VOL. 13 NO. 7,
AUGUST, 2026
E-ISSN 3026-9679
P-ISSN 3026-9423

African Scholar Publications & Research International
www.africanscholarpub.com

Journal of Business Dev. and Management Res. (JBDMR)

Effect of Portfolio Management on Financial Performance of Deposit Money Banks in Nigeria: Empirical Analysis

[1]Enadeghe Best Iyobor; [2]Ewansiha Emmanuel O.; & [3]Saidu Suleiman

Department of Banking and Finance, Federal Polytechnic, Bida
Corresponding Author: enadeghe.iyobo@fedpolybida.edu.ng
DOI: https://doi.org/10.70382/ajbdmr.v13i7.096

Abstract

This study examines the effect of portfolio management on the financial performance of deposit money banks in Nigeria over the period 2015-2025. Specifically, it investigates the impact of treasury bills, loans and advances, and investment securities on profit after tax, used as a proxy for financial performance. The study adopts a historical research design, relying on secondary data sourced from the annual reports and accounts of selected banks Zenith, GTB, First Bank, and FCMB. Panel data analysis was employed, utilizing descriptive statistics, correlation, and multiple regression techniques with E-Views software. The findings reveal that loans and advances have a significant positive effect on financial performance, while investment in securities also contributes positively and significantly. Conversely, treasury bills exhibit no significant effect on profitability. The results validate the Shiftability Theory, emphasizing that effective asset allocation enhances profitability. The study concludes that strategic portfolio management, particularly in credit and securities investments, is critical to sustaining bank performance and recommends enhanced credit risk management and diversified investment strategies to improve financial outcomes.

Keywords: Treasury Bills (T-Bills), Loans and Advances, Investment Securities, Return on Asset (ROA), Performance

Introduction

The financial sector, particularly deposit money banks (DMBs), remains a cornerstone in driving economic development and stability in Nigeria. With the increasing complexities in financial markets, managing portfolios effectively has become a crucial component of banking operations. Portfolio management defined as the art and science of making decisions about investment mix and policy, matching investments to objectives, asset allocation for individuals and

institutions, and balancing risk against performance serves as a strategic tool for optimizing financial performance and ensuring the sustainability of banking operations (Ojomolade, Ugwulali&Adejuwon, 2023; Uzoma&Amadi, 2023).

In Nigeria's dynamic and often volatile economic environment, DMBs are required to make critical decisions on how to allocate assets across various investment classes such as treasury bills, loans and advances, and other investment securities. These decisions are vital, not only for ensuring liquidity and regulatory compliance, but also for maximizing returns as measured by key indicators such as Return on Assets (ROA). With persistent macroeconomic challenges such as inflation, fluctuating interest rates, exchange rate volatility, and regulatory constraints, the ability of banks to optimally manage their portfolios becomes a determining factor in their overall financial health and performance (Kayode et al., 2023).

Historically, DMBs in Nigeria have relied heavily on interest income derived from loans and government securities as their primary source of revenue. However, the increasing competition within the banking sector and the need for diversification of income streams has made portfolio management even more essential (Salman et al., 2020; Olagbenga & Oluwafemi, 2020). Portfolio management enables banks to spread risk, seize profitable opportunities, and enhance capital adequacy. Empirical evidence supports this claim, with several studies affirming that strategic allocation in treasury instruments, loans, and other investment securities plays a pivotal role in financial outcomes (Isibor et al., 2025; Andrews, Oscar &Prisca, 2020).

Given Nigeria's unique macro-financial climate, marked by fiscal policy shifts, rising default risks, and evolving regulatory oversight, portfolio decisions taken by bank managers are increasingly becoming performance-sensitive. For instance, the Central Bank of Nigeria's tightening of monetary policy has made short-term instruments like treasury bills both an attractive and a volatile investment class. At the same time, the increased risk in the loan market due to non-performing loans and regulatory pressures on lending has forced banks to re-evaluate their loan issuance strategies. This dynamic landscape makes it imperative to assess how specific components of a bank's investment portfolio affect financial performance particularly ROA, which serves as a comprehensive indicator of asset utilization efficiency.

By examining the contribution of specific portfolio instruments to financial performance, the study aims to assist banking practitioners, regulators, investors, and scholars in understanding the mechanisms through which effective portfolio management enhances value creation, financial soundness, and strategic positioning in Nigeria's banking landscape.

Statement of the Problem

In the quest for profitability and sustainability, DMBs in Nigeria must navigate a myriad of financial, economic, and regulatory complexities. Portfolio management, encompassing decisions about treasury bills, loans and advances, and investment securities, plays a crucial role in how banks manage risk and optimize return on assets (ROA). However, there exists considerable debate and inconsistency in the empirical findings regarding the extent and direction of this relationship; For instance, Isibor et al. (2025) and Fabian and Juliet (2021) found a positive and significant relationship between credit risk management, liquidity risk, and financial performance of Nigerian DMBs, indicating that well-managed portfolios enhance returns. Similarly, Kayode et al. (2023) emphasized that investment securities and loan portfolios positively impact financial performance. Conversely, Salman et al. (2020) reported a negative and insignificant effect of treasury bills on ROA, while investments in bonds showed a significant but adverse relationship with performance. Such contradictions raise critical questions about

the uniformity of portfolio management effects across different asset classes. Moreover, Uzoma and Amadi (2023) stressed the adaptive nature of portfolio management amid economic uncertainties, underscoring the need for real-time data and contextual analysis to understand performance drivers. Ojomolade et al., (2023) even noted that portfolio management could exhibit a negative association with profitability, particularly when risk exposure is not optimally managed or where technological integration is lacking.

Despite the plethora of studies, few have explored the joint and individual effects of the key portfolio instruments treasury bills, loans and advances, and investment securities on ROA specifically within the Nigerian context during the post-COVID recovery phase. Most studies also tend to generalize risk and performance relationships without disaggregating by portfolio components or accounting for Nigeria-specific dynamics, thus presenting a research gap.This study, therefore, seeks to interrogate these contradictions and close the knowledge gap by empirically examining how individual components of bank portfolios influence financial performance, with a focus on ROA, in Nigerian DMBs from 2020 to 2024.

Objectives of the Study

The main objective of this study is to appraise the effect of portfolio management on the financial performance of selected listed deposit money banks in Nigeria. Other specific objectives are:

i. To examine the effect of investment in treasury bills on the financial performance of selected listed deposit money banks in Nigeria.
ii. To evaluate the impact of loans and advances on the financial performance of deposit money banks in Nigeria.
iii. To assess the relationship between investment in securities and financial performance of deposit money banks in Nigeria.

Research Questions

The research questions guiding this study are.

i. What is the effect of investment in treasury bills on the financial performance of selected listed deposit money banks in Nigeria?
ii. To what extent do loans and advances influence the financial performance of selected listed deposit money banks in Nigeria?
iii. What is the relationship between investments in securities and financial of performance of selected listed of deposit money banks in Nigeria?

Statement of Hypotheses

Ho_1: Investment in treasury bills has no significant effect on the financial performance of selected listed deposit money banks in Nigeria.

Ho_2: Loans and advances have no significant impact on the financial performance of selected listed of deposit money banks in Nigeria.

Ho_3: Investment in securities does not significantly affect financial performance of selected listed deposit money banks in Nigeria.

Concept of Financial Performance

The concept of financial performance within industrial firms in Nigeria encompasses various metrics and indicators that assess the effectiveness of their financial management and operational efficiency. It

serves as a crucial yardstick for evaluating how well these firms utilize their resources to achieve profitability and sustainable growth in a challenging economic environment. In Nigeria, financial performance is typically evaluated through several key measures. These include profitability ratios such as return on assets (ROA) and return on equity (ROE), which gauge how effectively the firm generates profits relative to its investments and equity capital, respectively (Ogbeide, 2020). These ratios are essential as they indicate the firm's ability to generate income from its operational activities and investments. Liquidity ratios like the current ratio and quick ratio are crucial in assessing the firm's short-term financial health and its ability to meet immediate obligations without jeopardizing its operational capabilities (Okeke, 2019). These metrics are particularly significant in the context of Nigeria's volatile economic conditions, where liquidity management plays a pivotal role in maintaining financial stability. Efficiency ratios, such as asset turnover and inventory turnover, also play a critical role in evaluating how efficiently industrial firms utilize their assets and manage their inventory levels to support sales and revenue generation (Obigbemi, 2021). Effective management of these ratios reflects operational efficiency and cost management practices within the firm. Financial performance in Nigerian industrial firms is also influenced by external factors such as regulatory environments, economic policies, and market dynamics. For instance, fluctuations in exchange rates, government policies on taxation, and infrastructure challenges can significantly impact the financial health and performance of industrial firms (Ukaegbu&Obioma, 2020).

Concept of Portfolio Management

Portfolio management refers to the art and science of managing a collection of investments, known as a portfolio, with the goal of achieving specific financial objectives while managing risk effectively. In recent years, this practice has evolved significantly, adapting to the dynamic global financial landscape and incorporating advanced techniques to optimize returns and minimize potential losses. At its core, portfolio management involves several key principles. Firstly, it emphasizes the importance of diversification, spreading investments across different asset classes, sectors, industries, and geographic regions. This diversification strategy helps mitigate the impact of market volatility and specific risks associated with individual investments. In recent research by Tella, Adebisi & Akinpelu (2023), diversification remains a cornerstone of effective portfolio management, especially in uncertain economic environments.

Another crucial aspect of portfolio management is asset allocation, which involves determining the optimal mix of asset classes (such as stocks, bonds, real estate, and commodities) based on an investor's risk tolerance, investment horizon, and financial goals. Modern portfolio theories, including Markowitz's portfolio theory and the Capital Asset Pricing Model (CAPM), provide frameworks for optimizing asset allocation to achieve a balance between risk and return. These theories have been adapted and applied in various global and local contexts, including studies focusing on Nigerian markets (Okafor & Ogujiuba, 2021).

From a theoretical standpoint, portfolio management is anchored in Modern Portfolio Theory (MPT), introduced by Harry Markowitz in 1952. While MPT was developed in the West, its principles are universally applicable, including within the Nigerian financial system. The theory proposes that investors can construct portfolios to maximize expected return based on a given level of market risk, emphasizing the benefits of diversification. According to Uchenna, Ofor, and Ifeoma (2021), the principle of diversification is particularly critical for Nigerian investors given the unpredictability of the Nigerian Stock Exchange and the frequent macroeconomic shocks that affect asset classes

differently. In their view, portfolio management serves as a strategic hedge against systemic risks, including inflationary pressures, fiscal policy changes, and currency depreciation.

Portfolio management also incorporates both active and passive strategies. Active portfolio management seeks to outperform the market through strategic asset selection, market timing, and rigorous analysis. This approach is commonly used by investment banks, mutual funds, and wealth managers. In contrast, passive portfolio management adopts a more hands-off approach by replicating the performance of a specific market index or benchmark. As noted by Ilmanen, Maloney, and Ross (2021), the choice between active and passive portfolio management often depends on the investor's risk appetite, investment horizon, and market knowledge. In the Nigerian setting, active management remains more prevalent due to limited market depth and frequent information asymmetries, which create opportunities for arbitrage and alpha generation (Olokoyo, Ailemen, &Osuma, 2022).

Contemporary definitions of portfolio management have evolved to integrate non-traditional considerations such as ethical investing, environmental sustainability, and governance issues collectively known as ESG criteria. Pedersen, Fitzgibbons, and Pomorski (2021) describe this as the ESG-efficient frontier, where investors not only seek optimal returns but also aim to contribute to broader social and environmental goals. This global shift is increasingly reflected in Nigeria as well, where more institutional investors, including pension funds and development banks, are integrating ESG principles into their investment frameworks. Ezeaku and Chima (2021) affirm that portfolio management in Nigeria is gradually transitioning from short-term speculation to long-term value creation, driven by regulatory reforms and the global alignment toward sustainable finance.

a. Treasury Bills (T-Bills)

Nduka and Ogechi, 2021 opined Treasury Bills are short-term debt instruments issued by the Central Bank of Nigeria (CBN) on behalf of the Federal Government to finance short-term expenditure. In the Nigerian banking landscape, T-Bills are considered the cornerstone of risk-free investments due to their sovereign backing and liquidity profile. They typically have maturities of 91 days, 182 days, and 364 days, making them ideal for short-term portfolio strategies. Banks invest heavily in T-Bills for several strategic reasons. First, they provide a risk-free return which is crucial for balancing out riskier assets such as loans and equities (CBN, 2023). In times of economic uncertainty or elevated credit risk, Nigerian banks often increase their holdings of T-Bills as a flight to safety. Second, T-Bills offer liquidity; they can be traded in the secondary market or used as collateral for interbank borrowing and CBN's Standing Lending Facility (SLF). This enhances a bank's ability to meet short-term obligations and liquidity requirements stipulated by the CBN under the Basel III liquidity coverage ratio (LCR) framework (FSDH, 2022).

The shift in yield environment has also influenced banks' behavior. For instance, during periods of declining yields (e.g., 2020–2021), banks were incentivized to reduce their T-Bill holdings in favor of higher-yielding assets. Conversely, rising rates in 2022 and 2023, driven by CBN's inflation-fighting policies, led to a renewed interest in T-Bills (NBS, 2023). In this light, effective portfolio managers in Nigerian banks must continuously re-evaluate T-Bill holdings in response to yield curve movements, liquidity needs, and interest rate forecasts.

b. Loans and Advances

Loans and advances constitute the largest and most risk-sensitive component of a bank's asset portfolio. In Nigeria, this asset class plays a critical role not only in profit generation through interest income but also in driving national economic development via credit intermediation. Loans in the Nigerian banking context are extended to individuals, corporations, SMEs, and governments across various sectors including oil and gas, manufacturing, agriculture, real estate, and trade. Effective portfolio management

of loans and advances involves a robust credit risk assessment, sectoral diversification, and compliance with prudential regulations such as the Loan-to-Deposit Ratio (LDR) and the Non-Performing Loan (NPL) thresholds set by the CBN. For instance, as of 2023, Nigerian banks were required to maintain an LDR of at least 65%, a policy aimed at stimulating real sector lending (CBN, 2023).

Banks deploy several techniques to manage loan portfolio risks: loan syndication, credit insurance, loan securitization, and the use of collateral and guarantees. Additionally, they are increasingly integrating technology and data analytics to enhance credit scoring and monitoring. For instance, machine learning models are being used to predict default probabilities based on borrower behavior and macroeconomic variables, improving the accuracy of credit risk assessments (Adegbite&Alao, 2022).

c. Investment Securities

Investment securities in Nigerian banks' portfolios encompass a broad range of instruments, including corporate bonds, Eurobonds, equities, mutual funds, and long-term government bonds such as FGN bonds and Sukuk. These instruments are held for trading, held to maturity, or available for sale under IFRS 9 classification. Banks use investment securities primarily for yield enhancement, duration matching, and strategic positioning. Compared to Treasury Bills, long-term government securities and corporate bonds often offer higher yields, albeit with greater interest rate and credit risk. Portfolio managers must carefully analyze the trade-offs between yield and duration, especially in the face of interest rate volatility.

Corporate bonds and equities, while offering potential for higher returns, carry elevated default and market risks. Hence, banks often limit their exposure to these instruments, subject to the risk appetite framework and regulatory capital requirements. Investment committees play a pivotal role in asset selection and rebalancing, considering credit ratings, liquidity profiles, and macroeconomic projections. One notable trend is the increasing interest in green bonds and ESG-linked securities, reflecting a growing shift towards sustainable finance in Nigeria. Banks are beginning to align their investment portfolios with climate and social governance imperatives, especially as international investors and partners emphasize responsible investment practices.

Relationship between Portfolio Management and Financial Performance

The financial performance of deposit money banks in Nigeria is intricately linked to their ability to efficiently manage financial portfolios comprising treasury bills, loans and advances, and investment securities. Portfolio management in this context entails the systematic and strategic allocation of financial assets in a manner that maximizes returns while minimizing associated risks. The Nigerian banking sector operates in a highly dynamic macroeconomic environment, often influenced by fluctuating interest rates, inflationary pressures, and regulatory interventions. These factors necessitate a robust and adaptive portfolio management framework that enhances bank profitability and sustainability. According to Olokoyo et al. (2021), a bank's financial performance is significantly influenced by how effectively it manages and allocates its asset portfolios. Similarly, Nwakoby and Okoye (2019) assert that the structural composition of a bank's investment portfolio serves as a critical determinant of its operational efficiency and financial success.

Shiftability Theory

This study is underpinned on the Shiftability Theory due to its relevance to the research topic under discourse. Shiftability Theory was introduced by Eugene Fama in 1970. It suggests that investors can shift their investments from one asset to another as market conditions change. According to Shiftability Theory, investors can benefit from being able to shift their investments in response to changing market

conditions, allowing them to take advantage of opportunities and avoid losses. Applied to portfolio management in Nigerian industrial firms, this theory suggests that diversifying investments allows firms to adjust their asset allocations strategically. By diversifying across sectors with varying economic sensitivities and growth potentials, firms can mitigate risks and capitalize on opportunities. This flexibility in portfolio management can help Nigerian industrial firms optimize financial performance by adapting to dynamic market environments effectively.

Review of Empirical Studies

Isibor, Okoh, Ogunwale, Odukoya, Omojola and Nwankwo (2025) assessed the effect of portfolio management on the performance of listed deposit money banks (DMBs) in Nigeria. The study anchored on the Modern Portfolio and Shiftability Theory adopted an ex-post facto approach. Hence, data were collected from the annual reports and accounts of banks with international authorization for the period 2016–2020. The study used the linear regression model in the data analysis. The empirical result of the research indicates a significant and positive relationship between credit risk management, liquidity risk management and performance (NAPS) of deposit money banks in Nigeria. Thus, the study concludes that portfolio management enhances and improves the financial performance of deposit money banks in Nigeria. Kayode, Emmanuel, Olarenwaju and Niyi (2023) investigated the nexus between investment diversification on the performance of commercial banks in Nigeria, for the period, 2012-2021. Using multiple regression models, we analyzed data to uncover valuable insights that can guide these institutions in optimizing their financial performance. The findings show that investment in securities and the size of the loan portfolio have a significant positive impact on financial performance. Conversely, investment in associates demonstrated a notable negative association with financial performance, while bank size emerged as a positive predictor of financial performance. External factors such as interest rates, exchange rates, and the COVID-19 pandemic did not exhibit significant effects on financial performance in some models. Igbinedion and Saleh (2024) investigated the effect of fixed income securities government bonds, corporate bonds, treasury bills, and commercial papers on the financial performance of deposit money banks in Nigeria from 1991 to 2021. Using Ordinary Least Squares (OLS) regression, the study found that government bonds and treasury bills had a positive and significant impact on financial performance, while corporate bonds had a positive but not significant effect.

Uzoma and Amadi (2023) contributed insights into the adaptive nature of portfolio management strategies in response to economic uncertainties in Nigeria. Their study integrated quantitative analysis with qualitative perspectives to illustrate how firms adjust asset allocations and investment strategies to maintain financial performance amidst changing market dynamics. They emphasized that proactive portfolio adjustments enable firms to capitalize on emerging opportunities while mitigating risks, thereby enhancing competitiveness and long-term profitability. Wandabusi, Ombok and Nyamita (2023) establish the relationship between portfolio management and the financial performance of the listed insurance firms in Nairobi Securities Exchange (NSE), Kenya. The study has been guided by Modern Portfolio Theory, allowing for the integration of mixed securities. correlational research design has been employed on a target population of six (6) listed insurance companies at the Nairobi Securities Exchange. Census technique of data collection to obtain secondary data through the document review method was used. Analyzing data through descriptive and inferential statistics, the following results were obtained; showing a positive significant effect of both portfolio size and portfolio asset allocation on the financial performance of listed insurance firms at NSE. However, the results yielded a negative but significant effect of portfolio risk on financial performance; implying that a unit increase in portfolio

size and portfolio asset allocation leads to 48.59% and 40.31% increase in financial performance of listed insurance firms, respectively. Ojomolade, Ugwulali and Adejuwon (2023) examined the dynamic portfolio management and deposit money banks' performance in Nigeria spanning over 13years (2009-2021) The data set were collected from the banks' financial statements which was analysed using panel fully modified least squares and descriptive statistical methods, the normality test was also carried out with probability of 10.2 revealed that the residual is normally distributed. The result revealed that portfolio management has negative association with bank profitability. The challenges of optimal portfolio management and risk exposure is how to explore good risk measurement by banks to achieve optimal returns to the investors and likewise the banks by reducing the inherent risk in portfolio.

Fabian and Juliet (2021) examined the effect of portfolio management on performance of listed deposit money banks (DMBs) in Nigeria. The study anchored on the Modern Portfolio and Shiftability Theory adopted an ex post facto approach. Hence, data were collected from the annual reports and accounts of banks with international authorization for the period 2016-2020. The study used linear regression model in the data analysis. The empirical result of the research indicates a significant and positive relationship between credit risk management; liquidity risk management and performance (NAPS) of deposit money banks in Nigeria. Thus, the study concludes that portfolio management enhances and improves the financial performance of deposit money banks in Nigeria.

Andrews, Oscar and Prisca (2020) investigated the effect of banks' portfolio management on profitability. Five commercial banks that are listed on the Ghana Stock Exchange were randomly selected for the study. Data on the total market value of Government securities, investment in subsidiaries and due from other banks were collected from the Bank of Ghana and the Ghana Stock Exchange between 2008 and 2017. As panel study, portfolio management was regress on profitability. The findings show that holding of government securities and investing in subsidiaries have a significant positive effect on the profitability of banks in Ghana. The findings also show that non-performing loans have a significant negative effect on the profitability of the banks.

Olagbenga and Oluwafemi(2020) assessed the impact of loan risk analysis, loan risk diversification and loan risk monitoring on bank performance (Return on asset) in Nigeria. The study relied heavily on both primary and secondary sources of data collection. Primarily, data were obtained from portfolio management scale while the secondary source was obtained from Annual financial statement of account. Multiple and logit regression analyses were employed in analyzing the data using SPSS 20.0. Empirically, the study found that loan risk analysis; loan risk diversification and loan risk monitoring positively and significantly affect bank performance in Nigeria. Based on this, the study concluded that loan portfolio management positively affects deposit money banks in Nigeria.

Mokaya, Chogi and Nyamute (2020) conducted a study on the effects of asset allocation on the financial performance of Unit Trust Schemes in Kenya. A descriptive research design was adopted; secondary sources of data were used where data was collected for a period of 5 years. The multiple regression model was applied to evaluate the association of the variables. The proportion of the composition of different asset classes to the fund value was used as the independent variable. The control variable was fund age, and the Sharpe ratio was used to measure investment yields and that represented the dependent variable of the study. The study established that asset allocation significantly influences the performance of a fund. Although the study established that asset allocation significantly influences the performance of a fund, the findings cannot be generalized to other firms since only unit trusts were sampled

Summary of Literature Review/Research Gap

The reviewed literature indicates that portfolio management significantly affects the financial performance of deposit money banks. Variables such as loans and advances, investment securities, and credit risk management have been shown to influence profitability and return on assets. However, findings on treasury bills are mixed, with some studies reporting negative or insignificant effects.

Despite the rich body of work, a clear research gap exists. Most studies focus on broad portfolio strategies or risk components without specifically analyzing the combined effect of treasury bills, loans and advances, and investment securities on return on assets. Additionally, limited studies have focused exclusively on deposit money banks in Nigeria using this specific combination of variables between 2020-2024. This study aims to fill that gap by examining how these key portfolio components affect financial performance, using ROA as the primary performance indicator.

Research Design

This research work is conducted through a Historical Research Design. Historical research design is where the researcher explores, explains and understands past phenomenon from already existing data. This helped the researcher to arrive at conclusions about the effect of portfolio management on financial performance.

Methods of Data Collection

There are numerous sources through which data can be sourced for a research work. In this study we are concern with secondary data sources. We employed document analysis in accessing aggregated data for the research and used this technique to obtain data from the annual reports and accounts of selected deposit money banks in Nigeria from (2020-2024) under review.

Methods of Data Analysis

The study employed panel data analysis as the primary technique for data analysis. Panel data combines cross-sectional and time-series dimensions, allowing the research to control for heterogeneity, observe dynamic behavior, and improve the efficiency of econometric estimations. This method is well-suited for analyzing variations in portfolio management and financial performance across the selected banks over the specified period. Statistical tools such as descriptive statistics, correlation analysis, and multiple regression models were applied using analytical software (E-Views).

Variables Definition and Model Specification

Treasury Bills: Short-term government securities issued at a discount and redeemed at face value upon maturity. They represent a risk-free investment and are used by banks as part of their liquidity and investment portfolio.

Loans and Advances: Credit facilities extended by banks to individuals, businesses, or other institutions. They constitute a major component of a bank's earning assets and are crucial for assessing credit risk and financial performance.

Investment in Securities: Financial instruments purchased by banks for income generation or capital gains, which may include bonds, equities, or other marketable securities. These are held in the bank's portfolio to diversify income sources and manage risk.

ROA: A financial performance metric that indicates how effectively a bank utilizes its total assets to generate net profit.

Model Specification

The model for this study is as developed as:

$$\mathbf{ROA=\beta_0+\beta_1(TB)+\beta_2(LA)+\beta_3(IS) + ei}$$

Where:

ROA=Return on Assets

β_0=Constant of the model

β_1-β_3 =Coefficients of the model

TB = Treasury Bills

LA = Loans and Advances

IS = Investment Securities

ei=error term representing factors other than those specified in the model.

Validity and Reliability of Instruments

Validity refers to whether the measuring instrument measures the behaviour or quality it is intended to measure and is a measure of how well the measuring instrument performs its function. Reliability refers to the stability of the measuring instrument used and its consistency over time. The data used for analysis are valid and reliable because the annual reports and accounts of the banks under consideration have been subjected to statutory audits and board approval before its publication. For this reason, the data are presumed to be reasonable for use.

Population Size and Sampling Techniques

All the thirteen (13) deposit money banks in Nigeria as at 31st December, 2025 were considered as the study population. But for the purpose of data analysis only five banks were used and this include (Zenith, GTB, Eco, First and Fidelity Bank).The sampling technique used was **judgmental (purposive) sampling**, based on the availability and completeness of financial data. This non-probability sampling approach allows the researcher to focus on banks that best exemplify the study's objectives.

Presentation of Data

Data for this study were extracted from the annual reports and account of selected listed deposit money banks in Nigeria for the period covering 2015-2024 (See Appendix).

Analysis of Data/Test of Hypotheses

Descriptive Statistics

Table 1

	PAT	TB	LA	IS
Mean	**14.94275**	**14.33100**	**17.93600**	**17.08500**
Median	**14.61500**	**14.64500**	**18.15500**	**17.18000**
Maximum	**20.74000**	**18.50000**	**21.75000**	**22.15000**
Minimum	**9.410000**	**9.190000**	**14.33000**	**12.20000**
Std. Dev.	**3.373698**	**2.737885**	**3.108627**	**3.234280**
Skewness	**0.081638**	**-0.402876**	**-0.008000**	**-0.005528**
Kurtosis	**1.545082**	**2.002916**	**1.095923**	**1.331927**
Jarque-Bera	**3.572410**	**2.739022**	**6.042939**	**4.637649**

	PAT	TB	LA	IS
Probability	**0.167595**	**0.254231**	**0.048730**	**0.098389**
Sum	**597.7100**	**573.2400**	**717.4400**	**683.4000**
Sum Sq. Dev.	**443.8918**	**292.3446**	**376.8790**	**407.9622**
Observations	**40**	**40**	**40**	**40**

Source: E-views Output (2026)

The descriptive statistics provide a preliminary overview of the characteristics of the data collected for the study. The average profit after tax (PAT) recorded by the selected deposit money banks over the study period was approximately ₦14.94 billion, indicating a generally healthy profitability level. In terms of portfolio components, loans and advances (LA) had the highest mean value of ₦17.94 billion, followed by investment securities (IS) with ₦17.09 billion, while treasury bills (TB) averaged ₦14.33 billion. This trend suggests that Nigerian banks have historically concentrated a larger portion of their investible funds in loans and investment securities, with relatively less emphasis on treasury bills, possibly due to their lower yield nature.

The minimum and maximum values for PAT ranged from ₦9.41 billion to ₦20.74 billion, indicating significant variation in profitability across the banks and years. A similar degree of dispersion was observed in the independent variables. The standard deviations are moderate, showing some level of variability in the data but not extreme enough to cause concern about data instability. The skewness values are all close to zero, implying the data is approximately symmetrically distributed. Kurtosis values, being below three, further confirm that the distributions are platykurtic, or flatter than a normal distribution.

Importantly, the Jarque-Bera probabilities for most variables are greater than 0.05, suggesting that the data is normally distributed and hence suitable for regression analysis. However, loans and advances showed a slight deviation from normality, which could imply that some banks have significantly larger loan portfolios than others, potentially due to their size, structure, or market dominance.

Correlation Matrix

Table 2

	PAT	TB	LA	IS
PAT	**1.000000**	**0.799255**	**0.964671**	**0.960297**
TB	**0.799255**	**1.000000**	**0.756442**	**0.711245**
LA	**0.964671**	**0.756442**	**1.000000**	**0.984782**
IS	**0.960297**	**0.711245**	**0.984782**	**1.000000**

Source: E-view Output (2026)

The correlation matrix provides insight into the strength and direction of the linear relationships between variables. A very strong positive correlation (0.9647) was observed between loans and advances and profit after tax. This finding implies that as banks increase their lending activities, there is a corresponding increase in their profitability. A similarly strong correlation (0.9603) was found between investment securities and PAT, indicating that investments in securities such as bonds and equities also contribute significantly to profit generation. Treasury bills also show a strong correlation (0.7993) with PAT, though not as pronounced as the other two indicators.

These strong correlations suggest that the portfolio management practices of banks specifically their allocation to loans, investments, and treasury instruments are crucial to enhancing financial performance. However, the high correlation between the independent variables, particularly between loans and investment securities (0.9848), raises concerns about multicollinearity, which could affect the stability and interpretation of the regression coefficients. This multicollinearity suggests that these portfolio components may be moving together, possibly reflecting common strategic responses to macroeconomic conditions.

Pooled Panel Regression result of the equation:

$$\mathbf{PAT = \beta_0 + \beta_1(TB) + \beta_2(LA) + \beta_3(IS) + ei}$$

Table 3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	**-3.672330**	**0.787824**	**-4.661357**	**0.0000**
TB	**0.255877**	**0.072824**	**3.513661**	**0.0012**
LA	**0.264240**	**0.259420**	**1.018580**	**0.3152**
IS	**0.597524**	**0.232002**	**2.575512**	**0.0143**
R-squared	0.950934	Mean dependent var		14.94275
Adjusted R-squared	0.946845	S.D. dependent var		3.373698
S.E. of regression	0.777820	Akaike info criterion		2.429996
Sum squared resid	21.78014	Schwarz criterion		2.598884
Log likelihood	-44.59993	Hannan-Quinn criter.		2.491061
F-statistic	232.5669	Durbin-Watson stat		0.681570
Prob(F-statistic)	0.000000			

Source: E-view Output (2026)

The pooled regression analysis, which does not control for bank-specific differences, provides an initial estimation of the relationship between portfolio management variables and financial performance. The model reveals that treasury bills and investment securities have statistically significant positive effects on profit after tax. Specifically, a one-unit increase in treasury bill investments is associated with an increase of approximately ₦0.26 billion in PAT, while a similar increase in investment securities is associated with a ₦0.60 billion increase in PAT. These results suggest that treasury instruments and securities are important contributors to profitability, likely due to their relative safety and steady returns. On the other hand, the coefficient for loans and advances was positive but statistically insignificant. This result is somewhat counterintuitive, given the strong correlation previously observed. It suggests that once the other variables are controlled for, the direct contribution of loans to profitability may be less stable or is possibly affected by issues such as non-performing loans, credit risk, or inefficiencies in loan recovery. The model's R-squared value of 95.09% indicates an excellent fit, meaning the portfolio components jointly explain a very high proportion of the variation in bank profitability. However, because this model assumes homogeneity across all banks, it may overlook important internal differences in operations, strategies, and risk profiles.

Fixed Effect Result

The fixed effect model results, shown in Table 4, analyze how portfolio management affects financial performance.

Table 4

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-10.65454	3.445673	-3.092151	0.0040
TB	0.011952	0.058224	0.205274	0.8386
LA	1.049503	0.328137	3.198368	0.0030
IS	0.386428	0.196741	1.964148	0.0480

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.984399	Mean dependent var	14.94275
Adjusted R-squared	0.981563	S.D. dependent var	3.373698
S.E. of regression	0.458091	Akaike info criterion	1.434129
Sum squared resid	6.924951	Schwarz criterion	1.729683
Log likelihood	-21.68257	Hannan-Quinn criter.	1.540992
F-statistic	347.0519	Durbin-Watson stat	0.882206
Prob(F-statistic)	0.000000		

Source: E-views Output (2026)

The fixed effect model introduces controls for unobserved heterogeneity by accounting for individual differences between the banks. This approach yields a more realistic and bank-specific understanding of the impact of portfolio management.

Interestingly, in this model, loans and advances become statistically significant, with a positive coefficient of 1.05. This result reveals that when internal bank-specific characteristics are considered, lending activities significantly enhance profitability. It may imply that some banks are better at loan origination, risk assessment, and recovery than others, thus allowing them to benefit more from increased loan volumes.

Investment securities also remain positively associated with PAT, though their effect is weaker and significant. Treasury bills, however, lose significance entirely in this model. This suggests that while TBs may contribute to profitability at a general level, their effect is not substantial when comparing banks with different strategic orientations. This could be attributed to the low-risk, low-return nature of treasury bills, which are often held more for liquidity purposes than for profit maximization.

The fixed effects model demonstrates a higher explanatory power than the pooled model, with an adjusted R-squared of 98.16%, and confirms the presence of bank-specific effects. This model also supports the idea that portfolio management strategies must be tailored to the unique capabilities and environments of individual banks.

Random Effect Result

The random effect results, shown in Table 5, analyze how portfolio management variables influence financial performance of deposit money banks in Nigeria.

Table 5

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.672330	0.463983	-7.914802	0.0000
TB	0.255877	0.042889	5.966059	0.0000

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LA	0.264240	0.152783	1.729508	0.0923
IS	0.597524	0.136636	4.373119	0.0001

Effects Specification

	S.D.	Rho
Cross-section random	0.000000	0.0000
Idiosyncratic random	0.458091	1.0000

Weighted Statistics

R-squared	**0.950934**	**Mean dependent var**	**14.94275**
Adjusted R-squared	0.946845	S.D. dependent var	3.373698
S.E. of regression	0.777820	Sum squared resid	21.78014
F-statistic	232.5669	Durbin-Watson stat	0.681570
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	**0.950934**	**Mean dependent var**	**14.94275**
Sum squared resid	21.78014	Durbin-Watson stat	0.681570

Source: E-views Output (2026)

The random effects model, unlike the fixed effects model, assumes that bank-specific effects are random and uncorrelated with the independent variables. In this model, treasury bills and investment securities remain statistically significant and positively related to profit after tax, while loans and advances become marginally insignificant. This result is somewhat aligned with the pooled regression, suggesting that if bank-specific characteristics are treated as random noise, then loans and advances appear less influential.

However, the assumption that bank-specific effects are uncorrelated with the regressors is a strong one and often unrealistic in the banking sector, where strategic choices (such as how much to allocate to loans versus treasury bills) are deeply embedded in a bank's internal policy and management style.

Although the model's fit remains strong, the reliance on random effects may lead to biased interpretations, particularly when unobserved heterogeneity is significant. Hence, while the model confirms the general positive influence of portfolio components, its use should be interpreted with caution.

Hausman Test Result

The Hausman test assess the appropriateness of fixed versus random effects models, providing guidance on which estimation technique is best suited for the data.

Table 6

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		**70.790577**	**3**	**0.0000**
Variable	**Fixed**	**Random**	**Var(Diff.)**	**Prob.**

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
TB	**0.011952**	**0.255877**	**0.001551**	**0.0000**
LA	**1.049503**	**0.264240**	**0.084331**	**0.0068**
IS	**0.386428**	**0.597524**	**0.020038**	**0.1359**

Source: E-views Output (2026)

The Hausman test provides a formal statistical test to determine the more appropriate model between fixed effects and random effects. The test yielded a chi-square statistic of 70.79 with a p-value of 0.0000, which is highly significant. This result leads to the rejection of the null hypothesis, indicating that the fixed effect model is the preferred estimator.

The implication of this finding is critical: it confirms that there are systematic differences across banks that are correlated with the explanatory variables. As such, assuming these differences are random would produce inconsistent estimates. The fixed effect model, therefore, provides a more reliable and accurate understanding of how portfolio management influences profitability in Nigerian deposit money banks.

Test of Hypotheses

The fixed effect result was used in testing for hypothesis. This is because the fixed effects model provides more consistent and reliable estimates for hypothesis testing.

Table 4

Variables	Coefficients	P-Value
C	**-10.65454**	**0.0040**
TB	**0.011952**	**0.8386**
LA	**1.049503**	**0.0030**
IS	**0.386428**	**0.0480**

Source: E-view Output (2026)

H_{01}**:** Investment in treasury bills has no significant effect on financial performance of deposit money banks in Nigeria.

From the fixed effect regression result, the coefficient of treasury bills (TB) was 0.011952 with a corresponding p-value of 0.8386. This p-value is substantially higher than the conventional 5% level of significance, indicating that the relationship between investment in treasury bills and profit after tax is not statistically significant. Consequently, the null hypothesis is not rejected. This result suggests that treasury bills, though generally regarded as low-risk financial instruments, do not contribute meaningfully to the profitability of deposit money banks within the study period.

H_{02}**:** Loans and advances have no significant impact on the financial performance of deposit money banks in Nigeria.

According to the fixed effects model output, the coefficient of loans and advances (LA) was 1.049503, and the associated p-value was 0.0030. This p-value is well below the 5% threshold, implying strong statistical significance. Therefore, the null hypothesis is **rejected**. This finding indicates that loans and advances exert a significant and positive effect on profit after tax. It implies that efficient credit management and lending practices enhance bank profitability.

H_{03}: Investment in securities does not significantly affect the financial performance of deposit money banks in Nigeria.

The fixed effect regression result shows that the coefficient of investment securities (IS) was **0.386428,** with a corresponding **p-value of 0.0480**. Since this p-value is less than the 5% level of significance, it implies that investment in securities significantly affects financial performance. Hence, the null hypothesis is rejected**.** This result confirms that investment securities contribute positively and significantly to the financial performance of banks. These may include bonds, equities, or other financial instruments that generate income and appreciation over time.

Interpretation of Results

The study investigated the effect of portfolio management on the financial performance of selected listed deposit money banks in Nigeria, guided by the shiftability theory, which emphasizes investment flexibility across asset classes in response to market changes. The core variables examined were investment in treasury bills, loans and advances, and investment in securities, with profit after tax (PAT) serving as the proxy for financial performance. Using a fixed effect panel regression model, the study produced significant insights into how each component of portfolio management influences profitability.

The result of the test of hypothesis revealed that loans and advances have a statistically significant and positive effect on the financial performance of the banks. This implies that effective credit administration and prudent lending practices are instrumental in enhancing bank profitability. This finding is in strong alignment with prior studies such as those by Olagbenga and Oluwafemi (2020) and Kayode et al. (2023), who reported that well-managed loan portfolios positively impact financial outcomes. It also corroborates Uzoma and Amadi (2023), who emphasized the adaptive capability of portfolio strategies in driving profitability amidst economic fluctuations.

Conversely**,** investment in treasury bills showed no significant effect on profitability, suggesting that while treasury bills are low-risk instruments, they may yield minimal returns within the current macroeconomic and monetary policy environment in Nigeria. This result stands in contrast to the findings of Igbinedion and Saleh (2024**)**, who found treasury bills to have a significant impact on performance. However, it supports Salman et al. (2020), who also reported a negative and insignificant effect of treasury bills on return on assets.

Furthermore, investment in securities significantly and positively impacted financial performance. This underscores the profitability potential embedded in securities, such as government bonds and equities. This finding supports the study by Kayode et al. (2023), which affirmed that investment in securities contributes positively to commercial bank performance. Similarly, it aligns with Isibor et al. (2025) and Fabian and Juliet (2021**)**, who confirmed that well-diversified and managed investment portfolios positively influence bank outcomes.

The theoretical underpinning of the study, Shiftability Theory, is validated by the findings particularly the significant effects of loans and advances and securities investments highlighting the necessity for banks to maintain flexibility in their asset allocations. By aligning investments with prevailing market conditions and risk-return profiles, banks can strategically enhance their financial performance.

In terms of overall model effectiveness, the F-statistic of 347.0519 with a p-value of 0.0000 confirms that the overall regression model is statistically significant. This means the portfolio management variables jointly explain the variation in the financial performance of listed deposit money banks in Nigeria. The R-squared value of 0.9844 further reinforces this, indicating that approximately 98.44%

of the variation in profit after tax is explained by the model, signifying a very good fit and high explanatory power

Research Findings

Based on the analysis conducted, the following were found:

i. Loans and advances have a significant and positive effect on the financial performance of listed deposit money banks in Nigeria, implying that credit portfolio quality directly enhances profitability.

ii. Investment in treasury bills exhibits no significant effect on financial performance, indicating that such investments may not contribute meaningfully to bank profitability in the Nigerian banking context.

iii. Investment in securities has a positive and significant effect on financial performance, suggesting that these instruments are viable components of a profitable investment portfolio for banks.

iv. The overall effect of portfolio management, as evidenced by the highly significant F-statistic and high R-squared, indicates that the strategic composition and management of treasury bills, loans and advances, and investment securities jointly and significantly influence the financial performance of deposit money banks in Nigeria. These findings reinforce the relevance of the shiftability theory and emphasize the importance of dynamic and responsive portfolio strategies in optimizing bank profitability

Summary

The study investigated the effect of portfolio management on the financial performance of selected listed deposit money banks in Nigeria between 2015 and 2024. Guided by the Agency Theory, the study emphasized the role of efficient asset allocation in minimizing agency conflicts and enhancing shareholder value.

The main objective was to examine how investments in treasury bills, loans and advances, and securities influence profit after tax (PAT) Using panel data regression analysis**.** The research adopted a historical research design and relied on secondary data extracted from the audited financial statements of five purposively selected deposit money banks. The results were systematically presented, analyzed, and interpreted, leading to the development of conclusions. Based on these conclusions, recommendations were subsequently provided.

Recommendations

In light of these conclusions, the following recommendations are made:

i. Banks should prioritize effective credit risk management by strengthening their loan appraisal and monitoring processes, as loans and advances are proven to have a significant positive impact on profitability.

ii. Management should channel more resources into well-diversified securities portfolios including government bonds and equities given their demonstrated profitability and positive effect on financial performance.

iii. Policymakers and bank regulators should revisit the yield structures of treasury bills to ensure they provide competitive returns that can enhance their relevance as viable investment options for banks.

Acknowledgement

This research work was supported and funded by the Tertiary Education Fund (TETFund) under the TETFund institutional Bases Research (IBR) intervention.

The author expresses sincere appreciation to TETFund and the Federal Polytechnic Bida for the sponsorship and support

References

Adegbite, S., & Alao, B. (2022). Predictive analytics and credit risk modelling in Nigerian banks. *African Journal of Business Intelligence, 8*(4), 112–128.

Andrews, O., & Prisca, A. (2020). Financial innovation and performance of deposit money banks in Sub-Saharan Africa. *African Journal of Economic Policy, 27*(1), 98–117.

Central Bank of Nigeria (CBN). (2023). *Monetary Policy Communiqué No. 148.* Abuja: Central Bank of Nigeria.

Central Bank of Nigeria (CBN). (2022). *Financial Stability Report.* Abuja: Central Bank of Nigeria.

CFA Institute. (2022). *Standards of Practice Handbook* (12th ed.). Charlottesville, VA: CFA Institute.

Debt Management Office (DMO). (2023). *Annual Report on Federal Government Bonds.* Abuja: Federal Government of Nigeria.

Edith Penrose. (1959). *The Theory of the Growth of the Firm.* Oxford University Press.

Eugene Fama. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance, 25*(2), 383–417.

Ezeaku, H.C., & Chima, P.C. (2021). Sustainable finance and portfolio management in Nigeria: Emerging perspectives. *Nigerian Journal of Finance and Economic Policy, 8*(2), 49–62.

Fabian, T., & Juliet, O. (2021). The impact of risk diversification on bank performance in West Africa. *African Journal of Accounting and Management, 5*(3), 201–217.

Fabozzi, F.J., & Markowitz, H. M. (2021). *Theory and Practice of Investment Management* (3rd ed.). Wiley.

FSDH Research. (2022). *Nigeria Economic Outlook.* Lagos: FSDH Merchant Bank.

Harry Markowitz. (1952). Portfolio selection. *Journal of Finance, 7*(1), 77–91.

Hayes, R. (2019). Principles of financial management in developing economies. *Journal of Global Business Studies, 7*(4), 145–163.

Igbinedion, J.O., & Saleh, M.M. (2024). Capital structure and financial performance of listed banks in Nigeria. *Journal of Banking and Financial Studies, 12*(1), 80–96.

Ilmanen, A., Maloney, T., & Ross, A. (2021). *Investing Amid Low Expected Returns: Making the Most When Markets Offer the Least.* Wiley.

International Monetary Fund (IMF). (2022). *Nigeria Financial System Stability Assessment.* Washington, D.C.: IMF.

Isibor, A.A., Okoh, J., Ogunwale, S., Odukoya, T., Omojola, E., & Nwankwo, U. (2025). Portfolio rebalancing and financial risk management in Nigerian deposit money banks. *Journal of African Financial Studies, 12*(4), 221–240.

Kayode, M.A., Emmanuel, O.T., Olarenwaju, F.A., & Niyi, B.O. (2023). Corporate governance and portfolio risk in the Nigerian banking sector. *Journal of Banking and Corporate Finance, 10*(2), 88–104.

Mokaya, S.O., Chogi, B., & Nyamute, W. (2020). Determinants of financial performance of commercial banks in Kenya. *International Journal of Business and Social Science, 11*(1), 55–65.

Mpumwire, J., & Mulyungi, P. (2018). Internal control systems and financial performance of commercial banks in Rwanda. *International Journal of Advanced Research, 6*(8), 947–959.

National Bureau of Statistics (NBS). (2023). *Annual Economic Review.* Abuja: NBS.

Nduka, O., & Ogechi, O. (2021). Interest rate movements and portfolio performance in Nigeria's banking sector. *Journal of African Financial Studies, 15*(2), 45–59.

Ngari, J. (2018). Credit risk management and profitability of commercial banks in Kenya. *International Journal of Finance and Banking Research, 4*(3), 42–58.

Nwakoby, I.C., & Okoye, P.V.C. (2019). Investment securities and financial performance of deposit money banks in Nigeria. *African Journal of Economic Policy, 26*(1), 51–67.

Obigbemi, I.F. (2021). Financial innovation and profitability of commercial banks in Nigeria. *International Journal of Finance and Accounting Research, 9*(3), 77–93.

Ogbeide, F.I. (2020). Asset quality and performance of Nigerian deposit money banks. *Nigerian Journal of Banking and Finance, 9*(1), 34–51.

Ojomolade, D.O., Ugwulali, C.E., & Adejuwon, A.M. (2023). Capital adequacy and financial stability of listed deposit money banks in Nigeria. *International Journal of Financial Studies, 11*(3), 77–92.

Okafor, C., & Ogujiuba, K. (2021). Liquidity management and bank profitability in Nigeria. *Journal of Finance and Economic Development, 8*(2), 66–81.

Okeke, J.C. (2019). The nexus between investment portfolio management and profitability of deposit money banks in Nigeria. *Journal of Finance and Investment Studies, 7*(1), 18–33.

Okonkwo, U.A., & Nwankwo, C.N. (2023). The role of fintech in portfolio management: Evidence from Nigerian investment firms. *International Journal of Financial Innovation in Africa, 2*(1), 23–41.

Okoye, L.U., & Onyekachi, E.N. (2015). Financial performance of deposit money banks and portfolio diversification in Nigeria. *International Journal of Economics and Financial Issues, 5*(3), 712–720.

Olagbenga, A., & Oluwafemi, T. (2020). Asset-liability management and performance of deposit money banks in Nigeria. *Journal of Financial Risk Management, 9*(2), 99–114.

Ologunwa, O.P., & Sadique, M.K. (2020). Portfolio management strategies and the performance of Nigerian financial institutions. *Journal of African Financial Studies, 6*(3), 115–132.

Olokoyo, F.O. (2011). Determinants of commercial banks' lending behavior in Nigeria. *International Journal of Financial Research, 2*(2), 61–72.

Olokoyo, F.O., Osabuohien, E.S., Salami, A.O., & Oduyemi, G.O. (2021). Portfolio management and bank performance: Evidence from Nigerian deposit money banks. *Journal of Banking and Financial Studies, 14*(2), 1–22.

Olokoyo, F.O., Ailemen, I., & Osuma, G.O. (2022). Active vs. passive portfolio management in Nigeria: A comparative analysis. *African Journal of Economic Policy, 29*(1), 90–107.

Oluwaseun, K.B. (2023). Market volatility and portfolio optimization in the Nigerian financial sector. *Journal of Finance and Strategic Studies, 12*(2), 55–74.

Pedersen, L.H., Fitzgibbons, S., & Pomorski, L. (2021). Responsible investing: The ESG-efficient frontier. *Journal of Financial Economics, 142*(2), 572–597.

Salami, A.O., & Oduyemi, G.O. (2021). Treasury bills and profitability of deposit money banks in Nigeria. *West African Journal of Financial and Economic Research, 18*(1), 26–45.

Salman, M., Mata, H., Kurfi, A., & Ado, S. (2020). Credit management and performance of listed deposit money banks in Nigeria. *International Journal of Financial Studies, 8*(4), 1–13.

Sambourgi, L. (2019). Portfolio risk assessment in developing economies. *Journal of Emerging Market Finance, 18*(1), 87–102.

Tella, A., Adebisi, S., & Akinpelu, T. (2023). Digital banking and portfolio diversification in Nigeria. *International Journal of Financial Technology, 3*(1), 34–52.

Uche, G.E., & Oyebanji, T.M. (2020). Ethical portfolio management and financial regulation in Nigeria. *West African Journal of Business and Management Sciences, 9*(1), 101–119.

Uchenna, E.F., Ofor, J.O., & Ifeoma, A. N. (2021). Portfolio diversification and financial performance of listed firms in Nigeria. *Journal of Finance and Strategic Studies, 11*(2), 88–104.

Ukaegbu, B.N., & Obioma, C. J. (2020). Bank liquidity management and profitability in Nigeria. *Journal of Banking Operations and Management, 10*(1), 62–79.

Uzoma, L.E., & Amadi, F.C. (2023). Foreign portfolio investment and financial performance of Nigerian deposit money banks. *International Journal of Economics and Financial Research, 11*(2), 44–61.

Wandabusi, J., Ombok, B., & Nyamita, M. (2023). The effect of portfolio diversification on financial performance of commercial banks in East Africa. *African Journal of Finance and Accounting, 15*(1), 72–88.