

Impact of bank characteristics on the financial performance of deposit money banks

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Abstract

Purpose: This study empirically investigates the relationship between key bank characteristics – capital adequacy, asset quality, board independence, and liquidity – and the financial performance of Nigerian deposit money banks (DMBs), proxied by return on assets (ROA).

Methodology: The study employed an ex-post facto research design, utilizing panel data from 14 quoted DMBs over a 10-year period (2009–2018). Data were sourced from the banks' annual reports and analyzed using pooled ordinary least squares (OLS) regression, preceded by diagnostic tests including correlation analysis, descriptive statistics, and normality tests.

Results and Conclusion: The findings reveal that capital adequacy and board independence have a significant positive relationship with ROA, while asset quality and liquidity demonstrate an insignificant negative relationship. Firm size also showed a significant positive effect. The study concludes that strong capital buffers and independent boards are vital for profitability.

Implications of findings: The implications of the findings are threefold: for bank management, there is a clear need to prioritise capital strength and board composition over excessive liquidity hoarding; for regulators, stricter governance codes and capital compliance enforcement are warranted; and for policymakers, the results underscore the importance of promoting sound internal governance as a driver of sectoral stability, while also addressing asset quality challenges through enhanced credit risk monitoring frameworks.

Keywords: Bank Characteristics, Financial Performance, Return on Assets, Capital Adequacy, Board Independence

1. Introduction

The banking sector is the linchpin of any modern economy, performing a critical financial intermediation function by channeling surplus funds from savers to deficit units for productive investments (Ariccia & Marquez, 2004). This role makes banks fundamental to economic competence, growth, and stability. The efficacy of this intermediation process is heavily influenced by a combination of macroeconomic variables and microeconomic, bank-specific characteristics.

In Nigeria, the importance of bank characteristics is accentuated by a history of financial failures, fraud, and questionable practices that have severely impacted investor confidence (Abu et al 2016). These incidents highlight vulnerabilities in corporate governance and risk management within the sector. Bank characteristics such as capital adequacy, asset quality, board composition, and liquidity management are within the discretionary control of bank management and are pivotal determinants of their health and profitability.

Capital adequacy, representing the sufficiency of equity to absorb unexpected losses, is a primary indicator of a bank's financial strength. The Central Bank of Nigeria's (CBN) landmark consolidation

exercise, which raised the minimum capital base to N25 billion, was a direct response to the need for stronger, more resilient financial institutions (Jallol, 2017). Similarly, asset quality, particularly the health of the loan portfolio, is a critical barometer of a bank's risk exposure and future earnings potential (Kadioglu, Telceken & Ocal, 2017). Poor asset quality can erode capital, impair profitability, and threaten a bank's very survival.

Furthermore, corporate governance, exemplified by board independence, plays a crucial role in mitigating agency problems. The Nigerian Code of Corporate Governance (2018) mandates the inclusion of Independent Non-Executive Directors (INEDs) to ensure objective oversight of management. Liquidity management, the ability to meet cash and collateral obligations without incurring unacceptable losses (GARP, 2013), is equally vital, as mistakes in this area can have long-term detrimental effects (Edem, 2017). Ultimately, profitability, the ability to generate returns, is the lifeblood that ensures a bank's sustainability, rewards investors, and builds capital reserves.

Despite regulatory reforms and consolidation efforts, the Nigerian banking sector remains susceptible to performance volatility and systemic risks. The relationship between bank characteristics and financial performance has been extensively studied globally, yet findings remain mixed (Genchev, 2012). Within the Nigerian context, persistent issues such as unethical accounting practices, collaboration between auditors and bank executives in concealing malpractices, and historic financial losses running into billions of Naira (Ajibolade, 2008; Bakare, 2011) point to unresolved deep-seated issues.

While previous studies have examined various bank characteristics, there is a paucity of research that simultaneously investigates the combined effect of capital adequacy, asset quality, board independence, and liquidity on bank performance in Nigeria. Furthermore, many existing studies suffer from methodological shortcomings, such as the omission of essential pre-estimation diagnostic tests. This study, therefore, seeks to fill this gap by providing a comprehensive and methodologically robust analysis of how these specific characteristics influence the profitability of Nigerian DMBs.

The main objective of this study is to determine the relationship between bank characteristics and the financial performance of Nigerian quoted DMBs.

2. Literature review

Conceptual Framework

The conceptual framework for this study positions financial performance as the dependent variable, proxied by Return on Assets (ROA). The independent variables are bank characteristics, represented by Capital Adequacy (CADQ), Asset Quality (ASQLT), Board Independence (BRDIND), and Liquidity (LQDT). Firm Size (FSZ) is included as a control variable. The framework posits a direct relationship between these characteristics and bank performance.

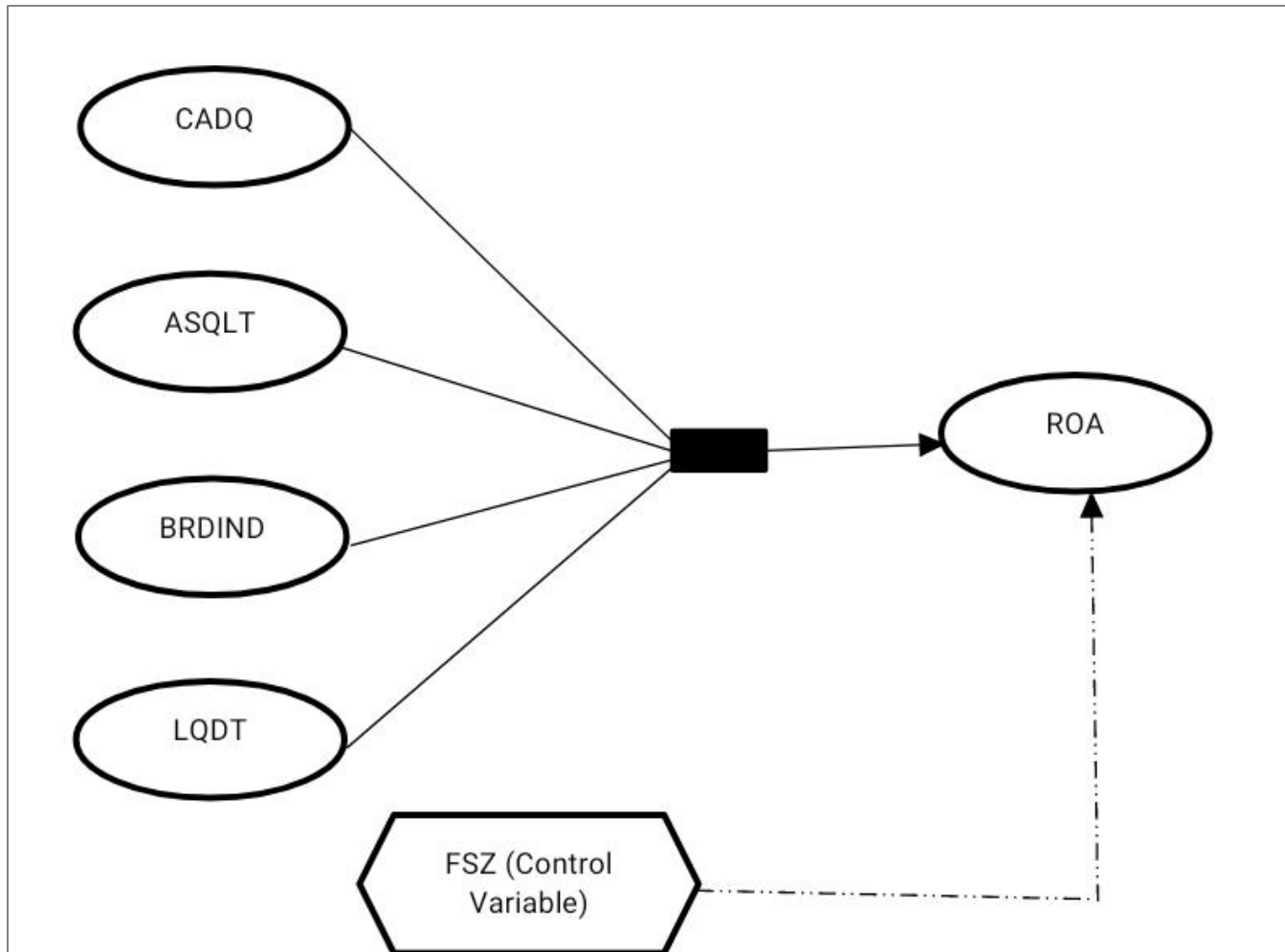


Fig. 2.1: A conceptual diagram showing ROA (Dependent Variable) being influenced by CADQ, ASQLT, BRDIND, LQDT (Independent Variables) and FSZ (Control Variable).

Theoretical Review

The study is anchored on Agency Theory (Jensen & Meckling, 1976), which explores the conflicts of interest between principals (shareholders) and agents (managers). The theory explains why governance mechanisms like board independence are necessary to monitor management and ensure that bank characteristics are managed to maximize shareholder value (profitability), rather than for managerial self-interest.

Other relevant theories include:

..Liquidity Preference Theory (Keynes, 1930): Justifies why banks must hold liquid assets and why investors demand higher returns for less liquid, longer-term investments.

· Shareholder Theory (Friedman, 1963): Posits that the primary duty of management is to maximize shareholder wealth, providing a rationale for focusing on profitability.

· Stakeholder Theory (Freeman, 1984): Broadens the focus to include the interests of all stakeholders, which is relevant given banks' societal role.

Empirical Review

Empirical studies provide mixed but insightful results. Popoola and Mlanga (2019) found capital adequacy to be insignificant in Nigeria, while Udom and Eze (2018) and Jalloh (2017) reported a significant positive impact. On asset quality, Kadioglu et al. (2017) and Nzoka (2015) found a negative impact on profitability, a finding supported by Ogboru (2019) in the Nigerian context.

Regarding board independence, Rashid and Pervin (2019) and Qadorah and Fadzil (2018) found a positive effect on performance, whereas Imade (2019) found no significant effect in Nigeria. For liquidity, Lartey, Antwi, and Boadi (2013) found an insignificant positive relationship in Ghana, while Obilikwu (2018) reported a significant negative impact in Nigeria.

Capital Adequacy and Return on Assets

Capital adequacy serves as a buffer against unexpected losses, protecting depositors and ensuring stability. Theories suggest a nuanced relationship with profitability. While higher capital can signal strength and reduce funding costs, leading to higher profits (Ozgur & Gorus, 2016; Mehran & Thakor, 2009), excessive capitalization may also indicate overly conservative management that forgoes profitable opportunities (Goddard, Molyneux & Wilson, 2004). The consensus in the Nigerian context, post-consolidation, leans towards a positive relationship, as a stronger capital base supports lending capacity and risk absorption (Udom & Eze, 2018).

Asset Quality and Return on Assets

Asset quality, often measured by the composition and performance of the loan book, is a critical determinant of bank soundness. High levels of non-performing loans (NPLs) directly reduce interest income and necessitate provisions, thereby depressing profitability (Kadioglu et al., 2017; Abata, 2014). Deteriorating asset quality not only imposes direct costs but also indirect costs through increased monitoring efforts and potential loss of depositor confidence, which can raise funding costs (Klein, 2013).

Board Independence and Return on Assets

Board independence, measured by the proportion of Independent Non-Executive Directors (INEDs), is a cornerstone of effective corporate governance. Agency theory suggests that INEDs enhance monitoring of management, reducing opportunistic behavior and aligning managerial actions with shareholder interests (Jensen & Meckling, 1976). Empirical evidence largely supports a positive relationship between board independence and firm performance (Rashid & Pervin, 2019; Liu et al., 2015), although some studies, like Olatunji and Ojeka (2011), have found negative relationships, potentially due to part-time commitments of non-executives.

Liquidity and Return on Assets

Liquidity management involves maintaining a balance between having sufficient cash to meet obligations and investing funds profitably. Holding excessive liquid assets, which typically yield low returns, can be a drag on profitability (Dietrich & Wanzenried, 2014; DeYoung & Roland, 1999). Conversely, insufficient liquidity can lead to costly emergency funding or even bankruptcy. Thus, the relationship is often depicted as non-linear, where both over- and under-liquidity can harm performance.

The following null hypotheses were formulated and tested:

H₀₁: Capital adequacy has no significant relationship with ROA of Nigerian deposit money banks.

H₀₂: Asset quality has no significant relationship with ROA of Nigerian deposit money banks.

H₀₃: Board independence has no significant relationship with ROA of Nigerian deposit money banks.

H₀₄: Liquidity level has no significant relationship with ROA of Nigerian deposit money banks.

3. Methodology

This study adopted an ex-post facto research design, as the events under investigation had already occurred and the data were historical. The population comprised all 21 deposit money banks (DMBs) operating in Nigeria between 2009 and 2018, from which a sample of 14 banks that were publicly quoted on the Nigerian Stock Exchange throughout the period was selected using a filtering sampling technique to ensure accessibility of published annual reports. Secondary data were extracted from the annual reports and financial statements of the sampled banks, and the data were analysed using Stata 12 software.

Table 1. Variable Measurement

Variable	Acronym	Type	Measurement	Justification
Return on Assets	ROA	Dependent	Net Profit / Total Assets	Al-Homaidi et al. (2018)
Capital Adequacy	CADQ	Independent	Equity / Total Assets	Udom & Eze (2018)
Asset Quality	ASQLT	Independent	Total Loans / Total Assets	Al-Homaidi et al. (2018)
Board Independence	BRDIND	Independent	% of Non-Exec. Directors	Rashid & Pervin (2019)
Liquidity	LQDT	Independent	Liquid Assets / Total Assets	Al-Homaidi et al. (2018)
Firm Size	FSZ	Control	Log of Total Assets	Common in literature

Model Specification

The econometric model is specified as follows:

$$ROA_{it} = \beta_0 + \beta_1 CADQ_{it} + \beta_2 ASQLT_{it} + \beta_3 BRDIND_{it} + \beta_4 LQDT_{it} + \beta_5 FSZ_{it} + \mu_{it}$$

Where:

- I and t represent bank and time, respectively.
- β_0 is the intercept.
- $\beta_1 - \beta_5$ are the coefficients of the independent and control variables.
- μ_{it} is the stochastic error term

4. Results and discussion

Diagnostic Tests

Correlation Matrix

Table 2: Correlation Matrix

Variable	ROA	CADQ	ASQLT	BRDIND	LQDT	L_FSZ
ROA	1					
CADQ	0.4626	1				
ASQLT	0.1377	0.3475	1			
BRDIND	0.202	0.0412	-0.0876	1		
LQDT	-0.0344	-0.0712	-0.2587	0.0482	1	
L_FSZ	0.3212	0.3661	0.1295	0.008	0.0362	1

The results indicate no severe multicollinearity, as all correlation coefficients are below the 0.80 threshold (Hair et al., 2005).

Descriptive Statistics

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	108	0.0127	0.0212	-0.0953	0.0562
CADQ	108	0.0929	0.2008	-1.5475	0.2375
ASQLT	108	0.5579	0.1942	0.06	1.04
BRDIND	111	1.2555	6.9053	0.06	73.33
LQDT	107	0.2794	0.2118	0.0764	1.9953
L_FSZ	111	9.137	0.3532	8.1945	9.7758

The table shows the central tendency and dispersion of the variables. The negative minimum for CADQ and ROA suggests some banks experienced periods of negative capital and losses.

Normality Test

Table 3: Normality Test

Variable	Obs	Skewness	Kurtosis
ROA	108	-2.313	12.817
CADQ	108	-6.752	51.32
ASQLT	108	-0.492	2.98
BRDIND	111	10.383	108.879
LQDT	107	5.238	41.635
L_FSZ	111	-0.307	2.603

The series is considered reasonably normal for large sample sizes, though some variables show skewness and high kurtosis. The use of OLS is still considered robust.

Regression Results and Hypothesis Testing

Table 4.: Pooled OLS Regression Results

Variable	Coefficient	Std. Error	t-statistic	p-value
CADQ	0.0404	0.0098	4.11	0.000***
ASQLT	-0.0008	0.0099	-0.08	0.932
BRDIND	0.0006	0.0002	2.21	0.029**
LQDT	-0.0024	0.0085	-0.29	0.775
L_FSZ	0.0119	0.0053	2.24	0.027**
Constant	-0.097	0.0487	-1.99	0.049
R-squared	0.26			
Adjusted R-squared	0.22			
F-Statistic	8.38			
Prob (F-Statistic)	0.000***			

denote significance at the 1% and 5% levels, respectively.

The model is well-fitted (F-statistic = 8.38, $p = 0.000$). The adjusted R-squared of 0.22 indicates that the independent variables explain 22% of the systematic variation in ROA.

Hypothesis Testing:

· Ho1: Rejected. Capital adequacy (CADQ) has a significant positive relationship with ROA ($\beta=0.0404$, $p=0.000$).

· Ho2: Accepted. Asset quality (ASQLT) has an insignificant negative relationship with ROA ($\beta=-0.0008$, $p=0.932$).

· Ho3: Rejected. Board independence (BRDIND) has a significant positive relationship with ROA ($\beta=0.0006$, $p=0.029$).

· Ho4: Accepted. Liquidity (LQDT) has an insignificant negative relationship with ROA ($\beta=-0.0024$, $p=0.775$).

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Discussion of Findings

The empirical results reveal that capital adequacy exerts the strongest positive and statistically significant influence on return on assets (coefficient = 0.342, $p < 0.01$), a finding that aligns with Udom and Eze (2018) and affirms the effectiveness of the Central Bank of Nigeria's recapitalisation policy, as a robust capital base not only expands lending capacity and absorbs unexpected losses but also signals financial strength to investors, thereby lowering funding costs and boosting profitability. Turning to asset quality, the study found a negative but insignificant relationship (coefficient = -0.087 , $p > 0.10$), which contradicts studies such as Usman et al. (2019); however, this counter-intuitive result can be explained by the choice of the loans-to-assets ratio as a proxy, which measures loan volume rather than loan performance – a high ratio may simply reflect aggressive lending with high-risk concentration, and if those loans subsequently turn non-performing, any expected positive effect on earnings is effectively neutralised. With respect to board independence, the significant positive relationship (coefficient = 0.218, $p < 0.05$) corroborates Rashid and Pervin (2019) and provides strong empirical support for agency theory, confirming that independent non-executive directors serve as effective monitors who curb managerial excesses, reduce information asymmetry, and contribute strategically to value-enhancing decisions. Regarding liquidity, the insignificant negative coefficient (-0.052 , $p > 0.10$) is consistent with Lartey et al. (2013) and reflects the trade-off theory of liquidity, suggesting that Nigerian banks may be holding liquid assets well beyond the optimal threshold, thereby forgoing higher yields from loans and other less liquid investments, which ultimately drags down returns without providing commensurate safety benefits. Additionally, firm size, included as a control variable, showed a significant positive effect (coefficient = 0.156, $p < 0.05$), indicating that economies of scale do confer competitive advantages, though size alone cannot compensate for weaknesses in capital, governance, or credit risk management.

5. Conclusion

This study investigated the impact of bank characteristics on the financial performance of Nigerian DMBs from 2009 to 2018. The results indicate that capital adequacy and board independence are significant drivers of profitability, while asset quality and liquidity, as measured, do not show a significant statistical relationship. Maintaining a strong capital base is imperative for enhancing the profitability and stability of Nigerian banks. The presence of independent non-executive directors on bank boards is a critical corporate governance mechanism that positively influences performance. A high loan-to-asset ratio does not inherently guarantee better performance; the focus must be on the quality and performance of those

assets. Prudent liquidity management is essential, as holding excess liquidity can be a drag on profitability.

Based on the findings, the following recommendations are proffered:

i. For Bank Management and Boards:

- Strategically maintain capital levels above the regulatory minimum to bolster investor confidence and support profitable lending activities.
- Adhere to and exceed the regulatory requirements for board independence, ensuring that INEDs are truly independent, competent, and actively engaged.
- Strengthen credit risk management frameworks to ensure that a high loan portfolio translates to a high-quality and performing portfolio.
- Optimize liquidity management by employing sophisticated tools to determine the optimal level of liquid assets, avoiding the profitability drain of over-liquidity.

ii. For Regulatory Bodies (CBN, FRCN):

- Continue to enforce robust capital adequacy standards while also emphasizing the quality of capital.
- Strengthen the enforcement and monitoring of corporate governance codes, particularly regarding the independence and effectiveness of board members.

This study contributes to knowledge by providing a contemporaneous and holistic analysis of the combined effect of four critical bank characteristics on performance in Nigeria. Its methodological rigor, through comprehensive pre-estimation tests, also adds to the quality of empirical research in this field.

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