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EFFECT OF FINANCIAL RISK ON PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

Financial risks have significantly impacted the profitability of deposit money banks (DMBs), particularly through operational and solvency risks. Traditional operational pitfalls, coupled with challenges in compliance and environmental disturbances, contribute to operational risks that jeopardize the stability of the banking system. Solvency risks pose a threat to the sustainable operation of commercial banks when they are unable to meet their debt obligations. These financial risks lead to a decline in financial performance, as they result in increased costs, reduced revenues, and a loss of stakeholder trust. Addressing these issues is crucial for improving the financial returns of Nigerian DMBs and maintaining strong foundations in their evolving financial sector. This research investigates the impact of financial risks on the profitability of Nigerian-listed deposit money banks. Return on assets is used as the measure of profitability, while operating risk and solvency risk serve as proxies for financial risk. The study employs an ex post facto research design and gathers data from the audited annual financial reports of 11 listed deposit money banks from 2014 to 2023. The results show that operating risk has a positive and statistically significant effect on profitability, highlighting the importance of effective operational risk management. In contrast, solvency risk shows an insignificant effect on profitability. The findings suggest that effective financial risk management is essential for safeguarding profitability and ensuring sustainable operations for Nigerian DMBs within a competitive and turbulent economic environment.

INTRODUCTION

The profitability and operational stability of firms depend heavily on financial risks, especially in the banking sector, because sustainable operations require efficient risk management. Nigeria's Deposit Money Banks (DMBs) act as central drivers in economic advancement by linking funds from savers with investor needs. The financial risks faced by these banks continue to grow because of economic uncertainties together with both technological disruptions and shifting regulations that threaten their operational stability while weakening their financial stability (Afrogha et al., 2023; Bonny & Ayunku, 2024). Poor internal control measures together with violations of regulatory standards generate operational risks within firms, while solvency risk develops from a firm's inability to fulfil its extended financial commitments and thus puts stakeholder trust at stake (Ehiedu & Ukueku, 2024). The Nigerian banking sector faces severe risks since its governance structures remain insufficient while its risk management practices remain inadequate, thus intensifying these challenges (Aernan et al., 2023). The combination of operational inefficiencies and solvency issues negatively affects market trust, which triggers increased costs and decreased revenue, thereby jeopardizing the profitability and sustainability of DMBs at risk (Mawalla, 2023). Firms must address these potential risks to both boost their operational performance and defend their place in the financial system while contributing to economic expansion.

This study examines how operational and solvency financial risks affect the profitability levels of Nigerian DMBs. The research examines multiple dimensions unlocking practical guidance to improve risk control measures and financial performance. Findings from this research will guide Nigerian banking sector regulators and industry stakeholders to create enhanced regulations that promote banking sector stability while building financial resilience and enhancing market competitiveness.

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LITERATURE REVIEW

Profitability refers to the ability of firms to earn a profit from the resources and capital invested (Ehiedu & Ukueku, 2024). It is an essential indicator of financial performance that shows how well a firm uses its resources and assets to produce profits for its stakeholders and shareholders. In the study of (Abubakar et al., 2023), defines profitability as the surplus of revenue over costs incurred in generating that revenue. A number of financial measures and ratios, such as return on equity (ROE) and return on assets (ROA), are included in the concept of profitability. High profitability is a sign of a firm's capacity to run its business efficiently, keep expenses under control, and create income streams from fee-based services, lending, and investment activities (Adi & Panji, 2022). In addition to supporting sustainable growth and expansion goals, it improves the firm's appeal to investors and adds to its financial stability. On the other hand, low profitability or losses may indicate ineffective risk management procedures, poor asset quality, operational inefficiencies, or unfavorable economic circumstances (Ismail & Ahmed, 2023). It might undermine investor trust, hinder the firm's capacity to draw in capital, and provide difficulties for its long-term survival and ability to compete in the industry.

Empirical Review

Operational Risk and Profitability

Financial institutions could experience financial losses from operational risks that develop because internal systems break down through human mistakes or external disruptive events (Basel Committee on Banking Supervision, 2015). The effective control of operational risk remains essential for organizational profitability because operational inefficiencies together with failures result in rising costs and damage to reputation and revenue decline that negatively impacts financial performance. A wide array of operational risks compromises performance in organizations by including compliance breaches alongside cybersecurity threats and disruptions from natural disasters and geopolitical events (Singh et al., 2024). Businesses using proactive internal control systems tied to comprehensive risk management frameworks succeed in reducing their operational challenges, which builds operational efficiency and maintains extended business profitability in competitive markets (Wahyuni et al., 2023). However, various study have investigated the relationship between operational risk and profitability, such as Muriithi (2016), Mudanya and Muturi (2018), Olivia et al. (2022), Wekesa and Dayim (2022), Amijaya and Alaika (2023) proven a negative and significant impact on profitability. In contrast, empirical analysis by Ali and Oudat (2020), Wijayanty et al. (2024) provide evidence of insignificant impact of operational risk on profitability. Although operational risk plays a significant role in determining a company's profitability, efficient operational management is necessary to best fulfill this function and other long-term goals of the company. As a result, poor operational management may negatively affect corporate results. The relationship between operational risk and profitability as it is now portrayed in the literature has produced ambiguous results in firm theory. The following hypothesis (H1) was developed as a result of the aforementioned argument:

***H_1:** There is no significant effect of operational risk on the profitability of deposit money banks in Nigeria.*

Solvency Risk and Profitability

A firm's inability to honour long-term financial responsibilities constitutes solvency risk, indicating significant threats to profits and firm stability (Akram & Hushmat, 2024). Solvency risks that are elevated diminish market trust and result in costlier debt financing, which affects a firm's capacity to maintain sustainable profit levels (Aernan et al., 2023). Strong capital structures enable companies to survive economic downturns and unexpected financial shocks because efficient solvency risk management preserves profitability (Amijaya & Alaika, 2023). Relationship between solvency and profitability has been investigated by numerous scholar with variation in their findings. Results from Ayoush et al. (2021) combined with Wekesa and Dayim (2022) demonstrate that solvency risk has an adverse relationship with profitability, which underscores why businesses need strong financial management strategies to defeat solvency problems. Wijayanty et al. (2024) in their study prove evidence of insignificant impact on profitability. While high solvency risk destroys confidence among investors, which drives up borrowing expenses and reduces a company's ability to be profitable. Financial stability demands both robust capital structures and effective solvency risk management for organizations to survive economic downturns successfully. Research studies display conflicting relationships between solvency risk and profitability because some measure a negative impact, while others find an insignificant association. While high solvency risk destroys confidence among investors, which drives up borrowing expenses and reduces a company's ability to be profitable. Financial stability demands both robust capital structures and effective solvency risk management for organizations to survive economic downturns successfully. Research studies display conflicting relationships between solvency risk and profitability because some measure a negative impact, while others find an insignificant association. Based on this argument, this study formulated that:

***H_2:** There is no significant effect of solvency risk on the profitability of deposit money banks in Nigeria.*

MATERIAL AND METHODS

This study employs an ex post facto research design to analyze how financial risk affects the profitability of Nigerian Deposit Money Banks (DMBs) from 2014 to 2023. The population includes all 15 DMBs operational listed on Nigeria Exchange Group's floor as of 31st December 2021. A sample of 11 banks was selected for the study, whose data were operating risk, financial risk, firm size (control variable), and profitability proxy by ROA were obtained from audited annual reports and accounts of selected banks from 2014 to 2023 viz Nigeria Exchange Group financial records, which habitually made up the sources appropriate and comprehensive. STATA 13 software was used for its robust regression analysis capabilities.

This study adopts the multiple regression to test the formulated hypotheses with the below formulated model:

ROA = f (OR, SR, FS)…………………………………eqn. (i)

The econometric form of the model is stated as:

$ROA_{it} = \beta_0 + \beta_1 OR_{it}, + \beta_2 SR_{it}, + \beta_4 FS_{it} + + \mu_{it}$ ....eqn (ii)

Where: ROA = Return on Assets

OR = Operational risk

SR = Solvency risk

FS = Firm size

β_0 = Intercept

β_1- β_9 = Coefficient of estimation

μ = Residual or error term

it = Firm 'i' in period 't'

Table 1. Descriptive of variables and measurements

Variables	Measurement	Type
Return on assets (ROA)	Net profit after tax/Total assets	DV
Operational risk (OR)	Operating expenses/Income	IV
Solvency risk (SR)	Total liability/Total assets.	IV
Firm size (FS)	Natural log of total asset	Control variable

RESULTS

Correlation Analysis

Table 2. Matrix

Variables	ROA	Operating risk	Solvency risk	Firm size
(1) ROA	1.000			
(2) Operating risk	0.403*	1.000		
	(0.000)			
(3) Solvency risk	-0.251*	-0.596*	1.000	
	(0.008)	(0.000)		
(4)Firm size	-0.182	-0.096	0.244*	1.000
	(0.057)	(0.318)	(0.010)	

Source: Stats output from authors compiled data, 2024

Table 2 presents the correlation coefficients for the effect of financial risk of operating risk, solvency risk, firm size, and profitability of listed money deposit banks in Nigeria. The correlation matrix range from -1 to +1. Table 2 documents a positive relationship between operating risk and profitability, signifying that an increase in operating risk could increase profitability. In contrast, the relationships between solvency risk and profitability exhibit negative outcome, signifying that an increase in the firm solvency, could result in a reduction firm's profitability.

Descriptive Statistics

Table 3. Descriptive Statistics between Financial Risk, Firm Size, and Profitability

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	110	.027	.063	-.1	.44
or	110	.364	.391	-1.52	1.02
sr	110	.775	.434	0	2.55
fs	110	17.123	2.902	12.49	22.59

Source: Stats output from authors compiled data, 2024

Table 3 presents descriptive statistics for four key variables: return on assets (ROA), financial risk (operational risk (OR) and solvency risk (SR), and firm size (FS), generating results from 110 observations. On average, ROA amounts to a 2.7% return on assets, but individual firms exhibit moderate variations (Std. Dev. = 0.063), ranging from negative -0.1 to positive 0.44. Firms face moderate operational risk as shown through the mean value of 0.364 yet demonstrate significant variability (Std. Dev. = 0.391), while the lowest observed risk was negative (-1.52) and the highest risk measurement was positive (1.02). The analysis reveals diverse solvency risk levels across firms, given a 0.775 average and 0.434 standard deviation, while organizations experience risks that range between 0 and 2.55. Findings show an average firm size of 17.123, indicating a widespread presence of large-sized firms, while a standard deviation of 2.902 demonstrates differences in firm scale between the smallest firm at 12.49 and the largest firm at 22.59, established through size measurements that reached a maximum of 22.59.

Empirical Results

Table 4. Heteroscedasticity Tests

Breusch-Pagan / Cook-Weisberg test for heteroscedasticity		
Assumption: Normal error terms		
Variables: fitted values of ROA		
Ho: Constant variance		
	chi2(1)	Prob > chi2
	38.65	0.0000

Source: Stats output from authors compiled data, 2024

Table 5. Hausman Specification Test

Test: H0: different in coefficients not systematic	
Chi2 (3) = (b-B) ‘ [(v_b-v_B) ^ (-1) } (b-B) = 38.24	Prob>chi2 = 0.000

Source: Stats output from authors compiled data, 2024

Table 6. Regression Results Summary

roa	**Coefficient**		**t-value**	**p-value**	**Sig**
Independent Variable					
or	.052		3.36	0.001	***
sr	-.027		-1.32	0.19	
Control Variable					
fs	-.018		-6.46	0.000	***
Constant	.1039		6.68	0.000	***
R-squared		0.348	Number of obs		110
F-test		17.103	Prob > F		0.000

Source: Stats output from authors compiled data, 2024

DISCUSIONS

Table 6 show the regression summary results from the investigating the effect of financial risk on profitability of listed manufacturing firms in Nigeria. The results are hereby summarized as follows:

Heteroscedasticity Test (Table 4): with a p-value of 0.000 below a threshold of 5%, it is an indication that there is present of heteroscedasticity. This is address through regress robust.

Hausman Test (Table 5): with p-value of 0.000 below 5% threshold, suggesting that fixed effects model is more suitable for the panel data than random effects.

Observations

Effect of Operating Risk on Profitability

The study documents a positive and significant effect of operating risk on profitability with a coefficient of 0.052 and a p-value of 0.001. This result provides evidence in the rejection of the hypothesis with the assumption that operating risk has no significant effect on the profitability. This finding contradict the findings of Muriithi (2016), Mudanya and Muturi (2018), Olivia et al. (2022), Wekesa and Dayim (2022), and Amijaya and Alaika (2023), who documents a negative impact of operating risk on profitability.

Solvency Risk and Profitability

Solvency risk observes a negative but insignificant effect on the profitability with a coefficient of -0.027 and a p-value of 0.19, which is not significant at 5% significance level. This study, therefore, accepts the null hypothesis which assume that solvency risk has no significant effect on profitability. Signifying that increase in solvency risk limit could reduce profitability, thereby, reducing the economic growth in the area of job creation, staff welfare, and community’s corporate social responsibility, which is in agreement with the findings of Sharma (2024) and (Wijayanty, Indrianisca, Aurelia, Olivia, & Leon, 2024) who prove in their separate study that solvency risk has an insignificant effect on profitability.

CONCLUSIONS

This research investigated how operational and solvency financial risks affect profitability within Nigerian deposit money banks. Operational risk demonstrates a positive, significant effect on profitability, revealing how DMBs effectively manage their operations. In addition, solvency risk has an insignificant negative effect on profitability, implying that an upward increase in solvency risk could reduce profitability. The banking sector needs effective financial risk management practices that ensure operational efficiency, financial stability, and long-term sustainable performance in competitive situations. This paper contributes its distinctive value through a thorough investigation of Nigerian-listed DMBs operational and solvency risks that are vital to both financial practitioners and governmental policymakers. This research proves that strong governance models combined with predictive risk management practices remain essential for managing risks, which leads to better bank profitability outcomes. The results enhance our comprehension of financial risk management effects on firm performance outcomes and reveal practical recommendations about firm control systems, compliance requirements, and capital reserve needs. This research offers valuable guidance for financial institutions through advanced risk assessment technology, together with building risk-conscious workplace cultures along with resilient solutions for emerging market conditions. Policymakers need to create better regulatory systems to build banking sector resilience with financial stability. The research faces constraints that limit its generalization. This assessment concentrates its study on Nigerian Deposit Money Banks, thus potentially missing key dynamics of financial risk patterns in different sectors and also other jurisdictions within the emerging economies. The limitations in extending research findings stem from using target measures to evaluate operational and solvency risks. Further research needs to examine how financial risks and profitability relations work across diverse industries within and outside of Nigerian DMBs and to also study independent risks, including market impacts and credit risk exposure effects. Extended research duration and international data assessment will augment our comprehension of financial risks and their overall financial outcomes.

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