

Accounting Journal | Accepted: 24 March, 2025 | Published: 29 April, 2025

Risk Management Strategies and Financial Performance of Quoted Deposit Money Banks in Nigeria

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ABSTRACT

Despite regulatory efforts and reforms aimed at strengthening the Nigerian banking sector, the performance of many deposit money banks remains volatile, raising concerns about the effectiveness of current risk management practices. This study examined the risk management strategies and financial performance of quoted deposit money banks in Nigeria, from 2012 to 2023. The population consists of all the ten (10) quoted deposit money banks in Nigeria while filtering criteria was used to arrive at a sample size of nine (9) quoted deposit money banks. The hypotheses were tested using fixed effect regression model. The results showed that earnings volatility (EVT) has a significant positive effect on financial performance of quoted deposit money banks in Nigeria, while debt-to-equity ratio (DER) has a significant negative effect on financial performance of quoted deposits money banks in Nigeria. However, interest coverage ratio (ICR) has an insignificant positive effect on financial performance of quoted deposits money banks in Nigeria for the period under review. The study recommended that the deposit money bank in Nigeria should focus on strategies that enhance their earnings before interest and taxes (EBIT) to further improve their ICR. This can be achieved through efficient operations, cost management, and revenue growth. Also, the deposit money bank in Nigeria with high debt-to-equity ratio should develop a debt reduction strategy. This could involve paying down existing debts, refinancing at lower interest rates, or limiting new debt issuance to maintain a manageable debt level.

Keywords: Debt-to-equity ratio, earnings volatility, financial performance, interest coverage ratio, risk management strategies

Article ID: IJMRASFP-MGS-1128431

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1 INTRODUCTION

The financial performance of deposit money banks (DMBs) is a critical indicator of economic stability and growth in any nation, particularly in developing economies like Nigeria. In a rapidly evolving financial environment, the effective management of risks is crucial to ensuring the sustainability and profitability of these institutions. Risk management strategies play a pivotal role in mitigating the adverse effects of financial uncertainties, which, in turn, influence the financial performance of banks. The global financial crisis of 2007-2008 highlighted the significance of sound risk management practices, leading to increased scrutiny and regulatory reforms aimed at enhancing the resilience of financial institutions (Bessis, 2015).

Earnings volatility, which refers to the degree of variation in a bank's earnings over time, is a key concern for stakeholders. High volatility can signal instability, affecting investor confidence and the bank's ability to attract capital. Research has shown that managing earnings volatility is essential for maintaining financial stability and achieving consistent financial performance (Acharya *et al.*, 2012). This study aims to examine the effect of earnings volatility on the financial performance of quoted deposit money banks in Nigeria.

The interest coverage ratio, a measure of a bank's ability to meet its interest obligations, is another crucial indicator of financial health. A higher ratio indicates better financial performance, as it suggests that the bank generates sufficient earnings to cover its interest expenses. Prior studies have established a positive relationship between interest coverage ratio and financial performance, underscoring the importance of this metric in risk management strategies (Ghosh, 2015). This study seeks to determine the effect of the interest coverage ratio on the financial performance of quoted deposit money banks in Nigeria.

The debt-to-equity ratio, representing the proportion of a bank's debt to its equity, is a critical factor in assessing financial leverage and risk. A higher debt-to-equity ratio can lead to increased financial risk, potentially affecting the bank's profitability and overall financial performance. Empirical evidence suggests that effective management of this ratio is vital for sustaining long-term financial health (Myers, 2001). This study evaluates the effect of the debt-to-equity ratio on the financial performance of quoted deposit money banks in Nigeria.

This study explores the intricate relationship between risk management strategies and the financial performance of quoted deposit money banks in Nigeria, focusing on key metrics such as earnings volatility, interest coverage ratio and debt-to-equity ratio. The findings will provide valuable insights into how these banks can optimize their risk management practices to enhance financial performance and stability. This study is motivated by the need to critically assess how specific risk management strategies influence the financial performance of quoted deposit money banks in Nigeria. In particular, the study focuses on four key risk indicators: earnings volatility, interest coverage ratio, debt-to-equity ratio, and capital adequacy ratio. These indicators are essential for understanding the financial health and stability of banks, yet there is limited empirical research that examines their collective impact on the financial performance of Nigerian banks.

The banking sector in Nigeria plays a crucial role in the nation's economic development by facilitating financial intermediation, providing credit, and ensuring the smooth operation of the financial system. However, the sector is also exposed to various financial risks that can significantly impact its performance and stability. The global financial crisis of 2007-2008 and subsequent economic challenges have underscored the importance of robust risk management strategies in safeguarding the financial health of banks (Bessis, 2015). Despite regulatory efforts and reforms aimed at strengthening the Nigerian banking sector, the performance of many deposit money banks remains volatile, raising concerns about the effectiveness of current risk management practices. The Nigerian banking sector has faced substantial challenges in recent years, including economic volatility, regulatory changes, and heightened competition. Despite efforts to strengthen risk management frameworks, many deposit

money banks continue to experience unstable financial performance, raising questions about the effectiveness of their risk management strategies (Sanusi, 2012). This persistent volatility in financial performance is particularly concerning given the sector's critical role in supporting economic growth and stability in Nigeria.

Earnings volatility, as an indicator of financial stability, remains a pressing issue for Nigerian banks. High levels of earnings volatility can undermine investor confidence, reduce market valuation, and increase the cost of capital, thereby negatively impacting financial performance (Acharya et al., 2012). However, there is limited empirical evidence on how earnings volatility specifically affects the financial performance of Nigerian deposit money banks, necessitating further investigation.

Similarly, the interest coverage ratio is a crucial measure of a bank's ability to meet its interest obligations, yet its impact on the financial performance of Nigerian banks has not been thoroughly examined. A low interest coverage ratio can lead to increased financial distress and reduced profitability, but the extent to which this affects Nigerian banks remains unclear (Ghosh, 2015). The debt-to-equity ratio is another critical factor that influences financial performance by determining the level of financial leverage a bank employed. High leverage can magnify profits during good times but can also lead to significant losses during downturns, potentially threatening a bank's solvency (Myers, 2001). The lack of comprehensive studies on how the debt-to-equity ratio impacts the financial performance of Nigerian banks highlights a gap in the literature that this study aims to address.

Given these gaps in the literature, there is a pressing need to explore the effects of these key risk indicators—earnings volatility, interest coverage ratio and debt-to-equity ratio on the financial performance of Nigerian deposit money banks. Addressing this problem is critical not only for improving the risk management practices of individual banks but also for enhancing the overall stability and resilience of the Nigerian banking sector.

Some of these studies for example Ebe *et al.* (2023), Oketah *et al.* (2024) and Omoleye and Omomeji (2023) conducted in this area in Nigeria combined the data from both the pre and post international financial reporting standards implementation in 2012 in Nigeria. This has made a lot of changes in financial reporting in Nigeria particularly in the treatment of preference shareholders returns as an interest as against the former treatment as dividend. The empirical works have equally shown that some of the studies for example Istan *et al.* (2024), Mulbah *et al.* (2024), Oketah *et al.* (2024) and Omoleye and Omomeji (2023) carried out in recent times regarding earnings volatility, interest coverage ratio, debt-to-equity ratio and financial performance in Nigeria and other countries of the world were not current in the data used for the analysis to reflect the current economic realities as all the data were within 2020 and below except the few works whose data cover up to 2022. These identified gaps in literature call for further study in this area which necessitated this study the risk management strategies and financial performance of quoted deposit money banks in Nigeria, to update the data up to 2023, use appropriate panel regression technique and cover only the periods of IFRS implementation in Nigeria.

The main objective of this study is to evaluate the risk management strategies and financial performance of quoted deposit money banks in Nigeria. The study specifically intends to examine the effect of earnings volatility on financial performance of quoted deposit money banks in Nigeria, determine the effect of interest coverage ratio on financial performance of quoted deposit money banks in Nigeria, and to evaluate the effect of debt-to-equity ratio on financial performance of quoted deposit money banks in Nigeria.

To achieve the objectives of this study, the following null hypotheses were formulated to be tested based on the specific objectives of the study as follow:

H₀₁: Earnings volatility has no significant effect on financial performance of quoted deposits money banks in Nigeria;

Ho2: Interest coverage ratio has no significant effect on financial performance of quoted deposits money banks in Nigeria; and

Ho3: Debt-to-equity ratio has no significant effect on financial performance of quoted deposits money banks in Nigeria.

2 LITERATURE REVIEW

2.1 Conceptual clarification

2.1.1 Financial performance

Financial performance is a key concept in business management, reflecting how well an organization is achieving its financial goals. It encompasses a range of metrics that assess the overall financial health, efficiency, profitability, and growth potential of a company. Various researchers have provided definitions of financial performance, each emphasizing different aspects of this multifaceted concept.

Richard *et al.* (2009) defined financial performance as the extent to which an organization's financial objectives are being or have been accomplished. They emphasize that financial performance is typically measured through indicators such as profitability, return on assets (ROA), return on equity (ROE), and earnings per share (EPS). Venkatraman and Ramanujam (1986) viewed financial performance as a subset of organizational effectiveness, focusing on the outcomes related to financial metrics. They argue that financial performance should be assessed using both accounting-based measures (such as ROA and ROE) and market-based measures (such as stock price and market share).

Kaplan and Norton (1992) introduced financial performance as one of the key dimensions in the Balanced Scorecard framework, which also includes customer, internal business processes, and learning and growth perspectives. They suggest that financial performance is a reflection of how well a company is implementing its strategy and achieving its long-term financial goals. Neely *et al.* (2005) defined financial performance as the quantitative measurement of the results of an organization's financial activities. They highlight the importance of using a variety of financial metrics, including profitability ratios, liquidity ratios, and leverage ratios, to gain a comprehensive understanding of a company's financial condition.

Hult *et al.* (2008) described financial performance as the degree to which a firm meets its financial objectives, as indicated by metrics such as sales growth, profit margins, and return on investment (ROI). They emphasize that financial performance is influenced by both internal factors (such as operational efficiency) and external factors (such as market competition). Ross *et al.* (2008) defined financial performance as the analysis of a firm's financial statements to evaluate its profitability, solvency, liquidity, and overall financial health. They suggest that financial performance is a critical indicator of a firm's ability to generate wealth for its shareholders and sustain long-term growth.

Murphy *et al.* (1996) offered a comprehensive definition of financial performance by incorporating both subjective and objective measures. They argue that financial performance should not only include traditional financial metrics but also consider managers' perceptions of the organization's financial success relative to its competitors. Nguyen and Luu (2020) defined financial performance as the ability of a firm to achieve its financial objectives through efficient use of resources and sound financial metrics, such as profitability and return on investment, and the firm's ability to adapt to changing market conditions. Kenton and Terry (2021) described financial performance as the overall financial health of an organization, measured by its ability to generate revenue, control costs, and manage risks. They stress that financial performance is not only about short-term profitability but also about long-term sustainability and resilience in the face of economic uncertainties.

Mishra and Modi (2022) defined financial performance as the comprehensive evaluation of an organization's financial results, considering both quantitative measures (such as revenue growth, profit margins, and cash flow) and qualitative aspects (such as innovation, customer satisfaction, and market position). They argue that financial performance should also reflect the firm's commitment to ESG

principles, as these are increasingly linked to long-term financial success. Karim and Rahman (2023) viewed financial performance as a multi-dimensional construct that includes both traditional financial indicators and new metrics related to digital transformation and ESG impact. They highlight that financial performance now also involves assessing how well a company leverages digital technologies to improve operational efficiency and customer engagement. Sridharan and Sangeetha (2024) defined financial performance as the degree to which an organization meets its financial goals while balancing stakeholder interests, including shareholders, employees, customers, and the broader community. They emphasize that financial performance is increasingly measured by a company's ability to deliver sustainable value, which includes financial returns as well as social and environmental impact.

2.1.2 Risk Management Strategies

Risk management strategies refer to the processes and approaches used by organizations to identify, assess, and mitigate risks that could potentially affect their objectives and operations. These strategies are crucial for ensuring that organizations can withstand and adapt to various risks, ranging from financial and operational to strategic and reputational. Different researchers have provided various definitions of risk management strategies, each emphasizing different aspects of the concept. Dionne (2013) defined risk management strategies as systematic approaches used by organizations to minimize the adverse effects of risks on their financial performance and overall stability. He emphasizes that these strategies involve the identification, assessment, and prioritization of risks, followed by coordinated efforts to mitigate or transfer those risks. Kleffner *et al.* (2003) describe risk management strategies as an integral part of corporate governance, where they involve the development of policies and procedures to manage risks that could impede the achievement of organizational goals. They argue that effective risk management strategies require the involvement of top management and should be aligned with the organization's overall strategy.

Lam (2014) defined risk management strategies as the comprehensive processes through which organizations identify, evaluate, manage, and monitor risks in order to achieve their strategic objectives. Lam emphasizes the importance of integrating risk management into the decision-making process at all levels of the organization to enhance resilience and performance. Hopkin (2017) viewed risk management strategies as the frameworks and methodologies that organizations employ to manage uncertainty in their operations and decision-making processes. According to Hopkin, effective risk management strategies enable organizations to anticipate potential risks and take proactive steps to reduce their impact.

McNeil *et al.* (2015) defined risk management strategies as the set of quantitative and qualitative techniques used to assess and control risks that could adversely affect an organization's financial health. They highlight the role of statistical models and scenario analysis in developing strategies that can mitigate the impact of financial and operational risks. Aven (2016) considered risk management strategies as the processes that organizations use to make informed decisions about risk-taking, balancing the potential benefits and harms associated with different courses of action. Aven emphasizes that risk management strategies should be dynamic and adaptable to changing circumstances. Jorion (2007) defined risk management strategies as the systematic approaches organizations take to measure and manage the potential adverse effects of risk exposure on their financial and operational performance. He stresses the importance of using financial instruments, such as derivatives, as part of these strategies to hedge against market risks.

Bromiley *et al.* (2020) defined risk management strategies as the integrated processes through which organizations proactively identify, assess, and respond to potential threats and opportunities in a manner that aligns with their strategic goals. They emphasize the importance of embedding risk management within the organizational culture and decision-making processes to ensure long-term resilience. Olson and Wu (2021) described risk management strategies as dynamic frameworks that

allow organizations to anticipate, prepare for, and mitigate the impacts of emerging risks, such as those related to climate change, cyber threats, and global pandemics. According to Olson and Wu, these strategies must be adaptable and continuously updated to respond to rapidly changing external environments.

Frigo and Anderson (2022) defined risk management strategies as a holistic approach to managing uncertainty, where organizations systematically evaluate risks across all aspects of their operations, from financial to operational and reputational risks. They argue that effective risk management requires a balance between risk mitigation and risk-taking, ensuring that organizations remain competitive while protecting against potential losses. Sheedy and Griffin (2023) emphasized the role of digital technologies and data analytics in modern risk management strategies. They define risk management strategies as data-driven processes that leverage advanced analytics, artificial intelligence, and machine learning to identify and mitigate risks in real-time, enabling organizations to make more informed decisions under uncertainty. Culp and Sarpong (2024) provide a definition of risk management strategies as comprehensive systems that integrate traditional risk management techniques with sustainability and ESG (Environmental, Social, and Governance) considerations. They highlight the increasing focus on managing risks related to social and environmental factors, arguing that these strategies are essential for achieving both financial and non-financial objectives in a rapidly changing world.

2.1.3 Earnings Volatility

Earnings volatility refers to the degree of variation in a company's earnings over time. It reflects the stability or instability of a company's profitability and is an important indicator of financial risk. Beaver *et al.* (1970) defined earnings volatility as the fluctuations in a company's earnings over a given period, which can be influenced by both internal factors (such as operational efficiency and management decisions) and external factors (such as market conditions and economic cycles). They highlight that higher earnings volatility indicates greater uncertainty and potential risk for investors. Ball and Brown (1968) describe earnings over time. They argue that high earnings volatility can lead to increased uncertainty about a firm's future financial performance, making it more difficult for investors to forecast future earnings.

Dechow and Schrand (2004) defined earnings volatility as the variation in a firm's earnings over time due to the inherent uncertainty in its business environment. They suggest that earnings volatility is a critical factor for understanding a firm's financial health, as stable earnings are typically preferred by investors for providing more predictable returns. Graham *et al.* (2005) viewed earnings volatility as the fluctuations in earnings that occur due to changes in a firm's operating environment, including market demand, cost structures, and competition. They emphasize that managing earnings volatility is crucial for maintaining investor confidence and achieving long-term financial stability.

Francis *et al.* (2005) defined earnings volatility as the standard deviation of earnings over a specified period, indicating the level of risk associated with a firm's income-generating activities. They highlight that earnings volatility can impact a firm's cost of capital, as investors may demand higher returns for taking on additional risk. Zhang (2013) described earnings volatility as the degree to which a firm's earnings are subject to fluctuations due to factors such as economic cycles, regulatory changes, and shifts in consumer behavior. Zhang emphasizes that high earnings volatility can be a sign of underlying business risk, which may affect the firm's ability to sustain its profitability over time. Burgstahler and Dichev (1997) defined earnings volatility in the context of earnings management, suggesting that firms with high earnings volatility may engage in practices to smooth earnings, making them appear more stable than they actually are. They argue that while some volatility is natural, excessive earnings volatility can raise concerns about the reliability of reported earnings.

Chen and Zhang (2020) defined earnings volatility as the variability in a company's earnings over a specified period, reflecting the uncertainty in its financial performance due to fluctuating market conditions, operational risks, and external economic factors. They argue that increased earnings volatility can signal higher risk and instability, impacting investor confidence and firm valuation. Ghosh and Kallapur (2021) described earnings volatility as the standard deviation of earnings over multiple periods, highlighting its role in assessing financial risk and performance predictability. They emphasize that firms with high earnings volatility may face greater challenges in maintaining consistent financial performance and investor trust.

Lee and Wang (2022) defined earnings volatility as the measure of how much a firm's earnings deviate from their mean over time, influenced by both internal operational issues and external economic shocks. They note that managing earnings volatility is crucial for ensuring financial stability and reducing the cost of capital. Smith and Williams (2023) described earnings volatility as the extent to which a firm's earnings exhibit fluctuations due to business cycles, market competition, and regulatory changes. They highlight that understanding and mitigating earnings volatility can enhance financial reporting quality and investment decision-making. Johnson and Singh (2024) defined earnings volatility as the variability in reported earnings resulting from changes in a company's operating environment and financial structure. They emphasize that high earnings volatility can impact the firm's ability to predict future performance and manage financial risks effectively.

2.1.4 Interest Coverage Ratio

The interest coverage ratio (ICR) is a key financial metric used to assess a company's ability to meet its interest obligations from its earnings before interest and taxes (EBIT). Various researchers have provided definitions of the interest coverage ratio, each highlighting different aspects of its importance and implications. Brigham and Ehrhardt (2010) defined the interest coverage ratio as the ratio of a company's earnings before interest and taxes (EBIT) to its interest expenses. They argue that the ratio is a critical measure of a firm's ability to service its debt, with higher values indicating a greater ability to cover interest payments. Ross *et al.* (2008) described the interest coverage ratio as a financial metric that indicates how easily a company can pay interest on its outstanding debt. They emphasize that this ratio is an important indicator of a firm's financial stability, with a low ratio signaling potential difficulties in meeting interest obligations. Damodaran (2012) defined the interest coverage ratio as a measure of a firm's operating performance relative to its interest obligations. He explains that this ratio provides insight into the risk of default, with lower ratios suggesting higher risk and a greater likelihood of financial distress.

Penman (2013) viewed the interest coverage ratio as a measure of a company's solvency, calculated by dividing EBIT by interest expense. He notes that the ratio is commonly used by creditors and investors to assess the financial health of a company, particularly its ability to meet debt obligations without compromising operational capabilities. Brealey *et al.* (2011) defined the interest coverage ratio as the ratio of EBIT to interest expenses, highlighting its role in evaluating a firm's creditworthiness. They argue that a high interest coverage ratio indicates a strong ability to meet interest payments, thereby reducing the risk to creditors.

Higgins (2012) described the interest coverage ratio as a crucial measure of a company's financial performance, reflecting its capacity to cover interest costs from operating income. He suggests that the ratio is an essential tool for analyzing a firm's leverage and financial risk. White, Sondhi, and Fried (2003) defin the interest coverage ratio as the ratio of operating income (EBIT) to interest expense, explaining that it measures the margin of safety a firm has in paying interest on its debt. They emphasize that this ratio is particularly important for assessing the risk of insolvency during periods of declining earnings.

Gopinath and Verma (2020) defined the interest coverage ratio as a financial metric that measures a company's ability to meet its interest obligations using its earnings before interest and taxes (EBIT). They emphasize that in a low-interest-rate environment, a strong interest coverage ratio is crucial for maintaining financial flexibility and reducing credit risk. Jones and Smith (2021) described the interest coverage ratio as a key indicator of a firm's financial health, reflecting its capacity to pay interest on its outstanding debt from operating income. They highlight that this ratio is particularly relevant for assessing corporate sustainability in volatile economic conditions. Kumar and Patel (2022) defined the interest coverage ratio as the ratio of EBIT to interest expense, used to evaluate a company's solvency and risk of default. They note that the ratio is an essential tool for investors and creditors to assess the potential impact of rising interest rates on a firm's debt-servicing ability.

Lin and Chen (2023) viewed the interest coverage ratio as a critical measure of financial stability, indicating how comfortably a firm can cover its interest payments with its operating profits. They argue that a declining interest coverage ratio can signal increasing financial distress, especially in highly leveraged firms. Ramirez and Li (2024) defined the interest coverage ratio as the ratio of a company's operating income to its interest expenses, reflecting its ability to manage debt obligations in the context of fluctuating earnings. They emphasize that the interest coverage ratio has become increasingly important as firms navigate economic uncertainties and shifting credit markets.

2.1.5 Debt-to-Equity Ratio

The debt-to-equity ratio (D/E ratio) is a financial metric that compares a company's total liabilities to its shareholder equity, providing insight into its financial leverage and risk. Various researchers have provided definitions of the debt-to-equity ratio, emphasizing different aspects of its significance in financial analysis. Weston and Brigham (1992) defined the debt-to-equity ratio as a measure of a company's financial leverage, calculated by dividing total debt by total equity. They highlight that a higher ratio indicates greater financial risk, as the company relies more on borrowed funds. Ross *et al.* (2008) described the debt-to-equity ratio as the ratio of a firm's total debt to its shareholders' equity, reflecting the extent to which the company is financial risk but can also indicate more aggressive growth strategies. Damodaran (2012) defined the debt-to-equity ratio as a leverage ratio that compares the total liabilities of a company to its equity, showing the proportion of debt and equity used to finance the company's assets. He explains that this ratio is crucial for assessing the risk associated with the firm's capital structure.

Gitman and Zutter (2012) viewed the debt-to-equity ratio as a financial metric that indicates the relative proportions of debt and equity used by a company to finance its assets. They note that the ratio is essential for understanding the financial risk and stability of a company, with higher ratios typically indicating higher risk. Penman (2013) defined the debt-to-equity ratio as a key indicator of a company's capital structure, calculated by dividing total liabilities by shareholders' equity. He emphasizes that the ratio is used by investors and creditors to assess the financial risk and the firm's ability to cover its debt obligations with its equity.

Brealey *et al.* (2011) described the debt-to-equity ratio as the ratio of total debt to total equity, providing insights into a company's financial leverage and risk profile. They argue that while a higher ratio can indicate greater potential returns for equity holders, it also increases the risk of financial distress. Higgins (2012) defined the debt-to-equity ratio as a measure of a firm's financial leverage, reflecting the balance between debt and equity financing in the company's capital structure. He suggests that the ratio is critical for evaluating a firm's long-term solvency and risk.

The debt-to-equity ratio (D/E ratio) has been increasingly analyzed in the context of evolving financial markets, corporate financing strategies, and economic conditions. Miller and White (2020) defined the debt-to-equity ratio as a financial metric that quantifies the relationship between a company's

total debt and its shareholders' equity. They emphasize that the ratio is crucial for understanding the degree of financial leverage a firm is using, with implications for its risk profile and cost of capital. Johnson and Martin (2021) described the debt-to-equity ratio as a measure of a company's financial leverage, calculated by dividing total liabilities by total equity. They highlight that a higher debt-to-equity ratio indicates that a company is more heavily financed by debt, which can lead to higher returns but also greater financial risk, especially in volatile markets.

Gupta and Singh (2022) defined the debt-to-equity ratio as the ratio of a company's total debt to its equity, used to assess the firm's financial structure and risk. They note that this ratio is particularly important for evaluating a firm's ability to sustain its debt levels and manage financial obligations in the face of economic challenges. Kim and Park (2023) viewed the debt-to-equity ratio as a critical indicator of a company's financial strategy, reflecting the balance between debt and equity financing. They argue that the ratio is a key determinant of a firm's financial flexibility and resilience, especially in industries with high capital requirements. Jones and Li (2024) defined the debt-to-equity ratio as a key financial metric that compares total liabilities to shareholders' equity, offering insights into the firm's capital structure and risk management practices. They emphasize that in a rapidly changing economic environment, maintaining an optimal debt-to-equity ratio is essential for long-term financial stability.

2.2 Theoretical Review

2.2.1 Agency Theory

Agency Theory was postulated by Michael C. Jensen and William H. Meckling in their seminal paper titled "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," which was published in 1976. The thrust of Agency Theory revolves around the relationship between principals (owners or shareholders) and agents (managers or executives) within a firm. The theory posits that there is a fundamental conflict of interest between the principals and agents due to differing goals. Principals typically aim to maximize shareholder value, while agents may pursue personal goals, such as job security, power, or perks that may not align with the principals' objectives. This misalignment can lead to agency costs, which include monitoring costs incurred by the principals to oversee the agents' actions, bonding costs incurred by agents to assure principals of their alignment, and residual loss, which represents the reduced value resulting from the misalignment of interests.

Agency Theory underscores the need for mechanisms, such as incentive structures, governance frameworks, and contractual arrangements, to align the interests of agents with those of principals to minimize agency costs and ensure the firm operates efficiently in pursuit of shareholder value. Agency costs, driven by conflicts between managers and shareholders, can increase earnings volatility, which in turn can negatively affect a firm's financial performance. Effective risk management and governance practices are essential to align interests and reduce the negative impact of earnings volatility.

2.2.2 Trade-Off Theory

The Trade-Off Theory was primarily developed by Kraus and Litzenberger in 1973. In their paper titled "A State-Preference Model of Optimal Financial Leverage," they articulated the concept that firms balance the tax benefits of debt financing against the costs of potential financial distress when making capital structure decisions. The thrust of the Trade-Off Theory is that firms make financing decisions by balancing the benefits and costs associated with debt. The theory posits that firms seek an optimal capital structure by trading off the tax advantages of debt, such as interest tax shields, against the costs of financial distress, which include bankruptcy risk and agency costs.

According to the theory, while debt provides tax benefits because interest payments are taxdeductible, it also increases the probability of financial distress, especially as leverage rises. Therefore, the optimal level of debt is reached when the marginal benefit of the tax shield equals the marginal cost of financial distress. This balance allows firms to maximize their value by optimizing their capital structure. The Trade-Off Theory, thus, provides a framework for understanding why firms may not operate with either no debt or excessively high debt, but rather with a moderate level of debt that reflects this trade-off (Kraus & Litzenberger, 1973).

The Trade-Off Theory explains how the Interest Coverage Ratio reflects a firm's ability to balance the benefits of debt with the risks of financial distress. A well-managed ICR, aligned with the principles of the Trade-Off Theory, underpins strong financial performance by optimizing the firm's capital structure and minimizing the negative impacts of excessive debt.

2.2.3 Pecking Order Theory

The Pecking Order Theory was postulated by Stewart C. Myers and Nicholas Majluf in 1984. Their paper, titled "Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have," introduced the concept that firms prefer to finance new projects using internal funds, then debt, and finally equity as a last resort. The thrust of the Pecking Order Theory is that firms prioritize their sources of financing based on the principle of least resistance or cost. According to the theory, firms prefer to finance investments first with internal funds (retained earnings), then with debt, and only as a last resort with equity. This preference order arises due to the asymmetric information between managers and investors.

Managers, who have more information about the firm's true value and prospects, are likely to prefer internal financing to avoid the adverse signals that issuing new equity might send to the market. Issuing new equity might suggest that managers believe the firm is overvalued, leading to a potential decline in the firm's stock price. As a result, firms opt for internal funds to avoid signaling effects and minimize the costs associated with external financing. The theory also implies that firms with more profitable operations and substantial retained earnings are less likely to issue debt or equity, while those with limited internal funds may resort to debt before considering equity.

The Pecking Order Theory helps explain how firms' preferences for financing sources impact their Debt-to-Equity Ratio and financial performance. By prioritizing internal funds and managing external debt and equity carefully, firms aim to optimize their capital structure and enhance their financial performance.

2.3 Empirical Review

Mulbah et al. (2024) examined the effect of bank size, capital adequacy ratio (CAR), and net interest margin (NIM) on banks' return on assets (financial performance) from the perspective of Tanzania – a least-developed country. The study employed the Random Effect, and the Generalized Least Squares (GLS) regression models utilizing a panel dataset spanning the period 2000 to 2022 of ten (10) Tanzanian commercial banks to examine the specific effect of the foregoing variables on commercial banks' financial performance. The study show that capital adequacy ratio (CAR) and bank size have positive significant effects on the financial performance of commercial banks in Tanzania. Whereas the study found inconsistent results for the effect of NIM; while the random effect model shows a marginally significant positive effect on ROA, the GLS regression shows a significant negative effect, indicating that the effect of NIM could be either positive or negative depending on the context. The study recommended that policymakers should prioritize measures aimed at promoting healthy levels of capital adequacy and encouraging the growth of larger banks while ensuring adequate oversight to mitigate potential risks associated with market dominance. Additionally, regulatory frameworks should be designed to foster competition and efficiency in the banking sector, facilitating a conducive environment for banks of all sizes to thrive and thus contribute to economic growth. The study used appropriate statistical tools of analysis to examine the data. However, the study was also carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

Oketah et al. (2024) examined the effect of debt indices on financial performance of oil and gas companies in Nigeria. The specific objectives are to evaluate the effect of debt ratio (DR), debt to equity ratio (DER) and interest coverage ratio (ICR) on return on assets (ROA). The an ax-post facto research design was adopted wherein secondary data sourced from audited financial statements of three (3) selected oil and gas companies (Total Nigeria Plc, 11 Nigeria Plc and Oando Nigeria Plc) listed on Nigerian Exchange Group. A period of 12 years (2010–2020) was used for the analysis. The study revealed that the predictor variables of DR had negative and significant effect on ROA; DER had a negative and non-significant effect on ROA; while ICR had a positive and non-significant effect on ROA of oil and gas companies in Nigeria. The implication of the finding is that a higher interest coverage ratio is associated with better financial performance in terms of ROA. The study concluded that among the explanatory variables examined only the interest coverage ratio had a positive effect on the financial performance of oil and gas companies in Nigeria. The adjusted R-squared (R2) of the study is 31%. The study recommended amongst other things that oil and gas companies should maintain a balance debt structure and avoid taking excessive debt that could strain their ability to generate profits. They should also aim at maintaining a healthy interest coverage ratio to ensure that they can comfortably meet interest payment obligation and avoid financial strain. The study used appropriate statistical tools of analysis to examine the panel data but combined data from both pre (2010-2011) and post (2012-2020) IFRS implementation in Nigeria which affects the findings. Also, the study was carried out in 2024 and the data covered up to 2020 which is considered belated and required to be updated to reflect the current economic trends in Nigeria.

Igwe (2024) investigated effect of debt financing on the firm value of listed ICT firms in Nigeria Exchange Group (NGX). The specific objectives of the study were to examine effect of debt ratio, debt to equity ratio, and debt-to-capital ratio on firm value of listed ICT firms in Nigeria. The study adopted ex-post facto research design and secondary data were extracted from the annual reports of sampled ICT firms in Nigeria for the period 2013 - 2022. The panel regression analysis was used for data analysis. The study showed that, the debt ratio demonstrated a statistically non-significant negative effect on market capitalization, the debt-to-equity ratio exhibited a statistically significant positive effect on market capitalization. Similarly, the debt-to-capital ratio demonstrated a statistically significant positive effect on market capitalization. These results imply that a balanced mix of debt and equity in the capital structure contributes to higher firm value. The study therefore concluded that debt financing has a significant effect on firm value of ICT firms in Nigeria. The study recommends that Nigerian ICT firms, recognizing the non-significant negative impact on market capitalization attributed to the debt ratio, critically assess their debt levels for alignment with industry standards and investor expectations. Emphasizing the significant positive effect on market capitalization associated with the debt-to-equity ratio, it suggests strategic management of this ratio, utilizing debt for growth while transparently communicating its benefits to investors. Additionally, the study encourages ICT firms to explore a balanced debt-to-capital structure, recognizing the potential benefits of a strategic mix of debt and equity. Prudent debt management is emphasized to mitigate risks and ensure sustained enhancement of firm value in the dynamic Nigerian ICT sector. The study used appropriate statistical tools of analysis to examine the data. Also, the study was carried out in 2024 and the data covered up to 2022 which is considered current and reflects the economic trends in Nigeria.

Istan *et al.* (2024) examined the impact of asset structure, earning volatility, and financial flexibility on capital structure and corporate performance in manufacturing sector companies listed on the Indonesia Stock Exchange (IDX) covering 2015 to 2020. The research method employed in the study was descriptive quantitative OLS regression analysis. The data for the study were collected from financial reports of 58 companies using purposive sampling. The study indicated that asset structure, financial flexibility, and earning volatility had a positive and significant influence on both capital structure and corporate performance. The influence value for capital structure was found to be 96.9%,

while the influence value for corporate performance was 94.8%. The study suggests that optimizing asset structure, managing income volatility, and enhancing financial flexibility are crucial for manufacturing companies to improve capital structure and corporate performance. The study used appropriate statistical tools of analysis to examine the data. However, the study was carried out in 2024 and the data covered up to 2020 which is considered belated and required to be updated to reflect the current economic trends in Nigeria. The study was also carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

Dara *et al.* (2024) analyzed the influence of short-term debt, long term debt, total debt to assets, total debt to equity, and liquidity on company performance with company size as a moderating variable on manufacturing companies of the consumer goods industry listed in the Indonesia Stock Exchange 2018-2022 period. The population of this research is manufacturing companies in the consumer goods industry sector, which consists of 47 companies. The sampling selection is conducted using the purposive sampling method. Therefore, 38 samples are obtained. The data analysis method was carried out using panel data testing and data processing using the EViews program. The study showed that partially and simultaneously, short-term debt (STD), long-term debt (LTD), total debt to assets (TDTA), total debt to equity and liquidity have significant effects on company performance. Firm size can moderate the impact of short-term debt, long-term debt, total debt to asset, total debt to equity, and liquidity on company performance. The study recommended that future study should enlarge the scope to more subsectors. The study used appropriate statistical tools of analysis to examine the data. Also, the study was carried out in 2024 and the data covered up to 2022 which is considered current and reflects the economic trends in Nigeria. However, the study was carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

Ebe et al. (2023) investigated the effect of debt financing on financial performance of listed consumer goods companies in Nigeria. The study addressed a number of objectives: to examine the effect of debt to equity ratio on return on assets of listed consumer goods companies in Nigeria; ascertain the effect of total debt ratio on the return on assets of listed consumer goods companies in Nigeria; and determine the effect of long-term debt ratio on the return on assets of listed consumer goods companies in Nigeria. The study used secondary panel data obtained from firms' annual reports and accounts from 2011 to 2022 and expo facto research design. Descriptive statistics was used to analyze the data and OLS Regression analysis was employed to test the hypotheses at 5% level of significance. The study revealed that debt-equity ratio was insignificant and negative effect on return on assets of listed consumer goods companies in Nigeria, similarity total debt ratio is not significant also documented negative relationship on return on assets of listed consumer goods companies in Nigeria, while long term debt ratio was also not significant at 5% level though has positive effect on return on assets of listed consumer goods companies in Nigeria. The study recommended among others is that management of these firms should be careful when using debt as its source of financing its activities, they should seek to finance their activities with retained earnings and use debt as a last option as supported by the pecking order theory. Long term debt finance is mostly used by highly tangible firms, hence, policies that would encourage growing firms accumulate huge tangible assets should be pursued. Hence, tax concession and exemptions can be approved. The study used appropriate statistical tools of analysis to examine the data. Also, the study was carried out in 2023 and the data covered up to 2022 which is considered current and reflects the economic trends in Nigeria.

Omoleye and Omomeji (2023) investigated the effect of risk management strategies on financial performance of listed deposit money banks in Nigeria. Where liquidity risk, interest risk and foreign exchange risk used as proxies for independent variables while returns on assets used as proxy for dependent variable and firm size was control variable. The study employed ex-post facto research design and secondary data was collected from the financial reports of 11 listed deposit money banks for a period spanning 2011 to 2020. The data collected was analyzed through the means of Hausman test that was

conducted to determine the best model between random effect and fixed effect, the result of Hausman test shows that fixed effect is the most appropriate model to determine whether there is statistical effect among the variables. The study showed that rise in liquidity risk of the firm will bring about decrease in the firm financial performance and decline in interest rate risk will lead to rise in financial performance, interest risk has negative effect with returns on assets and that increase in foreign exchange risk leads to fall in financial performance of the banks. The study recommended that deposit money banks should strengthen their risk management strategies by employing capable teams and new strategies that follow the rules put in place by the Central Bank of Nigeria. The study used appropriate statistical tools of analysis to examine the data. Also, the study was carried out in 2023 and the data covered up to 2022 which is considered current and reflects the economic trends in Nigeria.

Hastuti *et al.* (2021) determined the effect of capital adequacy ratio, non-performing loan and debt equity ratio on financial performance in banking companies listed on the Indonesia Stock Exchange (IDX) in 2016-2020. The population in this study is banking companies listed on the Indonesia Stock Exchange (IDX) in 2017-2020. This study used purposive sampling techniques. With an analysis unit of 129 financial statements with 43 banking companies. The analysis used in this study is multiple regression analysis using SPSS version 25 as a tool in calculation. The study showed that the capital adequacy ratio negatively affects financial performance. The predictive ability of the three variables to financial performance was 18.8% while the other 81.2% came from other variables. The study suggests submitted for additional examination include expected for further research to add other independent variables such as loan to deposit ratio, net interest margin and so on, otherwise for future research can add to the sample by extending the observation period by more than 3 years. The study used appropriate statistical tools of analysis to examine the data. However, the study was carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

Sathyamoorthi et al. (2020) examined the impact of financial risk management practices on the financial performance of commercial banks in Botswana. The study used Return on Assets and Return on Equity to measure financial performance. Inflation, Interest rates, total debt to total assets, total debt to total equity, total equity to total assets and loan deposit ratios were used as proxies for financial risk management. The research population was all the 10 commercial banks in Botswana and the study covered a period of 8 years from 2011 to 2018. This descriptive study sourced monthly secondary data from Bank of Botswana Financial Statistics database. Descriptive statistics, correlation and regression analyses were applied to analyze the data. The study showed that interest rates had a negative and significant impact on return on assets and on return on equity. On the other hand, total debt to total assets showed a negative and insignificant effect on return on assets. However, total debt to total assets, revealed a positive and insignificant effect on return on equity. The loan deposit ratio indicated a negative and significant impact on return on assets and on return on equity. The study suggests that banks should strike a proper balance between financial risk management practices and financial performance by engaging in appropriate market, credit, and liquidity risk management practices that will ensure safety for their banks and yield positive profits. The study used appropriate statistical tools of analysis to examine the data. However, the study was carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

Refni (2020) examined the effect of capital adequacy ratio (CAR), loan to deposit ratio (LDR), operating- income expense ratio (BOPO), non-performing loans (NPL), net interest margin (NIM), and on return on assets (NIM) ROA) as the financial performance of banking companies listed on the Indonesia Stock Exchange in 2016-2018. The data used in this study were obtained from the Annual Financial Statements of Banking Companies Listed on the Stock Exchange in 2016-2018. The samples used were 23 Banking Companies Listed on the IDX. The analytical method used is multiple linear

regression. The study showed that the CAR, BOPO, NPL, NIM, and LDR variables had a positive and significant effect on Return on Assets (ROA). Thus the study recommends that bank is expected to pay attention to the level of efficiency of its operations to increase profitability on its financial performance. The study used appropriate statistical tools of analysis to examine the data. However, the study was carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

Elisa *et al.* (2020) examined the factors that influence the cost of debt variable. The independent variables in this study were discretionary accrual and income volatility. The study used sample of public companies listed on the Indonesia Stock Exchange 2014-2018. Banking and companies that subject to final tax were excluded, including mining, infrastructure, real estate, and construction companies. The data used were obtained from Bloomberg, Indonesia Capital Market Directory (ICMD), financial statements, and reading sources obtained by experts as a theoretical foundation. The analysis technique used in this study was weighted least square and used Gretl. The study suggests for future creditors in Indonesia should also consider the risk of tax avoidance and earning management as a basis for making decisions when they want to provide loans. The study used appropriate statistical tools of analysis to examine the data. However, the study was carried out in another environment outside Nigeria in the past which cannot be generalized because of the environmental differences.

3 METHODOLOGY

The study adopted an ex post facto research design considering the research objectives. This research design is used to examine the statistical relationship between two or more variables. This research design is, therefore, considered as the most appropriate for this study because it allows for testing of relationships between or among variables and making of predictions regarding these relationships. The population of this study consists of all the ten (10) quoted deposit money banks in Nigeria on the Nigerian exchange Group as at 31st December 2023 calendar year. The sample size of this study comprises of all the quoted deposit money banks in Nigeria, at least one year before the implementation of International Financial Reporting Standard in Nigeria totalling nine (9) banks in the banking sector in Nigeria covering 2012-2023 based on the filter criteria stated below. The filter criteria for the banks included in the study from the banking sector are stated below:

- i. A bank must have been quoted on the floor of Nigerian exchange (NGX) group at least a year before the implementation of International Financial Reporting Standard in (2012).
- ii. A bank must have its financial statements available and accessible for the period under study.

This study used panel data mainly from secondary sources which are quantitative in nature. The data were obtained from the annual reports and accounts of the sampled deposit money banks in Nigeria. Therefore, the data were extracted from the audited financial reports/statements of the sampled banks within the chosen period of this study. The technique of data analysis used by this study is Random effect regression model. The study adopted this technique to establish the effect of risk management strategies (earnings volatility, interest coverage ratio and debt-to-equity ratio) on return on assets of deposit money banks in Nigeria. The data were analyzed using STATA 13 and the outcome was used to test the formulated hypotheses. Panel data analysis was used for the study.

This study adapts the econometric style of Omoleye and Omomeji (2023). Various robustness tests of Pearson correlation, Heteroskadasticity test, Breusch and Pagan Lagrangian multiplier test, Hausman specification test were carried out to enhance the reliability of the research results. Financial performance is proxied by return on assets (ROA) which is measure through profit after tax divided by total assets and is a function of three explanatory variables such as earnings volatility (EVT), interest coverage ratio (ICR) and debt-to-equity ratio (DER). Therefore:

ROA = f(EVT, ICR, DER)(i)
The expression in equation one is express econometrically as follows:
$ROA_{it} = \alpha + \beta_1 EVT_{it} + \beta_2 ICR_{it} + \beta_3 DER_{it} + e_{it}(ii)$
Where:
β 1, β 2 and β 3 are parameters to be estimated with a priori expectations.
ROA= Return on Assets
EVT = Earnings Volatility
ICR = Interest Coverage Ratio
DER = Debt-to-Equity Ratio
$\alpha = \text{Constant}$
e = Error term
i = Firms

t = Periods

Variable	Acronym	Type of	Measurement	Justification
		Variable		
Returned on	ROA	Dependent	Profit after Tax/Total Assets	Oketah et al. (2024)
Assets				and Omoleye and
				Omomeji (2023).
Earnings	EVT	Independent	Earning volatility measured the	Elisa <i>et al.</i> (2020) and
volatility			dispersion of returns for firms'	Istan et al. (2024).
			securities or market indexes and is	
			calculated using variance and	
			standard deviation.	
Interest	ICR	Independent	Earnings Before Interest and Taxes	Mulbah et al. (2024),
Coverage			(EBIT)/Interest Expenses.	Oketah et al. (2024)
Ratio			•	and Refni (2020).
Debt-to-Equity	DER	Independent	Total debt/Total equity.	Ebe et al. (2023), Dara
Ratio		Ŧ		et al. (2024) and
				Hastuti et al. (2021).

Table 3.1: Measurement of Variables

Source: Researcher's Compilation, 2024.

4 DATA ANALYSIS AND DISCUSSION OF FINDINGS

4.1 Descriptive Statistics

The data analysis was carried out using descriptive statistics, Shapiro-Wilk normality test, Pearson correlation, Heteroskadasticity test, Pagan Lagrangian multiplier test, Hausman specification test, Breusch and robust Random effect regression model.

Variable	Obs	Mean	Std.Dev.	Min	Max
ROA	108	0.008	0.046	-0.344	0.075
ICR	108	4.492	2.220	1.013	7.908
DER	108	0.482	0.167	0.104	0.795
~ ~					

Source: STATA 15 Result, 2024

Table 4.1 shows that the Return on Assets (ROA) has a minimum value of -0.344, a maximum value of 0.075 and a mean value of .008 within the period studied. The Table also revealed that ROA

has a standard deviation of .046 that is more than the mean, which implies that it is skewed right away from the mean. Table 4.1 also showed that earnings volatility (EVT) has a minimum value of 3.815, a maximum value of 4.538 and a mean value of 4.231 within the period studied. The Table also revealed that EVT has a standard deviation of 0.127 that is less than the mean, which implies that it is skewed left from the mean.

Table 4.1 equally affirm that the interest covering ratio (ICR) has a minimum value of 1.013, a maximum value of 7.908 and a mean value of 4.492 within the period studied. The Table also revealed that ICR has a standard deviation of 2.220 that is less than the mean, which implies that it skewed from the mean. Table 4.1 further confirms that the debt equity ratio (DER) has a minimum value of 0.104, a maximum value of 0.795 and a mean value of 0.482 within the period studied. The Table also reveals that DER has a standard deviation of 0.167 that is less than the mean, which implies that it skewed from the mean.

4.2 Shapiro-Wilk Normality Test

Table 4.2 and figure 1 present the results of the normality test conducted with the use of Shapiro-Wilk normality test and normal distribution curve. The decision rule is if P-Value > 0.05, the residual is normally distributed but if P-Value is equal to or < 0.05, the residual is not normally distributed.

Variable	Obs	W	V	Ζ	Prob>Z
Residual	108	0.98946	0.928	-0.166	0.56573

Source: STATA 15 Result, 2024



Figure 1: Normal Distribution Curve

Table 4.2 confirms the residual and Z-value of -0.166 and the corresponding probability of value of 0.566 that is more than 0.05 which signifies that the residual is normally distributed around the mean. This result is further collaborated by the normal distribution curve presented in figure 1. This implies that one of the basic assumptions of linear regression technique which allows only normally distributed residual has been satisfied.

4.3: Correlation Matrix

Table 4.3 affirms the Pearson correlation matrix for the data set to show the extent of interdependent variables. The decision rule is that if a pair or more of the independent variables is equal to or above 0.85, there is a presence of multicollinearity in the model but if the independent variables is less than 0.85, there is no presence of multicollinearity in the model.

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Table 4.3: Correlation Matrix						
Variable	ROA	PC	STC	PB		
ROA	1					
EVT	0.0138	1				
ICR	0.0855	-0.0457	1			
DER	0.1310	-0.2370	0.0454	1		
Source: STATA 15 Result, 2024						

Table 4.3 presents a correlation matrix of the variables of the study. The correlation matrix shows the relationships between the proxies of independent variables themselves and their relationships with the dependent variable ROA. The result in the correlation matrix Table 4.3 presents a positive associations between earnings volatility (EVT) of 0.038 with return on assets (ROA). The result implies that earnings volatility has a positive relationship with the return on assets.

Also, interest coverage rate has a positive association of 0.0855 with ROA. The result implies that interest coverage rate will has a positive effect on their return on assets. Debt equity ratio has a positive association of 0.1310 with ROA. The result implies that debt equity ratio will has a positive effect on their return on assets. Table 4.3 presents that multicollinearity problem does not exist in the model as the correlational coefficients are less than (85%) which according to Hair *et al.* (2005), indicate that there is no multicollinearity problem in the model.

4.4: Variance Inflation Factor

The Variance Inflation Factor (VIF) in Table 4.4 was used to further test for the absence of multicollinearity problem in the model.

Variable	VIF	1/VIF
EVT	1.06	0.942629
DER	1.06	0.942653
ICR	1.00	0.996642
Mean		
VIF	1.04	

Table 4.4: Variance Inflation Factor (VIF)

Source: STATA 15 Result, 2024

The decision rule is that if the values of VIF and 1/VIF are up to 10 and 1 and above, there is a presence of multicollinearity in the model but if the values of VIF and 1/VIF are less than 10 and 1 respectively, there is no presence of multicollinearity in the model. Table 4.4 confirms the results of Variance Inflation Factor (VIF) values of less than 10 which indicates that there is no multicollinearity problem in the model.

4.5: Heteroskedasticity Breusch-Pagan Test

Heteroskedasticity Breusch-Pagan test which tests whether the estimated variance of the residuals from regression is dependent on the values of the independent variables.

Table 4 5	Heterosk	edasticity	Breusch.	.Pagan	Test
1 abic 4.3.	110101030	cuasticity	DICUSCII	'i agaii	1 621

Type of test	F-Test	P-Value			
Heteroskedasticity					
Breusch-Pagan	13.35	0.00			
Source: STATA 15 Result. 2024					

The Heteroskedasticity Breusch-Pagan is a statistical test that establishes whether the residual variance of a variable in a regression model is constant (i. e. heteroscedastic) or not constant (homoskedastic) over time. The decision rule is that if the P-value ≤ 0.05 , there is a problem of heteroscedasticity but if the P-value > 0.05, there is no problem of heteroscedasticity. Table 4.5 revealed that the null hypothesis that there is no constant variance (homoskedasticity) in the model is accepted. This is because the F-statistic of 13.35 and a probability value of 0.00 for the model is statistically significant at 1% level (p-value < 0.05). Therefore, there is a presence of heteroscedasticity in the model. To resolve this problem of heteroscedasticity, a robust fixed effect regression technique was used to estimate the model.

4.6 Breusch and Pagan Lagrangian Multiplier Test

The decision rule of Breusch-Pagan Lagrangian Multiplier Test is that if the P-value is equal to and less than 0.05, the random effect model is appropriate if otherwise, the pooled ordinary least square regression is appropriate. Considering the result of Random Effect Model (REM) regression, the Breusch and Pagan Lagrangian Multiplier test was conducted to give an insight into an actual test to be carried out between Random Effect Model and Pooled Ordinary Least Square Regression. From the Breusch and Pagan Lagrangian Multiplier test, the chibar2 value of (9.33) and the probability of (0.00) in Table 4.6, suggests that REM is preferred instead of Pooled Ordinary Least Square Regression. Table 4.6 also presents the result of the Breusch and Pagan Lagrangian Multiplier test of Pooled Ordinary Least Square Regression.

Table 4.6: Breusch and Pagan Lagrangian Multiplier Test

VariableChibar2P-ValueROA9.330.00Source: STATA 15 Result, 2024

4.7 Hausman Specification Test

Table 4.7 confirms the result of a Hausman specification test conducted to determine which of the model, fixed effect or Random effect would be used for estimation.

Table 4.7: Hausman Specification Test

Type of test	Chi2	P-Chi2
Hausman Test	23.91	0.00
Source: STATA 1	5 Result,	2024

The decision rule of Hausman specification test is that if the prob. Chi2 is equal to and less than 0.05, the fixed effect model is appropriate if otherwise, the random effect model is more appropriate. The result from Table 4.7 depicts a probability > chi2 of 0.00 a value that is less than 0.05. This result implies that the null hypothesis which states that difference in coefficient not systematic is rejected and so the fixed effect estimation is the most appropriate model for this study.

4.8 Test of Hypotheses

4.8.1 Estimation Based on Robust Fixed Effect Regression Model

Table 4.8 confirms the robust fixed effect regression model conducted which was used for the estimation of this model.

1 abic 4.0. Kobu	st Fixed Effect Re	gi coston n	Courts
Variable	Coefficients	t-value	Prob.
Cons.	-11.438	-1.55	0.125
EVT	3.610	2.25	0.027
ICR	0.145	0.36	0.722
DER	-4.670	-3.39	0.001
Overall R-			
squared	0.5179		
Ward Chi2	66.87		
Prob. >Chi2	0.00		
a amimu			

Table 4 8.	Robust	Fived	Effect	Regression	Results
1 abic 7. 0.	Nonasi	LIVER	Encu	Acgi coston	ICSUILS

Source: STATA 15 Result, 2024

Table 4.8 indicates that 52% variation of return on assets is predicted by the joint effect of earnings volatility, interest coverage ratio and debt to equity ratio (R-square = (0.517)). This indicates that the model of the study is fit and the independent variables are properly selected, combined and used. The Ward Chi2 value of 66.87 with a P-value of 0.00 signified that the model is fit for the study.

To examine risk management strategies and financial performance of quoted deposit money banks in Nigeria, the formulated null hypotheses were tested using a fixed effect regression model.

Ho1: Earnings volatility has no significant effect on financial performance of quoted deposits money banks in Nigeria

The results in Table 4.8 confirms the t-value of 2.25 and the corresponding probability value of 0.027 indicating that earnings volatility (EVT) has a significant effect on financial performance of quoted deposits money banks in Nigeria. Based on this, the null hypothesis one which states that earnings volatility has no significant effect on financial performance of quoted deposits money banks in Nigeria is rejected.

Ho2: Interest coverage ratio has no significant effect on financial performance of quoted deposits money banks in Nigeria.

The results in Table 4.8 also affirms the t-value of 0.36 and the corresponding probability value of 0.722 indicating that interest coverage ratio (ICR) has an insignificant effect on financial performance of quoted deposits money banks in Nigeria. Based on this, the null hypothesis two which states that interest coverage ratio has no significant effect on financial performance of quoted deposits money banks in Nigeria is accepted.

Ho3: Debt-to-equity ratio has no significant effect on financial performance of quoted deposits money banks in Nigeria.

The results in Table 4.8 presents the t-value of -3.39 and the corresponding probability value of 0.001 indicating that debt-to-equity ratio (DER) has a significant effect on financial performance of

quoted deposits money banks in Nigeria. Based on this, the null hypothesis three which states that debtto-equity ratio has no significant effect on financial performance of quoted deposits money banks in Nigeria is rejected.

4.9 Discussion of Findings

This study revealed that earnings volatility (EVT) has a significant positive effect on financial performance of quoted deposits money banks in Nigeria. This means that an increase in earnings volatility will increase financial performance of quoted deposit money banks in Nigeria, by 3.610. This finding is in line with the a-priori expectation of the researcher. The finding is in line with the agency theory because the central tenet of the theory holds that agency costs, driven by conflicts between managers and shareholders, can increase earnings volatility, which in turn can negatively affect a firm's financial performance. Effective risk management and governance practices are essential to align interests and reduce the negative impact of earnings volatility. This finding is in line with the finding of Istan *et al.* (2024). However, the finding is not in line with the finding of Elisa *et al.* (2020).

The study also revealed that interest coverage ratio (ICR) has an insignificant positive effect on financial performance of quoted deposits money banks in Nigeria. This means that an increase in interest coverage ratio will increase financial performance of quoted deposit money banks in Nigeria, by 0.145. This finding is not in line with the a-priori expectation of the researcher. Also, the finding is in line with the trade-off theory because the theory explains how the interest coverage ratio reflects a firm's ability to balance the benefits of debt with the risks of financial distress. A well-managed ICR, aligned with the principles of the Trade-Off Theory, underpins strong financial performance by optimizing the firm's capital structure and minimizing the negative impacts of excessive debt. This finding is in agreement with the findings of Oketah *et al.* (2024) and Omoleye and Omomeji (2023). However, the finding is not in agreement with the findings of Mulbah *et al.* (2024) and Refni (2020).

The study finally revealed that debt-to-equity ratio (DER) has a significant negative effect on financial performance of quoted deposits money banks in Nigeria. This means that an increase in debt-to-equity ratio will reduce financial performance of quoted deposit money banks in Nigeria, by -4.670. This finding is in line with the a-priori expectation of the researcher. The finding is not in line with the pecking order theory because the theory explains how firms' preferences for financing sources impact their Debt-to-Equity Ratio and financial performance. By prioritizing internal funds and managing external debt and equity carefully, firms aim to optimize their capital structure and enhance their financial performance. This finding is in consonance with the finding of Dara *et al.* (2024) and Hastuti *et al.* (2021). However, the finding is not in line with the findings of Ebe *et al.* (2023) and Oketah *et al.* (2024).

5 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

This study confirms that earnings volatility (EVT) has a significant positive effect on financial performance of quoted deposits money banks in Nigeria. This means that an increase in earnings volatility will increase financial performance of quoted deposit money banks in Nigeria, by 3.610.

The study also revealed that interest coverage ratio (ICR) has an insignificant positive effect on financial performance of quoted deposits money banks in Nigeria. This means that an increase in interest coverage ratio will increase financial performance of quoted deposit money banks in Nigeria, by 0.145.

The study finally revealed that debt-to-equity ratio (DER) has a significant negative effect on financial performance of quoted deposits money banks in Nigeria. This means that an increase in debt-to-equity ratio will reduce financial performance of quoted deposit money banks in Nigeria, by -4.670.

5.2 Conclusion

The fluctuations in earnings, rather than being detrimental, contributes to better financial outcomes for the deposit money banks in Nigeria. This suggest that as earnings volatility increases, so does the financial performance, indicating that deposit money banks in Nigeria may be leveraging volatile earnings to improve their profitability and overall financial standing. This insight highlights the dynamic nature of earnings in shaping the financial health of banks in the Nigerian context.

The increase in interest coverage ratio (ICR) reflects the bank's improved ability to meet its interest obligations, the financial performance of deposit money banks also improves. A higher ICR demonstrates stronger earnings relative to interest expenses, which enhances the financial stability and profitability of the banks. Therefore, maintaining a healthy ICR is essential for boosting the financial performance of quoted deposit money banks in Nigeria.

As the debt-to-equity ratio increases, reflecting a higher proportion of debt relative to equity, the financial performance of deposit money banks in Nigeria declines. A higher DER suggests that banks are more reliant on debt financing, which can increase interest obligations and financial risk, ultimately reducing profitability and financial stability. Therefore, managing debt levels is critical for improving the financial performance of deposit money banks in Nigeria.

5.2 Recommendations

Based on the above conclusion, the following recommendations are made:

i. Bank management should incorporate earnings volatility into their strategic planning and decision-making processes. Understanding the patterns of earnings fluctuations can help in making informed investment and operational decisions that boost financial performance.

ii. Deposit money Bank in Nigeria should focus on strategies that enhance their earnings before interest and taxes (EBIT) to further improve their ICR. This can be achieved through efficient operations, cost management, and revenue growth.

iii. Deposit money Bank in Nigeria with high debt-to-equity ratio should develop a debt reduction strategy. This could involve paying down existing debt, refinancing at lower interest rates, or limiting new debt issuance to maintain a manageable debt level.

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Adediran, S. A., Abdullahi, S. R., Oladipo, B. U. & Puke, S. O. (2025). Risk Management Strategies and Financial Performance of Quoted Deposit Money Banks in Nigeria. IJMRASFP