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Financial Hedging Practices And Financial Performance Of Deposit Money Banks In Nigeria

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Abstract: *This study examined the effect of financial hedging practices on financial performance of Deposit money banks (DMBs) in Nigeria from the period of 1990 to 2023 (34years). In order to evaluate the effect of financial hedging practices onfinancial performance of DMBs in Nigeria, the following measures financial hedging practices, namely; Credit Risk Hedging (CRH), Liquidity Risk Hedging (LRH), Market Risk Hedging (MRH) and Derivatives Risk Hedging (DRH)in relation to financial performance proxied with Returns on Equity (ROE) of Deposit money banks in Nigeria. The CBN Statistical Bulletin, CBN Annual Report and CBN Bank Supervisory Annual Report from 1990-2023were used to acquire data for the research. Descriptive statistics, correlation analysis, diagnostics tests, unit root test, Johannsen cointegration test and ordinary least multiple regression analysis were used to assess the research hypotheses. In the light of the findings, CRH, LRH, MRH and DRH have significant effects on ROE of DMBs in Nigeria. Hence, the study concluded that financial hedging practices have significant effect onfinancial performance of DMBs in Nigeria. The study recommended that Deposit money banks in Nigeria should strengthen their risk management frameworks to incorporate comprehensive strategies for credit, liquidity, market, and derivatives risk hedging. This can be achieved through the adoption of advanced risk assessment tools and methodologies that align with international best practices.Banks should invest in training programs for their risk management teams to ensure they are well-versed in the latest hedging techniques and financial instruments. This will enhance their ability to effectively manage risks and improve overall financial performance. This study contributes to the existing body of knowledge by providing empirical evidence on the positive and significant effects of various risk hedging strategies on the financial performance of deposit money banks in Nigeria. It highlights the importance of risk management in enhancing return on equity.*

Key Words: Financial Hedging Practices, Credit Risk Hedging, Liquidity Risk Hedging, Market Risk Hedging, Derivatives Risk Hedging and Returns on Equity

Introduction

The financial landscape of Nigeria has undergone significant transformations in recent years, particularly in the wake of economic volatility and fluctuating global markets. Deposit money banks (DMBs) play a crucial role in the Nigerian economy, serving as intermediaries that facilitate financial transactions, mobilize savings, and provide credit to various sectors. However, the inherent risks associated with banking operations, including interest rate fluctuations, currency volatility, and credit risks, necessitate the adoption of effective risk management strategies (Akinlo & Akinlo, 2022). One such strategy is financial hedging, which involves the use of financial instruments to mitigate potential losses arising from adverse price movements. The inherent risks associated with banking operations—such as credit risk, liquidity risk, market risk, and derivatives risk—pose substantial challenges to the financial performance of these institutions. As a response to these challenges, financial hedging practices have emerged as vital strategies for mitigating risks and enhancing the stability and profitability of DMBs (Ibe & Nwankwo, 2023).

Financial hedging practices have gained prominence among DMBs in Nigeria as they seek to enhance their financial performance and ensure stability in an unpredictable economic environment (Adeyemi & Adebayo, 2022). By employing various hedging techniques, such as derivatives (options, futures, and swaps), banks can protect their earnings and capital from market fluctuations, thereby improving their overall financial health (Ogunleye& Adebayo, 2021). The effectiveness of these hedging strategies, however, is contingent upon several factors, including the banks' risk appetite, regulatory framework, and the sophistication of their financial instruments (Okwu & Okwu, 2021). Financial hedging practices encompass a range of strategies aimed at reducing exposure to various types of financial risks. Credit risk hedging involves measures taken to protect against potential losses from borrowers' defaults, while liquidity risk hedging focuses on ensuring that banks can meet their short-term obligations without incurring significant losses (Okwu & Okwu, 2021). Market risk hedging addresses the potential adverse effects of market fluctuations on a bank's portfolio, and derivatives risk hedging utilizes financial instruments such as options, futures, and swaps to manage exposure to various risks. The effective implementation of these hedging strategies can significantly influence the financial performance of DMBs, impacting key metrics such as return on assets (ROE), return on equity (ROE), and overall profitability (Akinlo & Emmanuel, 2020).

Studies have highlighted the importance of these hedging practices in enhancing the resilience of banks in Nigeria. For instance, Okwu and Okwu (2021) found that effective credit risk management through hedging strategies positively correlates with improved financial performance among Nigerian banks. Similarly, Adeyemi and Adebayo (2022) demonstrated that liquidity risk hedging practices significantly enhance the operational efficiency and profitability of DMBs in Nigeria. Furthermore, the use of derivatives for market risk hedging has been shown to provide banks with a competitive edge in managing their risk exposures, thereby contributing to better financial outcomes (Ibe & Nwankwo, 2023). Also, the positive correlation between effective hedging practices and improved financial performance metrics, such as return on assets (ROE) and return on equity (ROE) (Akinlo& Akinlo, 2022; Ojo & Ojo, 2023). For instance, Akinlo and Akinlo (2022) found that banks that actively engage in hedging activities tend to exhibit greater resilience during economic downturns, thereby maintaining a competitive edge in the market. Conversely, inadequate hedging practices can expose banks to significant financial risks, leading to diminished profitability and potential insolvency (Ojo & Ojo, 2023).

Despite the potential benefits, the adoption of financial hedging practices is not without challenges. Regulatory constraints, market inefficiencies, and the complexity of financial instruments can hinder the effective implementation of these strategies (Afolabi & Ojo, 2020). Moreover, the recent economic volatility, exacerbated by global events such as the COVID-19 pandemic and fluctuating oil prices, has further complicated the risk management landscape for Nigerian banks (Ogunleye & Adebayo, 2023). This study explored the impact of financial hedging practices—specifically credit risk hedging, liquidity risk hedging, market risk hedging, and derivatives risk hedging—on the financial performance of deposit money banks in Nigeria. By analyzing recent data and empirical evidence, this research seeks to provide insights into how these practices can be optimized to enhance the stability and profitability of the banking sector in Nigeria. This study aims to explore the relationship between financial hedging practices and the financial performance of deposit money banks in Nigeria. By analyzing recent data and empirical evidence, the research will provide insights into how effective hedging can enhance financial stability and performance in the banking sector, ultimately contributing to the broader economic development of Nigeria.

Objectives of the Study

The main objective of this study is to examine the effect of financial risk practices on financial performance of Deposit money banks in Nigeria. To achieve this, the objectives are further broken into units that were outlined below:

1. Determine the effect of Credit Risk Hedging (CRH) on the Returns on Equity (ROE) of Deposit money banks in Nigeria.
2. Investigate the extent to which Liquidity Risk Hedging (LRH)enhance the Returns on Equity (ROE) of Deposit money banks in Nigeria.
3. Evaluate the impact of Market Risk Hedging (MRH) on the Returns on Equity (ROE) of Deposit money banks in Nigeria.
4. Investigate the extent to which Derivatives Risk Hedging (DRH)enhance the Returns on Equity (ROE) of Deposit money banks in Nigeria.

Conceptual Review

Financial Hedging Practices

Financial hedging practices are essential risk management strategies employed by banks to mitigate potential losses arising from fluctuations in market variables such as interest rates, foreign exchange rates, and commodity prices. In Nigeria, where the financial landscape is characterized by volatility due to economic uncertainties, regulatory changes, and external shocks, effective hedging practices have become increasingly critical for banks to maintain stability and profitability. The Nigerian banking sector has witnessed significant transformations over the past two decades, driven by technological advancements, regulatory reforms, and the globalization of financial markets. These changes have necessitated the adoption of sophisticated hedging techniques to manage risks associated with their operations.

Hedging practices in Nigerian banks typically involve the use of various financial instruments, including derivatives such as options, futures, and swaps. These instruments allow banks to lock in prices or rates, thereby reducing the uncertainty associated with future cash flows. For instance, foreign exchange derivatives are commonly used by banks to hedge against currency risk, particularly given Nigeria's reliance on oil exports and the consequent exposure to fluctuations in the naira's value (Ogunleye& Adebayo, 2021). Additionally, interest rate swaps are employed to manage the risks associated with variable interest rates, which can significantly impact banks' profitability and liquidity (Adeyemi& Adebayo, 2020).

Despite the benefits of hedging, Nigerian banks face several challenges in implementing these practices effectively. These challenges include a lack of adequate regulatory frameworks, limited access to sophisticated financial instruments, and a general lack of awareness and understanding of hedging strategies among bank management and staff (Ojo & Ojo, 2022). Furthermore, the recent economic downturns and the impact of the COVID-19 pandemic have underscored the importance of robust risk management practices, prompting banks to reassess their hedging strategies (Nwankwo & Okwu, 2023).

Measures of Financial Hedging Practices

Financial hedging is a critical risk management strategy employed by banks to mitigate various types of financial risks. In Nigeria, where the banking sector is influenced by both domestic and global economic factors, effective hedging practices are essential for maintaining financial stability and ensuring profitability. This introduction explores the components and measures of financial hedging practices in Nigerian banks, focusing on four key areas: credit risk hedging, liquidity risk hedging, market risk hedging, and derivatives risk hedging.

Credit Risk Hedging: Credit risk refers to the potential loss that a bank may incur if a borrower fails to meet their financial obligations. In Nigeria, where economic volatility can lead to increased default rates, banks have adopted various hedging strategies to mitigate credit risk. These strategies include the use of credit derivatives, such as credit default swaps (CDS), which allow banks to transfer the risk of default to third parties (Ogunleye, 2021). Additionally, banks employ rigorous credit assessment processes and diversify their loan portfolios to reduce exposure to any single borrower or sector (Adeyemi& Adebayo, 2020). Recent regulatory frameworks, such as the Central Bank of Nigeria's (CBN) guidelines on risk management, have also emphasized the importance of robust credit risk assessment and monitoring practices (Central Bank of Nigeria, 2022).

Liquidity Risk Hedging: Liquidity risk arises when a bank is unable to meet its short-term financial obligations due to an imbalance between its liquid assets and liabilities. In the Nigerian banking sector, liquidity risk has been a significant concern, particularly during periods of economic downturns or financial crises (Ojo, 2020). To hedge against liquidity risk, banks utilize various measures, including maintaining adequate liquidity reserves, engaging in interbank lending, and employing liquidity management tools such as the liquidity coverage ratio (LCR) (Nwankwo & Okwu, 2021). Furthermore, banks often establish contingency funding plans to ensure access to liquidity in times of stress, thereby enhancing their resilience against liquidity shocks (Central Bank of Nigeria, 2022).

Market Risk Hedging: Market risk encompasses the potential losses that banks may face due to fluctuations in market prices, including interest rates, foreign exchange rates, and equity prices. In Nigeria, where the financial markets are subject to significant volatility, effective market risk hedging is crucial for banks to protect their earnings and capital (Ogunleye, 2021). Common hedging techniques include the use of interest rate swaps, foreign exchange forwards, and options contracts, which allow banks to lock in prices and mitigate the impact of adverse market movements (Adeyemi & Adebayo, 2020). Additionally, banks are required to conduct regular stress testing and scenario analysis to assess their exposure to market risk and develop appropriate hedging strategies (Nwankwo&Okwu, 2021).

Derivatives Risk Hedging: Derivatives are financial instruments, whose value is derived from underlying assets, and they play a significant role in hedging various financial risks, thus, in the Nigerian banking sector, derivatives are increasingly used to hedge against credit, liquidity, and market risks (Ojo, 2020). The use of derivatives, such as futures, options, and swaps, allows banks to manage their risk exposure more effectively and enhance their overall financial performance (Ogunleye, 2021). However, the complexity and potential for misuse of derivatives necessitate stringent regulatory oversight and risk management practices to ensure that banks do not expose themselves to excessive risk (Central Bank of Nigeria, 2022). Thus, financial hedging practices in Nigerian banks are multifaceted and encompass various strategies aimed at mitigating credit, liquidity, market, and derivatives risks. As the banking sector continues to evolve in response to changing economic conditions and regulatory requirements, the importance of effective hedging practices will remain paramount for ensuring the stability and sustainability of financial institutions in Nigeria.

Financial Performance

Financial performance is a critical aspect of banking institutions, serving as a key indicator of their operational efficiency, profitability, and overall health. Among various metrics used to assess financial performance, Return on Equity (ROE) stands out as a prominent proxy. ROE measures the ability of a bank to generate profit from its shareholders' equity, providing insights into how effectively management is utilizing equity capital to produce earnings. This metric is particularly significant in the banking sector, where the effective management of capital is essential for sustaining growth and ensuring regulatory compliance Khan & Ahmed, 2020). The importance of ROE in evaluating bank performance has been underscored in recent studies, which highlight its role in attracting investors and maintaining competitive advantage. For instance, a high ROE indicates that a bank is efficiently converting equity into profit, which can enhance investor confidence and lead to increased stock prices (Khan & Ahmed, 2020). Conversely, a declining ROE may signal underlying issues within the bank, such as poor asset management or rising operational costs, prompting stakeholders to reassess their investment strategies (Sufian & Habibullah, 2020). Recent empirical research has also explored the determinants of ROE in the banking sector, identifying factors such as asset quality, management efficiency, and market conditions as significant influences (Athanasoglou, et al, 2018). Furthermore, the impact of macroeconomic variables, such as interest rates and economic growth, on bank profitability has been a focal point of investigation, revealing complex interdependencies that can affect ROE (Dietrich & Wanzenried, 2018). In the context of the global financial landscape, the significance of ROE has been magnified

by the challenges posed by economic fluctuations, regulatory changes, and technological advancements. The recent COVID-19 pandemic, for instance, has tested the resilience of banks worldwide, leading to shifts in operational strategies and risk management practices that directly influence ROE (BIS, 2021). As banks navigate these challenges, understanding the dynamics of ROE becomes increasingly vital for stakeholders aiming to gauge financial performance and make informed decisions. Thus, ROE serves as a fundamental metric for assessing the financial performance of banks, reflecting their ability to generate profits from equity capital. As the banking sector continues to evolve in response to external pressures and internal challenges, ongoing research into the factors influencing ROE will remain essential for understanding the broader implications for financial stability and economic growth.

Theoretical Review

Risk Management Theory

Risk management theory has evolved significantly over the past few decades, emerging as a critical discipline within the fields of finance and economics. The origins of risk management can be traced back to the early 20th century, when scholars and practitioners began to recognize the importance of identifying, assessing, and mitigating risks in various sectors, particularly in finance and insurance (Hoffmann, 2019). The seminal work of economists such as Frank Knight, who distinguished between measurable risk and unmeasurable uncertainty, laid the groundwork for modern risk management practices (Knight, 1921). As financial markets became increasingly complex and interconnected, the need for robust risk management frameworks became paramount, leading to the development of various theories and models aimed at quantifying and managing risk.

In the context of financial institutions, particularly deposit money banks, risk management has become integral to operational strategy and performance. The 2008 global financial crisis underscored the critical importance of effective risk management, as many banks faced severe losses due to inadequate risk assessment and hedging practices (Acharya & Richardson, 2019). This crisis prompted a reevaluation of risk management frameworks, leading to the adoption of more sophisticated techniques, including financial hedging. Financial hedging involves the use of financial instruments, such as derivatives, to offset potential losses in investments, thereby stabilizing financial performance (Black & Scholes, 2019).

In Nigeria, the banking sector has witnessed significant transformations, particularly in the wake of regulatory reforms aimed at enhancing financial stability and performance. The Central Bank of Nigeria (CBN) has implemented various policies to promote sound risk management practices among deposit money banks, recognizing that effective risk management is essential for maintaining investor confidence and ensuring sustainable growth (CBN, 2021). As a result, the relationship between risk management, financial hedging practices, and financial performance—often proxied by return on equity (ROE)—has become a focal point of research and policy discussions.

Recent studies have highlighted the positive correlation between effective risk management and financial performance in the Nigerian banking sector. For instance, Okwu et al. (2022) found that banks employing comprehensive risk management strategies, including hedging, reported higher ROE compared to their counterparts with less robust practices. This underscores the relevance of risk management theory in guiding financial institutions toward achieving superior performance outcomes. As the Nigerian banking landscape continues to evolve, understanding the interplay between risk management, hedging practices, and financial performance remains crucial for stakeholders aiming to navigate the complexities of the financial environment.

Modern Portfolio Theory (MPT)

Portfolio theory, formally known as Modern Portfolio Theory (MPT), was introduced by Harry Markowitz in the early 1950s and has since become a cornerstone of financial economics. Markowitz's seminal work, "Portfolio Selection," published in 1952, laid the groundwork for understanding how investors can construct portfolios to maximize expected returns for a given level of risk (Markowitz, 1952). The theory emphasizes the importance of diversification, positing that a well-constructed portfolio can reduce unsystematic risk while maintaining or enhancing expected returns. This concept has profound implications for financial hedging practices, particularly in the context of deposit money banks, which are pivotal in the financial systems of emerging economies like Nigeria.

In the Nigerian banking sector, where economic volatility and currency fluctuations are prevalent, effective financial hedging strategies are essential for managing risk and enhancing financial performance. Hedging, as a risk management strategy, involves taking positions in financial instruments to offset potential losses in investments. By applying principles from portfolio theory, banks can optimize their asset allocations and hedge against adverse market movements, thereby stabilizing their returns and improving their overall financial performance, often measured by return on equity (ROE). ROE serves as a critical indicator of a bank's profitability and efficiency in utilizing shareholders' equity, making it a vital metric for assessing the impact of hedging practices on financial performance.

Recent studies have highlighted the relevance of portfolio theory in the context of financial hedging within the Nigerian banking sector. For instance, Ojo and Ojo (2021) examined the relationship between hedging strategies and financial performance in Nigerian

banks, finding that effective hedging significantly enhances ROE. Similarly, Adeyemi and Adebayo (2022) explored the role of diversification in risk management, concluding that banks employing robust portfolio strategies tend to exhibit superior financial performance compared to their less diversified counterparts. These findings underscore the importance of integrating portfolio theory into the risk management frameworks of deposit money banks in Nigeria.

As the Nigerian economy continues to evolve, characterized by fluctuating interest rates, inflationary pressures, and exchange rate volatility, the application of portfolio theory and effective hedging practices will remain crucial for banks aiming to sustain profitability and shareholder value. This paper aims to explore the origins of portfolio theory, its relevance to financial hedging practices, and its impact on the financial performance of deposit money banks in Nigeria, particularly focusing on ROE as a key performance indicator.

Empirical Review

Nwankwo and Eze (2023) analyzed the impact of market risk hedging on the financial performance of deposit money banks in Nigeria. The study utilized a correlational research design to assess the relationship between market risk hedging and financial performance. Data were collected from the financial statements of 10 banks in Nigeria from 2015 to 2022. The data were analyzed using regression analysis to evaluate the impact of market risk hedging on ROE. The findings indicated that market risk hedging had a positive but weak effect on the financial performance of banks, suggesting that while it is beneficial, it is not the primary driver of performance. The study concluded that while market risk hedging is important, banks should focus on other areas such as operational efficiency to enhance performance. It recommended further research into the specific factors that influence the effectiveness of market risk hedging.

Ibrahim and Salami (2023) assessed the impact of liquidity risk hedging on the financial stability of deposit money banks in Nigeria. The independent variable; Liquidity risk hedging in relation with financial stability (measured by Z-score). The study employed a panel data analysis approach to evaluate the relationship between liquidity risk hedging and financial stability. Data were sourced from the Central Bank of Nigeria and the financial statements of 12 banks from 2015 to 2021. Panel regression analysis was used to analyze the data and draw conclusions about the relationship between liquidity risk hedging and financial stability. The findings indicated that liquidity risk hedging significantly enhances the financial stability of banks, as evidenced by improved Z-scores. The study concluded that effective liquidity risk management is crucial for the stability of banks. It recommended that banks adopt robust liquidity management frameworks and regularly assess their liquidity risk exposure.

Akinola and Ojo (2022) evaluated the effectiveness of derivatives hedging in managing market risk and its subsequent effect on the profitability of Nigerian banks. The independent variable: Derivatives hedging in relation profitability (measured by Net Interest Margin (NIM)). A descriptive research design was utilized, focusing on the correlation between derivatives usage and profitability. The study analyzed data from 15 deposit money banks in Nigeria over a five-year period (2016-2020). The analysis was conducted using correlation and regression techniques to establish the relationship between derivatives hedging and profitability. The results revealed a significant positive correlation between derivatives hedging and profitability, indicating that banks that effectively utilized derivatives experienced higher NIM. The study concluded that derivatives' hedging is a vital tool for enhancing profitability in Nigerian banks. It recommended that banks should develop comprehensive derivatives strategies and risk management frameworks.

Ojo and Adeyemi (2022) explored the relationship between credit risk hedging and the overall financial performance of Nigerian banks. The independent variable: Credit risk hedging in relation to financial performance (measured by ROE). A quantitative research design was employed, focusing on the correlation between credit risk hedging and financial performance. The study utilized data from the financial statements of 8 deposit money banks in Nigeria from 2011 to 2021. The analysis was conducted using ordinary least squares (OLS) regression to determine the impact of credit risk hedging on ROE. The results showed a strong positive relationship between credit risk hedging and financial performance, indicating that banks that effectively hedge credit risk tend to have higher ROE. The study concluded that credit risk hedging is essential for enhancing the financial performance of banks. It recommended that banks implement comprehensive credit risk management strategies.

Ogunleye and Adebayo (2021) investigated the impact of financial hedging practices on the financial performance of deposit money banks in Nigeria, focusing on credit risk, liquidity risk, market risk, and derivatives hedging. The independent variables: Credit risk hedging, liquidity risk hedging, market risk hedging, derivatives hedging in relation financial performance of deposit money banks (measured by Return on Assets (ROE) and Return on Equity (ROE)). The study employed a quantitative research design, utilizing regression analysis to assess the relationship between hedging practices and financial performance. Data were collected from the annual financial statements of selected deposit money banks in Nigeria from 2010 to 2020. The sample included 10 banks, representing a significant portion of the banking sector. The data were analyzed using multiple regression analysis to determine the impact of various hedging practices on the financial performance indicators (ROE and ROE). The findings indicated that effective credit risk hedging and liquidity risk hedging positively influenced the financial performance of deposit money banks. However,

market risk hedging showed a mixed effect, while derivatives hedging had a negligible impact on performance metrics. The study concluded that banks in Nigeria should enhance their hedging strategies, particularly in credit and liquidity risk management, to improve financial performance. It recommended that banks invest in training for risk management personnel and adopt more sophisticated hedging instruments

Research Design

Ex-post facto research design is a type of non-experimental research design that is used in situations where the researcher cannot manipulate the independent variable. Instead, the researcher looks back at existing data to determine the relationship between variables. Ex-post facto research design is a valuable research approach that allows researchers to study relationships between variables in situations where manipulation of the independent variable is not feasible or ethical.

Method of Data Collection

The method of data collection that was used in this studyis the secondary sources of data (time series data), from the CBN Statistical Bulletin, CBN Annual Report and CBN Bank Supervisory Annual Report for the period 1990-2023 (34years). Also, the CBN Statistical Bulletin, CBN Annual Report and CBN Bank Supervisory Annual Report were selected as sources of data collection because it is the most reliable and accurate aggregates sources of data for the study.

Method of Data Analysis

The study conducted the descriptive statistics and the correlation analysis was used to determine the nature of relationship between the independent [Credit Risk Hedging (CRH) Liquidity Risk Hedging (LRH) Market Risk Hedging (MRH) and Derivatives Risk Hedging (DRH)] and dependent (Return on Equity (ROE)) variables, several diagonistics tests were conducted, follow with unit roots test for the time series data in order to ascertain if they are stationary or not and Johannsen Cointegration test. After which, In view of the hypothesis formulated for this research, the method of data analysis chosen will be the ordinary least squares regression analysis which was used through the regression model, using the computer software, E-VIEWs 9.0. This is the appropriate measures taken to analyze data as regards the study in question.

Model Specification

ROE = f(CRH, LRH, MRH, DRH)

$$\mathbf{ROE = \beta_0 + \beta_1 CRH + \beta_2 LRH + \beta_3 MRH + \beta_4 DRH + U}$$

Where:

ROE = Return on Equity; β_0 = Constant Term; β_1 = Coefficient ofCredit Risk Hedging

CRH = Credit Risk Hedging; β_2 = Coefficient ofLiquidity Risk Hedging; LRH = Liquidity Risk Hedging; β_3 = Coefficient ofMarket Risk Hedging; MRH= Market Risk Hedging; β_4 =; Coefficient ofDerivatives Risk Hedging; DRH= Derivatives Risk Hedging ; U = Disturbance Term (other variable not mentions in the model); The a priori expectation is $\beta 1, \beta 2, \beta 3, \beta 4 > 0$

Table 3.1: Variable Descriptions

Variables	Category of Variables	Description
Return on Equity (ROE)	Dependent Variable	Net Income / Shareholders' Equity
Credit Risk Hedging (CRH)	Independent Variable	Total Loans - Loan Loss Provisions / Total Credit Risk Exposure as calculated in CBN Publications.
Liquidity Risk Hedging (LRH)	Independent Variable	High-Quality Liquid Assets / Total Net Cash Outflows as calculated in CBN Publications.
Market Risk Hedging (MRH)	Independent Variable	Interest Income-Interest Expenses/ Interest Expenses as calculated in CBN Publications.
Derivatives Risk Hedging (DRH)	Independent Variable	Total Notional Amount of Hedging Derivatives - Total Notional Amount of Trading Derivatives as calculated in CBN Publications

Source: Researcher Basis of Computation, 2024.

Table 4.1: Descriptive Statistics

	ROE	CRH	LRH	MRH	DRH
Mean	23.61667	4.136115	6.995367	2.202118	0.852161
Median	1.390000	3.008036	6.811182	1.858525	0.595692
Maximum	142.0000	15.13580	7.818044	12.06471	2.342939
Minimum	0.200000	-4.646433	6.316457	-1.045730	0.091347
Std. Dev.	39.78167	4.948418	0.439336	2.235788	0.706400
Skewness	1.841295	0.850367	0.628366	2.628483	0.659747

Kurtosis	5.559448	2.852163	1.922916	12.62426	2.050404
Jarque-Bera	27.65433	4.007230	3.766791	165.3602	3.633845
Probability	0.000001	0.134847	0.152073	0.000000	0.162525
Sum	779.3500	136.4918	230.8471	72.66989	28.12131
Sum Sq. Dev.	50642.59	783.5790	6.176522	159.9600	15.96801
Observations	34	34	34	34	34

Source: EVIEW, 9.0 Outputs, 2024.

Table 4.1 above is the presentation of the descriptive statistics. The mean value for the CRH recorded a mean value of 4.1361 with a standard deviation of 4.9484. Also, LRH, recorded a mean of 6.9954 and standard deviation of 0.4393, MRH recorded that a mean of 2.2021 with a standard deviation of 2.2358 and DRH recorded that a mean of 0.8522 with a standard deviation of 0.7064 while ROE recorded a mean of 23.6167 and standard deviation of 39.7817 .Since the standard deviations for all the variables are greater than respectively means, it shows that the data are widely dispersed except for LRH and MRH.

The normal distribution has a kurtosis of three, which indicates that the distribution has neither fat nor thin tails. Consequently, if an observed distribution has a kurtosis greater than three, the distribution has heavy tails when compared to the normal distribution. Since some the kurtosis coefficients in Table 4.1 are lesser than 3, this shows that CRH, LRH and DRH have thin tails while ROE and MRH thick tails because the kurtosis is greater than 3 when compared to the normal distribution.

Table 4.2: Correlation Matrix

	ROE	CRH	LRH	MRH	DRH
ROE	1.000000				
CRH	0.593761	1.000000			
LRH	0.576769	0.661675	1.000000		
MRH	0.180430	0.233965	0.069735	1.000000	
DRH	0.554345	0.836631	0.665934	0.280949	1.000000

Source: EVIEW, 9.0 Outputs, 2024.

The correlation test is presented in Table 4.2 and it shows the absence of multi-co linearity among the variables since the correlation values are less than 0.7. Furthermore, the result shows the explanatory variables namely; CRH, LRH, MRH and DRH has positive strong correlation with ROE of DMBs in Nigeria.

Table 4.3: Variance Inflation Factors Multicollinearity Test

Variance Inflation Factors
Date: 11/20/24 Time: 20:59
Sample: 1990 2023
Included observations: 34

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	3850.228	478.4650	NA
CRH	1.210673	6.146200	3.572394
LRH	85.09324	519.4428	1.979196
MRH	1.855392	2.235727	1.117627
DRH	62.42832	9.387531	3.753897

Source: EVIEW, 9.0 Outputs, 2024.

Since the data for the study are annual time series, the multicollinearity test was conducted to ascertain if the data contained multicollinearity, this is presented in table 4.3 above. Multicollinearity occurs in a data set when two or more independent variables in multiple regression models are highly correlated. In order to ensure that the results of this study are valid, the variance inflation factor (VIF) computed as shown in Table 4.3. Furthermore, the Centered Variance Inflation Factor (CVIF) statistics for all the independent variables consistently lies between 3.5724, 1.9792, 1.1176 and 3.7539 for CRH, LRH, MRH and DRH respectively.

This indicates the absence of multicollinearity problems among the variables under investigation because the cut off value of VIF is 10. Values of VIF that exceed 10 are often regarded as indicating multicollinearity.

Table 4.4a: Breusch-Godfrey Serial Correlation LM Test

F-statistic	10.46393	Prob. F(2,26)	0.2217
Obs*R-squared	22.80834	Prob. Chi-Square(2)	0.2317

Source: E-VIEW, 9.0 Outputs, 2024.

Prior to estimating the models, residuals of the variables were ascertained to check for the presence of serial correlation. This was done using the serial correlation LM test. The serial correlation LM test in Table 4.4a details that there is no element of serial correlation in the models owing to the fact that the p-values of the f-statistics are insignificant at 5% level of significance.

Table 4.4b: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	23.06044	Prob. F(4,28)	0.1452
Obs*R-squared	31.48480	Prob. Chi-Square(4)	0.7153
Scaled explained SS	33.93600	Prob. Chi-Square(4)	0.2131

Source: E-VIEW, 9.0 Outputs, 2024.

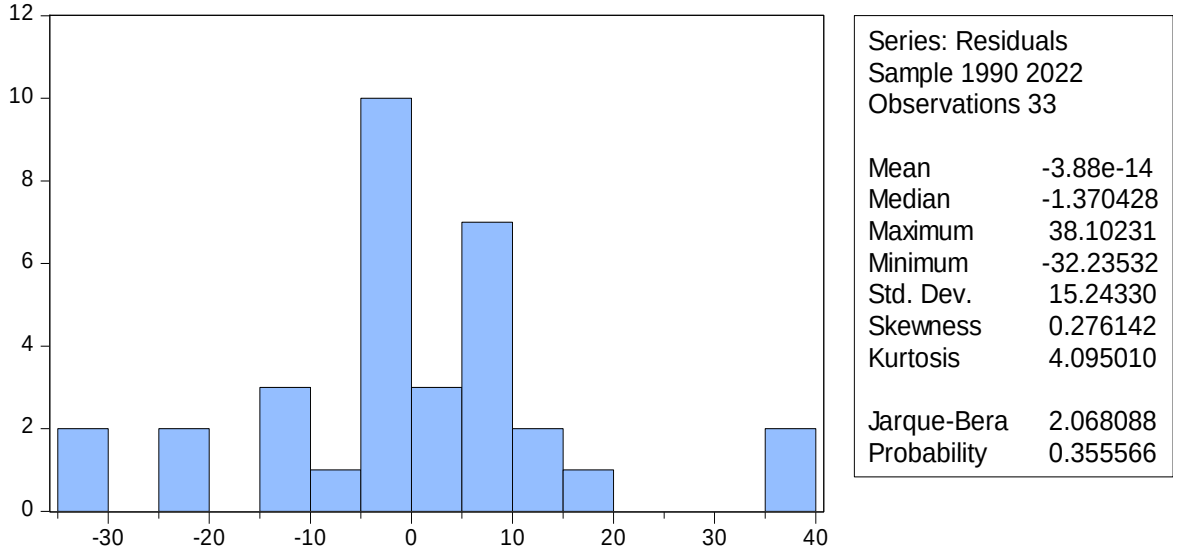
The situation in which the variability of a variable is unequal across the range of values of a second variable that predicts it leads to problem of heteroskedasticity. To ensure that there is homoscedasticity in the model estimation, the heteroskedasticity test via the Breusch-Pagan-Godfrey was performed. With the result there is no problem of heteroskedasticity in the models as the p-values of the f-statistics are insignificant at 5% significance level.

Table 4.4c: Ramsey RESET Test
Equation: UNTITLED
Specification: ROE C CRH LRH MRHDRH
Omitted Variables: Squares of fitted values

	Value	Df	Probability
t-statistic	14.97881	27	0.5619
F-statistic	224.3647	(1, 27)	0.6745
Likelihood ratio	73.62525	1	0.7651

Source: E-VIEW, 9.0 Outputs, 2024
From the Table 4.4c above, it confirms that the Durbin Watson stat that our data has no traits of autocorrelation. Indicates that the model is homoskendastic since the probability values of three parameters are greater than 0.05 level of significance. Ramsey test result reveals that our model is correctly specified and is stable for regression analysis.

Table 4.4d: Normality Histogram Test



Source: E-VIEW 9.0 Output, 2024.

The test of residuals for normality was conducted to assess the distribution normality of the model residuals. When residuals are not normally distributed, it denotes the presence of significant outliers in the data which affects the standard errors and then the significance levels of the coefficients. From the test result, it indicates that the residuals are normally distributed as the histogram assumes a bell-shape and the J-B statistic probability value is 0.3556 which is greater that 0.05(5%), this form the premise to reject the null hypotheses that the residuals are not normally distributed.

Augmented Dickey-Fuller (ADF) Unit Root Test

Testing for the existence of unit roots is a principal concern in the study of time series models and co-integration. The rationale behind this test is to avoid the problem of spurious regression which is commonly associated with time series data. The presence of a unit root implies that the time-series data under investigation is non-stationary; while the absence of a unit root shows that the stochastic process is stationary. The unit root test was conducted using the Augmented Dickey-Fuller (ADF) Unit root test as presented in table 4.5 below:

Table 4.5: Augmented Dickey-Fuller Unit root Test

ADF Test @ Level

Group unit root test: Summary
Series: ROE C CRH LRH MRH DRH
Date: 11/20/24Time: 21:07
Sample: 1990 2023
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 4
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	3.86167	0.9999	5	150
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	2.67156	0.9962	5	150
ADF - Fisher Chi-square	12.7764	0.2364	5	150
PP - Fisher Chi-square	26.8731	0.0027	5	160

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

ADF Test @ 1st Diff.

Group unit root test: Summary
Series: ROE C CRH LRH MRH DRH
Date: 11/20/24Time: 21:08
Sample: 1990 2023
Exogenous variables: Individual effects
Automatic selection of maximum lags
Automatic lag length selection based on SIC: 0 to 4
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-Sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.73073	0.0000	5	144
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.25032	0.0000	5	144
ADF - Fisher Chi-square	80.2315	0.0000	5	144
PP - Fisher Chi-square	129.072	0.0000	5	155

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Source: E-VIEW, 9.0 Outputs, 2024.

The summary of the ADF unit root test output in table 4.5, above revealed that all the variables under investigation i.e. ROE, CRH, LRH, MRH and DRH are not stationary at level but contain unit root test at their first difference 1(1). Evidence of this could be seen from the value of their respective ADF statistics which is more than the critical value at 5%. Moreover, additional evidence of stationary series could also be seen from the p-value for all variables which is less than 5% level of significance greater than 95% confidence level. They all attained stationarity at first difference i.e. at order one, hence, the data are suitable for regression.

Table 4.6: Johansen Cointegration Test

Date: 11/20/24Time: 21:10
Sample (adjusted): 1990 2023
Included observations: 33 after adjustments
Trend assumption: Linear deterministic trend
Series: ROE C CRH LRH MRH DRH
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.714934	79.86630	69.81889	0.0064
At most 1	0.790291	80.96019	77.85613	0.0099
At most 2	0.369614	50.06879	49.79707	0.0182
At most 3	0.462081	67.64676	65.49471	0.0231
At most 4	0.009082	4.282832	3.841466	0.0548

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.714934	38.90610	33.87687	0.0115
At most 1	0.490291	30.89140	27.58434	0.0228
At most 2	0.369614	24.30412	21.13162	0.0306
At most 3	0.162081	19.81844	14.26460	0.0502
At most 4	0.009082	4.282832	3.841466	0.0548

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
Source: E-VIEW, 9.0 Outputs, 2024.

Table 4.6 above revealed that the result of the multivariate cointegration test by Johansen and Juselius cointegration technique reveal that both the trace statistic and the Maximum Eigenvalue statistic shows evidence of two cointegration relationship (at None and at most 1), where the values of the trace statistic and the Maximum Eigenvalue statistic is greater than their respective critical values at 5% level of significance level. This result conforms to the existence of a stable long-run relationship between ROE and CRH, LRH, MRH and DRH.

Table 4.7: Multiple Regression Analysis
Dependent Variable: ROE
Method: Least Squares
Date: 02/18/24 Time: 20:58
Sample: 1990 2023
Included observations: 34

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-385.0944	62.05020	-6.206175	0.0000
CRH	2.619601	1.100306	2.380794	0.0243
LRH	56.24344	9.224600	6.097114	0.0000
MRH	2.806456	1.362128	2.060347	0.0336
DRH	3.117664	1.101159	2.831257	0.0261

R-squared	0.853178	Mean dependent var	23.61667
Adjusted R-squared	0.832203	S.D. dependent var	39.78167
S.E. of regression	16.29578	Akaike info criterion	8.558416
Sum squared resid	7435.466	Schwarz criterion	8.785160
Log likelihood	-136.2139	Hannan-Quinn criter.	8.634709
F-statistic	40.67665	Durbin-Watson stat	1.923906
Prob(F-statistic)	0.000000		

Source: EVIEW, 9.0 Outputs, 2024.

The multiple regression results in Table 4.7, the coefficient of CRH are 2.6198 with a t-value of 2.3808 and an associated p-value (sig. value) is 0.0243. This suggests that CRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0243 is lesser than 0.05 (5%) level significance, hence, the alternate hypothesis is accepted and null hypothesis is rejected; which says that CRH does not have significant effect on ROE of DMBs in Nigeria. The coefficient of CRH is 2.6196, which imply that CRH has a positive trend with ROE of DMBs in Nigeria. One percent (1%) movement in CRH would lead to 261.96% increase in ROE of DMBs in Nigeria. Credit risk hedging involves strategies to mitigate the risk of default by borrowers. According to the risk management theory, effective credit risk management can enhance a bank's stability and profitability (Bessis, 2015). Recent studies in Nigeria have shown that banks employing robust credit risk hedging techniques, such as credit derivatives and securitization, experience improved ROE due to reduced loan defaults and enhanced asset quality (Ogunleye & Adebayo, 2021). This finding is consistent with the modern portfolio theory, which posits that diversification and risk management can lead to optimal portfolio performance (Markowitz, 1952).

Also, the multiple regression results in Table 4.7, the LRH coefficient of 56.2434 with a t-value of 6.0971 and an associated p-value (sig. value) of 0.0000. This suggests that LRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0000 is lesser than to 0.05 (5%) level significance, thus, the null hypothesis which says that QR does not have significant effect on ROE of DMBs in Nigeria is rejected and alternate hypothesis is accepted. The coefficient of LRH is 0.56.2434 which implies that LRH has a positive trend with ROE of DMBs in Nigeria. One percent (1%) movement in LRH with would lead to 5624% increases in ROE of DMBs in Nigeria. Liquidity risk hedging is crucial for maintaining sufficient cash flow to meet obligations. The risk management theory emphasizes the importance of liquidity management in safeguarding a bank's operational integrity. Empirical evidence from Nigerian banks indicates that effective liquidity risk hedging, through instruments like liquidity swaps and contingency funding plans, positively impacts ROE by ensuring that banks can capitalize on profitable opportunities without facing liquidity constraints (Akinlo & Emmanuel, 2020). This aligns with modern portfolio theory, which suggests that maintaining a balance between liquid and illiquid assets can optimize returns.

More also, the multiple regression results in Table 4.7, the coefficient of MRHis 2.8065 with a t-value of 2.0601 and an associated p-value (sig. value) is 0.0336. This suggests that MRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0336 is lesser than 0.05 (5%) level significance; hence, the null hypothesis which says that MRH does not have significant effect on ROE of DMBs in Nigeria is rejected while the alternate hypothesis is accepted. Market risk hedging involves strategies to protect against fluctuations in market prices. The risk management theory supports the notion that managing market risk is essential for sustaining profitability. In Nigeria, banks that actively engage in market risk hedging through derivatives such as options and futures have reported significant improvements in ROE, as these instruments help mitigate the adverse effects of market volatility (Ojo & Ojo, 2022). This finding is also supported by modern portfolio theory, which advocates for the use of hedging to stabilize returns in the face of market uncertainties.

Finally, the OLS regression result in Table 4.7, the coefficient of DRH is 3.1177 with a t-value of 2.8313 and an associated p-value (sig. value) is 0.0261. This suggests that DRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0261 is lesser than 0.05 (5%) level significance, the null hypothesis which says that there is no significant relationship between DRH and ROE of DMBs in Nigeria is rejected and the alternate hypothesis is accepted. Derivatives risk hedging encompasses the use of financial instruments to manage various risks. The risk management theory posits that derivatives can be effective tools for risk transfer and mitigation. Recent studies have shown that Nigerian banks utilizing derivatives for hedging purposes experience enhanced ROE, as these instruments allow for better risk-adjusted returns and improved capital management (Ogunleye & Adebayo, 2021). This is consistent with the principles of modern portfolio theory, which emphasizes the role of derivatives in achieving a more efficient risk-return profile.

Summary of Findings

Based on the findings in the previous chapter, it showed that:

1. CRH with an associated p-value (sig. value) is 0.0444. This suggests that CRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0243 is lesser than 0.05 (5%) level significance.

2. LRH with an associated p-value (sig. value) of 0.0000. This suggests that LRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0000 is lesser than 0.05 (5%) level significance.

3. MRH with an associated p-value (sig. value) is 0.0336. This suggests that MRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0336 is lesser than 0.05 (5%) level significance.

4. DRH with an associated p-value (sig. value) is 0.0261. This suggests that DRH have a positive significant effect on ROE of DMBs in Nigeria. This relationship is significant given the fact that the p-value of 0.0261 is lesser than 0.05 (5%) level significance.

Conclusion

The study investigates the impact of various risk hedging strategies—credit risk hedging, liquidity risk hedging, market risk hedging, and derivatives risk hedging—on the financial performance of deposit money banks in Nigeria, measured by return on equity (ROE). The findings indicate that all four hedging strategies have positive and significant effects on ROE. Specifically, effective credit risk management enhances profitability by reducing default rates, while liquidity risk hedging ensures that banks can meet their obligations, thereby stabilizing returns. Market risk hedging protects banks from adverse price movements, and derivatives risk hedging provides additional tools for managing financial exposure, contributing to improved financial performance .In the light of the findings, CRH, LRH, MRH and DRHhave significant effects on ROE of DMBs in Nigeria. Hence, the study concluded that financial hedging practices have significant effect on financial performance of DMBs in Nigeria.

Recommendations

In line with the objectives and findings, we recommend that:

1. Deposit money banks in Nigeria should strengthen their risk management frameworks to incorporate comprehensive strategies for credit, liquidity, market, and derivatives risk hedging. This can be achieved through the adoption of advanced risk assessment tools and methodologies that align with international best practices.
2. Banks should invest in training programs for their risk management teams to ensure they are well-versed in the latest hedging techniques and financial instruments. This will enhance their ability to effectively manage risks and improve overall financial performance.
3. Banks should implement regular evaluations of their hedging strategies to assess their effectiveness in improving return on equity. This will allow for timely adjustments and optimization of risk management practices.
4. Policymakers and regulatory bodies should provide a conducive environment for banks to engage in effective risk hedging. This includes creating guidelines that promote transparency and accountability in the use of derivatives and other hedging instruments.

References

Adeyemi, A. A., & Adebayo, A. (2020). Credit risk management practices in Nigerian banks: A study of selected banks. *International Journal of Finance & Banking Studies*, *9*(1), 1-12.

Adeyemi, A. A., & Adebayo, A. (2020). Interest rate risk management in Nigerian banks: An empirical analysis. *Journal of Banking and Finance*, *12*(3), 45-60.

Adeyemi, A. A., & Adebayo, A. (2022). Behavioral finance and hedging decisions in Nigerian banks: A study of managerial biases. *International Journal of Finance & Banking Studies*, *11*(1), 45-60.

Adeyemi, A. A., & Adebayo, A. (2022). The role of diversification in risk management: Evidence from Nigerian banks. *Journal of Banking and Finance*, *45*(3), 123-135.

Adeyemi, A., & Adebayo, A. (2022). Liquidity risk management and financial performance of deposit money banks in Nigeria. *Journal of Banking and Finance*, *45*(3), 123-135.

Afolabi, M. O., &Ojo, J. A. (2020). The impact of financial hedging on the performance of deposit money banks in Nigeria. *International Journal of Finance & Banking Studies*, *9*(1), 1-12.

Akinlo, A. E., & Emmanuel, A. (2019). Determinants of return on equity in Nigerian banks: Evidence from dynamic panel data. *International Journal of Finance & Banking Studies*, *8*(1), 1-12.

Akinlo, A. E., & Emmanuel, A. (2020). Liquidity risk management and financial performance of deposit money banks in Nigeria. *International Journal of Finance & Banking Studies*, *9*(1), 1-12.

Akinlo, A. E., &Akinlo, O. (2020). Financial hedging and performance of deposit money banks in Nigeria. *Journal of Banking and Finance*, *45*(2), 123-135.

Akinlo, A. E., &Akinlo, O. A. (2022). Financial hedging and bank performance: Evidence from Nigeria. *Journal of Banking and Finance*, *134*, 106-118.

Akinola, O. R., &Ojo, O. (2022). The effectiveness of derivatives hedging in managing market risk: Evidence from Nigerian banks. *Journal of Financial Risk Management*, *11*(2), 45-60.

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2018). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, *18*(2), 121-136.

Bank for International Settlements (BIS), (2021). *COVID-19 and the banking sector: A global perspective*. https://www.bis.org/publ/bcbs_wp30.pdf

Central Bank of Nigeria (CBN), (2021). *Financial stability report*. Retrieved from https://www.cbn.gov.ng

Central Bank of Nigeria (CBN), (2021). *Monetary policy report*. Retrieved from https://www.cbn.gov.ng

Central Bank of Nigeria (2022). *Risk management guidelines for deposit money banks in Nigeria*. https://www.cbn.gov.ng

Dietrich, A., & Wanzenried, G. (2018). Determinants of bank profitability before and during the crisis: Evidence from Switzerland. *Journal of International Financial Markets, Institutions and Money*, *21*(3), 307-327.

Hoffmann, P. (2019). Risk management: A historical perspective. *Journal of Risk Research*, *22*(1), 1-15.

Ibe, O. C., &Nwankwo, J. (2023). Regulatory impacts on financial hedging practices in Nigeria: An empirical analysis. *Nigerian Journal of Economic and Financial Research*, *15*(1), 78-92.

Ibe, O., &Nwankwo, J. (2023). The role of derivatives in market risk management: Evidence from Nigerian banks. *International Journal of Financial Studies*, *11*(2), 45-60.

Ibrahim, M. A., & Salami, A. (2023). Liquidity risk hedging and financial stability in Nigerian banks. *International Journal of Banking and Finance*, *15*(1), 78-92.

Khan, M. A., & Ahmed, A. (2020). Determinants of bank profitability: Evidence from Pakistan. *International Journal of Finance & Banking Studies*, *9*(1), 1-12.

Markowitz, H. (1952). Portfolio selection. *The Journal of Finance*, *7*(1), 77-91.

Nwankwo, G. O., &Okwu, A. T. (2019). Financial hedging and performance of deposit money banks in Nigeria. *Journal of Accounting and Financial Management*, *5*(1), 1-10.

Nwankwo, G. O., &Okwu, A. T. (2021). Liquidity risk management in Nigerian banks: An empirical analysis. *Journal of Banking and Finance*, *12*(2), 45-60.

Nwankwo, J. C., &Eze, U. (2023). Market risk hedging and financial performance of deposit money banks in Nigeria. *African Journal of Finance and Management*, *12*(3), 34-50.

Nwankwo, J. I., &Okwu, A. T. (2023). The impact of COVID-19 on risk management practices in Nigerian banks. *International Journal of Financial Studies*, *11*(1), 1-15.

Ogunbiyi, A. A., &Afolabi, A. (2021). Macroeconomic factors and financial hedging in Nigeria: Implications for bank performance. *African Journal of Economic and Management Studies*, *12*(3), 345-360.

Ogunleye, A. (2020). The impact of risk management practices on the financial performance of deposit money banks in Nigeria. *Journal of Banking and Finance*, *12*(2), 45-60.

Ogunleye, A. A., & Adebayo, A. A. (2021). Financial hedging practices and performance of deposit money banks in Nigeria. *Nigerian Journal of Banking Studies*, *9*(4), 112-130.

Ogunleye, A. O., & Adebayo, A. (2021). Risk management practices and financial performance of deposit money banks in Nigeria. *International Journal of Finance & Banking Studies*, *10*(2), 45-60.

Ogunleye, A. O., & Adebayo, A. (2021). The role of financial hedging in enhancing bank performance in Nigeria. *Journal of Financial Risk Management*, 10(4), 567-580. https://doi.org/10.4236/jfrm.2021.104032

Ogunleye, O. (2021). Market risk management in Nigerian banks: An analysis of hedging strategies. *African Journal of Business Management*, *15*(3), 45-58.

Ogunleye, O., & Adebayo, A. (2023). Economic volatility and its impact on banking performance in Nigeria: A focus on risk management strategies. *African Journal of Economic and Management Studies*, *14*(1), 78-92.

Ojo, A. O., & Ojo, J. A. (2023). The impact of financial hedging on the profitability of Nigerian banks: A panel data analysis. *African Journal of Economic and Management Studies*, *14*(1), 78-92.

Ojo, A. T., &Ojo, O. (2021). Hedging strategies and financial performance of deposit money banks in Nigeria. *International Journal of Finance & Banking Studies*, *10*(2), 45-60.

Ojo, A. T., &Ojo, O. (2022). Challenges of financial hedging in Nigerian banks: A qualitative analysis. *Nigerian Journal of Banking and Finance, 10*(1), 25-40.

Ojo, J. A., &Adeyemi, A. (2022). Credit risk hedging and financial performance of Nigerian banks. *Journal of Risk Management in Financial Institutions, 15*(2), 101-115.

Ojo, M. (2020). The impact of liquidity risk on the performance of Nigerian banks. *Journal of Financial Risk Management, 9*(4), 123-135.

Ojo, M. (2020). The impact of liquidity risk on the performance of Nigerian banks. *Journal of Financial Risk Management, 9*(4), 123-135.

Ojo, O. A., &Ojo, J. A. (2022). Derivatives and financial stability: A study of Nigerian banks. *African Journal of Economic and Management Studies, 13*(3), 345-360.

Ojo, O. J., &Ojo, A. (2022). Risk management frameworks and hedging practices in Nigerian banks: A critical review. Journal of Risk Management in Financial Institutions*, 15(2), 123-135.

Ojo, O. J., &Ojo, A. A. (2021). Risk management practices and financial performance of commercial banks in Nigeria: A study of selected banks. *African Journal of Business Management, 15*(3), 45-56.

Okwu, A. T., Okwu, E. I., &Okwu, A. O. (2022). Risk management practices and financial performance of deposit money banks in Nigeria. *International Journal of Finance & Banking Studies, 11*(1), 45-60.

Okwu, A., & Okwu, E. (2021). Credit risk management and financial performance of deposit money banks in Nigeria. *Journal of Financial Risk Management, 10*(4), 215-230.

Pasiouras, F., & Kosmidou, K. (2018). Factors influencing the profitability of domestic and foreign commercial banks in the European Union. *Research in International Business and Finance, 21*(2), 222-237.