

Mergers and Acquisitions and the Financial Performance of Deposit Money Banks in Nigeria: A Panel Regression Analysis (2020–2024)

Iheanyichukwu Emmanuel Nkwa ¹; Chrisogonus Chukwunyere Nwaiwu ²; Goodluck Oghenejomafovwe Essi ³; Loveth Oribhabor Agboola ⁴; Adekemi Olayide Oyewale ⁴; and Kennedy Ofori Sarkwah ⁵

¹Department of Business Administration, Faculty of Management Science, Federal University Otuoke Bayelsa, Nigeria. ²MBA, York Business School, York St John University England. ³Department of Economics Education, Faculty of Education, University of Benin, Nigeria. ⁴Department of Economics, Faculty of Social sciences, Caleb university, Nigeria. ⁵Department of Finance and Information Studies, University of Ghana.

DOI: <https://doi.org/10.62154/ajmbr.2026.022.01012>

Abstract

This research evaluates the role played by operational cost, quality of assets and liquidity in determining the financial performance of the chosen deposit money banks in Nigeria after a merger and acquisition (M&A) exercise. The secondary data were collected using ex post facto research approach based on audited annual financial statements of ten purposely chosen banks that include the years 2020 to 2024. The estimation of the relationship between the independent variables and the return on assets (ROA) was done using panel least squares regression. The result shows that the operational cost has a statistically significant negative impact on ROA ($\beta = -0.064$, $p = 0.01$), which implies that post-merger cost inefficiencies reduce profitability. On the other hand, asset quality ($\beta = 0.066$, $p > 0.05$) and liquidity ($\beta = 0.016$, $p > 0.05$) have positive effects on ROA which are not statistically significant indicating limited short-term impact on profitability. It is estimated that the model accounts to 56 percent of the variation in bank performance ($R^2 = 0.557$), and the general regression is statistically significant. The researchers reach a conclusion that the most vital factor determining the post-merging profitability of Nigerian banks is operational efficiency. It suggests tight cost control, enhanced control on credit risks and improved liquidity deployment as a way of improving sustainable performance. The research paper will add to the literature on the banking sector in Nigeria, as it will be presenting recent panel-based findings on the drivers of the post-M&A performance in the 2020-2024 period.

Keywords: Mergers and Acquisitions, Operational Cost, Asset Quality, Liquidity, Return on Assets, Deposit Money Banks, Nigeria.

Introduction

The success of the deposit money banks in Nigeria is one of the key determinants of economic stability and growth. Banks act as the intermediaries in the financial system and bring together deposits and deploying credit into productive areas (Sanusi, 2010). Nevertheless, the banking industry of Nigeria has been bedeviled with problems such as undercapitalization, low quality of assets, inefficiency and governance problems in the past

(Soludo, 2004). All these structural deficiencies led to systemic distress episodes, which prompted regulatory measures to strengthen the sector.

The 2004-2005 banking consolidation exercise led by the Central bank of Nigeria (CBN) under Governor Charles Soludo was one of the most important regulatory reforms. The policy raised the minimum capital base from ₦2 billion to ₦25 billion, compelling banks to merge, acquire, or recapitalize (CBN, 2004). In this reform, 89 banks were done away with and bigger and seemingly more robust banks were formed. The merger was based on the assumptions that bigger banks would gain economy of scale, would be more efficient in their operations, they would have better risk management and be more resistant to macroeconomic shocks (Ezeoha, 2011; Fabinu et al., 2018).

Even though there are optimistic prospects about these reforms, the results have been inconsistent. Some banks were experiencing a better capital adequacy and positioning, whereas others were grappling with integration issues, cultural disfits, and inefficiencies (Ayagre et al., 2024; Musah, Gakpetor & Poma, 2020). Moreover, the international financial crisis of 2008-2009 revealed unresolved drawbacks of the Nigerian banking system, which resulted in the second wave of interventions. In 2010, Asset Management Corporation of Nigeria (AMCON) was set up with the aim of acquiring the non-performing loans and recapitalizing the troubled banks further leading to more mergers and acquisitions (CBN, 2011).

Mergers and acquisitions have their theoretical basis on a number of assumptions. According to the efficiency hypothesis, M and A activities bring about synergies in terms of cost savings, revenue growth and better distribution of resources (Seth, 1990). According to the market power theory, market share and pricing power are enhanced by the consolidation (Berger and Hannan, 1998). The too big to fail theory states that bigger banks enjoy government guarantees that make their cost of capital to be low (Mishkin, 2006). Nevertheless, there is no empirical data on the true performance of merged banks, and the research results indicate both positive and negative results (Badunenko et al., 2022).

This paper proposes the three major financial measures namely; the operational cost, asset quality and liquidity as a determinant of return on assets (ROA) in the post-merger banks. Operational cost indicates the effectiveness of the bank management to utilize resources (Berger and Mester, 1998). The credit risk and the health of the loan portfolio are determined by asset quality as measured by non-performing loans (Ezeoha, 2011). Liquidity, the loan to deposit ratio evaluates the capability of the bank to fulfill short term commitments at the same time remaining profitable. The importance of the insight into the effects of these factors on the post-merger performance is vital to the policy makers, bank managers, and investors.

Since the years 1960, which marked the independence of Nigeria, the Nigerian banking sector has been going through various forms of changes and development; starting with foreign-owned banks, but changing to national-owned banks, in the 1970s, as a result of the indigenization policies. The 1986 structural adjustment program liberalized the sector

leading to the explosion of weakly capitalized, and poorly governed banks. In Nigeria, there were 89 banks by the year 2004 with most of them being undercapitalized and inefficient (Soludo, 2004). It is against this context that the policy of consolidation of the CBN was to establish a stronger banking system. Although the immediate effect was down to 25 banks, the following years witnessed further mergers which were as a result of regulatory interventions as well as that of the market forces. Some notable ones are the case with the merger of Access Bank and Intercontinental Bank in 2012, and the acquisition of Diamond Bank by Access Bank in 2019.

Statement of the Problem

Banking consolidation reform in Nigeria was launched in 2004-2005 to improve capitals, efficiency and financial stability by use of mergers and acquisitions. Nevertheless, the empirical data concerning the existence of sustained improvement in the performance of banks due to the performance of these mergers is inconclusive and controversial.

Majority of the existing research is based on general pre- and post-merger comparisons and little attention is given to individual financial practices like operational cost, asset quality and liquidity. Moreover, most of the studies are centered on the previous periods after the consolidation leaving a gap in the recent empirical evidence.

Following the changing landscape of the Nigerian banking industry, the recent panel-based analysis on the role of these internal factors on the profitability is needed. In this work, the research problem is therefore the impact of operational cost, asset quality, and liquidity on the return on assets of the selected deposit money banks in Nigeria.

Research Objectives

1. Test the influence of operation cost on the return on asset (ROA) of the chosen deposit money banks in Nigeria.
2. Find out how assets quality impacts on the ratio of returns on assets (ROA) of the chosen deposit money banks in Nigeria.
3. Assess the impact of liquidity on the return on assets (ROA) of some of the deposit money banks in Nigeria.

Research Hypotheses

H₀₁: There is no significant impact of the operational cost on the return on assets of the chosen deposit money banks in Nigeria.

H₀₂: Asset quality does not have a significant impact on the return on asset of the chosen deposit money banks in Nigeria.

H₀₃: The liquidity does not play a significant role in the return on assets of the chosen deposit money banks in Nigeria.

Literature Review***Conceptual Clarification***

Mergers and acquisitions (M&A) are corporate strategies that entail the coming together of two or more companies into one company. Mergers and acquisitions are different processes where two companies form a new legal entity and one firm acquires another, respectively (Sherman, 2018). M&A activities are driven by objectives such as achieving economies of scale, expansion in the market, diversification, and acquisition of new technologies or abilities (Cartwright and Cooper, 1996). Regulatory pressures, competition, and the pursuit of operational efficiency are also common causes of M&A in the banking sector (Arogundade and Adegbe, 2024). The process of consolidation is usually associated with due diligence, valuation, negotiation, regulatory approval and post-merger integration. The different stages have their own challenges and opportunities which could determine the final success of the transaction.

Return on assets (ROA) is a profitability ratio used to determine how well a company employs the assets to achieve profits. It is determined as net income per total assets in the form of percentage (Brigham & Ehrhardt, 2020). ROA is a very important measure of the managerial effectiveness and efficiency of operation hence making it one of the most used measures of bank study (Berger and Humphrey, 1997). High ROA means high utilization of assets and profitability. In contrast to return on equity (ROE), which leverage may be used to grossly overstate its value, the ROA offers a less biased evaluation of the intrinsic earning power of a bank. In the case of banks, ROA is of specific importance as it demonstrates the capacity of the bank to make profits both on those activities that allow earning interest (loans and investments) and non-interest sources of revenue (fees and commissions). The average ROA of commercial banks is between 0.5 and 2.0, and any value exceeding this value implies an outstanding performance.

Operational cost is the expense that is used in the running of the businesses as is customarily undertaken such as salaries, rent, utilities, and administrative expenses. In the banking industry, the ratio of costs to the income or the operating expenses ratio is used to gauge the operational costs (Berger and Mester, 1998). Profitability may be destroyed by the high operational costs, especially during the post-merger stage when the integration costs increase (Ayagre et al., 2024). The cost management to achieve the synergies that M&A promises is also a resolved issue that requires cost effective management, which is commonly realized by removing redundancies, closing branches, integrating systems, and rationalization of the work forces, which are extremely expensive up-front. Nonetheless, when well-managed, these investments would result in long-term efficiency benefits such as standardized processes, infrastructure, and allocation of resources optimally. This is due to the difficulty in balancing the short-term cost increment with long-term cost reduction in terms of efficiency.

Asset quality is used to measure the health of loan portfolio of a bank and also its exposure to credit risk. It is usually measured by the ratio of the non-performing loans (NPL) that is

the ratio of loans in default or near default against the total loans (Ezeoha, 2011). A low quality of assets implies the inability to manage credit risks, and may result in substantial losses. After the merger, banks can also assume problematic assets of their acquisition targets and this impacts the overall performance (Chakraborty & Kattuman, 2023). The Nigerian banking institution has in the past been faced with the problem of poor asset quality especially when the economy is undergoing a recession. The non-performing loans were a result of poor credit appraisal, political influence on the lending decisions, concentration in the sector, and also due to the volatility of the macroeconomic factors. After the banking crisis in 2009, AMCON was set up to buy toxic assets of banks in distress making their balance sheets clean. The quality of improvement in asset quality is however sustainability subject to strong credit risk management systems such as strict lending guidelines, proper monitoring mechanisms and prompt recovery systems.

The term liquidity can be used to denote the capacity of a bank to fulfill its short-term commitments and to finance the demand of loans. A common ratio of liquidity is the loan to deposit ratio (LDR), which is the percentage of loans financed by deposits. Although high liquidity means that the business will not run into the difficulty of lack of liquidity, too high liquidity will point to an unused resource and profits are being missed. On the other hand, a low liquidity increases solvency issues. The merging of banks is facing a major challenge on balancing between liquidity and profitability. Banks should ensure that they have enough liquid assets to pay out withdrawal, interbank commitments as well as conform to the requirement of the regulatory bodies. Nevertheless, maintaining massive liquidity in low yielding instruments lower profitability. Best LDR depends on jurisdiction and the state of the economy, although it usually lies between 70 and 90 percent. Several policies by CBN intended to encourage credit by the private sector have enabled Nigerian banks to have relatively high LDRs. After a merger, the banks have to align their liquidity management policies, and these have to align with the expectations of the regulators and, at the same time, maximize returns.

Theoretical Framework

The main theoretical basis of this study is the Efficiency Theory of mergers and acquisitions that suggest that the companies resort to the process of consolidation to gain the advantages of cost synergies, optimization of operations and better allocation of resources (Seth, 1990). The theory separates cost efficiency and revenue efficiency. Operational cost as one of the direct measures of cost efficiency fits well in the context of this study and the theory posits that high operational cost correlates negatively with profitability.

There is also the Agency Theory (Jensen, 1986) which gives an explanatory analysis concerning the post-merger management of assets in terms of quality. Disagreement between managers and shareholders in terms of agency can affect the lending modes, risk-taking behaviour and credit monitoring, which in turn can result in the level of non-performing loans and the quality of assets.

As well, the Market Power Theory (Berger and Hannan, 1998) indicates that consolidation improves pricing power and competitive positioning which may affect the deployment of liquidity and earnings capacity.

All these theoretical views can be supportive to the choice of operational cost, quality of assets and liquidity as the determinants of post-merger financial performance.

Empirical Review

The effect of M&A in terms of performance of the banks has produced mixed evidence both in the global and Nigeria in particular. Fabinu et al. (2018) analyzed the Nigerian banks by comparing the financial ratios before and after mergers and concluded that M&A enhanced the profitability and efficiency, which evidence the synergy hypothesis. Their analysis period was 2000-2010 and they used longitudinal analysis to monitor changes of performance. In the same way, Arogundade and Adegbe (2024) have indicated that M&A can positively contribute to the economic growth of Nigeria during 2006-2021 through empirical analysis and showed that bank consolidation helps increase the credit provided to the real sector. Ayagre et al., (2024) however, established no positive correlation between M&A and profitability based on asset turnover as a performance ratio. They found out that merged banks performed worse than the non-merged counterparts in the post party of reform (2004-2008). This observation dispels the thought that size matters in banking. Musah et al. (2020) indicated the same in Ghana in 2009-2018 where the poor performance after the merger was attributed to integration problems, cultural misfits, incompatible systems, and governance problems that dominated the potential synergies. In the area of cost of operation, a number of studies have been able to make critical linkages with the bank performance. According to Ezeoha (2011), operation efficiency had a significant impact on quality of assets among Nigerian banks implying that cost effective banks are in a better position to ensure quality loan portfolios. The connection between this two is that the level of operational efficiency is mostly a measure of high quality of management which spills over to credit risk management. Badunenko et al. (2022)

Evidenced the fact that the higher the operating efficiency of a bank, the lower the systematic risk of a bank in various jurisdictions. In their study, they used sophisticated methods of econometrics to elicit the impact of efficiency out of other risk determinants. These results highlight the need to manage costs during post-merger performance, because the integration costs may be very heavy on merged organizations. Banks that effectively reduce the operations by taking an initiative in technology use, automation of processes, and optimization of the workforce are more likely to perform better as compared to those that fail to achieve the cost synergies.

The evidence is also subtle on quality of asset. Chakraborty and Kattuman (2023) found that in the pharmaceutical industry of India, successful mergers increased the quality of assets, which indicated that consolidation could help to augment risk management abilities when applied sufficiently well. This was contributed by the fact that it was more diversified,

improved governance and availability of better risk assessment tools. Nevertheless, Ezeoha (2011) showed a negative correlation between the non-performing loans and the profitability of the banks in Nigeria, which indicates the dangers of bequeathing the bad-quality assets in the times of acquisitions. This observation holds especially in involuntary mergers that forceful banks are forced to buy suffering banks. The acquiring bank can also inherit a collection of bad assets that will lower profitability over years. Besides, lending practices among the merging institutions that have different cultures may give inconsistencies in the standards of credits unless they are harmonised adequately.

Liquidity research has indicated that liquidity management is extremely important to financial stability and performance. The loan-deposit ratio contributed to bank profitability in the developing countries where the best ratios depended on the economic factors. When the economy is stable, the increase in LDRs can be maintained, but when the economy is volatile, the liquidity buffers have to be more conservative. According to Pervez et al., (2023), an increase in capital adequacy ratios led to more profitability as it increased the ability to absorb shocks as a result of reducing the costs of funding and boosting investor confidence. Nonetheless, too much liquidity may indicate that there is underutilization of resources, which reduces the returns on investment. According to a study conducted by Nasirah and Putra (2025), high lending ratios enhanced the solvency risks in volatile credit situations as banks became exposed to the deposit withdrawals and the pressures of funds. It is a dilemma between profitability and stability that bank managers will always face.

Recent research has highlighted the importance of long-term evaluation of the results of M & A and not looking at the short-term reactions of stock prices. Haakantu and Phiri (2022) studied the case of commercial banks in Zambia and came to the conclusion that the effects of M&A may differ depending on the macroeconomic situation, regulatory frameworks, and peculiarities of the merging institutions. Their work pointed out that forced mergers in times of crisis tend to be worse results compared to voluntary mergers in times of stability. To investigate allahabad bank merger with Indian Bank, (Sanusi, 2010; Soludo, 2004) employed paired t-tests and financial metrics to analyze the 2020 merger. Their results were mixed, as some of their operations improved (earnings per share and NPL ratios), but there were small short-term increases in financial performance. The article has revealed that time, proper integration strategies, and favourable economic conditions are necessary in the process of full actualisation of merger synergies. These results indicate that carrying out the analysis of the success of M&A is a long-term task and that one should consider numerous dimensions of performance.

Recent empirical studies from sub-Saharan African and comparable emerging market contexts further enrich the understanding of M&A and bank profitability. Olalere et al. (2019) examined the performance of selected Nigerian commercial banks and found that bank-specific factors, including cost efficiency and asset quality, were stronger predictors of return on assets than macroeconomic variables, underscoring the primacy of internal management quality in the post-consolidation environment. Similarly, Akintola and Alabi (2021) investigated the effect of post-merger integration on the financial performance of

Nigerian deposit money banks and reported that banks which successfully achieved operational integration within the first three years of merger recorded significantly higher ROA compared to those that experienced prolonged integration challenges. These findings affirm that the speed and quality of post-merger integration are as critical as the merger decision itself.

On operational cost and post-merger bank performance, more recent evidence reinforces the centrality of cost management. Okafor and Shaibu (2020) examined cost-to-income ratios among Nigerian banks between 2010 and 2019 and established that operational cost efficiency was the single most consistent predictor of sustained profitability, particularly in the immediate post-merger period when redundant cost structures had not yet been rationalized. This conclusion aligns with Agyei et al. (2021), who studied banks in the West African Monetary Zone and found that operational cost reduction mediated the relationship between M&A activity and improved return on assets, suggesting that synergy realization is fundamentally a cost management process. Taken together, these studies confirm that the efficiency theory prediction that post-merger value accrues primarily through cost reduction holds robustly in the Nigerian and broader African banking context. The relationship between asset quality and post-merger bank performance has received increasing attention in recent literature. Umar and Tudawada (2022) analyzed Nigerian deposit money banks between 2012 and 2021 and found that non-performing loan ratios had a significant negative effect on return on assets, indicating that deteriorating asset quality erodes profitability regardless of merger-induced size gains. This finding is consistent with Isola and Adeyemo (2023), who demonstrated that banks inheriting high non-performing loan portfolios through acquisition consistently underperform on profitability metrics for at least four years post-merger, confirming the view that asset quality diligence during the acquisition process is essential to post-merger value creation. Furthermore, Aluko and Ajayi (2023) using panel data for sub-Saharan African banks reported that the quality of loan portfolios moderated the effect of consolidation on ROA, with banks maintaining NPL ratios below five percent exhibiting significantly stronger post-merger profitability outcomes. These recent findings collectively underscore the long-term strategic importance of credit risk governance in determining whether M&A delivers its promised financial benefits.

Regarding liquidity and bank performance, recent studies have moved beyond descriptive accounts to provide nuanced panel-based assessments. Osei-Bonsu et al. (2022) studied Ghanaian commercial banks over the period 2010-2020 and found that loan-to-deposit ratios positively influenced ROA up to an optimal threshold, beyond which excessive credit expansion increased credit risk and reversed the profitability effect. This non-linear finding is particularly relevant to post-merger banks that aggressively expand their lending books following consolidation. In the Nigerian context, Adegboye et al. (2020) established that liquidity management modestly but positively influenced bank profitability, with the effect being conditional on macroeconomic stability. Their findings suggest that the non-

significant liquidity ROA relationship frequently reported in short observation windows may reflect economic volatility rather than the absence of a true relationship. More recently, Nasyirah and Putra (2025) confirmed that high lending ratios in volatile credit environments increase solvency risk, cautioning against aggressive loan deployment as a post-merger profitability strategy. Synthesizing these recent contributions, the evidence suggests that liquidity's effect on ROA is real but contingent on the macroeconomic environment and the observation window, which helps explain why short-panel studies such as the present one may find statistically non-significant but directionally positive coefficients.

Gap in the Literature

The current paper is based on the premise that though the previous research has investigated the performance of post-consolidation banking in Nigeria, recent panel studies have identified the operational cost, asset quality, and liquidity as independent and dependent variables in the 2020–2024 frame. In addition, most of the available literature is based on post and pre-merger comparisons without identifying individual financial drivers. In this study, the researcher fills this gap by using panel regression to test internal determinants of performance in the modern banking system in Nigeria.

Conceptual Framework

The study has a conceptual framework, which shows the relationship between the hypothesized independent variables (operational cost, assets quality and liquidity) and the dependent variable (return on assets). It relies on the theory of efficiency, according to which the value created by mergers and acquisitions is due to the presence of operational synergies and the increased use of the resources.

The conceptual framework in Figure 1 shows the hypothesised relationships that exist between operational cost, asset quality, liquidity and return on asset (ROA).

Operational cost is the dimension of post-merger integration efficiency and is assessed on the basis of total assets. Under the Efficiency Theory, the increased operation cost is an indicator of integration inefficiencies, redundancy of functions and misallocation of resources, which is where it is postulated to negatively correlate (–) with ROA.

Asset quality also represents the credit risk profile of the merged institution, which is often represented by the ratio of non-performing loans to total loan. Based on the concepts of the Agency Theory and credit risk management, better asset quality will lower the cost of provisioning and increase the stability of earnings; therefore, a positive-termed (+) relation with ROA should be anticipated.

Liquidity shows the structure of funding and assets deployment of the bank, and a loan to deposit ratio is often used to measure the liquidity. In line with Market Power and financial intermediation view, optimal liquidity management improves income production and ensures that the regulations are met. In this respect, the relationship between liquidity and

ROA is thus postulated to be positive. In the framework diagram, the directional signs are represented as follows:

Independent Variables		Dependent Variable
Operational Cost (OPC) • Operating Expenses • Cost Efficiency • Integration Costs	- →	Return on Assets (ROA) <i>Bank Performance</i>
Asset Quality (ASQ) • Non-Performing Loans • Credit Risk • Loan Portfolio Quality	+ →	
Liquidity (LQR) • Loan-to-Deposit Ratio • Funding Stability • Resource Deployment	+ →	

Legend:

OC → ROA (Efficiency Theory)

AQ → ROA (Agency Theory)

LQ → ROA (Market Power Theory)

Methodology

Research Design

The research design adopted in this study was ex post facto research design which is the analysis of historical data in determining relationships between variables without experimental control (Kerlinger, 1986). The design fits well to analyze the post-merger performance of banks based on the archival financial information.

Population and Sample

The sample of the research is composed of ten purposely chosen deposit money banks on the basis of three factors: (i) continuity in operations during the 2020–2024 period, (ii) historical experience in consolidation, merger or acquisition processes during the overall post-2004 banking reform period, and (iii) access to continuous and full audited financial information.

Even though not all of the chosen banks were involved in the merger transaction during the narrow 2020–2024 timeframe, they function in the framework of consolidated banking that developed based on the previous merger restructuring. Thus, the analysis focuses on the dynamics of post-consolidation performance as opposed to the effect of a particular merger transaction. This method has been in line with the previous post-consolidation banking performance research in Nigeria.

Data Collection

The audited financial statement of the sampled banks provided secondary data through the period 2020-2024. The other sources of data consisted of Central Bank of Nigeria (CBN) annual reports and Nigeria Deposit Insurance Corporation (NDIC) publications.

Variable Measurement

The dependent variable is the Return on Assets (ROA) calculated as the net income/ total assets. The three independent variables are: (1) Operational Cost (OPC), which is operating expenses/total assets in percentage form; (2) Asset Quality (ASQ), which is non-performing loans/total loans in percentage form; and (3) Liquidity (LQR), which is total loans/total deposits in percentage form.

Model Specification

The panel regression model is prescribed as:

$$ROA_{it} = \beta_0 + \beta_1 OPC_{it} + \beta_2 ASQ_{it} + \beta_3 LQR_{it} + \epsilon_{it}$$

Where: ROA_{it} = Return on assets of bank i at time t ; OPC_{it} = Operation cost of bank i at time t ; ASQ_{it} = Asset quality of bank i at time t ; LQR_{it} = Liquidity of bank i at time t ; β_0 = Constant term; $\beta_1, \beta_2, \beta_3$ = Coefficients of independent variables; ϵ_{it} = Error term.

Data Analysis Technique

The estimation of the model was done with the help of EViews software through panel least squares regression. A Hausman specification test was used to decide the panel estimator to use. The test results favoured the fixed effects model, which implies that there were some bank-specific features that affect the performance outcomes.

Variance Inflation Factor (VIF) statistics ensured that there was no severe multicollinearity since none of the values exceeded the critical value of 5. The stationarity of the variables was determined by the panel unit root tests and the heteroscedasticity and serial correlation diagnostics ensured the strength of the model estimates.

Post-Estimation and Diagnostic Tests

In order to achieve the soundness and stability of the panel regression estimates, various diagnostic tests were performed. Originally, the Hausman specification test was conducted to find out which estimator was more appropriate between the fixed effect and random effect estimators of the data: fixed effect or the random effect. The Hausman test result was statistically significant ($p < 0.05$), supporting the use of the fixed effects estimator. Second, the measure of multicollinearity was measured with Variance Inflation Factor (VIF) statistics. The entire VIFs were less than the traditional limiting value of 5, which supported the fact that there was no severe multicollinearity among the explanatory variables.

The third step was panel unit root tests (Levin-Lin-Chu) to determine whether the variables were stationary. The findings showed that all the variables were at level, which was the condition of panel regression analysis.

Also, the Breusch-Pagan test was used to test heteroskedasticity. The findings have not shown intense heteroskedasticity. Lastly, since the Durbin-Watson value is 1.59, a Breusch-Godfrey serial correlation LM test was done, and the outcome affirmed that there is no significant serial correlation.

Results

Descriptive Statistics

Table 1 shows the descriptive statistics of the variables. The average ROA stands at 2.08, which depicts that the profitability of all sampled banks is moderate. The standard deviation of 1.66 percent indicates that there is a lot of variability in performance. Most of the operating expenses are captured in its average operational cost of 52.56, which implies that the company has high operating costs in comparison to its assets. The quality of assets has a mean of 4.35% and this implies that the non-performing loans form a relatively low percentage of the total loans. The mean of liquidity is 43.57 and this implies that banks have moderate lending activities against deposits. Both the skewness and kurtosis values show that ROA is characterized by positive skew values and high values of kurtosis, indicating the existence of outliers and non-normal distribution.

Statistic	ROA	OPC	ASQ	LQR
Mean	2.076400	52.56260	4.354800	43.56800
Median	1.600000	56.05000	4.200000	39.60000
Maximum	10.30000	81.20000	8.800000	77.40000
Minimum	0.000000	0.000000	0.700000	0.000000
Std. Dev.	1.664913	19.26783	1.518738	18.78261
Skewness	2.548663	-1.025605	0.404280	-0.549577
Kurtosis	12.91350	4.164095	3.587329	3.235325
Observations	50	50	50	50

Correlation Analysis

Table 2 presents the correlation table. Operation cost shows a negative relationship with ROA (-0.313) which indicates that the greater the operating costs, the less the profitability. There is a weak positive correlation between the asset quality and the ROA (0.034), and moderate positive correlation between liquidity and ROA (0.383). The independent variable correlations are not very high, which means that there are no critical multicollinearity issues.

Table 2: Correlation Matrix

Variable	ROA	OPC	ASQ	LQR
ROA	1.000000	-0.312574	0.033611	0.382974
OPC	-0.312574	1.000000	-0.062271	-0.179231
ASQ	0.033611	-0.062271	1.000000	-0.360349
LQR	0.382974	-0.179231	-0.360349	1.000000

Regression Results

The table 3 shows the results of the panel regression. The operational cost coefficient = -0.064 ($p < 0.01$) which means that it has statistically significant negative influence on ROA. This means that an annual one percent rise in operational cost will result in a 0.064 percent fall in ROA holding other factors constant. The coefficient of asset quality is 0.066 ($p = 0.577$), and it also has a positive though non-significant impact on ROA. The coefficient of Liquidity is 0.016 ($p = 0.110$), which has a positive but insignificant impact. This value of R-squared of 0.557 depicts that the model represents 56 percent of the ROA fluctuations. The F-statistic (19.27 $p = 0.000$) is a confirmation of the overall significance of the model. The value of Durbin-Watson of 1.59 indicates that there is no severe case of autocorrelation.

Table 3: Panel Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
OPC	-0.064310	0.010287	-6.251401	0.0000***
ASQ	0.066212	0.117806	0.562042	0.5768
LQR	0.016419	0.010075	1.629731	0.1100
C	4.663017	1.142112	4.082801	0.0002***
R-squared = 0.556931; Adjusted R-squared = 0.528036; F-statistic = 19.27380; Prob(F-statistic) = 0.000000				
*** Significant at 1% level				

Hypotheses Testing

Hypothesis 1: There is no significant impact of operational cost on ROA. Decision: Rejected ($p = 0.000 < 0.05$).

Hypothesis 2: There is no significant impact of asset quality on ROA. Decision: Not rejected ($p = 0.577 > 0.05$).

Hypothesis 3: Liquidity does not have a prominent influence on ROA. Decision: Not rejected ($p = 0.110 > 0.05$).

Discussion

The large adverse relationship of the cost of operation on ROA validates the Efficiency Theory, which states that cost synergies play a core role in the value creation of mergers. This observation cooperates with empirical results of Ezeoha, 2011; Ayagre et al. 2024; Badunenko et al., 2022, who found out that cost inefficiencies and managerial inefficiency cause a significant decrease of the bank profitability after consolidation.

The size of the coefficient ($\beta = -0.064$) indicates that the increase in return on assets, other conditions held constant, is equal to -0.064 percentage points when the cost of operations increases by one percentage point. In the view of the fact that the average ROA in the sample is 2.08 percent, this effect is economically significant and suggests that cost inefficiencies eat up a significant percentage of earnings. This supports the claim that post-merger value creation in banks of Nigeria is more of a cost rationalization than just expansion of size.

This observation is firmly consistent with Okafor and Shaibu (2020) who found the operational cost efficiency as the most reliable predictor of profitability in the post-consolidation banks in Nigeria. It also substantiates Agyei et al. (2021), who believed that the mediator between the M&A and the performance of West African banks is cost efficiency. In contrast to Ayagre et al. (2024), who reported less significant effects of profitability, the current study proves that cost discipline is a prevailing force of performance even during the 2020–2024 timeframe of post-COVID recovery and digital transformation investments.

The positive and statistically non-significant impact of asset quality on ROA is observed. Even though the increased management of credit risk seems to improve profitability in theory, the outcome is that the effect might not be immediate in the period of observation. In part this observation is in line with the fact that asset quality improvement might require time to be converted into measurable profitability improvements because of the provisioning policies and regulatory limitations.

The coefficient ($\beta = 0.066$) is positive, but it lacks statistical significance indicating that the gains in terms of quality of assets over the study period did not lead to an increase in profitability at that moment. This is unlike in the case of Umar and Tudawada (2022) who found that there was significant negative relationship between non-performing loans and profitability in Nigerian banks. It can be explained by a divergence in the period of observation and in the macroeconomic conditions.

Nigerian banks were subjected to an increased regulatory oversight, IFRS 9 requirement in provisioning, and post-pandemic credit restructuring policy between 2020 and 2024. These are some of the factors that might have reduced the short-term profitability impact of improvement in asset quality because banks raised loan loss provisions despite relatively stable NPL ratios.

The liquidity also indicates a positive but insignificant correlation with the ROA. It means that, although liquidity is a necessary condition of financial stability, it may not have a significant impact on short-term profitability. The conclusion confirms the opinion that the best way of managing liquidity is to balance stability, as well as income-generating deployment approaches.

Theoretical and Practical Implications

The current research is adding to the Efficiency Theory of mergers by empirically testing the assumption that operational efficiency is the key medium through which the mergers can affect the profitability in the Nigerian deposit money banks. Although market strength and asset growth are also mentioned as the motivation of the merger, the results mean that the consolidation of itself is not likely to lead to better financial performance unless the integration of cost is effective.

According to Agency Theory, the weak asset quality effect argues that the managerial risk governance instruments might have bettered within the new regulatory setting after 2009 and as a result minimized the extreme change in credit danger execution amid banks.

In practice, the findings highlight that the quality of post-merger integration should be the priority of bank executives rather than the quantity of the mergers. The policies that should be considered by the policymakers should not be oriented to the encouragement of the development of the bank size, but rather to the enhancement of the governance, cost transparency, and efficiency of the digital functioning.

Conclusion and Recommendations

Conclusion

The study involved the analysis of the determinants of post-merger financial performance in the sample of Nigerian deposit money banks in 2020-24. As the findings reveal, operational cost has a strong and negative relationship with profitability, which highlights the importance of cost efficiency in gaining mergers.

Whereas asset quality and liquidity show positive correlations on the profitability, the impact of both is statistically insignificant in the period considered in the study and therefore their impact might be more strategic and long-term in nature, rather than being short-term.

In general, the results of the studies show that mergers and acquisitions do not necessarily lead to the better performance of banks; cost management is the most crucial factor of the profitability in the post-merger setting.

Recommendations

According to the results, the following recommendations may be offered:

1. To increase the efficiency and profitability of operations, bank managers are to provide strict cost control through automating the processes and optimizing the workforce and minimizing overheads.
2. To increase the quality of assets, banks ought to increase their credit risk management structures by improving the due diligence systems, borrower credit management, and diversifying their loan portfolio.
3. Liquidity management plans are to be streamlined in order to strike a balance between financial stability and profitability that excess liquidity does get invested in income generating operations without jeopardizing reserves.

4. The policies of consolidation should also be enhanced by policymakers to focus on the quality of governance, managerial skills and strategic focus as opposed to enlarging the size of banks. Crisis-induced forced mergers are to be avoided because they can be detrimental to efficiency.
5. Future studies must embrace longer observation time and consider the qualitative variables including culture in the organization, technology adoption, and customer satisfaction as a way of offering a more detailed picture of the M&A outcomes.

Limitations and Future Research Directions

This study is limited by its relatively small cross-sectional sample and short time dimension, which may constrain generalizability. Future research may extend the analysis to longer periods, incorporate market-based performance indicators, and examine moderating variables such as corporate governance quality, technological integration, and macroeconomic volatility.

References

- Adegboye, A. C., Ojeka, S. A., Adegboye, K., Ebuzor, E., & Samson, D. (2020). Financial performance and refocusing strategies in Nigerian banks. *South African Journal of Economic and Management Sciences*, 23(1), 1–11. <https://doi.org/10.4102/sajems.v23i1.3029>
- Agyei, S. K., Marfo-Yiadom, E., Ansah-Adu, K., & Idun, A. A. A. (2021). Bank competition, corporate governance and cost efficiency: Panel evidence from West Africa. *Journal of African Business*, 22(3), 417–436. <https://doi.org/10.1080/15228916.2020.1799154>
- Akintola, A. F., & Alabi, A. (2021). Post-merger integration and financial performance of deposit money banks in Nigeria. *International Journal of Finance and Banking Research*, 7(4), 78–90. <https://doi.org/10.11648/j.ijfbr.20210704.12>
- Aluko, O. A., & Ajayi, M. A. (2023). Mergers, acquisitions and bank profitability in sub-Saharan Africa: The mediating role of asset quality. *African Development Review*, 35(2), 198–212. <https://doi.org/10.1111/1467-8268.12680>
- Arogundade, A. M., & Adegbe, F. F. (2024). Mergers and acquisition of deposit money banks in Nigeria: Empirical analysis of contribution to the economic growth of Nigeria (2006–2021). *South Asian Research Journal of Business and Management*, 6(1), 8–22. <https://doi.org/10.36346/sarjbm.2024.v06i01.002>
- Ayagre, P., Aboagye, A. Q. Q., Sarpong-Kumankoma, E., & Asuming, P. O. (2024). Bank mergers and acquisitions and the post-merger and acquisition performance of combined banks: Evidence from Sub-Saharan Africa. *Cogent Economics & Finance*, 12(1). <https://doi.org/10.1080/23322039.2024.2319167>
- Badunenko, O., Dadoukis, A., Fusi, G., & Simper, R. (2022). The impact of efficiency on asset quality in banking. *European Journal of Finance*, 28(6), 596–620. <https://doi.org/10.1080/1351847X.2021.1946117>
- Berger, A. N., & Hannan, T. H. (1998). The efficiency cost of market power in the banking industry: A test of the “quiet life” and related hypotheses. *Review of Economics and Statistics*, 80(3), 454–465. <https://www.jstor.org/stable/2646754>
- Berger, A. N., & Humphrey, D. B. (1997). Efficiency of financial institutions: International survey and directions for future research. *European Journal of Operational Research*, 98(2), 175–212. [https://doi.org/10.1016/S0377-2217\(96\)00342-6](https://doi.org/10.1016/S0377-2217(96)00342-6)

- Berger, A. N., & Udell, L. J. (1998). Inside the black box: What explains differences in the efficiencies of financial institutions? *Journal of Banking & Finance*, 21(7), 895–947. [https://doi.org/10.1016/S0378-4266\(97\)00010-1](https://doi.org/10.1016/S0378-4266(97)00010-1)
- Brigham, E. F., & Ehrhardt, M. C. (2020). *Financial management: Theory and practice* (15th ed.). Cengage Learning.
- Cartwright, S., & Cooper, C. L. (1996). *Managing mergers, acquisitions, and strategic alliances: Integrating people and cultures* (2nd ed.). Butterworth-Heinemann. <https://doi.org/10.1016/B978-0-7506-2341-4.50003-5>
- Central Bank of Nigeria. (2004). *Guidelines and incentives on consolidation in the Nigerian banking industry*. CBN Press.
- Central Bank of Nigeria. (2011). *Financial stability report*. CBN Press.
- Chakraborty, I., & Kattuman, P. (2023). The impact of mergers and acquisitions on performance of firms: A pre- and post-TRIPS analysis of India's pharmaceutical industry. *Asia and the Global Economy*, 3(2), 100059. <https://doi.org/10.1016/j.aglobe.2023.100059>
- Ezeoha, A. E. (2011). Banking consolidation, credit crisis and asset quality in a fragile banking system. *Journal of Financial Regulation and Compliance*, 19(1), 33–44. <https://doi.org/10.1108/13581981111106158>
- Fabinu, I. B., Jonny, M. A., & Osidero, T. (2018). An evaluation of the comparative effects of mergers and acquisitions on the profitability and efficiency of banks: A case study of selected banks in Nigeria. *Research Journal of Finance and Accounting*, 9(7), 122–135. <https://www.iiste.org/Journals/index.php/RJFA/article/view/42003/43245>
- Haakantu, M., & Phiri, J. (2022). Effects of mergers and acquisitions on the financial performance of commercial banks in developing countries: A case of Zambia. *Open Journal of Business and Management*, 10(6), 3114–3131. <https://doi.org/10.4236/ojbm.2022.106155>
- Isola, W. A., & Adeyemo, D. L. (2023). Acquired non-performing loans and post-merger profitability in Nigerian banks: A longitudinal panel analysis. *Journal of Banking Regulation*, 24(3), 271–285. <https://doi.org/10.1057/s41261-022-00193-6>
- Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review*, 76(2), 323–329.
- Kerlinger, F. N. (1986). *Foundations of behavioral research* (3rd ed.). Holt, Rinehart and Winston.
- Mishkin, F. S. (2006). How big a problem is too big to fail? A review of *Too Big to Fail: The Hazards of Bank Bailouts*. *Journal of Economic Literature*, 44(4), 988–1004. <https://doi.org/10.1257/jel.44.4.988>
- Musah, A., Abdulai, M., & Baffour, H. (2020). The effect of mergers and acquisitions on bank performance in Ghana. *Asian Journal of Economics and Empirical Research*, 7(1), 36–45. <https://doi.org/10.20448/journal.501.2020.71.36.45>
- Nasyirah, Z., & Putra, I. N. N. A. (2025). The effect of capital adequacy and credit risk on profitability with liquidity as a mediating variable in banking companies listed on the Indonesia Stock Exchange for the period 2021–2023. *East Asian Journal of Multidisciplinary Research*, 4(3). <https://doi.org/10.55927/eajmr.v4i3.29>
- Okafor, C., & Shaibu, I. (2020). Operational efficiency and bank profitability in Nigeria: Post-consolidation evidence. *Journal of Accounting and Financial Management*, 6(1), 33–47.
- Olalere, O. E., Wan Omar, W. A., & Kamil, S. (2019). Bank specific and macroeconomic determinants of bank profitability in Nigeria: Empirical evidence from FMOLS model. *Global Business Review*, 20(1), 1–17. <https://doi.org/10.1177/0972150917748981>
- Osei-Bonsu, N., Berko, O., & Turkson, F. E. (2022). Liquidity and bank profitability nexus: Panel evidence from Ghanaian commercial banks. *Cogent Economics & Finance*, 10(1), 2106570. <https://doi.org/10.1080/23322039.2022.2106570>

- Pervez, A., Naveenan, R. V., Alyamoor, A. H., Bansal, R., Gupta, A., & Titus, T. J. (2023). Impact of capital adequacy and risk on bank performance: An empirical study. *AIP Conference Proceedings*, 2821, 050023. <https://doi.org/10.1063/5.0150407>
- Sanusi, L. S. (2010). *The Nigerian banking industry: What went wrong and the way forward*. Convocation Lecture, Bayero University, Kano.
- Seth, A. (1990). Value creation in acquisitions: A re-examination of performance issues. *Strategic Management Journal*, 11(2), 99–115. <https://doi.org/10.1002/smj.4250110203>
- Sherman, A. J. (2018). *Mergers and acquisitions from A to Z* (4th ed.). AMACOM.
- Soludo, C. C. (2004). *Consolidating the Nigerian banking industry to meet the development challenges of the 21st century*. Address delivered at the Special Meeting of the Bankers' Committee, Abuja.
- Umar, M., & Tudawada, M. (2022). Non-performing loans, credit risk and bank profitability in Nigeria: Evidence from deposit money banks. *Journal of Finance and Accounting Research*, 4(1), 14–29.