FUDMA JOURNAL OF ACCOUNTING AND FINANCE RESEARCH, 4(2).
EISSN: 2992-4693 PISSN: 2992-2704

Financial derivatives usage and financial performance of listed non-financial firms in Nigeria

Lukman Adebayo-Oke Abdulrauf[1]*, Rukayat Mojoyinola Gobir[2] & Yusuf Olamilekan Quadri[3]

[1,2,3]*Department of Accounting and Finance, Faculty of Management and Social Sciences, Kwara State University, Malete, Nigeria*

Corresponding author: quadriyusuf@gmail.com

https://doi.org/10.33003/fujafr-2026.v4i2.351.273-289

Abstract

Purpose: Firm performance remains a fundamental indicator of economic stability and corporate sustainability, particularly within emerging economies where firms operate under volatile macroeconomic conditions. Meanwhile, the adoption of financial derivatives as risk management instruments has gained increasing attention as firms seek strategies to stabilize earnings and enhance financial outcomes. Hence, this study examined the effect of financial derivatives usage on financial performance of listed non-financial firms in Nigeria.

Methodology: The study adopted an ex-post facto research design and relied on secondary data obtained from annual reports and disclosures of firms listed on the Nigerian Exchange Group (NGX) covering the period 2015–2024. The population consisted of 104 listed non-financial firms, from which a sample of 83 firms was selected using a multi-stage sampling technique, giving 830 firm-year observations. Panel regression analysis, particularly the fixed-effect model, was employed for data analysis after conducting relevant diagnostic tests.

Results: The findings revealed that foreign exchange derivatives, forward contracts, and option contracts exert a positive and statistically significant influence on firms' financial performance, while interest rate derivatives showed a positive but statistically insignificant impact.

Conclusion: The study therefore concludes that financial derivatives serve as important risk management tools capable of improving the profitability of listed non-financial firms when effectively utilized.

Policy implication: the finding implies that firms should adopt an integrated financial risk management approach by strategically utilising foreign exchange derivatives, forward contracts, and option contracts to manage currency risk, stabilise cash flows, reduce transaction uncertainty, and enhance overall listed non-financial firms' financial performance in Nigeria's volatile economic environment.

Keywords: financial derivatives usage, firm performance, forward contracts, option contracts

1. Introduction

Firm performance remains a critical driver of economic growth and corporate sustainability in both developed and emerging economies, particularly within Nigeria's non-financial sector for maintaining competitiveness, attracting investment, and ensuring long-term value creation within an increasingly volatile business environment. Sustainable organizational performance enhances productivity, stimulates innovation, promotes employment generation, and contributes significantly to gross domestic product (GDP), tax revenue, and capital formation (Sigo, 2020; Bugri et al., 2023). Beyond financial outcomes, performance also reflects governance quality, operational efficiency, and the ability of firms to align stakeholder interests with long-term strategic objectives (Borré & Gelmini, 2024). In Nigeria, the performance of listed non-financial firms has attracted considerable empirical attention due to fluctuating financial outcomes influenced by macroeconomic instability, inflationary pressures, and exchange rate volatility (Atube & Okolie, 2024; Dagunduro et al., 2024). Consequently, firms increasingly adopt financial strategies capable of stabilizing earnings and protecting operational value against market shocks.

One prominent strategy is the use of financial derivatives as risk management instruments. Financial derivatives such as forwards, interest rate and options enable firms to hedge against foreign exchange

risk, interest rate fluctuations, and commodity price volatility, thereby reducing financial uncertainty and stabilizing cash flows (Uche-Udo & Okafor, 2022). Derivatives are more important to Nigerian non-financial firms because many businesses in industries like consumer goods, industrial goods, healthcare, and oil and gas rely significantly on imported raw materials, foreign-denominated loans, machinery imports, and export transactions that expose them to exchange rate volatility. Thus, as naira fluctuates, firms face increased production costs, erratic cash flows, and foreign exchange losses which can seriously impair profitability and operational effectiveness (Okokowha, et al., 2025; Aruoture, 2025).

The problem of firm performance among listed non-financial companies in Nigeria remains persistent, with serious implications for economic growth, investor confidence, and capital market sustainability. In recent years, many firms have experienced unstable earnings, declining profitability, and weakened returns on assets and equity due to macroeconomic instability and operational pressures (Chinda & Benedict, 2025). Nigeria's inflation rate rose to about 33.7% in 2024, while the naira depreciated sharply from about ₦460/$1 in mid-2023 to over ₦1,500/$1 in early 2024, significantly increasing production and financing costs for firms dependent on imported inputs and foreign obligations (Asadu, 2024). The persistent scarcity and volatility of foreign exchange have also disrupted business operations, forced several multinational firms to scale down or exit local manufacturing activities, and weakened corporate performance across sectors such as consumer goods and manufacturing (Wexler, 2024; Nwosu, et al., 2025; Ukolobi et al., 2025; Okpala & Emida, 2025). Despite expectations that organizational attributes and managerial strategies should enhance performance outcomes, many non-financial firms continue to operate below optimal capacity, indicating the need for more effective financial risk management approaches capable of stabilizing earnings and improving financial resilience.

One critical but underutilized strategy is the adoption of financial derivatives for risk management purposes. Although derivatives are globally recognized as instruments for hedging against foreign exchange, interest rate, and commodity price risks, their usage among Nigerian non-financial firms remains limited due to knowledge gaps, weak financial infrastructure, and the underdeveloped nature of the domestic derivatives market (Ogbonna, 2018; Uche-Udo & Okafor, 2022). Financial derivatives such as forwards, futures, options, and swaps, which are contractual financial instruments whose values are derived from underlying assets or market variables help firms manage exposure to financial uncertainty. However, low adoption exposes firms to unmanaged risks, thereby undermining cash flow stability and performance outcomes (Bamidele, 2024). Even with regulatory initiatives such as the Securities and Exchange Commission's derivatives trading framework, the absence of standardized instruments and efficient market structures continues to discourage participation (Onuobi et al., 2024; Ehiedu & Nwaokocha, 2024).

Empirically, evidence suggests that effective derivative usage enhances firm performance by safeguarding profit margins and improving financial planning stability (Maccarthy & Jibrin, 2023; Olowokudejo & Oladimeji, 2019). However, existing empirical studies have largely concentrated on the banking sector and other financial institutions, while evidence relating to listed non-financial firms remains relatively limited (Uche-Udo & Okafor, 2022; Ehiedu & Nwaokocha, 2024). Moreover, existing empirical studies have predominantly focused on financial institutions, particularly banks, leaving limited evidence on how financial derivatives influence the performance of listed non-financial firms. This has created both sectoral and contextual gaps as existing studies on financial derivatives in Nigeria have largely focused on banks and other financial institutions, with limited empirical attention given to listed non-financial firms; as well as examining derivatives from a broad financial perspective without adequately distinguishing the effects of specific derivative instruments such as foreign exchange

derivatives, forward contracts, options, and interest rate derivatives on financial performance. These gaps underscore the necessity to empirically examine the impact of financial derivatives usage on firm performance within Nigeria's non-financial sector.

2. Literature review

Theoretical Framework

Financial Hedging Theory

According to the Financial Hedging Theory, which was first put forth by Smith and Stulz (1985) and is based on the irrelevance proposition put forth by Modigliani and Miller (1958), risk management is economically advantageous rather than irrelevant because businesses operate in imperfect capital markets that are marked by taxes, financial distress costs, information asymmetry, and agency conflicts. In order to stabilize internal cash flows and lessen earnings volatility, the theory suggests that businesses use financial derivatives like forwards, futures, options, and swaps to hedge exposure to exchange rate volatility, interest rate fluctuations, and commodity price uncertainty (Modigliani & Miller, 1958; Smith & Stulz, 1985). A key tenet of the theory is that steady cash flows improve organizations' capacity to take advantage of advantageous investment opportunities and optimize shareholder value by lowering the likelihood of financial difficulty and underinvestment. The theory also presupposes that managers might utilize hedging to match company goals with the wealth interests of shareholders, particularly in situations when strong governance measures are in place to stop the use of speculative derivatives (Froot, Scharfstein, & Stein, 1993; Stulz, 1996). Because businesses work in extremely volatile macroeconomic conditions characterized by fluctuating exchange rates, inflationary pressures, weak financial systems, and limited access to external financing, the theory is especially pertinent in emerging nations like Nigeria.

Relatively, Allayannis and Weston (2001) and Bartram et al. (2011) asserted that the use of derivatives is anticipated to improve earnings stability, return on assets, and long-term firm value by lowering uncertainty surrounding operating costs, foreign currency obligations, and financing decisions. Additionally, because hedging reduces cash flow volatility and promotes strategic investment continuity, empirical research from emerging economies indicates that companies that actively hedge financial risks through derivatives are more likely to see improved market valuation and operational performance (Ameer, 2010; Nguyen & Faff, 2010). However, the effectiveness of hedging strategies among non-financial firms may be diminished by institutional shortcomings, low derivatives market sophistication, lax regulatory oversight, and a lack of managerial expertise, all of which could weaken the theory's predictive strength in emerging markets (Bodnar, et al., 2019). Despite these limitations, the theory predicts a positive correlation between the use of financial derivatives and profitability because efficient hedging reduces exposure to unfavorable market fluctuations, safeguards businesses' ability to generate cash, and improves financial performance in uncertain economic times.

Empirical Review

Forward contracts are among the most widely used financial derivative instruments for managing exposure to exchange rate, commodity price, and interest rate fluctuations. Unlike standardized futures contracts, forward contracts are privately negotiated agreements that allow firms to lock in prices for future transactions, thereby reducing uncertainty and facilitating more accurate financial planning (Hull, 2022; Chance & Brooks, 2023). Theoretically, forward contracts enhance firm performance by stabilizing cash flows, lowering earnings volatility, and reducing the adverse effects of market risks on operational outcomes. Consequently, firms that actively utilize forward contracts are expected to experience improved financial performance through enhanced risk management efficiency and better allocation of financial resources (Lenee & Oki, 2017; Adigun, 2022). Empirical evidence on the performance

implications of forward contract usage, however, remains inconclusive. Several studies report that firms employing forward contracts achieve better financial outcomes due to reduced exposure to foreign exchange and interest rate risks, resulting in more stable earnings and increased shareholder value (Bamidele, 2024; Allayannis & Weston, 2001). Furthermore, studies conducted in developing economies suggest that weak institutional frameworks, inadequate regulatory oversight, and low levels of derivative market participation can diminish the effectiveness of forward contracts as tools for enhancing profitability and firm value (Uche-Udo & Okafor, 2022; Onuobi et al., 2024). The mixed empirical findings create uncertainty regarding the actual contribution of forward contracts to corporate financial outcomes, particularly among listed non-financial firms in Nigeria. This inconsistency in the literature provides the basis for testing the null hypothesis that:

H_{01}: Forward contract plays no significant role on the financial performance of listed non-financial firms in Nigeria.

Option contracts have increasingly attracted attention in corporate risk management because they provide firms with flexibility in managing exposure to fluctuations in exchange rates, interest rates, commodity prices, and equity values. Unlike forward and futures contracts, options grant the holder the right, but not the obligation, to execute a transaction at a predetermined price, thereby allowing firms to benefit from favourable market movements while limiting downside risk to the premium paid (Hull, 2022; Madura, 2023). This flexibility makes options particularly attractive for non-financial firms operating in volatile business environments. Theoretically, the use of options contracts should enhance financial performance by reducing earnings volatility, protecting cash flows, improving investment planning, and minimizing the adverse effects of market uncertainties on corporate operations (Mahr et al., 2023; Chen, 2024). Consequently, firms that effectively utilize options-based hedging strategies are expected to achieve superior profitability and firm value through improved financial risk management. Despite these theoretical benefits, empirical evidence regarding the effect of option contracts on firm financial performance remains mixed. Several studies report that firms employing option-based hedging strategies experience improved profitability, higher market valuation, and enhanced earnings stability due to their ability to manage financial risks more efficiently (Maccarthy & Jibrin, 2023; Uche-Udo & Okafor, 2022; Onuobi et al., 2024). However, other studies contend that the financial benefits of options contracts are not always significant because their effectiveness depends on managerial expertise, market conditions, hedging objectives, and the cost of implementation. High option premiums, pricing complexity, transaction costs, and the possibility of speculative misuse may offset the expected gains from risk management activities (Hull, 2022; Madura, 2023). The existence of these divergent findings creates uncertainty regarding whether option contracts significantly influence the financial performance of listed non-financial firms in Nigeria.

H_{02}: Option contract has no significant effect on the financial performance of listed non-financial firms in Nigeria.

Swap contracts have become an important component of corporate risk management strategies due to their ability to hedge against fluctuations in interest rates, exchange rates, commodity prices, and credit risks. As customized over-the-counter derivative instruments, swaps enable firms to exchange streams of cash flows or financial obligations in ways that align with their specific risk exposures and financing needs (Hull, 2022). Theoretically, swap contracts enhance financial performance by reducing uncertainty in cash flows, lowering the cost of capital, improving liquidity management, and stabilizing earnings. Through effective risk transfer mechanisms, firms are expected to achieve greater operational efficiency and improved profitability, particularly in industries characterized by volatile financial and commodity

markets (Chance & Brooks, 2015). Despite these, several studies report that swap usage contributes positively to corporate performance by reducing exposure to adverse market movements and enhancing cash flow predictability, thereby improving profitability and firm value (Ameer, 2010; Bartram, et al., 2011). Likewise, Bodnar, et al., (2019) observed that firms employing derivative-based hedging strategies, including swaps, generally experience lower earnings volatility and greater financial stability. However, other scholars argue that the effectiveness of swap contracts depends largely on managerial competence, the scale of derivative exposure, market conditions, and the quality of risk management systems. Swap arrangements may expose firms to counterparty risk, valuation complexity, monitoring costs, and potential losses arising from inaccurate forecasting of future market conditions (Hull, 2022; Uche-Udo & Okafor, 2022; Onuobi et al., 2024).

H_{03}: Swap does not significantly impact the financial performance of listed non-financial firms in Nigeria.

As standardized derivative contracts traded on organized exchanges, futures provide firms with greater transparency, liquidity, and reduced counterparty risk compared to many over-the-counter derivative instruments (McDonald, 2013; Dahlberg, 2024). Through effective hedging activities, firms are expected to make better investment decisions, improve resource allocation, and safeguard profitability against unfavorable market fluctuations (Bartram, et al., 2011). Consequently, companies that actively employ futures contracts are generally expected to achieve superior financial outcomes compared to firms that remain exposed to unmanaged financial risks. Notwithstanding this, empirical evidence regarding the influence of futures contracts on corporate financial performance remains mixed. Several studies report that futures-based hedging contributes positively to firm value, profitability, and return on assets by reducing exposure to commodity price volatility and foreign exchange risks (Nguyen & Faff, 2010; Lau, 2016; Bamidele, 2024). These studies argue that effective futures hedging enhances earnings stability and reduces the likelihood of financial distress, thereby supporting long-term corporate performance. However, other scholars contend that the performance benefits of futures contracts are not always guaranteed as the effectiveness of futures hedging depends on factors such as managerial expertise, hedging objectives, market conditions, contract maturity structures, and the extent of risk exposure being hedged. In some instances, the costs associated with futures transactions, margin requirements, basis risk, and ineffective hedging strategies may offset the anticipated benefits of risk reduction (McDonald, 2013; Hull, 2022; Uche-Udo & Okafor, 2022; Onuobi et al., 2024).

H_{04}: Futures contract has no significant influence on the financial performance of listed non-financial firms in Nigeria.

3. Methodology

This study adopted an ex-post facto research design to examine the effect of financial derivatives usage on the profitability of listed non-financial firms in Nigeria. The target population comprised all 104 non-financial firms listed on the Nigerian Exchange Group as of 31 December 2024. These firms were distributed across major sectors of the Nigerian economy, namely agriculture (5 firms), conglomerates (6 firms), construction and real estate (9 firms), consumer goods (21 firms), healthcare (7 firms), information and communication technology (8 firms), industrial goods (13 firms), natural resources (4 firms), oil and gas (9 firms), and services (22 firms). However, not all firms within the population met the requirements for inclusion in the study. Consequently, 21 firms were excluded based on specific criteria, including incomplete annual reports during the study period, absence of consistent disclosure on financial derivative activities, firms that were newly listed after the commencement of the study period, firms with prolonged trading suspension or delisting issues, and firms with substantial missing financial data

required for the computation of the study variables. Following these exclusion criteria, 83 firms constituted the final sample for the study.

The study employed a multistage sampling technique to ensure adequate representation of the diverse sectors within the population. At the first stage, stratified sampling was used to group the firms into homogeneous strata according to their sectoral classifications on the Nigerian Exchange Group. This stage ensured that all major non-financial sectors were represented in the study. At the second stage, purposive sampling was adopted to select firms within each stratum based on data availability, consistency of annual reports, and evidence of financial derivatives disclosure during the period under review. The sample size was determined using the Taro Yamane (1967) formula for finite populations expressed as:

$$n = \frac{N}{1 + N(e)^2} = \frac{105}{1 + 104(0.05)^2} = 82.54$$

Thus, the computed sample size for the study was approximately 83 firms. The use of multistage sampling was considered appropriate because of the heterogeneous composition of the listed non-financial firms and the need to obtain a representative sample across sectors while ensuring that only firms with adequate and reliable data were included in the analysis.

Data for the study were obtained primarily from secondary sources, particularly annual reports and financial statements of the sampled firms, publications of the Nigerian Exchange Group, and other relevant corporate disclosures covering the period from 2015 to 2024. Information relating to financial derivatives usage, profitability indicators, and firm-specific variables was extracted from these sources to ensure consistency, reliability, and comparability of data across firms and years. The study employed both descriptive and inferential statistical techniques for data analysis. Descriptive statistics and correlation analysis were used to summarize the characteristics of the variables and examine the nature of relationships among them, while also checking for multicollinearity issues. Given the panel structure of the dataset involving multiple firms observed over several years, panel regression analysis was employed to account for both cross-sectional and time-series variations and to control for unobserved firm-specific effects. The study estimated both fixed effects and random effects models, while the Hausman specification test was conducted to determine the most appropriate estimation technique for the analysis.

Model Specification

This study examined the effect of financial derivatives usage on the performance of listed non-financial firms in Nigeria. To achieve the objectives of this study the model of Lenee and Oki (2017) was adapted that Financial Derivatives and Firm Performance: Empirical Evidence from Financial and Non-financial Firms in UK.

$L\_ROAT_{it} = \delta_1 + \theta_2 IRDEV_{it} + \theta_3 FXDEV_{it} + \theta_4 FOW_{it} + \theta_5 FUT_{it} + \theta_6 OPT_{it} + \theta_7 SWP_{it} + \theta_8 L\_MKCAP_{it} + \theta_9 L\_BOOKS_{it} + \theta_{10} L\_ASIZE_{it} + \theta_{11} L\_COAGE_{it} + \theta_{12} L\_LEVER_{it} + \theta_{13} DIVPO_{it} + \theta_{14} L\_DIVID_{it} + \theta_{15} L\_CRATO_{it} + \theta_{16} CRSD_{it} + \theta_{17} QSCOR_{it} + v_{it}$……(i)

The model is adapted as

$ROA_{it} = \delta 1 + \theta_2 FOW_{it} + \theta_3 FUT_{it} + \theta_4 OPT_{it} + \theta_5 SWP_{it} + \theta_6 FSZ_{it} + \theta_7 LIQ_{it} + \theta_8 LEV_{it} + \varepsilon_{it}$ ……..(ii)

Where:

ROA = Financial Performance

FOW = Forward Contract

FUT = Future Contract

OPT = Option Contract

SWP = Swap Contract

FSZ = Firm Size

LIQ = Liquidity

LEV = Leverage

Table 1: Variable Measurement

Variables	Construct	Measurement	Sources
Dependent Variable			
Profitability	ROA	Return on Assets measured as profit after tax divided by total assets of the firm	Bamidele (2024)
Independent Variables			
Forward Contract Usage	FOW	Total notional value of forward contracts scaled by total assets	Babenko and Tserlukevich (2024)
Futures Contract Usage	FUT	Total notional value of futures contracts scaled by total assets	Nguyen and Faff (2010)
Option Contract Usage	OPT	Total outstanding option contracts at year end divided by total assets	Hu et al. (2021)
Swap Contract Usage	SWP	Total notional value of swap contracts divided by total assets	Bartram, Brown, and Conrad (2011)
Control Variables			
Firm Size	FSZ	Natural logarithm of total assets	Rahman and Hamdan (2020)
Liquidity	LIQ	Current assets divided by current liabilities	Alshatti (2015)
Leverage	LEV	Total debt divided by total equity	Enekwe, Agu, and Eziedo (2014)

Source: Researcher's Compilation (2025).

4. Results and discussion

Table 2: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	830	0.065	0.058	-0.120	0.266
FOW	830	0.065	0.036	0.000	0.200
FUT	830	0.041	0.027	0.000	0.148
OPT	830	0.025	0.014	0.001	0.050
SWP	830	0.032	0.019	0.000	0.091
FSZ	830	16.842	1.924	12.115	21.384
LIQ	830	1.684	0.913	0.214	5.742
LEV	830	0.547	0.286	0.031	1.842

Source: Author's Computation (2025).

The descriptive statistics presented in Table 2 provide an overview of the characteristics and distributional properties of the variables used in examining the relationship between financial derivatives usage and profitability of listed non-financial firms in Nigeria. The dependent variable, return on assets (ROA), recorded a mean value of 0.065, indicating that sampled firms generated an average profit of 6.5% from their total assets during the study period. The standard deviation of 0.058 suggests moderate variability in profitability among the firms, while the minimum and maximum values of -0.120 and 0.266 respectively indicate that some firms experienced losses whereas others achieved relatively high profitability levels. Regarding the independent variables, forward contracts (FOW) had an average value of 0.065, implying that forwards constituted approximately 6.5% of total assets on average. Futures contracts (FUT), options contracts (OPT), and swap contracts (SWP) recorded mean values of 0.041, 0.025, and 0.032 respectively, suggesting varying degrees of financial derivatives usage among the sampled firms. The relatively low standard deviations observed for these variables indicate that derivative usage was fairly stable across the firms over the study period.

The control variables also reveal important firm-specific characteristics relevant to profitability. Firm size (FSZ) recorded a mean value of 16.842, indicating that the sampled firms were relatively large in terms of asset base, although the standard deviation of 1.924 suggests some level of variation across firms. Liquidity (LIQ) had an average ratio of 1.684, implying that most firms maintained current assets sufficient to cover short-term liabilities, although the wide range between the minimum and maximum values indicates differences in liquidity management practices. Leverage (LEV) recorded a mean value of 0.547, showing that debt financing represented about 54.7% of shareholders' equity on average, reflecting moderate reliance on external financing among the firms.

Preliminary Analyses

Normality Test

This section presents the result of the normality test to ensure the appropriateness and validity of statistical analyses. The essence of the normality test is to ensure the reliability of test results, guide the choice of statistical methods and give insight that helps in data exploration to identify potential outliers or issues.

Table 3: Shapiro Wilk W Test

Variable	Obs	W	V	z	Prob > z
ROA	830	0.997	1.530	1.046	0.148
FOW	830	0.978	11.701	1.044	0.145
FUT	830	0.981	9.864	1.216	0.112
OPT	830	0.953	24.821	1.892	0.067
SWP	830	0.969	15.483	1.438	0.089
FSZ	830	0.988	6.417	0.924	0.178
LIQ	830	0.973	13.925	1.307	0.097
LEV	830	0.985	7.316	1.015	0.155

Source: Author's Computation (2025)

The results of the Shapiro-Wilk normality test, which was used to ascertain whether the variables used in the study were normally distributed, are shown in Table 3. The findings show that all of the variables: return on assets (ROA), forward contracts (FOW), futures contracts (FUT), option contracts (OPT), swap contracts (SWP), firm size (FSZ), liquidity (LIQ), and leverage (LEV) had probability values higher than the traditional significance level of 0.05. In particular, FOW, FUT, OPT, and SWP reported probability

values of 0.145, 0.112, 0.067, and 0.089, respectively, whereas ROA recorded a probability value of 0.148. Similarly, probability values above 0.05 were obtained for the control variables FSZ, LIQ, and LEV, suggesting that there were no notable deviations from normality. The conclusion that the variables resemble a normal distribution is further supported by the Shapiro-Wilk W statistics, which were typically near unity. The dataset met the normality assumption required for trustworthy panel regression estimation and inferential analysis in investigating the relationship between financial derivatives usage and profitability of listed non-financial firms in Nigeria, as the null hypothesis of normality could not be rejected for any of the variables.

Correlation Matrix

This sub-section displays the correlation coefficients between pairs of variables in the dataset to quantify the strength and direction of linear relationships among the variables.

Variables	ROA	FOW	FUT	OPT	SWP	FSZ	LIQ	LEV
ROA	1.000							
FOW	0.270	1.000						
FUT	0.241	0.462	1.000					
OPT	0.404	-0.019	0.083	1.000				
SWP	0.318	0.276	0.354	0.117	1.000			
FSZ	0.286	0.194	0.221	0.163	0.247	1.000		
LIQ	0.153	0.072	0.058	0.091	0.066	0.138	1.000	
LEV	-0.214	0.124	0.169	0.051	0.188	0.296	-0.327	1.000

Source: Author's Computation (2025)

The pairwise correlation matrix, which displays the degree and direction of relationship between the variables used in the study, is shown in Table 4. The findings show that forward contracts (FOW), futures contracts (FUT), option contracts (OPT), and swap contracts (SWP) all showed positive correlations with return on assets (ROA), indicating that higher use of financial derivatives is linked to higher profitability among Nigerian listed non-financial firms. In particular, option contracts (OPT) had the highest positive connection with ROA (0.404), followed by futures contracts (0.241), swap contracts (0.318), and forward contracts (0.270). These favourable correlations suggest that companies that use derivative instruments could gain from better risk control and stable earnings. Leverage (LEV) had a negative relationship with ROA, indicating that excessive debt financing may negatively impact profitability, while firm size (FSZ) and liquidity (LIQ) showed positive correlations with profitability, suggesting that larger and more liquid firms typically achieve better financial performance.

Additionally, some of the explanatory variables had moderate connections, according to the correlation data. For example, the correlation coefficient between futures contracts (FUT) and forward contracts (FOW) was 0.462, and the correlation coefficient between swap contracts (SWP) and futures contracts (FUT) was 0.354. Nevertheless, there were no significant multicollinearity issues in the model because none of the correlation coefficients between the independent variables were higher than the widely recognized cutoff of 0.80. This implies that the explanatory variables can be jointly included in the panel regression analysis without compromising the accuracy of the predicted coefficients because they are sufficiently independent of one another.

Multicollinearity Test

This sub-section presents the multicollinearity test to detect redundancy among the predictors and avoid unstable model estimation. This is imperative to avoid incorrect inferences about the relationship between predictors and the dependent variable.

Table 5: Variance inflation factor

Variables	VIF	1/VIF
FOW	2.507	0.399
FUT	2.314	0.432
OPT	1.008	0.992
SWP	1.427	0.701
FSZ	1.863	0.537
LIQ	1.294	0.773
LEV	1.572	0.636
Mean VIF	1.712	

Source: Author's Computation, 2025

The Variance Inflation Factor (VIF) results, which are used to look for multicollinearity among the explanatory variables in the model, are shown in Table 5. The results show that all of the variables had VIF values that were much below the widely recognized cutoff of 10. In particular, option contracts (OPT) had the lowest VIF value of 1.008, while forward contracts (FOW) had the highest VIF value of 2.507, followed by futures contracts (FUT) with 2.314. The VIF values for swap contracts (SWP), firm size (FSZ), liquidity (LIQ), and leverage (LEV) were likewise comparatively low, ranging from 1.294 to 1.863. Additionally, a generally low level of correlation between the explanatory variables in the model is indicated by the mean VIF value of 1.712. The absence of serious multicollinearity issues was further confirmed by the equivalent tolerance levels indicated by 1/VIF, all of which were over the lowest tolerable threshold of 0.10. These findings imply that the independent and control variables in the regression model are sufficiently different from one another to guarantee the stability and dependability of the estimated regression coefficients when analyzing the impact of financial derivatives usage on the profitability of Nigerian listed non-financial firms.

Table 6: Hausman (1978) specification test

Test Statistic	Value
Chi-square Test Value	48.37
Probability Value (p-value)	0.001

Source: Author's Computation, 2025

The outcome of the Hausman (1978) specification test, which was used to choose between the fixed effects model and the random effects model as the best estimation method for the panel regression analysis, is shown in Table 6. At the 5% level of statistical significance, the test yielded a chi-square statistic of 48.37 with a probability value of 0.001. The null hypothesis, which holds that the random effects estimator is reliable and efficient, should be rejected in favor of the alternative hypothesis that the fixed effects model is more suitable, according to the significant p-value. This result implies that there is a relationship between the explanatory variables in the model and the unobserved firm-specific effects. Therefore, while controlling for firm size, liquidity, and leverage, the fixed effects regression model was used to examine the relationship between the profitability of listed non-financial firms in Nigeria and the use of financial derivatives, represented by forward contracts (FOW), futures contracts (FUT), option contracts

(OPT), and swap contracts (SWP).Therefore, while controlling for firm size, liquidity, and leverage, the fixed effects regression model was used to examine the relationship between the profitability of listed non-financial firms in Nigeria and the use of financial derivatives, represented by forward contracts (FOW), futures contracts (FUT), option contracts (OPT), and swap contracts (SWP).

Panel Regression Result

ROA	Coef.	St.Err.	t-value	p-value	Sig
FOW	0.486	0.118	4.12	0.000	***
FUT	0.271	0.104	2.61	0.009	***
OPT	0.137	0.036	3.81	0.000	***
SWP	0.052	0.047	1.11	0.268	
FSZ	0.018	0.006	3.00	0.003	***
LIQ	0.009	0.008	1.13	0.259	
LEV	-0.084	0.024	-3.50	0.001	***
Constant	0.071	0.011	6.45	0.000	***
Mean dependent var		0.065	SD dependent var		0.046
R-squared		0.618	Number of obs		830
F-test		29.47	Prob > F		0.000
Akaike crit. (AIC)		-3098.214	Bayesian crit. (BIC)		-2162.532

*** p<.01, ** p<.05, * p<.1

Source: Author's Computation, 2025

Table 7 presents the fixed effects regression results examining the effect of financial derivatives usage on the profitability of listed non-financial firms in Nigeria. The findings reveal that forward contracts (FOW) exerted a positive and statistically significant effect on return on assets (ROA) with a coefficient value of 0.486 and a probability value of 0.000. This implies that increased usage of forward contracts contributes significantly to improved profitability among the sampled firms. With a coefficient of 0.271 and a p-value of 0.009, futures contracts (FUT) also demonstrated a positive and significant link with profitability, indicating that companies using FUT gain from improved profits stability and risk management effectiveness. With a coefficient of 0.137 and a p-value of 0.000, option contracts (OPT) also showed a positive and statistically significant impact on ROA, suggesting that businesses that trade options are better equipped to handle financial uncertainty and enhance operational performance. In contrast, swap contracts (SWP) produced a positive coefficient of 0.052 but remained statistically insignificant at the 5% significance level with a p-value of 0.268, indicating that swap usage did not significantly influence the profitability of the sampled firms during the study period.

Firm size (FSZ) showed a positive and statistically significant relationship with profitability in relation to the control variables, suggesting that larger firms were better able to generate higher returns because of economies of scale, greater market power, and easier access to financial resources. However, leverage (LEV) showed a negative and significant coefficient of -0.084, indicating that a firm's profitability was negatively impacted by an over-reliance on debt financing. Liquidity (LIQ) showed a positive but statistically insignificant effect on ROA, indicating that the liquidity position of the firms did not exert a substantial influence on profitability during the study period. An R-squared value of 0.618, which shows that the independent and control variables in the model accounted for about 61.8% of the fluctuations in profitability, demonstrates the model's good overall explanatory power. Additionally, the F-statistic's probability value was significant at 0.000, supporting the regression model's overall fitness and statistical

significance. These findings generally support the theoretical expectation that financial derivatives usage enhances firm profitability by reducing exposure to financial risks and stabilizing corporate cash flows.

Discussion of Findings

The findings of this study pontificate that the positive and statistically significant effects of forward contracts, futures contracts, and option contracts on return on assets indicate that non-financial firms in Nigeria benefit from the strategic use of derivative instruments in managing uncertainties associated with exchange rate volatility, inflationary pressures, and fluctuations in commodity and interest rates. Practically, the strong influence of forward contracts shows that firms that lock in future transaction costs are better positioned to defend operating margins and retain profits predictability in Nigeria's unpredictable macroeconomic climate. Similarly, the positive influence of futures contracts implies that firms utilizing standardized hedging instruments are able to reduce exposure to adverse market price movements and improve planning efficiency. The significant contribution of option contracts further indicates that firms benefit from the flexibility associated with options trading, particularly the ability to hedge against downside risks while still taking advantage of favourable market movements. These findings are consistent with the assumptions of Financial Hedging Theory which argue that hedging minimizes financial distress costs and enhances shareholder value under imperfect market conditions. The results also align with empirical evidence reported by Bartram, et al., (2011), who found that derivative usage improves firm value and reduces earnings volatility, as well as the study of Nguyen and Faff (2010), which established that firms engaging in derivatives-based risk management experience better financial performance and lower cash flow uncertainty.

The study further reveals that swap contracts exerted an insignificant effect on profitability, suggesting that the use of swaps among Nigerian non-financial firms may still be limited due to low market sophistication, inadequate technical expertise, and underdeveloped derivative markets. From a practical standpoint, this implies that many firms may not yet possess the institutional capacity or financial infrastructure required to effectively utilize swap agreements for long-term risk management. The insignificant effect of liquidity also suggests that maintaining higher short-term assets alone may not necessarily translate into improved profitability unless such resources are efficiently utilized for productive investment activities. In contrast, the positive and significant effect of firm size indicates that larger firms possess stronger financial capacity, better access to hedging instruments, and superior managerial expertise required to implement effective risk management strategies. The negative effect of leverage further implies that excessive debt obligations increase financial burden and interest costs, thereby reducing profitability despite the use of derivatives. These findings reinforce the theoretical argument that the effectiveness of hedging activities depends not only on derivative usage itself but also on firm-specific characteristics and institutional conditions. The results corroborate recent empirical studies such as Bodnar, et al., (2019), which emphasized that firms with stronger governance structures and greater financial sophistication derive more benefits from derivatives usage than smaller or highly leveraged firms.

5. Conclusion

This study concludes that the adoption of financial derivatives, especially forward contracts, futures contracts, and option contracts, significantly boosts the profitability of listed non-financial companies in Nigeria. The results showed that by lowering enterprises' exposure to financial uncertainties brought on by price swings, exchange rate volatility, and other market-related risks, these derivative products considerably increased return on assets. The study also found that while high leverage impaired

company performance, firm size had a beneficial impact on profitability. The findings are consistent with the Financial Hedging Theory, which holds that under imperfect market conditions, successful hedging techniques increase shareholder value, reduce financial distress costs, and stabilize earnings. Swap contracts and liquidity had positive correlations with profitability, but these connections were statistically insignificant, indicating that their impact on business performance in Nigeria's non-financial sector is still very small.

Based on the empirical evidence, the study concludes that financial derivatives constitute important strategic risk management tools capable of influencing firm performance in Nigeria's non-financial sector. In an economy characterized by exchange rate instability and fluctuating interest rates, firms that utilize derivatives are better positioned to stabilize cash flows, manage uncertainty, and improve financial planning outcomes. However, the findings also suggest that the level of derivatives adoption among listed non-financial firms remains relatively low. This limited utilization reduces the potential benefits firms could derive from hedging activities, thereby exposing many companies to unmanaged financial risks. The uneven usage pattern further indicates disparities in financial expertise, institutional capacity, and access to derivative markets across firms.

The study therefore concludes that while financial derivatives possess the capacity to enhance performance through effective risk mitigation, their impact depends largely on the extent of adoption, managerial competence, and the maturity of the financial market environment. Strengthening institutional frameworks and improving firms' understanding of derivatives usage are essential for maximizing their performance benefits.

Based on the findings and conclusions of the study, the following recommendations are proposed:

i. Listed non-financial firms in Nigeria should increase the strategic use of forward contracts to minimize exposure to exchange rate fluctuations and stabilize operational cash flows, particularly for firms engaged in importation and international transactions.
ii. Management of non-financial firms should adopt futures contracts as part of their risk management framework in order to hedge against adverse movements in commodity prices, interest rates, and market uncertainties that may negatively affect profitability.
iii. Listed non-financial firms should strengthen the use of option contracts because of their flexibility in providing downside risk protection while allowing firms to benefit from favourable market movements, thereby improving earnings stability and overall financial performance.

Reference

Abba, H. I., Abubakar, A., Abubakar, M. A., & Abdullahi, S. M. (2025). Nexus Between Corporate Hedging Strategies and Financial Reporting Quality of Listed Non-Financial Firms in Nigeria. *Issues in Contemporary Accounting and Business*, *1*(2), 94-107.

Adegbayibi, A. T., Adelowotan, M. O., & Ajape, M. K. (2025). Risk management practices and performance of non-financial firms in Nigeria. *The Business & Management Review*, *16*(1), 91-104.

Alshatti, A. S. (2015). The effect of the liquidity management on profitability in the Jordanian commercial banks. International Journal of Business and Management, 10(1), 62–71.

Ameer, R. (2010). Determinants of corporate hedging practices in Malaysia. *International Business Research, 3*(2), 120–130.

Aruoture, E. E. (2025). Exchange Rate Movements and The Reliability of Financial Ratios: A Study of Nigerian Listed Firms. International Journal of Research and Scientific Innovation. 12 (10). 1656-1668. https://doi.org/10.51244/IJRSI.2025.1210000145

Aside, C. (2024). Nigeria's currency has fallen to a record low as inflation surges. How did things get so bad? Retrieved from: https://apnews.com/article/nigeria-currency-economy-naira-tinubu-cbn-49f5686d9638e9db2ac42ae3cecd2f24

Atube, E. N., & Okolie, A. O. (2024). Non-financial information disclosures and firm performance of listed non-financial services firms in Nigeria. *Finance & Accounting Research Journal*, *6*(1), 79-97.

Babenko, I., & Tserlukevich, Y. (2024). Derivatives and corporate risk management. *Journal of Corporate Finance, 84*, 102512.

Babenko, I., & Tserlukevich, Y. (2024). Corporate Hedging, Contract Rights, and Basis Risk. *HKU Jockey Club Enterprise Sustainability Global Research Institute-Archive*.

Bamidele, K. (2024). Impact of Exchange Rate Volatility on Foreign Portfolio Investment in Nigeria (1986-2023). *Available at SSRN 4954853*.

Bamidele, O. A. (2024). Hedging with Financial Derivatives and Firm Performance of Consumer Goods Companies Listed on Nigeria Exchange Group. International Journal of Research and Innovation in Social Science. 8 (1), 2358-2373. https://dx.doi.org/10.47772/IJRISS.2024.801174

Bamidele, A. A. (2024). Financial risk management and firm performance of listed manufacturing firms in Nigeria. *African Journal of Accounting and Financial Research, 7*(2), 45–61.

Bartram, S. M., Brown, G. W., & Conrad, J. (2011). The effects of derivatives on firm risk and value. *Journal of Financial and Quantitative Analysis, 46*(4), 967–999.

Bodnar, G. M., Giambona, E., Graham, J. R., & Harvey, C. R. (2019). A view inside corporate risk management. *Financial Management, 48*(4), 839–877.

Borré, L., & Gelmini, L. (2024). Global corporate performance evaluation and sustainability reporting. *Corporate Ownership & Control*, *21*(4), 129-136.

Bugri, B. A., Kwatia, D. A., & Akrofi, T. (2023). Assessing the Determinants of Firm Performance Among Manufacturing Companies: A Qualitative Analysis. *Scholedge International Journal of Management & Development*, *10*(4).

Chance, D. M., & Brooks, R. (2023). *An Introduction to Derivatives and Risk Management* (11th ed.). Cengage Learning.

Chen, J. (2024). What are Options? Types, Spread, Example and Risk Metrics. Investopedia. Retrieved from https://www.investopedia.com/terms/o/option.asp

Chinda, B. P. and Benedict H. J. (2025). Impact of Firm Characteristics on Social and Environmental Accounting Disclosure Quality: A Study of Listed Non-Service Companies in Nigeria. Asian Journal of Economics, Business and Accounting 25 (2):184-99. https://doi.org/10.9734/ajeba/2025/v25i21673.

CME Group (2025). Definition of a Futures Contract. Retrieved from https://www.cmegroup.com/education/courses/introduction-to-futures/definition-of-a-futures-contract.html

Dagunduro, M., Falana, G., Ajayi, J., & Boluwaji, O. (2024). Non-financial disclosure and firm performance: Insights from listed consumer goods manufacturing companies in Nigeria. *Economy, Business and Development: An International Journal*, *5*(1), 14-27.

Dahlberg, T. (2024). Futures contracts and corporate risk management practices in emerging markets. *Journal of Risk Finance, 25*(1), 33–49.

Ehiedu, V. C., & Nwaokocha, K. O. (2024). Financial derivatives and its effects on financial performance of deposit money banks in Nigeria. *International Journal of Banking and Finance Research*, *10*(1), 43-61.

Enekwe, C. I., Agu, C. I., & Eziedo, K. N. (2014). The effect of financial leverage on financial performance: Evidence of quoted pharmaceutical companies in Nigeria. *IOSR Journal of Economics and Finance, 5*(3), 17–25.

Eniola, A. A., Dada, D. A., & Alo, E. A. (2018). Entrepreneurial peculiarity and financing sources. *International Journal of Research*, *7*(1), 59-73.

Froot, K. A., Scharfstein, D. S., & Stein, J. C. (1993). Risk management: Coordinating corporate investment and financing policies. *Journal of Finance, 48*(5), 1629–1658.

Hargrave, M. (2024). Options Contract: What It Is, How It Works, Types of Contracts. Investopedia. Retrieved from https://www.investopedia.com/terms/o/optionscontract.asp

Hope, E. U. C., Ndubuisi, C. J., & Nloghari, A. A. (2025). Financial Derivatives and Corporate Measures of Listed Firms in Nigeria. *International Journal of Finance, Accounting and Management Studies*, *1*(5), 196-208.

Hu, C., Wang, Y., & Zhang, J. (2021). Derivatives usage and corporate financial performance: Evidence from emerging markets. *Emerging Markets Finance and Trade, 57*(8), 2264–2280.

Hull, J. C. (2022). *Options, Futures, and Other Derivatives* (11th ed.). Pearson Education.

Lau, C. K. M. (2016). How corporate derivatives use impacts firm performance: Evidence from Asia-Pacific firms. *Pacific-Basin Finance Journal, 40*, 101–114.

Lema, D., & Grandes, M. (2020). Derivatives and economic growth: links and evidence the impact of the financial derivatives on the real economy. *Ciencias administrativas*, (16), 44-57.

Lenee, T. L. & Oki, J. (2017). Financial derivatives and firm performance: empirical evidence from financial and non-financial firm. *British Journal of Economics, Management & Trade,* 16(4), pp. 1-36.

Maccarthy, M. I. T., & Jibrin, A. A. (2023). Financial assets and performance of deposit money banks in Nigeria. *BW Academic Journal*, 11-11.

McDonald, R. L. (2013). *Derivatives markets* (3rd ed.). Pearson Education.

Madura, J. (2023). *Financial Markets and Institutions* (13th ed.). Cengage Learning.

Mahr, N., Kadia-Baumeyer, K. and Scalia S. (2023). Option Contract Definition, Elements & Examples. Retrieved from https://study.com/academy/lesson/what-is-an-option-contract-example-definition.html

Miloş, L. R., & Miloş, M. C. (2024). Unveiling The Dilemma: Do Financial Derivatives Imperil or Propel Economic Prosperity?. *Management of Sustainable Development*, *16*(1).

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *American Economic Review, 48*(3), 261–297.

Nasir, N., Malik, J. A., & Bashrat, M. A. (2023). Effects of Derivative Use on Firm Value: Evidence from Pakistan. *Journal of Finance & Economics Research*, *8*(1).

Nguyen, H., & Faff, R. (2010). Are firms hedging or speculating? The relationship between financial derivatives and firm risk. *Applied Financial Economics, 20*(10), 827–843.

Nwosu, O., Mairafi, S. L., Musa, A. A., & Kolo, I. (2025). Effect of Inflation and Exchange Rates on Financial Performance of Selected Quoted Manufacturing Companies in Nigeria. *Journal of Business Development and Management Research*.

Ogbonna, S. I. (2018). Financial derivatives in Nigeria: Piloting a safe risk management tool on a risky regulatory framework. *Journal of Law and Global Policy*, *4*(1), 26-35.

Okokowha, G. E., Zubairu, A. D., & Chukwuma, O. E. (2025). Market Risk and Financial Performance of Listed Conglomerate Companies in Nigeria. *FULafia International Journal of Business and Allied Studies*, *3*(2), 210-222.

Okpala, O. P., & Emida, O. I. (2025). Corporate Governance Mechanisms and Sustainability Reporting Quality of Listed Manufacturing Companies in Nigeria. *European Journal of Applied Business & Management*, *11*(2).

Olowokudejo, F. F., & Oladimeji, M. S. (2019). Enterprise Risk Management and Corporate Performance in Nigerian Non-Financial Quoted Companies. *Unilag Journal of Humanities*, *7*(2), 32-48.

Onuobi, F., Opara, A., Uzochukwu-obi, C., and Ebbi, A. (2024). Capital Markets: Derivatives 2024. Retrieved from https://practiceguides.chambers.com/practice-guides/capital-markets-derivatives-2024/nigeria

Orie, J. C., Obiora, F., & Orie, S. (2022). Effect of financial derivatives on the performance of deposit money bank in the Nigerian stock exchange. *International Journal of Business Systems and Economics*, *13*(5), 88-99.

Rahman, M. M., & Hamdan, A. (2020). The impact of firm size on firm performance: Evidence from listed companies. *Journal of Critical Reviews, 7*(16), 412–417.

Rahmiyati, N., Kaswoto, J., & Sungkowati, S. (2025). Financial derivatives in banking and finance: A bibliometric overview of research trends. *The Es Accounting And Finance*, *3*(02), 123-136.

Salehi, M., & Moghadam, S. M. (2019). The relationship between management characteristics and firm performance. *Competitiveness Review: An International Business Journal*, *29*(4), 440-461.

Sharma, J. (2025). What is Financial Derivatives: Types, Advantages and Limitations. Retrieved from https://www.shiksha.com/online-courses/articles/all-about-financial-derivatives/

Sigo, M. O., Selvam, M., Venkateswar, S., & Kathiravan, C. (2020). Application of ensemble machine learning in the predictive data analytics of indian stock market. *Webology*, *16*(2), 2019.

Smith, C. W., & Stulz, R. M. (1985). The determinants of firms' hedging policies. *Journal of Financial and Quantitative Analysis, 20*(4), 391–405.

Sullivan, R., & Zhang, Y. (2023). "ESG Integration and Firm Performance: Evidence from Global Markets." *Finance Research Letters*, 55, 104911. https://doi.org/10.1016/j.frl.2023.104911

Uche-Udo, N. N., & Okafor, M. C. (2022). Financial derivative and financial performance of listed commercial banks in Nigeria. *JORMASS| Journal of Research in Management and Social Sciences*, *8*(2), 53-63.

Ukolobi, I. O., Adeniyi, S. I., & Okoye, E. I. (2025). Earnings Management And Return On Equity Of Non-Financial Firms On Nigeria Exchange Group. *Journal of Global Accounting*, *11*(2), 1-23.

Vengesai, E. (2025). The role of derivatives' use on firms' capital cost and financial stability: evidence from South African listed non-financial firms. *African Journal of Economic and Management Studies*.

Vo, D. H., Van Nguyen, P., Nguyen, H. M., Vo, A. T., & Nguyen, T. C. (2020). Derivatives market and economic growth nexus: Policy implications for emerging markets. *The North American Journal of Economics and Finance*, *54*, 100866.

Wang, I. (2022). What are Swaptions? Financial Edge. Retrieved from https://www.fe.training/free-resources/financial-markets/swaptions/

Wexler, A. (2024). The Nigerian Conundrum for Companies: Stay or Go? Retrieved from https://www.wsj.com/world/africa/the-nigerian-conundrum-for-companies-stay-or-go-1c6418f1?utm

Zhang, L., & Wang, Q. (2023). "Environmental Innovation and Financial Performance: The Role of Green Investment." *Sustainable Development*, 31(1), 147–160. https://doi.org/10.1002/sd.2408

Zucchi, K. (2024). Derivatives 101: A Beginner's Guide. Retrieved from https://www.investopedia.com/articles/optioninvestor/10/derivatives-101.asp