JORMASS
Volume 8, Issue 2
December 2022
JOURNAL OF RESEARCH
IN MANAGEMENT AND SOCIAL SCIENCES
DOI: To be assigned

Financial Derivative And Financial Performance Of Listed Commercial Banks In Nigeria

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ABSTRACT:
This study examined Nigeria's Financial Derivatives and the Financial Performance of Listed Commercial Banks. A period of ten (10) years (2013 to 2022) was covered, and an ex-post facto research design was adopted and employed all fourteen (14) listed commercial banks. Earnings per Share (EPS) was used as a measure of performance. At the same time, Financial Derivative Assets (FDA), Financial Derivative Liabilities (FDL), Financial Derivative Trading Income (FDTI), and Financial Derivative Disclosure (FDD) were measures of financial derivatives. Results revealed that FDA, FDTI, and FDD have a positive significant effect (5%) on earnings per share. In contrast, FDL has an insignificant effect on Earnings per share of listed Commercial banks in Nigeria. The study, therefore, recommends that corporate managers, especially those within the banking sector, should engage in or drive policies that will promote the use of derivatives. This will increase the bank's holdings of derivative assets and derivative trading income to increase their earnings, which will, in the long run, enhance the performance of commercial banks in Nigeria. Financial Regulators should organize conferences and symposia for Commercial Banks to enhance their knowledge base on the effective use of financial market derivatives.

KEYWORDS: *Derivative Assets, Derivative Liabilities, Derivative Trading Income and Derivative Disclosure.*

MANUSCRIPT TYPE:
Research Paper
PUBLICATION DETAILS:
Received: May 2022
Revised: July 2022
Accepted: Oct. 2022

Publication College of Management Sciences, Michael Okpara University of Agriculture, Umudike Nigeria

INTRODUCTION

Prices rise and fall according to market whims in economics and finance, and due to constant price volatility, uncertainty becomes a thought-provoking feature that can make or break returns on investment. Derivatives have arisen as financial tools for engineering contracts with fixed values and timelines that have shown to be answers to various economical problems. In its most basic form, a derivative agreement between two parties to conduct a financial transaction at a particular time and a predetermined price. In general, this renders derivatives futuristic. Financial derivatives are effective risk management instruments for reducing market risk exposure. They let manufacturers and consumers lock in pricing while ensuring supply and demand remain consistent. Investors and businesses can utilize them to protect themselves from unfavorable events by reducing the impact of changes in macroeconomic variables.

Derivatives are a robust risk management tool that shifts risk from individuals with a low appetite for risk to those with a high appetite for risk. They are used to protect against price swings that are not favorable. Derivative instruments offer more leverage than any other financial instrument. Interest rate and foreign currency derivatives shield a company's cash flow and earnings from adverse interest rate and exchange rate

changes. Financial derivatives are standard tools financial institutions and corporations use in the money market to manage and hedge business risks (Gibson & Murawski, 2013; Hon, 2012). Financial derivatives offer a low-cost way to manage financial market risk without incurring additional fees.

Specifically, practically all firm activities (especially those of international scale) are tied to the international market circuit, exposing the company's cash flow to exchange rate fluctuations (Altuntas *et al.*, 2017). They are used by banks as a risk management strategy to prevent unforeseen events from obstructing their desired profit (Kasimu *et al.,* 2018). Financial derivatives have become so widespread and considered asset classes even though their values are often derived from one or more underlying securities that may belong to multiple asset classes. They are sometimes embedded in new debt and equity investment vehicles, as Valdivia-Velarde (2012) pointed out, which is often one of the reasons why the intricacies of these instruments make them very dangerous. These benefits encourage banks to position their businesses and improve their risk management efficiency so that risk management efficiency can be quantified to maintain value creation and avoid adverse events that may not have been adequately considered in the relevant business scenario (Zakaria, 2017).

Globalization has developed tight linkages in financial systems, allowing risks to spread swiftly, as evidenced by the devastation caused by the financial crisis of 2007–2008. Derivative instruments, conversely, are highly complicated since their values can be tied to nearly any underlying asset or obligation, including other derivatives, to achieve various goals. However, because recent research shows that analysts frequently underestimate the earnings implications of a firm's derivatives activity (Chang et al., 2015), it is unclear whether and under what circumstances the use of derivatives would be a value-enhancing activity, expose investors to more risk and whether risk management through hedging would provide further development opportunities in derivative trading profits. The study, therefore, aimed to determine the effect of Financial Derivatives on the Financial Performance of listed Commercial Banks in Nigeria.

REVIEW OF LITERATURE

According to McDonald (2013), financial derivatives are financial instruments whose value is derived and determined from or by the price and performance of something else. The International Monetary Fund (IMF) defines a financial derivative as a "financial instrument tied to a specific financial instrument, indicator, or commodity and through which specific financial risks can be exchanged in financial markets." Financial derivatives are contracts, and the value of such contracts is determined by the performance of whatever the contracting parties pick as the 'underlying' asset. The assets from which a derivative contract derives its value, in other words, the 'underlying' could be equity, fixed-income instruments, commodities, and interest rates. Derivatives are now well-known among all businesses and are used for risk management and speculation. As a result, financial statements reflect a steady shift in using and reporting these derivatives by financial reporting regulatory bodies' disclosure requirements (Graham & Rogers, 2002). The awareness was in response to the global financial crisis of 2008-2009, which left a lasting impact on the global economy, with many countries still suffering from the consequences. Following that, experts have focused on determining the role of derivatives in the global economic crisis and devising strategies for corporations to deal with such situations in the future. According to Jason and Taylor (1994) and Stern and Lipin (1994), derivative trading for profit is extremely risky and can result in significant losses for the firm.

One of the significant developments in today's financial markets is the increased proclivity of banks to participate in derivative activity. Due to low-quality loan applicants, financial innovation, improvement, deregulation, and expansion of financial markets and banks' margins have recently reduced, demotivating these banks to give sophisticated services and products to expand their profits.

On the other hand, a significant growth in commercial banks' derivatives activity is due to rising credit, interest, and foreign exchange rate risk exposures that banks face in international and domestic markets. Using financial derivatives to manage risks is less expensive and could replace expensive capital, giving banks the flexibility to achieve their targeted risk exposures without compromising their original business goals. Companies participate in the use of derivatives through hedging operations due to the rapid pace of globalization, which protects them from various financial dangers. When measured, Hull (2011) argues that derivatives marketplaces are enormous and much larger than the equity market. As a result, whether we like derivatives or not, we cannot escape them. Furthermore, financial derivatives have progressively increased over the last few decades, so we now have a well-developed exchange trading market for these financial instruments, such as over-the-counter (OTC) and exchange-traded derivatives (ETD). Many organizations

and firms engage in hedging operations, according to research published by the International Swaps and Derivatives Association, INC. on the financial market (ISDA, 2009).

Aside from corporations' usage of derivatives, various enforcements on the worldwide market have led to changes in how financial statements are generated and presented. As a result, many countries have adopted the principles of the International Financial Reporting Standards (IFRS). Firms must report whether or not they employ derivative contracts for hedging or trading purposes under the International Financial Reporting Standards (IFRS). Furthermore, this law requires businesses to disclose the likelihood of hazards they face and the steps they have taken to mitigate them. Financial derivatives are also tools for making financial markets work and for assisting in their development (Halilbegovic & Mekic, 2017). Due to their nature, derivatives are highly leveraged and require little to no upfront monetary commitment, making them a viable and appealing instrument for hedging market risk, cutting fund expenses, and managing assets. Derivative is traded between two parties, known as counterparties, bound by a set of terms and conditions defining their rights and responsibilities (NAPF, 2017).

Many research studies have found a link between financial derivatives and corporate success. The studies listed below have discovered a mixed bag of evidence. Financial derivatives, for example, reduce the impact of a company's creditworthiness and monetary policy transmissions (Fender, 2000); financial derivative hedging reduces systematic risk, increases profits, and provides abnormal returns to non-financial firms (Bartram *et al.*, 2011); and the use of options derivative trading increases innovative productivity and short-term performance (Bartram *et al.*, 2011). (Blanco & Wehrheim 2015). According to Stoll & Whaley (2010), using derivatives provides financial benefits to the firm, and the critical contribution of these derivatives is their leverage. That is, they create identical price exposure to the owners for a given purchase cost of the underlying asset. As a result, they provide a competent way of counterbalancing hedgers (risk transferors) and speculators, consistent with the findings of (Ahmed *et al.*, 2014 and MacCarthy, 2017).

Derivative asset and performance

Derivative assets are contracts with a specified life period rather than hard physical assets. They are exchanged on global financial markets by buyers and sellers wagering on the price of the underlying asset represented by the derivative in the future (Sulaiman & Ibrahim, 2020).According to Deshmukh *et al*. (1983), commercial banks that use derivative assets have reduced interest rate uncertainty and enhanced their lending activities, resulting in higher returns than fixed fee-for-service activities returns. As a result, commercial banks that use derivatives assets to manage interest rate risk will have a more significant total benefit than those that do not. According to Ilyina (2004), using derivatives can help investors manage their financial risk exposure by allowing them to transfer and unbundle financial risk. Derivative instruments have become an increasingly important aspect of commercial banks' asset portfolios, which they utilize to offset interest rate and foreign exchange rate risk. Commercial banks have recognized the benefits of interest rate swaps and futures in reducing risk and achieving optimal financial performance as interest rate volatility rises.

Derivative liabilities and performance

Derivatives effectively lock down transactions over the primary asset due to their leveraged nature. It could be employed when a company or organization does not have an urgent need or competence to transact an underlying commodity fully but anticipates doing so in the future. A company or organization can lock in the price of a commodity at the current rate, hedging against the risk of shifting market prices for that item. This option enables the company to conduct a planned future transaction that is less expensive than anticipated (Rechtschaffen, 2014). As a result, derivatives protect against risk exposures such as commodity price changes or seasonal risks (Salami, 2012).

While diversification cannot eliminate market risks, hedging can help to mitigate them. Interest and inflation rate swaps create offsetting positions that help to mitigate risk. Pension funds can take advantage of favorable interest rates and inflation hedges by using liability-driven investment funds (LDI) or derivatives.

Derivative of trading income and performance

Individual and institutional investors are encouraged to join the secondary market and trade securities, according to the New Zealand Futures and Options Exchange (NZFOX) (2008), because derivatives reduce the risk of holding the underlying asset. This increases liquidity in the primary market because people are less hesitant to purchase new securities. According to Danthine (1978), more trade volume leads to greater depth in the cash markets because there are positive benefits from increased derivative trading activity; the

derivatives' market depth role relates to liquidity influence. Increased derivative market depth is desirable because the more significant the transaction required to change the price of the security, the better the market depth. This maintains cash market stability, and the entire capital market becomes a lucrative means of savings and promoting higher levels of economic investment. According to Kavussanos *et al*. (2008), the derivative market allows enhanced transparency, development, and overall functioning in the capital markets by providing a cheap and efficient way to hedge and speculate. The derivatives market's efficiency and low-cost attributes make it a tempting investment option. As a result, there is less liquidity in the cash markets. Increasing underlying market liquidity is a crucial component of the derivatives market because it allows investors to readily sell their securities when they want without losing much money or significantly altering the price of the assets.

Financial derivative disclosure and performance

In recent years, corporate voluntary disclosure has received increasing attention. Such disclosures can be defined as disclosures that go beyond the rules, demonstrating management's free choice to give accounting and other information deemed relevant to the decision-making needs of annual report readers (Meek *et al*., 1995). Understanding why companies voluntarily disclose information benefits both the preparers and users of accounting data and accounting policymakers (Meek *et al.*, 1995). Annual reports are a valuable source of information regarding a company's derivative activities. Derivative disclosures can help various users, including investors, shareholders, lenders, and financial statement analysts, better understand derivatives activities and make better decisions. Failure to disclose the risks these companies take can misrepresent their risks, exposing unwitting shareholders and investors to significant losses. However, since the establishment of statutory financial instrument disclosure rules, there has been a significant improvement in derivative disclosures (Hassan *et al*., 2007; Woods & Marginson, 2004). The disclosure assists users in comprehending why entities use derivatives (by describing the risks associated with the entity) and what they hope to achieve by doing so. In addition, corporations must provide information about hedging operations because financial instruments control risk associated with anticipated future transactions. Some scholars, such as Ameer (2009), Seow & Tam (2002), and Zhang (2009), provide empirical evidence that the mandatory accounting and reporting requirements for the use of derivatives add value to investors' assessments of corporate risk profiles. The information disclosed by the corresponding standard is highly relevant to market responses such as changes in equity price, equity return, and trading volume, indicating that the information mandated by derivative-related requirements has provided new and valuable information to financial statement users, particularly investors. As a result, such information is helpful for investors in evaluating corporate financial performance and the effects of related derivative operations and assisting them in making investment decisions.

Furthermore, high-quality disclosures can help investors and creditors reduce their uncertainties by increasing their confidence in financial statements produced by companies (Miller, 2002). This increases investment in these companies, resulting in higher share prices.

Theoretical Framework

The Modern Portfolio Theory

Harry Markowitz propounded the Modern Portfolio Theory (MPT) in 1952. The relevance of portfolios, risk, diversification, and the links between different types of securities are all discussed in this theory. The MPT promotes asset and security diversification and the benefit of not placing all eggs in one basket. He believes an investor can create an ideal portfolio to deliver maximum returns while assuming the least risk. It allows investors to use diversification tactics to build groups of assets that decrease volatility, making it one of the tools for minimizing market risk. The theory is a sophisticated investment decision-making strategy that assists an investor in classifying, estimating, and controlling the type and amount of projected risk and return. The Modern Portfolio Theory (MPT) differs from traditional security analysis in that it focuses on establishing the statistical links among the many securities that make up the entire portfolio rather than evaluating the features of individual assets (Elton & Gruber, 1997). Kasimu *et al*. (2018) conducted research that supports the Modern Portfolio Theory (MPT), which recommends asset diversification to protect against market and asset-specific risks. Modern portfolio theory and the usage of financial derivatives have one thing in common, which is to mitigate risk.

Arbitrage Theory

Arbitrage price theory is a model that deals with asset pricing in general. It assumes that an asset's return may be predicted based on its relationship with standard risk variables (Ross, 1976a, 1976b). Furthermore, it is anticipated in this theory that the market will automatically neutralize arbitrage events. For example,

market transaction costs, various types of hazards, an endless flow of capital, and other arbitrage constraints imply that trade is riskier and costlier than the theoretical framework and, in some situations, may be impossible. The underlying assumption is that when mispricing rises, unlimited arbitrage trading will automatically drive the market price back to its fair value, and when actual arbitrage is not unattainable in the market (e.g., if finding a buyer of the underlying asset is difficult), that derivative model - "The Law of One Price," which advocates that when mispricing rises, unlimited arbitrage trading will automatically drive the market price back to its fair value (Figlewski, 2017). This is because the buyer's desire will be steered to the lower-cost market, whereas arbitrageurs will be willing to sell for a higher price and seek out higher-cost markets. The equilibrium will happen only when both markets have the same price (Figlewski, 2017).

As previously stated, arbitrageurs are always eager to profit from arbitrage chances risk-free. However, everyone wants to make such a profit if they are aware of a price differential between two marketplaces. However, because everyone wants to purchase in a lower-price market and sell in a higher-price market, the demand and supply theory of economics forces the price to shift to its equilibrium level. As a result, arbitrageurs engage in a risky business. In practice, though, these arbitrage events occur frequently. As a result, firms that use derivatives to protect themselves against price fluctuations from arbitrage.

Empirical Review

Orie *et al.* (2022) examined the effect of financial derivatives on the performance of deposit money banks in the Nigerian stock exchange between 2015 and 2021. Loan and advances, exchange rate, and financial derivative assets were used as the Independent variables, while profit after tax was the dependent variable. The findings show that loans and advances have no significant effect on the performance of deposit money banks in the Nigerian stock exchange. Financial derivatives assets significantly affect the performance of deposit money banks in the Nigerian stock exchange.

Sulaiman and Ibrahim (2020) examined the effect of financial derivatives on the profitability of selected deposit money banks in Nigeria. Data was collected from the annual financial report for five years between 2012 and 2017, using a panel regression model. The model is positive and substantial, according to the results. FDA and LTC had a favorable and significant impact on deposit money bank profitability in Nigeria, whereas FDL had a negative and minor impact. As a result, the study suggests that financial derivatives favor and considerably impact deposit money banks' profitability in Nigeria. Ekadjaja and Henny (2019), in a study, examine the characteristics of the user's derivative company towards the company's value. The study's participants were companies listed in the Indonesia Stock Exchange's Sharia Stock Index between 2014 and 2016. The test revealed that Return on Asset and firm size variables strongly impact derivative consumers' company valuation. While capital expenditures and dividend yield had no significant impact on company value, the leverage variable had a considerable negative impact.

Kasimu *et al*. (2018) examined the effect of using financial market derivatives on the performance of deposit money banks in Nigeria. The findings show a favourable correlation between derivative financial assets and deposit money bank performance in Nigeria. As a result, the study indicated that the usage of derivatives is critical to the performance of Nigerian banks.

MacCarthy (2017) investigated the impact of financial derivatives on the performance of firms in the financial sector in Ghana. For 2011-2015, secondary data on financial derivatives, controllable business risks, and business success in terms of return on investment were employed. Data from 23 financial firms in Accra, Ghana, were randomly chosen. The result shows a significant positive link between financial derivatives and company risks. Ghana also had a substantial link between financial derivatives and corporate performance. Kiio and Jagongo (2017) investigated the influence of financial risk hedging practices on the performance of firms in NSE. The regression model results allowed the researcher to examine how using futures, forwards, options, or swaps to hedge foreign exchange, interest rate, and commodity price risks affected performance. The firm's financial statements for 2011-2015 provided information on return on invested capital (ROIC) and return on assets (ROA). The study discovered a link between hedging activities, the moderator (central bank controls), and listed firm performance.

Altuntas *et al.* (2017) explored the relationship between hedging, cash flows, and firm value. The study examined how derivatives hedging affects business value directly and indirectly through its effect on cash flow volatility. In the study, derivatives hedging and cash flow volatility do not align with company value. The study discovered that relying solely on derivatives reduces business value and performance. However, when the study looked at the influence of hedging on cash flow volatility, the hedgers' value was found to

be less susceptible to cash flow volatility than non-hedgers' value. Lenee and Oki (2017) investigated financial derivatives on financial and non-financial firms' performance in the UK using Panel Least Square (PLS) regression. According to their findings, financial firms hedge more significant interest rate risks, while non-financial enterprises hedge more foreign exchange rate risks. Furthermore, both groups found that hedging interest rate risk with a combination of forwards and futures derivatives was positive and statistically significant with return on assets, whereas hedging foreign exchange rate risk with one or more financial derivatives was negative and statistically significant with return on capital employed.

Luo (2016) examined foreign currency derivatives and corporate value in China using the 30 largest listed firms in the Shanghai and Shenzhen stock exchanges between the first quarter of 2007 and the third quarter of 2013. A dummy variable was utilized for foreign currency derivatives, while firm value was proxied by Tobin Q, which was analyzed using the multivariate regression approach. Using foreign exchange derivatives provides a positive but small hedging premium to the average company value. Tijani and Mathias (2013) investigated corporate use of derivatives and financial risk management in Nigeria with evidence from non-financial firms. The study employed multivariate analysis and logistic regression analyses using SPSS version 18. The findings revealed very low usage of derivatives due to a lack of knowledge and the underdeveloped nature of our financial market. Bartram *et al.* (2009) considered a large sample of 7319 non-financial firms from 50 countries from 2000 to 2001 to investigate the relationship between the use of derivatives and firm value. The findings backed up the theory that hedging adds value to a portfolio. They also discovered that this positive correlation was stronger for interest rate derivatives and weaker for foreign exchange derivatives. Ameer (2009) investigated the relationship between firm value and the notional amount of FCD and IRD used by Malaysian firms from 2003 to 2007. The use of derivatives and firm value was significant and positive. They also showed that the notional quantity of derivatives generated value, but only a small amount.

Nguyen and Faff (2003) attempted to test the hypothesis of whether hedging by the use of financial derivatives is a value-enhancing strategy or not. The study used a sample of Australian firms from 1999 – 2000 and found that using general derivatives and FCD was associated with lower firm value. Allayannis and Weston (2001) examined the use of foreign currency derivatives on a sample of 720 large US non-financial firms. The study discovered that using Tobin's Q as a proxy for a firm's worth, the usage of currency derivatives boosts the firm's value. According to the study, enterprises exposed to foreign exchange risk and employ currency futures have a 4.87 percent higher value than firms that do not use currency derivatives.

From the literature reviewed, there is no empirical research on financial derivatives and earnings per share of listed commercial banks in Nigeria. Financial derivative components, such as financial derivative disclosure, were not adequately represented in the literature studied. When the derivative components are aggregated, and their impacts are investigated, this may not produce the intended result. If a company uses financial instruments to manage risk associated with anticipated future transactions, it must disclose information about hedge activities. High-quality disclosures reduce the uncertainties investors and creditors face by increasing their confidence in financial statements produced by companies.

METHODOLOGY

This study employed an ex-post facto research design, which involves collecting data acrossfirms on the same critical characteristics over a specific time to identify a common behavior trend amongst the firms. This study covers the banking sub-sector in Nigeria listed on the Nigerian Stock Exchange (NSE) market. Hence, the study intends to x-ray their published annual reports over time to establish the relationship between financial derivatives and firm performance.

Bryman *et al.* (2007) recommend that the larger the sample size, the more accurate the results will be; hence, we employ all fourteen (14) commercial banks in Nigeria listed on the Nigeria Stock Exchange as of 31st December2022. Furthermore, we note that this category of banks shows strong similarities in operating and reporting activities during the period under review. OLS estimation technique was employed, with a unit root test to check for stationarity and co-integration, and an error correction mechanism was employed to test for the long-run and short-run relationships among the dependent and explanatory variables. Panel data was collected annually based on variables captured in the model.

$$EPS_{it} = \beta_0 + \beta_1 FDA_{it} + \beta_2 FDL_{it} + \beta_3 FDTL_{it} + \beta_4 FDD_{it} + \varepsilon_{it} \quad 1$$

The above models were used to achieve the objectives of the study.

Where,
β = constant slope to be estimated and $\beta 1 \beta_2 \beta 3 \beta 4$ are intercept
εi = error term.

The principal dependent variable, EPS, represents Earning Per Share, and the independent variables, Financial Derivatives, were proxies by FDA = Financial Derivative of Assets, FDL = Financial Derivative of Liability, FDTI = Financial Derivative of Trading Income, and FDD = Financial Derivative Disclosure.

RESULTS AND DISCUSSIONS

Unit root tests

To ensure reliability, a unit root test was done to ensure that the variables employed in this study are mean reverting, i.e., stationary. The result of the Levin, Lin & Chu test to test for stationery is presented in Table 1.

Table1: Unit Root Test Table

Variable	LLC (Common P-value)	Order	Difference
EPS	0.0000	I(0)	Level
LOGFDA	0.0000	I(0)	Level
LOGFDL	0.0000	I(0)	Level
FDTI	0.0000	I(0)	Level
FDD	0.0000	I(I)	1st D

Null: There is a serial Unit Root in the data
Source: Researcher's compilation 2023

The table above shows the result of the first test required to know the common stationarity of the variables. For the common stationarity test, the Levin Lin Chu (LLC) test for common stationarity is interpreted using the p-value to ascertain the level of individual stationarities of the panel variable data. The unit root test result shows an LLC P-value less than 0.05 at different orders (0 & 1), which depicts common stationarity at the level and 1st difference. It implies a need for a co-integration test to determine whether the study will adopt an error correction model for long-run adjustment.

Co-integration Tests

To ensure the level of co-integration of the data set, the ADF tau statistics probability value is considered to ensure a more robust test for co-integration. For the model (EPS), the tau statistics is -2.298383, and Prob. of 0.0108 reveals a probability value of <0.05. Therefore, the co-integration test statistics reveal a co-integration of data for the series, which implies that in the short-run shocks, the data series will converge in the long run to absorb the short-run shocks. Therefore, there is no need for an error correction model.

Table 2: Regression Result

Test Summary		Chi-Sq.	Prob.
Cross-section random		4.935220	0.6679
Variable C	Co. eff.	t-Statistic	Prob.
	-139.8057	-0.725787	0.4699
LOGFDA	98.26064	5.153570	0.0000
LOGFDL	-26.34416	-0.948181	0.3457
FDTI	6.297367	1.957817	0.0435
FDD	58.28248	0.938614	0.0504
R-squared	0.32		
Adjusted R-squared	0.310		
F-statistic	6.985979	Durbin-Watson stat	2.517759
Prob. (F-statistic)	0.00001		

Source: Researcher's compilation 2023

The EPS variable is estimated at -139.8057 units. This implies that when all independent variables are held constant, there will be a decrease in the *EPS* of listed commercial banks up to the tune of 139.8057 units occasioned by factors not incorporated in this study. Thus, a unit increase in LOGFDA will lead to an increase in EPS by 98.26064 units. Also, a unit increase in LOGFDL will lead to a decrease in EPS by 26.34416 units. Furthermore, a unit increase in FDTI will increase EPS by 6.297367 units. A unit increase in FDD will lead to an increase in EPS by 58.28248 units. Finally, the result shows a significant variation of Fisher's statistics (6.985979) at 0.00001 probability value, which means the model as a whole is statistically significant at an autocorrelation level of 2.517759 (Durbin-Watson).

HO1*:* Financial derivatives (LOGFDA, LOGFDL, FDTI & FDD) have no significant effect on earnings per share of listed commercial banks in Nigeria.

Since the calculated probability value for LOGFDA (0.0000), FDTI (0.04), and FDD (0.05) against EPS is less than/equal to the accepted probability value of 0.05. The null hypothesis is rejected, and the alternative is accepted. Thus, LOGFDA, FDTI, and FDD significantly affect earnings per share of listed commercial banks in Nigeria.

This finding is consistent with the similar outcomes of Orie *et al*. (2022) and Kasimu *et al*. (2018), which state that derivative assets significantly affect the performance of deposit money banks in Nigeria. Smith and Watts (1992) also concluded that firms that use derivatives in risk management show more growth opportunities and more convex tax functions than non-users. Similarly, we align our results with Bartram et al. (2009), who concluded that hedging is a firm's value-enhancing activity. In this study, we find strong evidence supporting the findings of Allayannis and Weston (2001), whose findings align with the hypothesis that firms exposed to foreign currency risk use foreign currency derivatives in hedging. Their study noted that firms that introduced hedging policies in their operation experienced higher performance than those of unhedged firms. Also, firms that quit after a while show a decline in their performance relative to those that remain hedged.

Furthermore, we share the same idea with Chaudhry *et al.* (2014) and Ahmed *et al*. (2014), who found a statistically positive relationship between financial derivatives and firm performance. Furthermore, our result showed that disclosure of financial derivative usage is value-enhancing, and investors are rewarded when financial derivative usage is disclosed. International Financial Reporting Standards (IFRS 7) require reporting the instruments' financial derivative use and associated risks. We also find it consistent with the findings of Dadalt *et al*. (2002), who emphasized that hedging and proper disclosure of hedging activities improve the informational quality of financial reports and reduce information asymmetry between managers and outsiders.

Financial derivative liabilities were statistically insignificant, which is consistent with the position of Hagelin *et al*. (2007), who concluded that firm performance decreases when a firm is involved in hedging activities on the motive of the manager's stock options. This reduction in firm performance is due to managers who usually hold risk avert motives and protect their claim on the firm's assets due to stock options they hold.

CONCLUSION AND RECOMMENDATIONS

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. On this premise, we analyzed to empirically test the effect of financial derivatives and financial performance of listed commercial banks that fall within the Central Bank of Nigeria (CBN) in Nigeria. The results show that financial derivative usage significantly affects the financial performance of commercial banks in Nigeria.

Therefore, the study recommends that corporate managers, especially those within the banking sector, engage in/drive policies promoting the use of derivatives. This will increase the bank's holdings of derivative

assets and derivative trading income to increase their earnings, which will, in the long run, enhance the performance of commercial banks in Nigeria. The study also advises the government on creating an environment that enables a stable and conducive derivative market for such banks to thrive effectively. Furthermore, commercial banks in Nigeria should minimize their financial derivative liabilities holdings. This is in response to the adverse effect of the derivative liability variable on firm performance. Financial regulators should organize conferences and symposia for commercial banks to enhance their knowledge base on the effective use of financial market derivatives.

REFERENCES

Ahmed, H., Azevedo, A., & Guney, Y. (2014). The effect of hedging on firm value and performance: Evidence from the non-financial UK firms. *European Financial Management Association*, *44*, 1-5.

Allayannis, G., & Weston, J.P. (2001). The use of foreign currency derivatives and firm market value. *Review of Financial Studies*, 14(1), 243-276.

Altuntas, M., Liebenberg, A. P., Watson, E. D., & Yildiz, S. (2017). Hedging, cash flows, and firm value: evidence of an indirect effect. *Journal of Insurance Issues*, 1-22.

Ameer, R. (2009). Value-relevance of foreign-exchange and interest-rate derivatives disclosure: The case of Malaysian firms. *The Journal of Risk Finance, 10*(1), 78–90.

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.

Bartram, S.M., Brown, G.W., & Fehle, F.R. (2009). International evidence on financial derivatives usage. *Financial management, 38*(1), 185-206.

Blanco, I., &Wehrheim, D. (2015). The bright side of financial derivatives: Options trading and firm innovation. *Journal of Financial Economics*, *125*(1), 99-119.

Bryman, A., Bell, E., Mills, A. J., & Yue, A. R. (2007). Business research strategies. *Business research methods*, 226–238.

Central Bank of Nigeria, Guidelines for FX Derivatives in the Nigerian Financial Markets, March 2011.

Chang, C. C., Chow, C. C., Tellier, L. C., Vattikuti, S., Purcell, S. M., & Lee, J. J. (2015). Second-generation PLINK: Rising to the challenge of larger and richer datasets. *Gigascience*, *4*(1), s13742-015.

Chanzu, L. N., & Gekara, M. (2014). Effects of use of derivatives on financial performance of companies listed in the Nairobi Security Exchange. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, *4*(4), 27-43.

Chaudhry, D. N., Mehmood, M. S., & Mehmood, A. (2014). Determinants of corporate hedging policies and derivatives usage in risk management practices of non-financial firms. *Wulfenia Journal, ISI Indexed, Impact Factor 0.267*, *21*(7), 293-310.

DaDalt, P., Gay, G. D., & Nam, J. (2002). Asymmetric information and corporate derivatives use. *Journal of Futures Markets: Futures, Options, and Other Derivative Products*, *22*(3), 241-267.

Danthine, J. P. (1978). Information, futures prices, and stabilizing speculation. *Journal of Economic Theory*, *17*(1), 79–98.

Deshmukh, S. D., Greenbaum, S. I., & Kanatas, G. (1983). Interest rate uncertainty and the financial intermediary's choice of exposure. *The Journal of Finance*, *38*(1), 141-147.

Elton, E. J., & Gruber, M. J. (1997). Modern portfolio theory, 1950 to date. *Journal of Banking & Finance*, *21*(11-12), 1743-1759.

Ekadjaja, M., & Henny, A. E. (2019). The characteristics of users derivative company towards the company's value. *Journal Akuntansi*, *23*(1), 62-77.

Fender, I. (2000). Corporate hedging: The impact of financial derivatives on the broad credit channel of monetary policy.

Figlewski, S. (2017). Derivatives valuation based on arbitrage: The trade is crucial, *Journal of Futures Markets*, 37(4), 316-327.

Gibson, R., & Murawski, C. (2013). Margining in derivatives markets and the stability of the banking sector. *Journal of Banking & Finance*, *37*(4), 1119-1132.

Graham, J. R., & Rogers, D. A. (2002). Do firms hedge in response to tax incentives? *The Journal of Finance*, *57*(2), 815–839.

Hagelin, N., Holmén, M., Knopf, J. D., & Pramborg, B. (2007). Managerial stock options and the hedging premium. *European Financial Management*, *13*(4), 721-741.

Halibegovic, S. & Mekic. A, (2017). Usage of derivatives in emerging markets: The case of Bosnia and Herzegovina. *Asian Economic and Financial Review*, 7(3): 248–257.

Hassan, M. S., Mohd-Saleh, N., & Che Abdul Rahman, M. R. (2008). Determinant of financial instruments disclosure quality among listed firms in Malaysia. *Available at SSRN 1157788*.

Hon, T. Y. (2012). The behavior of small investors in the Hong Kong derivatives markets: A factor analysis. *Journal of Risk and Financial Management*, *5*(1), 59–77.

Hull, J. C. (2011). Options, Futures, and other derivatives, 8th edition. Upper Saddle River, NJ: Prentice Hall. 1.

Ilyina, A. (2004). The role of financial derivatives in emerging markets. *Emerging Local Securities and Derivatives Markets*, 69–90.

International Monetary Fund (IMF). World Economic Outlook (April 2015) IMF Data Mapper, International Monetary Fund; 2013.

International Swaps and Derivatives Association, (2009). ISDA Derivatives usage survey.

Jason, G., & Taylor, J. (1994). Derivatives force first closure of money fund. *The Wall Street Journal*, *28*, C1.

Kasimu, A., Osayi, V. I., & Nkwonta, H. C. (2018). Financial market derivatives and the performance of deposit money banks in Nigeria. *International Journal of Economics, Commerce and Management*, *6*(11), 382–396.

Kavussanos, M. G., Visvikis, I. D., & Alexakis, P. D. (2008). The lead-lag relationship between cash and stock index futures in a new market. *European Financial Management*, *14*(5), 1007-1025.

Kiio, J. M., & Jagongo, A. (2017). Financial risk hedging practices and performance of firms listed in Nairobi Securities Exchange (NSE), Kenya. *International Journal of Scientific Research and Innovative Technology*, *4*(1), 11-28.

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

Luo, R. H. (2016). Foreign currency derivatives and corporate value: Evidence from China. Proceedings of the Australia-Middle East conference on business and social sciences. *Journal of Developing Areas, Tennessee State University,* USA, 117–126.

MacCarthy, J. (2017). The effect of financial derivatives on the financial performance of firms in the financial sector in Ghana. *European Journal of Business and Management*, *9*(34), 90–96.

McDonald R. L., (2013). Derivatives Markets. Pearson Sven-Kristjan B. Sentiment-indices on Financial Markets: What do they Measure? http://www.economics-ejournal.org/economics/discussionpapers/2013 58/comment.2014-08-06.5118393022/ at_ download/ file.

Meek, G. K., Roberts, C. B. & Gray, S.J. (1995). Factors influencing voluntary annual report disclosures by US, UK and continental European multinational corporations. *Journal of International Business Studies,* Third Quarter: 555–572.

Miller, P. B. (2002). Quality financial reporting. *Journal of Accountancy*, *193*(4), 70.

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance, and the theory of investment. *The American*, *1*, 3.

Nguyen, H., & Faff, R. (2003). Are financial derivatives really value-enhancing? Australian evidence. *University of South Australia working paper*.

Orie, J. C., Obiora, F., & Orie, S. (2022). Effect of Financial Derivative on Performance of Listed Deposit Money Bank in Nigeria Stock Exchange. *International Journal of Business Systems and Economics*. 88–99.

Rechtschaffen, A. N. (2014). *Capital markets, derivatives, and the law: evolution after crisis*. Oxford University Press, USA.

Ross, S. (1976). Arbitrage, risk-return in finance ed. I. *Friend and J. Bicksler, Cambridge, Mass.: Ballinger*.

Salami, I. (2012). Derivatives markets in Africa—legal and regulatory issues. *Journal of International Banking Law and Regulation*, *27*(10), 416.

Seow, G.S. & Tam, K. (2002). The Usefulness of derivative-related accounting disclosures. *Review of Quantitative Finance and Accounting,* 18(3), 273 -291.

Smith Jr, C. W., & Watts, R. L. (1992). The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics*, *32*(3), 263–292.

Stern, G., & Lipin, S. (1994). Proctor and Gamble to Take a Charge to Close Out Two Interest Rate Swaps. *The Wall Street Journal*, *13*, A3.

Stoll, H. R., & Whaley, R. E. (2010). Commodity index investing and commodity futures prices. *Journal of Applied Finance (F*ormerly Financial Practice and Education), *20*(1).

Sulaiman, L. A., & Ibrahim, O. S. (2020). Financial Derivatives and Profitability of Selected Deposit Money Banks in Nigeria. *Acta Universitatis Danubius. Œconomica*, *16*(6).

Tijani, O. M & Mathias, G. O. (2013). Derivatives and financial risk management in Nigeria: evidence from non-financial firms. *African Journal of Scientific Research*, 11(1), 622-640.

Valdivia-Velarde, E. (2012). The treatment of financial derivatives in BPM6. *In China and the Irving Fisher Committee in Zhengzhou on 27–29 September 2010, 31.*

Zakaira, S. (2017). The use of financial derivatives in measuring bank risk management efficiency. A data envelopment analysis approach. *Asian Academy of Management Journal,* 22(2), 209–244.

Zhang, H. W. (2009). Effect of derivative accounting rules on corporate risk-management behavior. *Journal of Accounting and Economics,* 47(3), 244–264.