BANK SPECIFIC FACTORS AND BANK PERFORMANCE: A STRUCTURAL EQUATION MODELING APPROACH

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ABSTRACT

Background: The Deposit Money banks determines the direction of growth and viability of the Nigerian economy, so their performance is an important component that is determined and affected by internal and external factors. **Aims**: This study examines the effect of bank-specific factors on the performance of deposit money banks, including return on average asset (ROAA), return on average equity (ROAE), Capitalisation ratio (CAR), Asset quality (AQ), Board size (BOS), and Bank Size (BS). **Methods**: The study employed the Structural Equation modelling technique on selected and listed deposit money banks in Nigeria. The convenience sampling technique informed the selection of ten deposit money banks that have continuous and active operations on the Nigerian Exchange Group. The secondary data was sourced from the audited financial statements from 2018 to 2024. **Results:** The findings reveal that bank size has a positive and significant effect on return on average assets and return on average equity, while capitalisation ratio has a negative and significant effect on return on assets. **Conclusions**: Deposit money banks in Nigeria should pursue strategies that encourage sustainable growth in size, such as mergers, acquisitions, and expansion into underserved markets, to leverage economies of scale and enhance both asset and equity returns. **Implications:** This implies that economies of scale, wider customer bases, and diversified operations enhance profitability in the Nigerian banking sector.

Keywords: Bank Specific, Bank Performance, Return on average asset, Return on average equity, Operational factors, Corporate governance, SEM Technique.

JEL Classification: C15, E59, G21

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Introduction

For more than two decades, the Nigerian banking sector has undergone significant fundamental changes in a bid to reposition it as the hub the spurs economic development in the country. Before 2005, more than 89 banks in the country were highly under-capitalised, distressed and grossly inefficient, with a high percentage of non-performing loans. The Institutional quality, which the financial Institution is part of, helps spur economic growth and attract foreign investment, thereby promoting the development of all economic agents. Financial institutions are conduits that enable financial stability and investment expansion through financial mobilisation and creation (Huong, 2024).

The banks (Deposit Money Banks) are among the key financial institutions in Nigeria, since the country is a bank-based economy, depicting that internal factors or external factors that affect positively or negatively shows on the performance level of the country (Tochuwu et al, 2019; Austin, 2025). The money creation and money decomposition from the surplus sector to the deficit sector determines the saving-investment component in developing economies, which equips the financial system to integrate competence to withstand adverse shocks and externalities (Atanasoglov et al., 2008).

However, a deposit bank failure due to the bank's retarding performance affects the growth of the economy. Factors that could affect performance and profitability level could be bank-specific factors (Magweva & Marime, 2016; Barra and Ruggiero, 2023), Macro-economic factors (Ghosh and Mondal, 2024; Dhodary, 2024) and Financial factors (Tochukwu et al., 2019), among others. Studies remain limited on bank-specific factors that influence performance, particularly in understanding how return on equity is achieved through the efficiency with which managers deploy resources. Methodologically, studies have concurrently used panel regression, which captures all explanatory variables holistically and treats them with particularity to the random-effect and fixed-effect models. This study employs structural equation modelling, assuming that latent variables cannot be observed directly but are measured indirectly through observable indicator variables, as done by Gadzo et al. (2019).

Inclusively, according to the Basel Accord I-III and CAMEL, the financial performance of the deposit money banks could be summarised into the following acronym of capital, Asset Quality, Management, Earnings and Liquidity (Sah & Pokharel, 2023). These measures capture the banking institution's operating competence, financial condition, financial performance, and regulatory compliance. Economically, the financial vibrancy of the banks in terms of monetary effectiveness has an internal advantage for the profitability and external advantage towards investment improvement and economic development (Dhodary 2024; Akinuli et al., 2024).

Theoretical background

Magweva and Marime (2016) examine how bank internal measures, most importantly the CAMEL requirement, determine performance captured with return on assets. The panel regression technique was employed, which shows that internal measures do not have an effect on performance, but external factors have a significant influence on performance. Barra and Ruggiero (2023) examine the relational effect of bank-specific factors on credit risk. The inquiry captures a comparison of the different types of banks, like co-operative, commercial and popular banks, along with various geographical locations in Italy, all with a sample of fifteen thousand two hundred and seven. The findings suggest that regulatory credit policy, capitalisation, volume of credit and volume of intermediation cost are the main bank-specific factors affecting credit risks. Ghosh and Mondal (2024) examine the combined impact of macro-economic and bank-specific variables on bank performance. The inquiry investigates a comparison study of public and private bank-specific and macro-economic variables on bank performance. The methodology of bank comparison is similar to the methodology of Bama & Ruggiero (2023); the panel regression model is similar to the works of Magweva and Marime (2016), which only tested how the internal factors affect return on assets.

Arh and Huong (2024) examine the influence of bank-specific factors and the profitability of listed commercial banks in Vietnam. The subject matter was to capture seven pivotal factors on return on average assets, which is a measure of profitability. The specific factors include off-balance sheet activities, cost-income ratio, non-performing loans, Net Interest margin, Loan loss reserve, and Bank size and credit balance. The independent variables of net interest margin, bank size, and non-performing loans align with the work of Magweva & Marime (2016), but the uniqueness of return on average assets for measurement is novel. The findings reveal that off-balance sheet, Net interest margin, and Bank size positively affect return on average assets. Sarkar and Rakshit (2024) investigated the influence of bank-specific factors on the profitability level of public sector banks in India. The bank-specific factors are

similar to the work of Magweva and Marime (2016), which focuses on CAMEL requirements for banks; apart from employee performance, they are quite different. The inquiry usage of the GMM estimation technique may be too cumbersome for a micro panel data set that may not have the problem of homogeneity with the disturbance term that is visible in inter-country panel analysis. Different from the findings of Barra and Ruggiero (2023), asset management, operating efficiency, loan quality, and employee performance have a significant effect on return on assets. The capturing of net interest margin as a profitability measure is quite valid, different from the works of Anh & Huong (2024) and Ghosh & Mondal (2022), capturing the measure as an independent variable. The net interest margin captures banks' intermediation performance, which, in turn, has a long-run effect on economic growth and development. Addressing only the public sector banks aligns with the works of Ghosh and Mondal (2022).

Dhodary (2024) examines bank-specific and macroeconomic variables related to the financial performance of commercial banks in Nepal. The capturing of internal and external specific factors aligns with the content of Ghosh & Mondal (2022), with the macroeconomic variable selected on the profitability of banks. The bank-specific factors align with the work of Sarkar and Rakshit (2024), Magweval & Marima (2022). The inquiry, along with other studies, employed the Panel regression to determine the relationship between the dependent and independent variables inferentially. The findings reveal that management effectiveness, capital base, credit risk, GDP, and inflation are factors that influence bank profitability in Nepal. Dhodary and Rajbanshi (2024) investigate the effect of bank-specific factors on financial performance, a relationship also documented in Dhodary (2024). The work is similar to the content of Dhodary (2024), except for the exclusion of macro-economic variables, which are external or systematic factors that affect the viability and performance of commercial banks. The findings show that internal management, credit policy, and business management have a moderate effect on banks' financial performance.

Akinuli et al. (2024) examined the determinants of capital adequacy in the Nigerian banking sector. The inquiry captures how asset quality, bank size, management, non-performing loans, Return on assets, and return on equity contribute towards the attainment of capital adequacy. The analysis lacks robustness in terms of pre-estimation testing, which is not required for this type of microdata. Some of the independent variables align with the work of Magweval & Marima (2022). The findings depict that asset quality and return on equity affect the capital adequacy of Nigerian deposit money banks.

Limon (2025) examines the effect of bank-specific factors and non-performing loans. The subject matter was to determine how agency costs, bank size, loan-to-deposit ratio and capital adequacy affect non-performing loans. The study is similar to the work of Barra and Ruggiero (2023), which captures credit risk, which is also a holistic measure of non-performing loans. Tochukwu et al. (2019) examine the combined influence of bank-specific, financial and macro-economic factors on bank profitability. The study captures bank-specific factors from CAMEL indicators, as in the work of Magweval & Marima (2022) and Sarkar & Rakshit (2024), and, by measuring financial depth, shows how this factor could spur bank profitability in Nigeria. The study employs a dynamic ordinary least squares (DOLS) panel regression model, in line with the methodology of Sarkar and Rakshit (2024), who also used a dynamic approach for inference. The results indicate that bank-specific factors and financial depth influence profitability.

Austin (2025) examines the influence of different dimensions of bank size on financial performance. The study is quite unique, exploring various components of size like bank assets, bank loan size, bank deposit size, and bank capital size. The deployment of various internal components of size has been explored by Arh & Huong (2024), Dhodary (2024), and Dhodary & Rajbonshi (2024), who have shown that using only bank asset size is insufficient to capture bank size. The findings show that all measures of size have a positive and significant effect on return on assets and earnings per share. Ikue et al. (2022) investigated the effect of bank-specific factors and macroeconomic variables on capital adequacy. The context is similar to that of Akinuli et al. (2024), focusing on how bank-specific factors influence capital adequacy rather than macroeconomic variables. The findings show that both components of bank-specific factors and macro-economic variables have a positive effect on capital adequacy. Oladele &Ade (2020) investigated the effect of firm-specific attributes, market risks, and asset quality. The study captures a financial factor peculiar to the economy, similar to Ikue et al (2022), with macroeconomic factors.

Methodology

The study adopted the causal design methodology from the explanatory research perspective as described by Gadzo et al (2019). The panel data were sourced from the financial statements of the

deposit money banks from 2018 to 2024. Causal research designs enable researchers to examine the cause-and-effect relationships among variables. The study employed a convenience sampling technique to select ten deposit money banks listed on the Nigerian Exchange Group. These banks are among the most prominent and actively traded deposit money banks on the Nigerian Exchange Group in 2024.

The banks include First Bank of Nigeria, Access Bank, United Bank of Africa, Wema Bank, FCMB, Fidelity Bank, Guaranty Trust Bank, Stanbic IBTC, Sterling Bank and Zenith Bank. The model used to adjust for the inquiry was sourced from the work of Khan et al. (2023), Pokharel (2022), and Ariyibi et al. (2020).

The linear equation is given below;

$BP_{t(ROAA,ROAE)} = f(BSF\ \ )$.....1

$BSF_{i,t} = f(OPF, CG\ \ )$.....2

Model for Objective One

The impact of capitalisation ratio, asset quality, bank size and board size on return on average assets

$ROAA\ \ = f(CAR, AQ, BS, BOS\ )$.....3

$ROAA\ \ = (\alpha_0 + \beta_1 CAR\ \ + \beta_2 AQ\ \ + \beta_3 BOS\ \ + \beta_4 BS\ \ + \mu_t)$.....4

Model for Objective Two

The impact of capitalisation ratio, asset quality, bank size and board size on return on average equity

$ROAE\ \ = f(CAR, AQ, BS, BOS\ )$.....5

$ROAE\ \ = (\alpha_0 + \beta_1 CAR\ \ + \beta_2 AQ\ \ + \beta_3 BOS\ \ + \beta_4 BS\ \ + \mu_t)$.....6

Where:

Dependent Variables
BP: Bank Performance at time t
ROAA: Return on average assets at time t
ROAE: Return on average equity at time t
Independent Variables
BSF: Bank-Specific factors at time t
OPF: Operational factors at time t
CAR: Capitalisation ratio at time t

AQ: Asset quality at time t

CG: Corporate governance at time t

BOS: Board size at time t

Control Variables

BS: Bank Size at time t
U = Disturbance term/White noise at time t
α = Intercept
$\alpha_1 - \alpha_3$ = Coefficient of the Independent Variables

Table 1 Variables description

Variables	Description	Measurement
Dependent Variables		
ROAE *Return on average equity*	Return on average equity (ROAE) is a financial metric used to evaluate a company's profitability relative to its shareholders' equity.	$ROAE_{it} = \frac{Net\ Income_{it}}{Average\ Shareholders\ Equity._{it}} * 100$
ROAA *Return on average asset*	Return on average assets is a financial ratio used to evaluate a company's profitability relative to its total assets.	$ROAA_{it} = \frac{NI_{it}}{Av.total\ assets_{it}} * 100$
Independent Variables		
CAR *Capitalisation Ratio*	Capitalisation ratio, also known as capital structure ratio, is a financial metric that measures the proportion of a company's capital that comes from debt and equity.	$CAR_{it} = \frac{TA_{it}}{TE_{it}}$
AQ *Asset Quality*	Asset quality refers to the overall health and value of a company's assets.	$AQ_{it} = \frac{Val\ of\ Non.perfoming\ Loan_{it}}{Total\ value\ of\ loans_{it}}$
BOS *Board Size*	It is a corporate governance measure that captures the board size for each year.	$BOS_{it} = No\ of\ directors\ for\ each\ year$
Control Variable		
BS *Bank Size*	In most cases, bank size is usually measured as the total investment of an entity in non-current assets used to produce goods or employed in the delivery of its services. It is usually expressed as a natural log of total assets.	$BS_{it} = Ln\ Total\ Assets$

Author's Compilation, 2025

Results

Table 2: Descriptive Analysis

	Mean	Median	Observed min	Observed max	Standard deviation	Excess kurtosis	Skewness
Asset Quality	0.389	-0.161	-1.287	2.953	0.674	0.385	0.848
Bank Size	0.410	0.062	-2.347	2.203	0.667	-0.490	0.029
Board Size	0.304	0.111	-2.254	1.800	0.863	-0.357	-0.114
Capitalisation ratio	0.447	0.252	-3.714	1.604	0.776	1.588	-1.035
Return on Average Asset	0.150	-0.280	-1.191	3.714	0.553	2.003	1.393
Return on Average Equity	0.320	-0.271	-1.444	2.722	0.784	-0.378	0.714

Author's Compilation, 2025

The mean value of asset quality is 0.38, the median is -0.16, the range is from a minimum of -1.28 to a maximum of 2.95, the standard deviation is 0.67, kurtosis is platykurtic at 0.38, and it is positively skewed at 0.84. Bank size has a mean of 0.41, a median of 0.062, a range from a minimum of -2.34 to a maximum of 2.20, a standard deviation of 0.66, kurtosis is platykurtic at -0.49, and it is positively skewed at 0.02. The capitalisation ratio has a mean of 0.44, a median of 0.25, a range from a minimum of -3.71 to a maximum of 1.60, a standard deviation of 0.77, kurtosis is platykurtic at 1.58, and it is negatively skewed at -1.04. Return on average assets has a mean of 0.15, a median of -0.28, a range from a minimum of -1.19 to a maximum of 3.71, a standard deviation of 0.55, kurtosis is platykurtic at 2.00, and it is positively skewed at 1.39. Return on average equity has a mean of 0.32, a median of -0.27, a range from a minimum of -1.44 to a maximum of 2.72, a standard deviation of 0.78, kurtosis is platykurtic at -0.37, and it is positively skewed at 0.71.

Table 3: Multicollinearity Test

	VIF
AQ	1.000
BOS	1.000
BS	1.000
CAR	1.000
ROAA	1.000
ROAE	1.000

Author's Compilation, 2025

All the variables have values of 1, indicating no multicollinearity. In other words, the independent variables are not highly correlated with one another. This implies that the regression results are reliable for policy implications.

Table 4: Explanatory Power Test

	R-square	R-square adjusted
Return on Average Asset	0.596	0.571
Return on Average Equity	0.366	0.327

Author's Compilation, 2025

The independent variables explained the average asset return at 0.596 and 57.1% after adjustment. Also, return on average assets was explained by independent variables at 0.366 and 32.7% after adjustment.

Table 5: F-sqaure

	Asset Quality	Bank Size	Board Size	Capitalisation ratio	Return on Average Asset	Return on Average Equity
Asset Quality					0.039	0.028
Bank Size					0.377	0.466
Board Size					0.051	0.050
Capitalisation ratio					0.585	0.010

Author's Compilation, 2025

The F-square shows the size of the effect of the independent variables on the dependent variables. Bank size has a strong effect on return on average assets at 0.37% and return on average equity at 0.46%. Capitalisation ratio has a strong effect on return on average assets at 0.58%, but has a negligible effect on return on average equity at 0.01. Board size and Asset quality have a weak effect of less than 0.10 on both return on assets and return on equity.

Table 6: Model Fitness

	Saturated model	Estimated model
SRMR	0.000	0.102
d_ULS	0.000	0.218
d_G	0.000	0.660
Chi-square	-0.000	131.753
NFI	1.000	0.459

Author's Compilation, 2025

The SRMR value of 0.102 suggests it exceeds the acceptable threshold of 008. The chi-square statistic (131.753) shows the model is influenced by a small sample size. Inclusively, the NFI value of 0.459 provides minimal improvement over the null model.

Table 7: Path Coefficient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Asset Quality -> Return on Average Asset	0.130	0.119	0.089	1.462	0.144
Asset Quality -> Return on Average Equity	0.138	0.132	0.095	1.453	0.146
Bank Size -> Return on Average Assets	0.419	0.423	0.079	5.343	0.000
Bank Size -> Return on Average Equity	0.584	0.587	0.081	7.256	0.000
Board Size -> Return on Average Asset	-0.155	-0.152	0.099	1.559	0.119
Board Size -> Return on Average Equity	-0.192	-0.192	0.111	1.730	0.084
Capitalisation ratio -> Return on Average Asset	-0.529	-0.518	0.096	5.503	0.000
Capitalisation ratio -> Return on Average Equity	-0.088	-0.078	0.123	0.715	0.475

Author's Compilation, 2025

The table above shows that bank size has a positive and significant effect on return on average assets and return on average equity. In contrast, capitalisation ratio has a negative and significant effect on return on assets. Meanwhile, asset quality and board size have no significant effect on return on assets or return on equity. These findings indicate that bank size is the most relevant bank-specific factor driving the performance of selected deposit money banks in Nigeria, while capitalisation ratio reduces asset returns but does not affect equity returns. Based on the findings from the postulation of the economies of scale and financial intermediation theories, big banks tend to benefit from cost efficiency and improved access to funding, thereby enhancing their profitability. While the negative effect of capitalisation ratio on return on asset aligns with the postulation of the trade-off theory that higher capital reduces banks' risk exposure but limits leverage and income-generating prospects, thereby lowering asset returns. The findings of Arch and Huong (2024), Dhodary (2024) and Austin (2025) agree with the inference that bank size components have the ability to improve the performance of deposit money banks, while the works of Magweva and Marine (2016) disagree with the findings, indicating that internal factors do not contribute to the performance of banks.

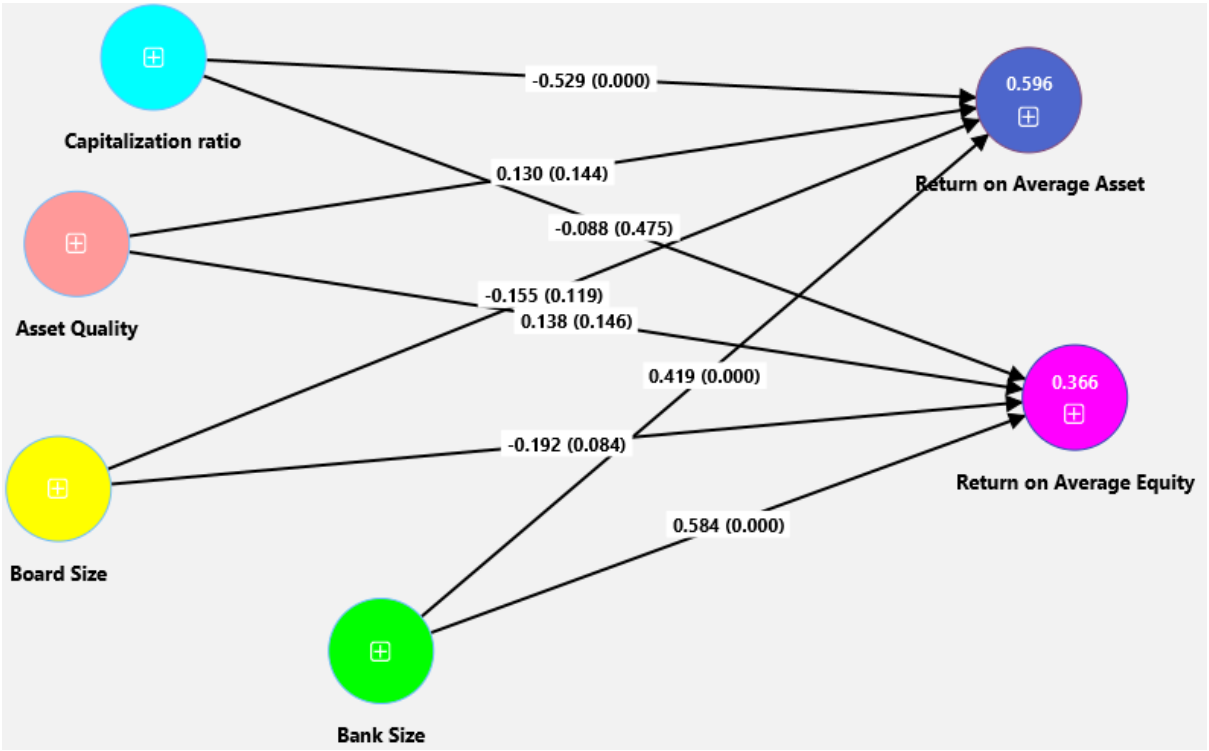

Figure 1: Results of Structural Model using PLS Algorithm

Conclusion

The study concludes that bank size exerts a strong positive and significant effect on both return on average assets (ROAA) and return on average equity (ROAE), highlighting the performance advantages enjoyed by larger banks. This implies that economies of scale, wider customer bases, and diversified operations enhance profitability in the Nigerian banking sector. Inclusively, the capitalisation ratio demonstrates a significant negative effect on ROAA, suggesting that excessive capitalisation may limit the efficient use of resources, thereby reducing asset returns. Board size and asset quality, however, show no significant influence on bank performance. Holistically, the findings reinforce the importance of optimal bank structure and financial management practices in driving profitability. Deposit money banks in Nigeria should pursue strategies that encourage sustainable growth in size, such as mergers, acquisitions, and expansion into underserved markets, to leverage economies of scale and enhance both asset and equity returns. The study excludes macroeconomic variables that have an impact on the performance is one of the limitations of the study, relying only on bank-specific factors. And the use of return on average assets and return on average equity captures only market-based performance. Other studies could capture both bank-specific factors and macro-economic

factors simultaneously on both bank-based performance measures and market-based performance measures.

However, management should avoid over-capitalisation, as excessive idle capital may reduce asset efficiency and limit profitability. Regulators, including the Central Bank of Nigeria, should adopt policies that promote a balance between maintaining adequate capitalisation for financial stability and allowing banks flexibility to optimise asset utilisation. Finally, while board size and asset quality were not significant, continuous monitoring of governance structures and asset risk management remains essential for long-term stability and competitiveness.

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