



Effect of Risk Management on Financial Performance of Deposit Money Banks in Nigeria

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Abstract:

The study investigated the effect of risk management on financial performance of deposit money banks in Nigeria. The study employed ex post facto research design. This design is chosen and applied because of the fact that the various elements of the design are not under the control of the researcher. The data for this study already exists hence; it is used for secondary data study. The population for this study consisted of twenty-six (26) listed deposit money banks in Nigeria spanning between 2010-2022. This study employed the judgment sampling technique. The sample size is made up of two (2) DMBs which includes United Bank for Africa Plc, Fidelity. Data for this study were collected from the published financial statements of the selected listed deposit money banks in Nigeria. This study used estimated technique of both descriptive statistics and Ordinary least square (OLS) regression analysis method with the help of E-view-9 software. The study specifically concluded that net interest margin (NIM) is a statistically significant predictor of gross profit (GP), while loan loss provision (LLP) is not statistically significant at the 0.05 significance level. The study also established that net interest margin is statistically significant and has a positive effect on operating income (OI). However, loan loss provision is not statistically significant and does not appear to have a significant effect on operating income. The researchers suggested that Deposit money banks should continually strengthen their risk assessment processes and implement robust risk mitigation strategies to minimize potential losses.

Keywords: Risk Management, Net Interest Margin, Financial Performance.

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1. INTRODUCTION

1.1. Background of the study

The financial performance of banks is crucial for investors, stakeholders, and the economy, reflecting resource utilization efficiency and profitability. Key metrics like the cost-to-income ratio, operating income, and gross revenue are utilized to assess bank profitability, with a focus on gross revenue and net income (Ozcalici & Bumin, 2020; Amelia, 2017). Gross revenue is vital for evaluating profitability, reflecting resource effectiveness and providing insights into underlying factors driving changes (Osho & Olusolaomole, 2022). Conversely, operating income evaluates revenue conversion into profits solely from operational activities, excluding non-operational expenses (Barauskaite & Streimikiene, 2020). It offers insights into revenue generation efficiency and expense management, with a rising trend generally viewed positively by investors (FastARfunding, 2020).

Risk management is a pivotal aspect of organizational strategy, encompassing the identification, assessment, and prioritization of risks to determine which to avoid, reduce, or exploit for achieving objectives (Chuke & Chinedu, 2018). Acknowledging that risk is inherent in every human endeavor, particularly in financial institutions where operations are piloted by humans, it's imperative for banks to proactively manage risks to mitigate potential challenges (Edor, 2021). Among the prominent challenges faced by banks are slack credit standards, poor portfolio risk management, and economic fluctuations, all of which can jeopardize a bank's stability and solvency. Given the centrality of risk in banking operations, risk management assumes a critical role in shaping business decisions and ensuring the soundness of financial institutions (Chuke & Chinedu, 2018). Deposit money banks, being major players in the financial services sector, undertake various risks, with credit risk being predominant due to the lending-centric nature of banking activities (Ademola & Ismaila, 2022). The loan portfolio, constituting the largest asset and revenue source for banks, also represents a significant source of risk, underscoring the importance of effective risk management practices (Duque-Grisales & Aguilera-Caracue, 2019). Loan loss provisions serve as a vital risk management tool for banks to mitigate expected losses on loan portfolios by setting aside specific amounts to absorb potential losses due to credit defaults, thereby enhancing banks' safety and soundness (Duque-Grisales & Aguilera-Caracue, 2019).

Net interest margin (NIM) analysis is another crucial aspect of bank performance evaluation, reflecting the difference between interest income from lending activities and interest expenses paid to lenders (Jufri, 2021). A positive NIM indicates profitability and operational efficiency, while negative values signify potential financial challenges that require immediate attention (Sunny, 2020). Factors such as monetary policies, supply-demand dynamics, and diversification into non-interest income streams influence NIM, highlighting the multifaceted nature of financial performance evaluation in banking (Sunny, 2020). Ultimately, effective risk management and prudent financial performance evaluation are essential for maintaining the stability, resilience, and long-term viability of deposit money banks in dynamic economic environments.

1.2. Statement of the problem

Banking crises in Nigeria have highlighted the diverse risks faced by banks, including asset quality deterioration due to equity market downturns (Edor, 2021). These crises have led to liquidity constraints, hindering banking operations and resulting in credit shortages, eroding public trust in banks and impacting the financial system and broader economy (Dordum et al., 2021). Despite improvements, Nigerian banks still struggle with loan defaults, necessitating adjustments like loan loss provisions to address evolving lending-related losses (Corporate Finance Institute, 2020). Inadequate risk management has been a significant factor in the past failures of many Nigerian banks, underlining the urgent need for effective risk mitigation strategies (Edor, 2021). Understanding the impact of risk management on financial performance is crucial, yet existing studies yield conflicting results, indicating the need for further investigation into the relationship (Inegbedion et al., 2020; Alnabulsi et al., 2023; Ademola & Ismaila, 2022). Therefore, this study aims to examine the effect of risk management on the financial performance of Nigerian deposit money banks, offering insights for stakeholders, policymakers, and regulators.

1.3. Aim/Objectives of the Study

The aim of this study is to investigate the effect of risk management on financial performance of deposit money banks (DMBs) in Nigeria. Specifically, the study will:

- i. Determine the effect of loan loss provision on gross revenue of DMBs in Nigeria.
- ii. Determine the effect of loan loss provision on operating income of DMBs in Nigeria.

- iii. Determine the the effect of net interest margin on gross revenue of DMBs in Nigeria.
- iv. Determine the effect of net interest margin on operating income of DMBs in Nigeria.

1.4. Research Hypotheses

H₀₁: There is no significant effect of loan loss provision on gross revenue of DMBs in Nigeria.

H₀₂: There is no significant effect of loan loss provision on operating income of DMBs in Nigeria.

H₀₃: There is no significant effect of net interest margin on gross revenue of DMBs in Nigeria.

H₀₄: There is no significant effect of net interest margin on operating income of DMBs in Nigeria.

2. LITERATURE REVIEW

2.1. Conceptual review

2.1.1.1. Risk management

Risk management entails systematically identifying, assessing, and controlling various risks like financial, legal, and strategic to protect an organization's capital and earnings (Yin et al., 2022). These risks, stemming from factors like financial instability and legal obligations, can result in minor costs or severe consequences such as financial distress (Yin et al., 2022). Effective risk management involves allocating resources to minimize negative events while maximizing positive outcomes (Yin et al., 2022). John (2020) defines a risk management framework as foundational components guiding risk management practices aligned with operational policies and strategic objectives. Effective credit risk management in financial institutions requires a deep understanding of portfolio composition, industry concentrations, and robust policies to control individual loan and portfolio risks (Nguyen & Vo, 2020).

2.1.1.2. Loan Loss Provision

Loan loss provisions are vital expenses for banks, aiding in anticipating and covering potential losses from uncollected loans, contributing to loan loss reserves on the balance sheet (Corporate Finance Institute, 2020). These provisions impact financial system stability and banks' profitability, influencing their ability to supply credit to the economy (Ozili & Outa, 2017). Effective provisioning enables banks to anticipate losses and maintain their capital base, with well-managed banks typically exhibiting lower provisions and higher profitability (Malik et al., 2022; Mulyanto et al., 2021). Additionally, factors like political instability can affect a bank's profitability, with historical instability having a more significant impact than current conditions (Ademola & Ismaila, 2022).

2.1.1.3. Net Interest Margin

Net Interest Margin (NIM) is a vital profitability measure for banks, reflecting investment success relative to expenses incurred (Camino-Mogro et al., 2019). It's calculated by subtracting interest expenses from investment income and dividing by average earning assets, indicating the difference between interest income and payments to lenders (Res et al., 2019; Shrivastava et al., 2019). Comparable to gross margin in non-financial firms, NIM considers volume and nature of earning assets and borrowed funds, crucial for assessing financial performance (Mushafiq et al., 2021). Differences in NIM among firms can be attributed to variations in resource endowments, as per the resource-based view theory (Wernerfelt, 1984). In essence, NIM offers insights into a bank's investment and liability management efficiency, essential for evaluating profitability.

2.1.2. Financial performance

Financial performance, crucial for assessing a firm's health and effectiveness, involves measuring outcomes in monetary terms over time (Minority Business Development Agency, 2020). Determinants include internal factors like revenue and costs, and external factors such as competition and market share, impacting profitability indirectly (Minority Business Development Agency, 2020). Financial strength and stability are pivotal for revenue generation, cash flow maintenance, and shareholder returns, influencing valuation and stock prices (Barauskaite & Streimikiene, 2020). Ultimately, optimizing revenue generation, cost management, and cash flow to support growth are essential for enhancing financial performance (Soyemi, 2019; Ayuba et al., 2019).

2.1.2.1. Gross Revenue

Gross revenue signifies a business's total sales before deductions, while net revenue deducts discounts and returns to reflect actual cash received (Authority, 2017). While gross revenue can be used to evaluate a business, overemphasizing it may lead to issues like product returns and reputation damage (Onsongo et al., 2020). Thus, while gross revenue indicates sales performance, net revenue is a more insightful metric as it reflects actual cash flow.

2.1.2.2. Operating income

Operating income, also referred to as earnings before interest and taxes (EBIT), is a key indicator of a company's profitability before non-operating expenses like interest and taxes are factored in. It reflects adjusted revenue after deducting all operating expenses and depreciation, focusing solely on expenses related to normal business operations. Gross profit, supporting operating expenses and net earnings, is pivotal in evaluating future profitability (Edwards, 2016). It aids in predicting earnings surprises by removing nonrecurring expenses, providing a reliable signal about earnings growth sustainability (Chiu & Haight, 2014). Operating expenses (OPEX), crucial business expenditures, are distributed in proportion to revenues across different divisions, highlighting the importance of understanding the relationship between gross profit, operating expenses, and operating income in assessing a company's financial health and future performance.

2.2. Theoretical review

2.2.1. Commercial Loan Theory

The Real Bills Doctrine, articulated by Adam Smith in "Wealth of Nations" (1776), advocates for commercial banks to provide short-term self-liquidating productive loans to businesses, ensuring liquidity and minimizing bad debt risks (Smith, 1776). Loans under this doctrine should finance the production and circulation of goods, leading to self-liquidation, with central banks ensuring liquidity against these loans. This theory's relevance lies in promoting short-term self-liquidating loans, aligning with deposit money banks' objectives and contributing to economic stability and growth.

2.3. Empirical Review

Edor (2021) examines risk management implications on Nigerian deposit money banks' performance, finding a positive relationship between risk management practices and financial performance, emphasizing the need for prudent risk management to protect investor interests. Inegbedion et al. (2020) focus on commercial banks, highlighting the impact of various risks on profitability, advocating for effective risk management, especially regarding credit, capital adequacy, leverage, and liquidity. Malik et al. (2022) explore earning management practices' association with financial distress, noting a significant positive link between discretionary and non-discretionary loan loss provisions and financial distress, suggesting implications for regulatory measures. Mulyanto et al. (2021) investigate

the effect of allowance for impairment losses, non-performing loan ratio, and third-party funds on capital adequacy ratio, stressing the significance of these factors for bank stability. Ozili and Outa (2017) review bank loan loss provisioning literature, highlighting advancements, challenges, and suggesting future research directions, addressing issues such as income smoothing and regulatory measures.

Chuke and Chinedu (2018) analyze the impact of credit risk management on deposit money banks' performance, finding positive effects on total loans, return on asset, and return on equity, recommending enhanced risk control measures. Ademola and Ismaila (2022) examine risk and stability in Nigerian deposit money institutions, identifying substantial impacts of credit and liquidity risks on financial performance, suggesting a need for effective risk management strategies. Kumar (2018) evaluates financial risk and performance trends, highlighting successful risk management strategies in maintaining financial stability. Anthony and Shence (2018) investigate credit risk's impact on bank profitability, emphasizing the need for improved risk management practices for enhanced profitability. Imola (2017) analyzes credit risk in the Romanian banking sector, identifying correlations between risk types and return on asset, emphasizing banks' ability to manage risks concurrently for revenue generation.

The studies emphasize risk management's critical role in ensuring bank stability and profitability, addressing diverse risks such as credit, liquidity, and operational risks. They advocate for tailored regulatory measures targeting specific risk factors like loan loss provisioning and credit risk management. These insights contribute to the discourse on banking risk management, guiding policymakers, regulators, and bank stakeholders in enhancing financial resilience and performance.

2.4. Gap in Literature

Previous studies on risk management and financial performance of Nigerian deposit money banks yielded mixed results, lacking consensus (Edor, 2021; Inegbedion et al., 2020). Variations in scope, sample size, and analysis techniques may contribute to this inconsistency (Yusuf, 2019; Imola, 2017; Anthony & Shence, 2018). This study adopts a novel approach by using Loan Loss Provision and Net Interest Margin to proxy risk management, and Gross Revenue and Operating Income as measures of financial performance, focusing on two commercial banks in Nigeria (United Bank for Africa Plc and Fidelity Bank Plc), contributing significantly to the existing body of knowledge.

3. METHODOLOGY

The research design employed in this study is ex post facto, chosen due to the unalterable nature of the data which already exists and is used for secondary analysis. The target population comprises twenty-two listed deposit money banks in Nigeria spanning between 2010-2022. Utilizing a judgment sampling technique, the study selected two deposit money banks, namely United Bank for Africa Plc and Fidelity Bank Plc, for the analysis. This is due to its cost-effectiveness, convenience, and suitability for exploratory research (Appah, 2020; Oladimeji, 2017). Data were sourced from published financial statements of the selected banks obtained from the Nigerian Exchange Group website, ensuring the study's reliance on refined and audited facts to enhance external validity. The data analysis method involves descriptive statistics and Ordinary Least Square (OLS) regression using E-View-9 software, with statistical tests including R², Durbin-Watson (DW), F-ratio, and t-test, with a significance level of 5% (0.05). The model is expressed as follows:

$$GRit = \beta + \log \beta_1 \log LLPit + \beta_2 \log NIMit + eit$$

$$OIit = \beta + \log \beta_1 \log LLPit + \beta_2 \log NIMit + eit$$

Where:

GR = Gross Revenue

OI = Operating income

LLP = Loan Loss Provision

NIM = Net Interest Margin

T = Time period under study

Log = Natural log of the variables

β = constant.

4. RESULTS AND DISCUSION

4.1. Data analysis

Data analysed here were the properties of risk management (Loan Loss Provision, Net Interest Margin) and financial performance (Gross Revenue, Operating income) of deposit money banks in Nigeria.

Table 4.1 Descriptive Statistics

	LLP	NIM	GR	OI
Mean	2.934828	5.256206	4.390937	4.904421
Median	3.400711	5.314297	4.602960	4.914475
Maximum	3.761778	5.537177	5.126118	5.337070
Minimum	2.164353	4.694842	3.335859	4.421291
Std. Dev.	0.691090	0.215745	0.431315	0.244521
Skewness	-0.206103	-1.253585	-0.810972	-0.309326
Kurtosis	1.093376	4.002781	2.960926	2.470409
Jarque-Bera	3.963676	7.595284	2.741905	0.690830
Probability	0.137816	0.022424	0.253865	0.707927
Sum	73.37069	131.4052	109.7734	122.6105
Sum Sq. Dev.	11.46252	1.117105	4.464785	1.434974
Observations	26	26	26	26

Source: Eview9 output computed by the author

Table 4.1 displays descriptive statistics for four key variables: Loan Loss Provision (LLP), Net Interest Margin (NIM), Gross Revenue (GR), and Operating Income (OI), encompassing measures of central tendency, dispersion, skewness, kurtosis, and normality. Mean values for LLP, NIM, GR, and OI are approximately 2.935, 5.256, 4.391, and 4.904, with standard deviations around 0.691, 0.216, 0.431, and 0.245, respectively. The data indicates slight to moderate left-skewness and moderately heavy tails for GR and OI, slightly heavy tails for LLP and NIM, and deviations from normality based on Jarque-Bera test statistics, offering insights for tailored statistical analysis.

Decision Rule

Reject null hypothesis if PV is less than 0.05, otherwise accept.

Test of Hypotheses 1 and 3

H₀₁: There is no significant effect of loan loss provision on gross revenue of DMBs in

Nigeria.

H₀₃: There is no significant effect of net interest margin on gross revenue of DMBs in Nigeria.

Table 4.2: Panel regression analysis of LLP, NIM effect on gross revenue

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.514692	1.860396	-0.814177	0.4243
LLP	-0.175865	0.098719	-1.781466	0.0886
NIM	1.221749	0.316224	3.863550	0.0008
R-squared	0.671637	Mean dependent var		4.390937
Adjusted R-squared	0.641786	S.D. dependent var		0.431315
S.E. of regression	0.258146	Akaike info criterion		0.241586
Sum squared resid	1.466069	Schwarz criterion		0.387851
Log likelihood	-0.019822	Hannan-Quinn criter.		1.282153
F-statistic	22.49955	Durbin-Watson stat		1.982986
Prob(F-statistic)	0.000005			

Source: Eview9 output computed by the author

The panel regression analysis reveals that Net Interest Margin (NIM) significantly predicts Gross Revenue (GR), indicating that an increase in NIM corresponds to a notable increase in GR. However, Loan Loss Provision (LLP) does not show statistical significance at the conventional threshold, though it exhibits borderline significance. The model's strong goodness of fit, reflected in the high R-squared value, suggests that the independent variables explain a substantial portion of the variance in Gross Profit. Furthermore, the overall model is statistically significant, indicating the presence of at least one significant independent variable. The Durbin-Watson statistic suggests minimal autocorrelation in the residuals. These results highlight the crucial role of NIM in influencing GR and suggest avenues for further exploration into factors affecting LLP.

Test of Hypotheses 2 and 4

H₀₂: There is no significant effect of loan loss provision on operating income of DMBs in Nigeria.

Table 4.3: Panel regression analysis of LLP, NIM effect on operating income.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.048186	0.616530	-0.078157	0.9384
LLP	-0.041230	0.031991	-1.288802	0.2103
NIM	0.964888	0.106708	9.042299	0.0000
R-squared	0.857840	Mean dependent var		4.898478
Adjusted R-squared	0.845478	S.D. dependent var		0.241489
S.E. of regression	0.094928	Akaike info criterion		- 1.763237
Sum squared resid	0.207259	Schwarz criterion		- 1.618072
Log likelihood	25.92208	Hannan-Quinn criter.		- 1.721434
F-statistic	69.39467	Durbin-Watson stat		1.128411
Prob(F-statistic)	0.000000			

Source: Eview9 output computed by the author

The panel least squares regression analysis reveals that Net Interest Margin (NIM) significantly and positively affects Operating Income (OI), while Loan Loss Provision (LLP) does not exert a significant effect. The model explains approximately 85.78% of the variation in OI, indicating a good fit, supported by a high R-squared value of 0.857840 and adjusted R-squared value of 0.845478. The overall statistical significance is confirmed by a high F-statistic of 69.39467 and a low p-value, with minimal autocorrelation in the residuals indicated by the Durbin-Watson statistic of approximately 1.128411.

4.2. Discussion of Findings

The study's findings reveal that net interest margin (NIM) significantly predicts gross revenue (GR), whereas loan loss provision (LLP) does not at the 0.05 significance level, aligning with previous research (Alnabulsi et al., 2023). NIM's impact on operating income (OI) is positive and statistically significant, contrasting with the non-significant effect of non-performing loans (NPL) on OI (Alnabulsi et al., 2023). Various factors, including credit risk, loan growth, operating costs, and economic indicators, significantly influence interest margins and profitability (Ini et al., 2016). Additionally, the study confirms the negative association between NPLs and profitability, as well as the impact of credit risk and liquidity risk on financial performance, consistent with prior research (Malik et al., 2022; Ademola & Ismaila, 2022). Effective risk management is crucial for financial stability and profitability, as evidenced by previous studies (Imola, 2017; Kumar, 2018). Overall, the study underscores the importance of understanding the complex interplay between risk factors and financial performance in banking operations (Mulyanto et al., 2021).

5. CONCLUSION AND RECOMMENDATIONS

Effective risk management significantly shapes the financial performance of deposit money banks in Nigeria, impacting profitability, market reputation, and resilience in a dynamic economic landscape. Mitigating risks such as credit, market, operational, and liquidity risks contributes to financial health and stability, reducing costs associated with loan defaults and enhancing net income. Improved investor, customer, and regulatory confidence lead to increased deposits and investments, facilitating exploration of innovative financial products and services, diversification of revenue streams, and overall performance enhancement. While net interest margin emerges as a crucial predictor of gross revenue and operating income, prudent risk management strategies are vital for the long-term success and stability of deposit money banks in Nigeria. In line with the findings, the researchers suggested that;

1. Deposit money banks should continually strengthen their risk assessment processes and implement robust risk mitigation strategies to minimize potential losses.
2. Policymakers should embrace innovative technological solutions to enhance risk management capabilities, enabling real-time monitoring and predictive analytics for better risk forecasting.
3. Policymakers should ensure compliance with regulatory capital adequacy requirements to maintain financial stability, absorb potential losses, and withstand adverse economic conditions.
4. Management should foster a culture of risk awareness and accountability across all levels of the organization through proactive risk management practices, knowledge sharing, and training programs.

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