol.edu.pk/afrj/article/view/2934>

Azeem, M., Ahmad, N., Majid, S., Rehman, J. U., & Nafees, B. (2023). Corporate governance, financial constraints, and dividend policy: Evidence from Pakistan. *Cogent Economics & Finance*, 11(2), 2243709. <https://doi.org/10.1080/23322039.2023.2243709>

Bataineh, H. (2020). The impact of ownership structure on dividend policy of listed firms in Jordan. *Cogent Business & Management*, *8*(1). <https://doi.org/10.1080/23311975.2020.1863175>

Bechter, C. (2024). The Dynamics of Dividends and Profitability: Analyzing ratios and their impact on business strategies and risks of banks. *European Journal of Management, Economics and Business*, 1(3), 76–85. [https://doi.org/10.59324/ejmeb.2024.1(3).07](https://doi.org/10.59324/ejmeb.2024.1%283%29.07)

Berle, A. A., & Means, G. C. (1991). *The modern corporation and private property*. Transaction Publishers.

Bhattacharya, S. (1979). Imperfect information, dividend policy, and “the bird in the hand” fallacy. *The Bell Journal of Economics*, *10*(1), 259–270. https://doi.org/10.2307/3003330

Danni, W., & Qi, Z. (2024). Analyzing the Influence of Dividend Policy on Corporate Value: A Financial Perspective with Haier as a Case Study. *Journal of Accounting Business and Management (JABM)*, 32(1), 199. <https://doi.org/10.31966/jabminternational.v32i1.1464>

Dewasiri, N. J., Koralalage, W. B. Y., Azeez, A. A., Jayarathne, P., Kuruppuarachchi, D., & Weerasinghe, V. (2019). Determinants of dividend policy: Evidence from an emerging and developing market. *Managerial Finance*, 45(3), 413–429. <https://doi.org/10.1108/MF-09-2017-0331>

Duqi, A., Jaafar, A., & Warsame, M. H. (2020). Payout policy and ownership structure: the case of islamic and conventional banks. The British Accounting Review, 52(1), 100826. <https://doi.org/10.1016/j.bar.2019.03.001>

Faccio, M., Lang, L. H. P., & Young, L. (2001). Dividends and expropriation. *American economic review*, *91*(1), 54-78.

Fama, E. F., & French, K. R. (2001). Disappearing dividends: Changing firm characteristics or lower propensity to pay? *Journal of Financial Economics*, 60(1), 3–43. [https://doi.org/10.1016/S0304-405X(01)00038-1](https://doi.org/10.1016/S0304-405X%2801%2900038-1)

Hong, N. T. H., & Linh, T. K. (2022). Institutional investors, corporate governance and firm performance in an emerging market: Evidence from Vietnam. *Cogent Economics & Finance*, 11(1), 2159735. <https://doi.org/10.1080/23322039.2022.2159735>

Idris, S. (2023). Foreign Ownership and Dividend Pay-Out of Listed Consumer Goods Firms in Nigeria: The Mediating Role of Profitability. *African Banking and Finance Review Journal*, *6*(6), 121-141.

Ismail, A. F., & Anridho, N. (2024). The managerial and government ownership effect on dividend policy: The moderating role of investment opportunities. *Jurnal Dinamika Akuntansi, 16*(2), 187–201. <https://doi.org/10.15294/jda.v16i2.6560>

Januarsi, Y., & Sanusi, F. (2024). Profitability and dividend policy: How does free cash flow explain this relationship?. *Jurnal Siasat Bisnis*, 56-70.

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. [https://doi.org/10.1016/0304-405X(76)90026-X](https://doi.org/10.1016/0304-405X%2876%2990026-X)

Karim, A. K. A., Young, F. C. Y. F. C., Purnamasari, Y. F. P. Y. F., Febrianto, H. G. F. H. G., Zatira, D. Z. D., & Fitriana, A. I. F. A. I. (2025). The Moderating Effect of Profitability on Dividend Policy In Indonesian Infrastructure Companies. *JRAK*, *17*(2), 159–174. Https://Doi.Org/10.23969/Jrak.V17i2.22566

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Agency problems and dividend policies around the world. *Journal of Finance*, 55(1), 1–33. <https://doi.org/10.1111/0022-1082.00199>

Loncan, T. (2020). Foreign institutional ownership and corporate cash holdings: evidence from emerging economies. International Review of Financial Analysis, 71, 101295. https://doi.org/10.1016/j.irfa.2018.12.003

Lubis, R. K., Darmadi, S., Pratiwi, T. A., Windara, P. F., Lutvian, S., & Firas, R. (2025). Managerial ownership as a corporate governance mechanism in shaping leverage decisions: Insights from Indonesia. *Cogent Business & Management*, 12(1). <https://doi.org/10.1080/23311975.2025.2473043>

Miller, M. H., & Rock, K. (1985). Dividend policy under asymmetric information. *The Journal of Finance*, *40*(4), 1031–1051. <https://doi.org/10.1111/j.1540-6261.1985.tb02362.x>

Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. *Journal of Financial Economics, 20*, 293–315. https://doi.org/10.1016/0304-405X(88)90048-7

Munir, Q., Akram, B., & Abbas, S. A. (2024). Understanding stock price dynamics with dividend-related metrics and financial indicators in Pakistan's non-financial sectors. *Journal of Business and Economic Options*, 7(1), 1–9.

Nel, G., Jachi, M., & Scholtz, H. (2024). The impact of institutional and managerial ownership on the pay-performance relationship: Evidence from JSE-listed firms. *Journal of Management & Governance*. Advance online publication. <https://doi.org/10.1007/s10997-024-09725-9>

Nworie, G. O., Oduche, I. J., & Cyril-Nwuche, O. F. (2024). Signaling theory in action: How dividends affect shareholder investment decisions in Nigerian deposit money banks. *Asian Journal of Economics, Business and Accounting*, 24(7), 506-515. <https://doi.org/10.9734/ajeba/2024/v24i71426>

Sinha, P., & Kumar, A. (2024). Do dividends signal earnings quality in the emerging markets? Large sample evidence from India. *International Journal of System Assurance Engineering and Management*, 1-21.

Susilo, B. W., Chandrarin, G., & Asih, P. (2021). The effect of profitability on dividend policy and firm value: A case study of Indonesian manufacturing company. *International Journal of Advances in Scientific Research and Engineering, 7*(8), 70–76. <https://doi.org/10.31695/ijasre.2021.34068>

Tawfik, O. I., Rashid, A. R. A., Elbaz, M. M., & Madbouly, A. (2024). The effects of managerial entrenchments on the relationship between cash holdings and corporate financial objectives in GCC countries. *Cogent Business & Management*, *11*(1). <https://doi.org/10.1080/23311975.2024.2396045>

Tayachi, T., Hunjra, A. I., Jones, K., Mehmood, R., & Al‐Faryan, M. A. S. (2021). How does ownership structure affect the financing and dividend decisions of firm?. Journal of Financial Reporting and Accounting, 21(3), 729-746. <https://doi.org/10.1108/jfra-09-2021-0291>

Tayeh, M., Mustafa, R., & Bino, A. (2023). Ownership structure and agency costs: Evidence from the insurance industry in Jordan. *Journal of Economics, Finance and Administrative Science*, 28(56), 287–302. <https://doi.org/10.1108/JEFAS-12-2021-0257>

Tran, Q. T. (2024). Industry environment and dividend policy. In *Emerald Publishing Limited eBooks* (pp. 57–66). <https://doi.org/10.1108/978-1-83797-987-520241007>

Vijayakumaran, R. (2020). Impact of managerial ownership on investment and liquidity constraints: Evidence from Chinese listed companies. *Research in International Business and Finance*, 55, 101321. <https://doi.org/10.1016/j.ribaf.2020.101321>

Wijaya, H. (2023). Cash holdings, dividend payout, and corporate value: the role of institutional investors. Journal of Accounting and Strategic Finance, 5(2), 302-315. https://doi.org/10.33005/jasf.v5i2.307

Yahaya, O. A. (2025). Institutional ownership and firm performance. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5216573>

Yahaya, O. A. (2025b). Could a board share ownership encourage a dividend payout policy? *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.5272049>