**Profitability as a Moderator of the Ownership Structure-Dividend Policy Nexus: Quantile Insights from Nigerian Banks**

Abstract

*This study investigates the moderating role of profitability in the relationship between ownership structure and dividend policy among listed deposit money banks in Nigeria. Anchored in agency and signalling theories, the research evaluates how managerial, institutional, and foreign ownership influence dividend payout behaviour, and whether these effects vary with profitability. Employing balanced panel data from 12 banks between 2012 and 2023, the study adopts fixed effects panel quantile regression to capture distributional heterogeneity and within-firm dynamics often overlooked in mean-based models. The novelty of this study lies in its application of quantile regression to uncover how the ownership–dividend relationship differs across the distribution of dividend payouts, rather than assuming uniform effects. It is also one of the few to model profitability as a moderator in the ownership–dividend nexus within Sub-Saharan Africa’s banking sector, offering sector-specific insights under regulatory and governance constraints typical of emerging markets. Empirical results show that foreign ownership exerts a consistently positive and significant influence on dividend payouts across all quantiles, reinforcing its stabilising role in weak governance environments. Managerial ownership demonstrates a positive effect at lower quantiles, suggesting enhanced alignment with shareholders in lower-paying banks. Institutional ownership has a negative association in pooled regressions but becomes insignificant under fixed effects, indicating contextual variation. Profitability moderates the effect of foreign ownership, weakening its impact at higher profitability levels. However, its moderating influence on managerial and institutional ownership remains weak and inconsistent. These findings highlight the importance of incorporating firm-level heterogeneity and distributional effects in dividend policy analysis. The study advances the literature by integrating ownership structure, profitability, and quantile techniques within a single framework, thereby offering nuanced insights for policymakers, investors, and bank executives seeking to optimise payout strategies in emerging financial systems.*

**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 & 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 acts not only as a direct determinant of dividend capacity but also 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 across firms. This constitutes the first major research gap: existing models fail to capture how the ownership–dividend relationship may differ across the dividend distribution spectrum. This approach may obscure critical variations in how profitability interacts with different ownership types to influence dividend policy at low, median, or high payout levels.

To address this, the present study adopts quantile regression, which allows for estimating effects across the entire distribution of dividend payouts rather than focusing solely on conditional means. This method provides a richer and more nuanced understanding of firm behaviour and is particularly suited to the Nigerian banking context, characterised by heterogeneous and often skewed payout ratios.

The Nigerian banking sector offers a compelling empirical setting. Since the 2004-2005 banking consolidation and the post-2008 financial crisis reforms, the sector has undergone significant shifts in ownership structure, regulatory oversight, and governance practices. Concentrated ownership remains prevalent, with institutional and foreign investors often exerting considerable influence. Despite regulatory efforts to enhance capital adequacy and transparency, dividend payouts remain inconsistent. Some banks sustain high and stable dividends, while others adopt conservative payout policies or suspend dividends altogether, even when profitable. These inconsistencies suggest underlying structural factors, including ownership configurations and strategic earnings retention decisions. Yet, a second research gap persists: very few empirical studies have explored how profitability moderates the effect of specific ownership forms, namely managerial, institutional, and foreign, on dividend policy within Nigeria’s banking industry.

Moreover, most existing studies adopt mean-based estimation methods that overlook intra-group variation and fail to account for unobserved heterogeneity. This gives rise to a third research gap: a lack of methodological innovation in analysing dividend policy, especially in Sub-Saharan Africa. Prior studies often neglect the dynamic interplay between governance structures and firm-level performance indicators in a distribution-sensitive manner.

This study addresses these critical gaps by using quantile regression techniques, both cross-sectional and fixed effects panel approaches, to investigate how profitability moderates the relationship between ownership structure and dividend payouts across varying payout levels in Nigeria’s deposit money banks. By focusing on managerial, institutional, and foreign ownership, and their interaction with firm profitability, the study advances the theoretical understanding of agency and signalling mechanisms in emerging markets. It contributes methodologically by demonstrating the suitability of distributional regression techniques in unpacking complex corporate finance phenomena. The findings are expected to inform both scholarly debate and policy discourse on dividend regulation, corporate governance, and investor protection in Nigeria and similar jurisdictions.

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**

This literature review synthesises theoretical and empirical insights into the nexus between ownership structure, profitability, and dividend policy, with emphasis on the moderating role of profitability. Section 2.1 outlines the theoretical framework grounding the study, while Section 2.2 reviews extant empirical findings and develops the hypotheses guiding the analysis.

## **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 (Lubis et al., 2025; Nel et al., 2024; Vijayakumaran, 2020). 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, 2022Studies from Nigeria show that institutional investors encourage dividend payments to uphold reputational and liquidity standards (Yahaya, 2025) and have a significant positive effect on banks’ pay-out ratios (Farouk et al., 2022). 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 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**

Firms with stronger earnings performance typically have a greater capacity to pay dividends, making profitability an important factor in dividend decisions. 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 financial 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 14 DMBs listed on the Nigerian Exchange Group as of 2023. Using purposive sampling, 12 banks with complete financial disclosures were selected, while 2 banks 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 potential multicollinearity and heteroskedasticity, which could bias standard errors and compromise inferential validity (Gujarati & Porter, 2009; Wooldridge, 2013). The Variance Inflation Factor (VIF) analysis indicated no multicollinearity concerns, as all values fell substantially below the critical threshold of 10 (Hair et al., 2010), with the highest VIF of 1.54 (for firm size) and a mean VIF of 1.32 confirming minimal inter-variable correlation. Heteroskedasticity was evaluated using the Breusch–Pagan/Cook–Weisberg test, which yielded a chi-squared statistic of 1.43 (p = 0.2317), failing to reject the null hypothesis of homoskedastic errors (Cameron & Trivedi, 2009). This supports the validity of ordinary least squares (OLS) estimation under classical assumptions. Nevertheless, given the characteristically non-normal distribution and latent conditional heteroskedasticity inherent in financial datasets, quantile regression techniques remain analytically appropriate to ensure robustness across conditional distributions (Koenker & Hallock, 2001).

### **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 complex patterns across quantiles and model specifications. Hypothesis 1, which proposed an inverse relationship between managerial ownership (MGO) and dividend payout, was not supported. On the contrary, MGO exhibited a consistently positive influence across all quantiles. Although this effect was statistically insignificant in the pooled cross-sectional model (Model 1), it attained significance at the 25th and 50th quantiles in the fixed effects model (Model 2). This suggests that managerial ownership may strengthen dividend payouts, particularly among low and median dividend-paying banks, by aligning managerial interests with those of shareholders.

Hypothesis 2 anticipated a positive effect of institutional ownership (INST) on dividend payouts. However, the results present partial support at best. In Model 1, INST demonstrated significant negative effects across all quantiles, contradicting theoretical expectations. Yet, this relationship became statistically insignificant in Model 2, implying that the observed negative association in Model 1 may be driven more by between-firm differences than by within-firm behavioural dynamics.

Hypothesis 3, which posited a positive influence of foreign ownership (FRO) on dividend policy, is strongly supported by the empirical evidence. FRO consistently exhibited positive and significant coefficients across all quantiles in both models, underscoring the role of foreign investors as proponents of regular dividend payments in environments where governance mechanisms are relatively weak.

With regard to Hypothesis 4, which focused on the direct impact of profitability (ROA) on dividend payout, the findings are mixed. ROA was positively and significantly associated with dividend payouts in Model 1, consistent with predictions from signalling and free cash flow theories. However, this relationship became negative and insignificant in the fixed effects model, suggesting that unobserved firm-specific characteristics may confound the profitability–dividend link.

Finally, the examination of Hypothesis 5, which investigated the moderating role of profitability, yielded nuanced results. The interaction between ROA and MGO showed a significant negative effect at the 25th quantile in Model 1, implying that higher profitability may dampen the incremental influence of managerial ownership on dividends among lower-paying banks. The interaction between ROA and INST was weak and statistically inconsistent, offering little evidence of a systematic moderating effect. In contrast, ROA significantly and consistently attenuated the positive relationship between FRO and dividend payouts across all quantiles and models. This suggests that foreign investors may prefer dividend stability over performance-contingent payouts, particularly in contexts where earnings volatility is high or where returns are decoupled from profitability.

**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.

## **5. Conclusion and Recommendations**

This study investigated the influence of ownership structure on dividend policy in Nigerian deposit money banks, with profitability (ROA) examined as a moderating variable. Using panel quantile regression models, the research evaluated both between-firm and within-firm dynamics, thereby enhancing the methodological robustness of the findings. The analysis confirmed that foreign ownership exerts a consistent and statistically significant positive influence on dividend payout ratios across all quantiles and model specifications. This suggests that foreign investors in Nigeria’s banking sector prioritise transparency and stable shareholder returns, even after controlling for firm-specific characteristics. The effect of institutional ownership, however, proved less stable. While it showed a negative relationship with dividend payout in the cross-sectional analysis, this effect lost statistical significance when fixed effects were introduced. This indicates that the institutional ownership–dividend nexus may be contingent on firm-specific or contextual factors, such as reinvestment strategies or differing mandates of domestic institutional investors.

Managerial ownership revealed a positive relationship with dividend payouts, particularly among lower and median dividend-paying banks. This supports the view that modest levels of managerial ownership can align interests and reduce agency costs. However, this effect was statistically significant only in the fixed effects model at the lower quantiles, suggesting limited robustness. The direct effect of profitability (ROA) on dividends was not consistently significant across models. While a positive relationship was found in Model 1, this disappeared in Model 2, indicating that profitability alone may not be a reliable driver of dividend policy once unobserved firm characteristics are controlled.

With regard to moderation, profitability weakened the positive influence of foreign ownership on dividend payout, suggesting that foreign investors may prefer dividend stability over performance-driven payouts. The moderating effects of profitability on managerial and institutional ownership were found to be weak and statistically insignificant in the fixed effects model, implying that such interactions are more reflective of cross-sectional variation than persistent within-firm dynamics.

Taken together, these findings underscore the importance of distinguishing between short-term cross-sectional patterns and persistent within-firm effects when analysing dividend policy. The use of panel quantile regression adds analytical depth by uncovering heterogeneous effects across the distribution of dividend payouts, rather than relying solely on mean-based inference.

## **5.1 Recommendations**

Based on the findings, several policy and managerial recommendations emerge:

1. For policymakers and regulators, especially the Central Bank of Nigeria and the Nigerian Exchange Group, efforts should be made to create a conducive regulatory environment that attracts and retains foreign investors, given their stabilising effect on dividend policy. Strengthening investor protection and financial transparency can reinforce this role.
2. For bank boards and corporate managers, the positive association between managerial ownership and dividend payouts suggests that incentive alignment through equity participation may help reduce agency costs. However, this must be carefully managed to avoid managerial entrenchment.
3. For institutional investors, the findings highlight the need to reassess dividend expectations and engagement strategies. Their influence appears context-specific and may be improved through stronger governance activism and better alignment of investment goals with shareholder interests.
4. For future researchers, it is recommended that more advanced techniques such as dynamic quantile regression or instrumental variable quantile regression be employed to address potential endogeneity concerns. Additionally, extending the study beyond listed banks to include private and regional banks across Sub-Saharan Africa would enhance the external validity and regional relevance of the findings.
5. Finally, incorporating additional moderating variables such as board independence, audit quality, and macroeconomic volatility could offer richer insights into the governance–dividend interface in emerging financial markets.

## **5.2 Limitations**

Despite the methodological rigour of this study, several limitations must be acknowledged. First, the sample is restricted to listed deposit money banks in Nigeria, which may limit the generalisability of the findings to other sectors or regions within Sub-Saharan Africa. Second, the study does not address potential endogeneity between ownership structure and dividend decisions, which may bias estimates. Third, although quantile regression accounts for distributional heterogeneity, it does not capture dynamic adjustments or causal pathways. Lastly, the exclusion of qualitative governance variables such as board independence or shareholder activism may have limited the scope of explanatory mechanisms behind dividend policy.

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