

## **FINANCIAL DERIVATIVE INSTRUMENTS AND CORPORATE PERFORMANCE**

BY

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### **Abstract**

This study examined financial derivative instruments and corporate performance in listed interest taking banks in Nigeria. The specific objectives were to investigate whether derivative asset ratio, derivative liability ratio, derivative trading ratio and derivative information disclosure has significant effect on return on total assets of listed interest taking banks in Nigeria. The secondary source of data collection was adopted in the study where the purposive sampling technique was used to select a sample size of eight (8) listed interest taking banks for the study. Least Square regression analysis was used in this study and the findings revealed that derivative asset ratio, derivative liability ratio and derivative trading ratio has no significant effect on return on total asset while derivative information disclosure has significant effect on return on total asset of listed interest taking banks in Nigeria. The study concluded that derivatives are used for a number of purposes, such as hedging against future price movements of securities or against speculation or getting to trade assets or market. The study recommended among others that firm should increase their loan asset to better improve their profit and that firms should limit their financial derivative liabilities and ensure that financial derivative assets are better utilized.

**Keywords:** Financial derivative, derivative asset ratio, derivative liability ratio, derivative trading ratio, derivative information disclosure

### **1. Introduction**

To enhance profitability in their commercial operations, deposit money banks (DMBs) have intensified market globalization, thereby exposing themselves to an array of financial risks, including credit, interest rate, foreign exchange, commodity, operational, and systemic risks. Inadequately managed financial risks have adversely affected DMBs' financial performance, prompting them to utilize tradable instruments such as financial derivatives to mitigate these risks. Derivatives trading commenced to facilitate the timely availability of goods and mitigate fluctuations in value. This motivated traders to enter into contracts to fulfill their requirements. Diverse entities employed derivatives to mitigate losses. Farmers consistently received income regardless of crop failures, while merchants secured indemnities to finance subsequent transactions (Sulaiman & Ibrahim, 2020). The trading of

derivatives has proliferated and become essential to the global economy. The majority of international corporations have extensively utilized derivatives to mitigate uncertainty (Oyegbile, 2024).

Prices fluctuate based on market dynamics in economics and finance, and due to persistent price volatility, uncertainty emerges as a critical factor that can significantly impact investment returns. Derivatives have emerged as financial instruments for engineering contracts with predetermined values and timelines, demonstrating efficacy in addressing various economic issues (Ehiedu & Nwaokocha, 2024). A derivative is a contractual agreement between two parties to execute a financial transaction at a specified time and an agreed-upon price. This generally renders derivatives futuristic. Financial derivatives serve as efficient instruments for mitigating market risk exposure. They enable manufacturers and consumers

to secure pricing while maintaining equilibrium between supply and demand. Investors and enterprises can employ them to safeguard against adverse occurrences by mitigating the effects of fluctuations in macroeconomic variables (Ehiedu & Nwaokocha, 2024).

Virtually all corporate operations, particularly those of a global nature, are linked to the international market, thereby subjecting the company's cash flow to currency exchange rate volatility. Banks utilize them as a risk management strategy to avert unforeseen events that could hinder their anticipated profit. Financial derivatives have gained extensive prevalence and are regarded as asset classes, despite their values frequently being contingent upon one or more underlying securities that may span multiple asset classes. As noted by Sulaiman and Ibrahim (2020), they are occasionally incorporated into novel debt and equity investment vehicles, which frequently contribute to the perilous nature of these instruments due to their complexities. These advantages motivate banks to strategically position their operations and enhance their risk management efficiency, enabling the quantification of risk management effectiveness to sustain value creation and mitigate unforeseen adverse events that may not have been sufficiently addressed in the pertinent business context (Ehiedu & Nwaokocha, 2024).

As a result of the global financial crisis, numerous organizations were forced to adopt innovative risk management strategies or return to traditional methods. Companies are reevaluating the use of foreign currency options to effectively manage the substantial rise in currency risk, interest rate risk, and commodity risk (Abazu & Ofor, 2023). Global financial liberalization has resulted in the emergence of various financial products in the markets, including derivatives that allow speculators to manage investment risk. Comprehensive studies have been undertaken on international financial derivatives.

Commercial banks are exploring innovative strategies for profit generation, moving away from traditional methods, and employing financial derivatives to hedge against systemic risks due to the uncertainty and high volatility in both global and domestic financial

markets. In contrast to on-balance sheet asset-liability management, utilizing financial derivatives, commonly referred to as off-balance sheet activities, provides commercial banks with the flexibility to achieve their desired risk exposures without altering their fundamental business objectives. The utilization of derivatives is also less expensive and may serve as a substitute for costly capital. Numerous authors have analyzed financial derivatives with inconclusive results; Efanga *et al.*, (2019) investigated the influence of derivative instruments on risk management within the Nigerian banking sector from 2014 to 2018. The inferential analysis indicated that financial derivatives have a positive and significant effect on risk management within the Nigerian banking sector. John (2017) analyzed the influence of financial derivatives on the performance of companies within Ghana's financial sector. A robust positive correlation exists between financial derivatives and managed business risks, as Sulaiman and Ibrahim (2020) investigate the impact of financial derivatives on the profitability of specific deposit money banks in Nigeria. The outcome demonstrates that the model is both positive and significant. Waswa and Wepukhulu (2018) investigated the impact of derivative financial instrument usage on the financial performance of non-financial firms listed on the Nairobi Securities Exchange. The research indicated that the application of derivatives for price stabilization is statistically significant, while the use of derivatives for price discovery does not affect the financial performance of the firms. Consequently, to the researcher's knowledge, limited literature exists regarding the effect of financial derivative instruments on corporate performance, specifically concerning listed interest-taking banks in Nigeria, which motivates this study.

## **2. Literature Review and Hypotheses Development**

### **2.1 Corporate Performance (Return on Total Assets)**

In corporate finance, financial performance is a critical concern due to the prevalence of financial scandals and varying degrees of corporate failures. In accounting literature, financial performance denotes profits, return on assets, and economic value derived from a firm's financial activities (Emenyi & Okpokpo, 2023). Profits constitute a source of retained earnings, supplying a

significant portion of the capital for investments in plant and equipment that enhance productive capacity. Profits are commonly utilized to assess the rate of return on investment and the correlation between earnings and equity valuation. Profits can also be utilized to assess the impact of policy alterations on corporations or profits, as well as on economic conditions (Onohet *al.*, 2023).

The primary objective of a business venture is financial performance or profitability, which is essential for long-term survival. Consequently, assessing current or historical profitability and forecasting future profitability is crucial. Profitability is the paramount indicator of a business's success, and an unprofitable enterprise cannot endure. Thus, a firm's profitability significantly influences its structure and development, as it assesses performance, determines success, and bolsters the firm's reputation (Uche-Udo & Okafor, 2022). Financial performance is a summary measure of corporate success or failure, serving as a crucial indicator of economic performance. Thus, a highly profitable business can provide its owners with substantial returns on their investment. The profitability of a firm refers to its capacity to generate revenue that surpasses costs in relation to the company's capital base (Suhendraet *al.*, 2022).

## **2.2 Financial Derivative**

Financial institutions frequently employ derivatives to mitigate risk and minimize loss. Some utilize it to mitigate risks and engage in speculation. All derivatives in deposit money institutions are utilized for trading and risk management purposes. Banks may engage in derivative trading for their own account, on behalf of clients, or both. The term 'derivative' is derived from the English word 'derive', which signifies obtaining something from another source. Ehiedu and Nwaokocha (2024) characterized derivatives as financial instruments whose worth is derived from another entity. Financial and commodity derivatives are present. Financial derivatives are derived from interest rates, exchange rates, equities, bonds, and treasury bills, while commodity derivatives originate

from agricultural products, precious metals, oil, and gas.

Financial derivatives are instruments whose values are linked to underlying assets such as bonds, equities, currency exchanges, and interest rates, as stated by Muthine (2021). Abazu and Ofor (2023) emphasized that financial derivatives were appraised based on principal securities or indices rather than intrinsic cash flows. The study characterized financial derivatives as contracts whose values derive from underlying assets and are employed to alleviate financial market risks associated with traditional lending and borrowing activities. Swaps, options, forwards, and futures constituted the primary derivatives (Sulaiman & Ibrahim, 2020).

## **2.3 Derivative Asset Ratio and Return on Total Asset**

In financial accounting, an asset refers to any resource possessed or governed by a business or economic entity. It encompasses any entity (tangible or intangible) that can generate positive economic value. Assets denote ownership value that can be liquidated into cash, with cash itself also classified as an asset. The balance sheet of a company documents the financial value of its owned assets. It encompasses financial assets and other valuables owned by an individual or a business.

Derivative assets are contracts with a defined duration instead of tangible physical assets. They are traded on international financial markets by buyers and sellers speculating on the future price of the underlying asset represented by the derivative (Sulaiman & Ibrahim, 2020). Commercial banks utilizing derivative assets have mitigated interest rate volatility and augmented their lending operations, yielding superior returns compared to fixed fee-for-service activities. Consequently, commercial banks employing derivative assets for interest rate risk management will experience greater overall advantages than those that do not. Ehiedu and Nwaokocha (2024) assert that derivatives enable investors to manage financial risk exposure by facilitating the transfer and unbundling of financial risk.

Abazu and Ofor (2023) analyzed the impact of financial derivatives on the performance of publicly traded oil and gas companies in Nigeria from 2015 to 2021. The Ordinary Least Squares (OLS) method of data analysis was employed. The study employed an ex-post facto research design. The relevant data were extracted from the annual report of the publicly traded oil and gas company on the Nigerian stock exchange. The study utilizes financial exchange derivatives, interest rate swaps, financial derivative assets, and return on assets as variables. Secondary sources of data were utilized in that study. The employed statistical methods were descriptive statistics, correlation analysis, and regression analysis. The findings indicated that financial derivative assets exert a positive yet insignificant influence on the performance of publicly listed oil and gas companies in Nigeria.

Uche-Udo and Okafor (2022) investigated Nigeria's financial derivatives and the financial performance of publicly listed commercial banks. A decade (2013 to 2022) was examined, utilizing an ex-post facto research design that encompassed all fourteen (14) listed commercial banks. The results indicated that financial derivative asset exert a statistically significant positive influence on earnings per share.

Oriet *et al.* (2022) investigated the impact of financial derivatives on the performance of deposit money banks in the Nigerian stock exchange from 2015 to 2021. The Panel Least Squares (PLS) method of data analysis was employed. The variables utilized were: loans and advances, exchange rate, and financial derivative assets. Secondary sources of data were utilized in that study. The findings indicate that loans and advances have no significant effect on the performance of deposit money banks in the Nigerian stock exchange. The exchange rate significantly affects the performance of deposit money banks in the Nigerian stock exchange. Financial derivative assets do not significantly impact the performance of deposit money banks in the Nigerian stock exchange.

***H1: From the above, we hypothesize that derivative asset ratio has no significant effect***

*on return on total asset of listed interest taking banks in Nigeria*

#### **2.4 Derivative Liability Ratio and Return on Total Asset**

The liabilities to assets (L/A) ratio is a solvency metric that assesses the proportion of a company's assets constituted by liabilities. A liability-to-asset ratio of 20 percent indicates that 20 percent of the company's assets are financed by liabilities. A high liability-to-assets ratio may be detrimental, signifying low shareholder equity and potential solvency concerns. Rapidly expanding companies frequently exhibit a higher liabilities-to-assets ratio due to the swift accumulation of debt and assets. Companies exhibiting signs of financial distress frequently possess elevated L/A ratios. A company experiencing diminishing revenues and unfavorable long-term growth prospects will be affected in terms of retained equity. Companies exhibiting low L/A ratios signify minimal to negligible liabilities. With certain exceptions, this typically indicates the company's financial well-being (Sulaiman & Ibrahim, 2020).

Derivatives effectively secure transactions concerning the underlying asset due to their leveraged characteristics. It may be utilized when a company or organization lacks an immediate necessity or capability to fully engage in a transaction involving an underlying commodity but expects to do so in the future. An enterprise or institution can secure the price of a commodity at the prevailing rate, mitigating the risk of fluctuating market prices for that item. This option allows the company to execute a planned future transaction at a lower cost than expected. Consequently, derivatives mitigate risk exposures, including fluctuations in commodity prices or seasonal vulnerabilities (Oyegbile, 2024).

Ehiedu and Nwaokocha (2024) investigated the correlation between financial derivatives and the financial performance of deposit money banks in Nigeria over the decade from 2013 to 2022. Financial derivatives, represented by Financial Liabilities Derivatives, Foreign Exchange Derivatives, Trading Income on Derivatives, Loan and Advance to

Customers, and Bank Size, and financial performance, indicated by Return on Assets. The Ex-Post Facto research design was employed. Data regarding financial derivatives and performance metrics were sourced from the annual reports and accounts of ten (10) Deposit Money Banks listed on the Nigerian Exchange Group with international operations. The study revealed that financial liability derivatives demonstrate insignificant effects on the ROE of DMBs in Nigeria.

Muthine (2021) evaluated the impact of swaps, options, forwards, and futures on the financial performance of publicly traded commercial banks in Kenya. A descriptive research design was employed to gather data through closed-ended questionnaires from the 11 selected commercial banks in Kenya. Risk managers, operations managers, and marketing managers supplied the necessary data to engage in the study. The census sampling technique was employed because of the limited target population, resulting in the inclusion of every listed commercial bank. The gathered data was subsequently encoded utilizing SPSS 24.0 software. The research demonstrated a linear correlation between financial derivatives (asset derivative and liability derivative) and the financial performance of selected publicly listed commercial banks in Kenya.

Ibrahim and Nwankwo (2023) evaluated the impact of derivatives accounting on the financial performance of Nigerian deposit money banks. The researchers employed a quantitative methodology, collecting data from the annual reports of 10 deposit money banks spanning 2016 to 2021. Data were examined utilizing Ordinary Least Squares (OLS) regression analysis. The findings demonstrated that both asset and liability derivatives significantly influence the financial performance of banks, with asset derivatives positively affecting ROE. The study determined that derivatives accounting significantly enhances the financial performance of deposit money banks in Nigeria.

Ogunleye and Adeyemi (2022) examined the influence of derivatives accounting for assets and liabilities on the profitability of deposit money banks in Nigeria. The independent variables are asset derivatives and

liability derivatives, analyzed in relation to profitability, as measured by Return on Assets (ROA). Data were gathered from the financial statements of chosen deposit money banks in Nigeria for the period 2015-2020. The research utilized multiple regression analysis to ascertain the correlation between derivatives accounting and profitability. The findings indicated a substantial positive correlation between the utilization of asset derivatives and bank profitability, whereas liability derivatives exhibited a detrimental effect. The study determined that proficient management of asset derivatives can improve the profitability of deposit money banks in Nigeria, whereas liabilities derivatives require meticulous oversight to prevent negative consequences.

***H2: From the above, we hypothesize that derivative liability ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria***

## **2.5 Derivative Trading Ratio and Return on Total Asset**

The trading ratio is calculated by summing all domestic and foreign Accounts Receivable and Inventory, then dividing this total by the sum of the financial statement total of Accounts Payable and the outstanding balance of the Line of Credit Note, including any outstanding letters of credit. For the purposes of this document, Accounts Receivable and Inventory shall be defined as per Article 9 of the Uniform Commercial Code applicable in the State of Washington.

The New Zealand Futures and Options Exchange (NZFOX) encourages both individual and institutional investors to participate in the secondary market and trade securities, as derivatives mitigate the risk associated with holding the underlying asset. This enhances liquidity in the primary market as individuals exhibit reduced reluctance to acquire new securities. Orie *et al.* (2022) assert that increased trade volume enhances the depth of cash markets due to the advantageous effects of heightened derivative trading activity, with the role of derivatives in market depth pertaining to their impact on liquidity. Enhanced

derivative market depth is advantageous, as a greater transaction volume is necessary to alter the security's price, indicating superior market depth. This ensures cash market stability, rendering the entire capital market an attractive avenue for savings and fostering increased economic investment. Oluyi and Abioye (2020) assert that the derivative market facilitates increased transparency, development, and overall efficiency in capital markets by offering a cost-effective and efficient means for hedging and speculation. The efficiency and cost-effectiveness of the derivatives market render it an appealing investment choice.

Nwankwo (2025) examined the impact of financial leverage on the valuations of publicly traded consumer goods companies in Nigeria. The study's specific objectives were to analyse the impact of the debt ratio, debt to equity ratio, interest coverage ratio, debt to EBITDA ratio, and debt to capital ratio (which serve as proxies for financial leverage) on the firm values (represented by market capitalization) of publicly listed consumer goods companies in Nigeria. The research employed an ex-post facto design, utilizing secondary data obtained from the annual reports of selected consumer goods companies in Nigeria from 2013 to 2022. Panel regression and correlation analysis were employed for data analysis. The findings indicated that the debt ratio exerts a non-significant negative impact on the market capitalization of consumer goods firms in Nigeria, the debt-to-equity ratio similarly has a non-significant negative effect, while the interest coverage ratio demonstrates a non-significant positive influence on the market capitalization of these firms.

Chukwunweike and Ogheneovo (2024) examined the influence of financial assets (FA) on the financial performance (FP) of Nigerian deposit money banks (DMBs) from 2013 to 2022 (a decade). The chosen ten banks were selected from the 18 deposit money banks listed on the Nigerian Exchange Group. The subjects were analyzed using descriptive statistics, correlation analysis, and multiple regression analysis employing the OLS method. The results demonstrated that capital equity, liquidity asset density, and financial burden debt exert negligible effects on return on equity;

conversely, total revenue significantly influences ROE. The research ultimately demonstrated a robust correlation between financial assets and financial performance of deposit money banks in Nigeria.

Uju *et al.* (2025) analyzed financial derivatives and corporate metrics of publicly listed companies in Nigeria. The paper employed a synthesis of theoretical and case analyses, commencing with an introduction to the origins of derivatives, the principles of trading, and the explicit and potential risks that may arise. Subsequently, two particular corporate case studies are introduced to illustrate the inappropriate application of financial derivatives and the potential crisis stemming from an inadequate risk management strategy. Ultimately, suggestions for risk management and derivatives regulatory frameworks are provided. The research aims to enhance comprehension of the necessity for bolstering regulation and fostering risk-aversion awareness in the financial derivatives market. Furthermore, offer established firms an innovative strategy for derivatives risk management to facilitate consistent growth in the financial derivatives market.

***H3: From the above, we hypothesize that derivative trading ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria***

## **2.6 Derivative Information Disclosure and Return on Total Asset**

Annual reports serve as a crucial source of information regarding the derivative activities of any firm. Various stakeholders, including investors, shareholders, lenders, and financial analysts, can utilize derivative disclosures to gain a clearer understanding of derivative activities, thereby facilitating informed decision-making. Scholars, accountants, and analysts have long contended over the representation of intricate financial instruments such as derivatives in financial statements. Inadequate disclosure can distort the perceived risk undertaken by these firms, thereby subjecting unsuspecting shareholders and investors to significant losses (Oriet *et al.*, 2021).

The disclosure guidance in ASC 815 is applicable to all interim and annual reporting periods for which a balance sheet (pertaining to balance sheet-related disclosures) and an income statement (pertaining to income statement-related disclosures) are presented. If information regarding derivatives (or qualifying non-derivative instruments designated as hedging instruments) is presented in multiple footnotes, the reporting entity must cross-reference the derivative footnote with any relevant footnotes. Financial institutions aim to effectively manage their risk exposures associated with interest rates, exchange rates, credit, and other unsystematic risks that may jeopardize the firm's objectives (Oyegbile, 2024).

Oyegbile (2024) analyzed the influence of hedging activities through derivatives on the financial performance of consumer goods firms listed on the Nigerian Exchange (NGX). The independent variables for the study include foreign currency hedge, interest rate hedge, and commodity price hedge. Data were gathered from twenty consumer goods companies listed on the Nigerian Exchange, encompassing the financial years from 2018 to 2022. The findings of hypothesis testing indicate that hedging with derivatives significantly impacts firm performance.

Andrew *et al.* (2023) examined the effect of disclosing financial derivative risk information on the quality of financial reporting within a sample of Nigerian deposit money banks. Data from the annual financial reports of twelve publicly traded Nigerian commercial banks were gathered over a decade, from 2012 to 2021. Derivative assets functioned as the proxy for the independent variable, while Jones Discretionary Accrual was utilized to assess reporting quality, and the cash flow to asset ratio served as the control variable. The hypothesis was examined through Pooled Ordinary Least Squares regression analysis, which revealed that the disclosure of financial derivative risk information results in an increase in discretionary accrual value, consequently compromising the quality of financial reports.

Akinola and Abiola (2021) analyzed the effect of disclosing derivative financial instruments on the

financial performance of publicly listed manufacturing companies in Nigeria. The research employs a quantitative design and utilizes secondary data obtained from the annual reports of 20 manufacturing companies listed on the Nigerian Stock Exchange (NSE) from 2015 to 2019. The disclosure index was developed in accordance with IFRS 7 stipulations, while financial performance was assessed through Return on Assets (ROA) and Earnings per Share (EPS). The data underwent analysis through panel regression methodology. The results indicate a statistically significant positive correlation between the level of derivative disclosure and corporate performance.

Oboh and Isa (2020) examined the impact of the utilization and disclosure of derivative instruments on the performance of financial institutions in Nigeria. The research utilizes the financial statements of 15 deposit money banks listed on the NSE from 2013 to 2018. A disclosure index was created through content analysis to assess compliance with IFRS disclosure requirements regarding derivatives. The research utilizes generalized least squares (GLS) regression to evaluate the effects on return on assets (ROA) and profit margin. The findings indicate that increased disclosure of derivative utilization has a negative impact on financial performance.

***H4: From the above, we hypothesize that derivative information disclosure has no significant effect on return on total asset of listed interest taking banks in Nigeria***

### **3.0 Methodology**

The *ex-post facto* research design was used in this study due to the fact that the variables cannot be manipulated by the researcher. This method was adopted since social scientific research problems do not lend themselves to experimental and controlled inquiry of the *ex-post facto* kind. The population of this study consists of Nigerian listed companies on Nigerian Exchange Group (NGX) as at 31<sup>st</sup> December, 2024. The population comprises of one hundred and fifty one (151) firms listed on Nigerian Exchange Group and since the entire listed firms cannot be used for the study, the study is limited to ten (10) years

annual report of eight (8) listed interest taking banks in Nigeria. In selecting the sample, purposive sample technique was used to derive the sample size which used to ensure that the sample represents a diversity of perspectives. The secondary source of data collection was used for this study where data was gathered from audited annual reports of selected listed interest taking banks in Nigeria. The study employed multiple regression technique of analysis using Least Squares regression estimation. This method was adopted because it enhances easy presentation and interpretation of data. The empirical model of the study is mathematically expressed as follows:

$$ROTA_{it} = \alpha + \beta_1DASR_{it} + \beta_2DLBR_{it} + \beta_3DTDR_{it} + \beta_4DIFD_{it} + \epsilon_{it}$$

Where;

ROTA<sub>it</sub> = Return of Total Asset

DASR<sub>it</sub> = Derivative Asset Ratio

DLBR<sub>it</sub> = Derivative Liability Ratio

DTDR<sub>it</sub> = Derivative Trading Ratio

DIFD<sub>it</sub> = Derivative Information Disclosure

ε<sub>it</sub> = Error term

α = intercept

β<sub>1</sub> – β<sub>3</sub> = Coefficients of parameters estimated

### 3.9 Measurement of Variables

The variables used in this study were measured as follows:

S/N	Variables	Measurement
1.	Return of Total Asset	This is gotten by dividing a company's net income by its average total assets.
2.	Derivative Asset Ratio	This forms the size of a company's derivatives portfolio relative to its total assets.
3.	Derivative Liability Ratio	This forms the size of a company's derivatives liabilities relative to its total liabilities.
4.	Derivative Trading Ratio	This forms the amount of derivatives trading activity that a company is engaged in relative to its overall business activities.
5.	Derivative Information Disclosure	This forms the level of transparency and detail provided by a company about its derivatives transactions.

Source: Researcher’s Compilation, 2025

## 4. Result and Discussion

**Table 1:** Summary of Descriptive Statistics

	Descriptive Statistics						
	N	Minimum	Maximum	Mean	Std. Deviation	Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error
ROTA	80	.3600	8.2378	2.216719	1.5914169	3.955	.532
DASR	80	.0000	.2255	.012609	.0354080	31.631	.532
DLBR	80	-.0032	.1159	.005646	.0218503	22.332	.532
DTDR	80	-1.5727	11.8897	.331129	1.3893069	62.398	.532
DIFD	80	.0000	1.0000	.825000	.3823644	1.066	.532
Valid N (listwise)	80						

Source: Output of data analysis by author using SPSS (2025)

From the above table, the dependent variable, return on total asset (ROTE) has a mean value of 2.216719, standard deviation of 1.5914169, minimum value of 0.3600 and maximum of 8.2378. The independent variables; derivative asset ratio (DASR) has a mean value of 0.012609 and a standard deviation of .0354080, a minimum and maximum value of 0.0000 and 0.2255 respectively. Derivative liability ratio (DLBR) has a mean value of 0.005646, standard

deviation of 0.0218503, minimum value of -0.0032 and maximum value of 0.1159. Derivative trading ratio (DTDR) has a mean value of 0.331129, standard deviation of 1.3893069, minimum value of -1.5727 and maximum of 11.8897. Derivative information disclosure (DIFD) has a mean value, standard deviation, minimum and maximum values of 0.825000, 0.3823644, 0.825000 and 1.0000 respectively.

**Table 2: Summary of Coefficient of Correlation**

		ROTA	DASR	DLBR	DTDR	DIFD
ROTA	Pearson Correlation	1	.036	-.019	-.062	.310
	Sig. (2-tailed)		.752	.864	.584	.005
	N	80	80	80	80	80
DASR	Pearson Correlation	.036	1	.778	-.032	.165
	Sig. (2-tailed)	.752		.000	.777	.143
	N	80	80	80	80	80
DLBR	Pearson Correlation	-.019	.778	1	-.075	.119
	Sig. (2-tailed)	.864	.000		.507	.292
	N	80	80	80	80	80
DTDR	Pearson Correlation	-.062	-.032	-.075	1	.108
	Sig. (2-tailed)	.584	.777	.507		.339
	N	80	80	80	80	80
DIFD	Pearson Correlation	.310	.165	.119	.108	1
	Sig. (2-tailed)	.005	.143	.292	.339	
	N	80	80	80	80	80

Source: Output of data analysis by author using SPSS (2025)

Table 2 above shows the 2-tailed correlation analysis of the variables at 5% (0.05) level of significance. This shows that return on total asset (ROTA) is positive correlated with derivate asset ratio and derivative information disclosure while negatively correlated with derivative liability ratio and derivative trading ratio. Derivative asset ratio (DASR) is positively correlated with return on total asset (ROTA), derivative liability ratio (DLBR) and derivative information disclosure (DIFD) while negatively correlated with derivative trading ratio (DTDR). Likewise, Derivative liability ratio (DLBR) is positively correlated with derivative asset ratio (DASR) and derivative information disclosure (DIFD) while negatively correlated with return on total asset (ROTA) and derivative trading ratio (DTDR).

**Table 3: Summary of Regression result**

**Model Summary**

Multiple R	.335
R Square	.112
Adjusted R Square	.065
Std. Error of the Estimate	1.539

**Coefficients**

	Unstandardized Coefficients		Beta	t	Sig.
	B	Std. Error			
(Constant)	1.152	.411		2.800	.006
DASR	3.476	7.846	.077	.443	.659
DLBR	-9.190	12.665	-.126	-.726	.470
DTDR	-.119	.126	-.104	-.947	.346
DIFD	1.349	.462	.324	2.918	.004

Source: Output of data analysis by author using SPSS (2025)

The B column discusses the coefficient of the model. This indicates that a 115.2% increase in the return on total asset is influenced by 347.6% increase in derivative asset ratio, 919% decrease in derivative liability ratio, 11.9% decrease in derivative trading ratio and 134.9% increase in derivative information disclosure. The cumulative adjusted  $R^2$  (0.065) which is the multiple coefficient of determination gives the proportion or percentage of the total variation in the dependent variable as explained by the independent variables jointly. Hence, it signifies that 6.5% of the total variation in profitability of sampled interest taking banks is caused by the proxies of financial derivative. This is quite fair so predictions from the regression equation are fairly reliable. It also means that 93.5% of the variation is still unexplained so adding other independent variables could improve the fit of the model. This indicated that the model is fit and the explanatory variable are properly selected, combined and used. The findings have theoretical, practical and regulatory significance. This significance represents the contributions of the study which are expected to benefit the existing body of knowledge within the accounting and finance research, regulators and providers of accounting services.

Considering the significant effect of derivate asset ratio on return on total asset of listed interest taking banks in Nigeria, the regression result in table 4 indicate that derivative asset ratio has a positive and insignificance influence on return on total asset of listed interest taking banks in Nigeria. This was proved by the beta coefficient value of 0.077 and a t-value of 0.443 which has a p-value of 0.659 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that derivative asset ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria.

Considering the significant effect of derivate liability ratio on return on total asset of listed interest taking banks in Nigeria, the regression result in table 4 indicate that derivative liability ratio has a negative and insignificance influence on return on total asset of listed interest taking banks in Nigeria. This was proved by the beta coefficient value of 0.126 and a t-value of -

0.726 which has a p-value of 0.470 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that derivative liability ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria.

Considering the significant effect of derivate trading ratio on return on total asset of listed interest taking banks in Nigeria, the regression result in table 4 indicate that derivative asset ratio has a negative and insignificance influence on return on total asset of listed interest taking banks in Nigeria. This was proved by the beta coefficient value of 0.104 and a t-value of -0.947 which has a p-value of 0.346 which is insignificance at 5% significance level. This leads to the acceptance of null hypothesis and rejection of alternative hypothesis. Hence, it is concluded that derivative trading ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria.

Considering the significant effect of derivate information disclosure on return on total asset of listed interest taking banks in Nigeria, the regression result in table 4 indicate that derivative information disclosure has a positive and significance influence on return on total asset of listed interest taking banks in Nigeria. This was proved by the beta coefficient value of 0.324 and a t-value of 2.918 which has a p-value of 0.004 which is significance at 5% significance level. This leads to the acceptance of alternative hypothesis and rejection of null hypothesis. Hence, it is concluded that derivative information disclosure has significant effect on return on total asset of listed interest taking banks in Nigeria.

#### **4.1 Discussion of Findings**

The results indicate that almost all the variables are significantly normally distributed at 5% level of significance. The correlation matrix indicates the variables have mixed relationships. The results also indicate the absence of multi- colinearity.

### **Derivative asset ratio and return on total asset**

The findings from the first hypothesis revealed that derivative asset ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria. This findings is in agreement with the findings of Oriet *et al.* (2022) whose findings revealed that financial derivative assets do not significantly impact the performance of deposit money banks in the Nigerian stock exchange. The study however disagrees with the study of Abazu and Ofor (2023) whose findings indicated that financial derivative assets exert a positive yet insignificant influence on the performance of publicly listed oil and gas companies in Nigeria. Also, Abazu and Ofor (2023) findings indicated that financial derivative assets exert a positive yet insignificant influence on the performance of publicly listed oil and gas companies in Nigeria. Furthermore, Uche-Udo and Okafor (2022) results indicated that financial derivative asset exert a statistically significant positive influence on earnings per share

### **Derivative liability ratio and return on total asset**

The findings from the second hypothesis revealed that derivative liability ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria. This result agrees with the findings of Ehiedu and Nwaokocha (2024) whose result revealed that financial liability derivatives demonstrate insignificant effects on the ROE of DMBs in Nigeria. This study negates the study of Muthine (2021) whose result demonstrated a linear correlation between financial derivatives (asset derivative and liability derivative) and the financial performance of selected publicly listed commercial banks in Kenya. Also, Ibrahim and Nwankwo (2023) findings demonstrated that both asset and liability derivatives significantly influence the financial performance of banks, with asset derivatives positively affecting ROE.

### **Derivative trading ratio and return on total asset**

The findings from the third hypothesis revealed that derivative trading ratio has no significant effect on return on total asset of listed interest taking banks in Nigeria. This findings correlates with the findings of Nwankwo (2025) whose result demonstrated that debt

ratio exerts a non-significant negative impact on the market capitalization of consumer goods firms in Nigeria, the debt-to-equity ratio similarly has a non-significant negative effect, while the interest coverage ratio demonstrates a non-significant positive influence on the market capitalization of these firms. This result negates the findings of Chukwunweike and Ogheneovo (2024) whose results demonstrated that capital equity, liquidity asset density, and financial burden debt exert negligible effects on return on equity; conversely, total revenue significantly influences ROE.

### **Derivative information disclosure and return on total asset**

The findings from the forth hypothesis revealed that derivative information disclosure has significant effect on return on total asset of listed interest taking banks in Nigeria. This is further strengthened by the position of Oyegbile (2024) whose study indicated that hedging with derivatives significantly impacts firm performance. It also agrees with the study of Andrew *et al.* (2023) whose result revealed that the disclosure of financial derivative risk information results in an increase in discretionary accrual value, consequently compromising the quality of financial reports. The study disagrees with the findings of Oboh and Isa (2020) whose findings indicated that increased disclosure of derivative utilization has a negative impact on financial performance.

## **5.0 Conclusion and Policy Recommendation**

### **5.1 Conclusion**

Derivatives are financial instruments that derive their values from the performance of underlying entity. This underlying entity can be an asset index, or interest rate. Derivatives are used for a number of purposes, such as hedging against future price movements of securities or against speculation or getting to trade assets or market. Some of the common derivatives include forwards, futures, options, swaps and variations. Derivative exchanges perform more complex functions than real market exchange. They are also being transformed and modernized. They are compatible with qualitative changes in the shareholder's economy, offering along with these changes, strategies and paths of socioeconomic change.

The development of the derivatives market is an offspring of modern globalization and liberalization of the world economy. A closed economy can also be predictable but poor, while an open economy can be wealthier as gains from trade are realized, but they are also riskier. The growth of financial derivatives, particularly derivative markets, helps to enhance the effectiveness of monetary policy by speeding up the transmission process and influencing expectations, thus adding power or credibility to the process. Derivatives help alter international transmission by making arbitrage less expensive and reducing transactional transmission using market size. The rationale behind the use of derivatives is that, by lowering transaction costs, it increases liquidity period. Compared with equivalent transactions in underlying assets, financial derivatives can reduce the occurrence of large funds. The financial system will improve through promoting development-oriented policies like derivatives programs. This study hereby concludes that derivative asset ratio, derivative liability ratio and derivative trading ratio has no significant effect on return on total asset while derivative information disclosure has significant effect on return on total asset of listed interest taking banks in Nigeria.

### **5.2 Policy Recommendations**

The following recommendations are hereby made:

- i. Firm should increase their loan asset to better improve their profit. Increase their financial derivative and ensure that financial derivative assets are better utilized.
- ii. Firms should limit their financial derivative liabilities and ensure that financial derivative assets are better utilized.
- iii. Regulators should carefully and continuously monitor the banks 'derivative activities to assure that the increasingly popular trading instruments are used in a manner that is instrumental to the goal of a sound and safe and banking system.
- iv. Financial authorities should host seminars and symposia for DMBs to improve their derivatives understanding. Holding trade income derivatives will raise banks' trading income, thus improving the performance of DMBs in Nigeria.

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