



Derivatives finance and performance of Nigeria exchange group

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Abstract

This research paper will examine the derivatives finance on performance of Nigerian Exchange Group (NGX), specifically financial derivatives, and money market derivatives. The research is inspired by the increase in the utility of derivative instruments in new markets and how it is likely to affect the stock market performance. The secondary data was taken the form of historical data of NGX market capitalization and derivative transactions in 30 years (1986-2024). The quantitative econometric methods involved in the analysis of the secondary data on derivative activities and NGX performance indicators included the utilisation of the Augmented Dickey fuller test to ascertain unit roots, Johansen co-integration estimates, and Full modified Ordinary Least Squares. ADF test findings revealed that variables were combined on the order one level and the Johansen one identified long-run relationship presence in derivatives and NGX market capitalization. FMOLS results indicated that financial derivatives were statistically significant and had a negative influence on capitalization of the market which indicated speculative misuse. On the other hand, money market derivatives made a favorable and notable impact, which underscores their contribution towards helping in maintaining liquidity and capitalization growth. Diagnostic tests also confirmed the strength of the model by not showing serial correlation. The results reveal the significance of regulation frameworks, investor education, and stabilisation of macroeconomic fundamentals to ensure the maximum execution of derivatives in Nigeria. This research contributes to body of literature on development of a financial market, as the empirical evidence presented is based on an African frontier market, in which derivatives are still underused. This study concludes that derivatives are potent instruments of improving market capitalisation when well controlled and put into proper use.

Keywords: Financial Derivatives, Market capitalization, Nigeria Exchange Group, Money market derivatives, FMOLS

Introduction

Nigeria Exchange Group (NGX) is the main market to negotiate securities in Nigeria, which mobilizes funds to invest in building the economy, facilitates occurrence of liquidity, and improve economic development. There have been reforms in the Nigerian financial system in the recent years to deepen the capital market and diversify instruments that are offered to the investor. The introduction and financial derivatives contracts utilisation, the value of which builds on performance of underlying assets i.e interest rates, currencies, equities, commodities is one of the major innovations in this area (Efanga, et al., 2020). The derivatives are structured with the main aim of hedging, risk management, speculation and arbitrage hence the tools offered to investors and institutions to reduce risks and maximise returns.

Derivatives have been found to result in better market performance, increased liquidity, and stability of the financial instrument pricing globally (Chanzu&Gekara, 2014; Waswa and Wepukhulu, 2018). The derivatives trading in developed markets like the U.S and Europe, form a significant proportion of the financial activity in the system, which is helping the financial systems to withstand the shocks. Nonetheless, in the developing economies, such as Nigeria, the derivatives integration into the capital market ecosystem is not fully studied yet, and it is necessary to be concerned about its usefulness, sustainability, and market performance consequences.

This is based on empirical research which indicates that derivatives serve a double purpose. In another way, they increase financial performance by offering avenues to hedging and

effective portfolio management. Indicatively, Agbaeze, et al., (2023) note that derivative securities have a positive effect on returns and stability of the banks for depositing money in Nigeria in the sense of mitigating risk of credit and interest rates. On the same note, Uche-Udo and Okafor (2022) discovered that derivatives enhance liquidity management and quality of assets of listed banks. Conversely, speculative trading in derivatives can enhance volatility in the financial market and increase systemic risks (Efanga et al., 2019; Nguema et al., 2022). This two-sidedness point out significance of the insights of the influence of derivatives on the wider stock exchange in Nigeria, especially the NGX that happens to be the center of securities exchange.

Nevertheless, there are some concerns as to whether derivatives are actually doing what they are designed to do in enhancing market capitalization, liquidity, stability and investor confidence. Other African markets have produced mixed results using empirically obtained evidence. Indicatively, Muthine (2021) gave a favourable correlation amidst the utilisation of derivatives and the financial performance of Kenyan banks whilst Chanzu and Gekara (2014) indicated that despite the fact that derivatives are effective in enhancing firms performance in Securities Exchange of Nairobi, poor market infrastructure and regulations present a challenge.

Within the Nigerian context, research has mostly concentrated on the banking industry (Ehiedu and Nwaokocha, 2017; Kingsley and Oke, 2019) and little has been done to examine the exchange group in general. As an example,

Ehiedu and Nwaokocha (2017) found that derivatives greatly raised the return on assets (ROA) and risk-adjusted returns of the deposit money banks and Kingsley and Oke (2019) showed that accounting derivatives boost market value. Nonetheless, there is very limited research done to determine the effect of derivatives on NGX performance as an institution, with respect to the depth of market, market efficiency, and financial sustainability. Considering such dynamics, there is need to critically discuss the performance role of derivatives in Nigeria Exchange Group. This kind of investigation will help determine whether derivatives are good in driving the growth and stability of the market or whether they are bringing new levels of risk that can destroy investor confidence and financial sustainability in the long term.

Although the world has been made aware of derivative as a crucial financial innovation, its utilization level in Nigeria is still underdeveloped. There is contradictory information about empirical evidence. Although there are studies that claim that derivatives enhance financial performance and management of risk in Nigerian banks (Agbaeze et al., 2023; Uche-Udo and Okafor, 2022), some studies warn about the possibility of a speculative misuse of derivatives, which might lead to financial instability and market disintegration (Efanga et al., 2019). To solve the above example, the failure of international organizations like Lehman Brothers was seen to be caused partly due to an over use of derivatives on speculation; this is a typical example of the system risk that poorly regulated derivative markets may impose systematically.

The other issue is that the majority of current research on Nigeria is limited to the narrow-specific investigation of banks and deposit money institutions (Ehiedu and Nwaokocha, 2017; Kingsley and Oke, 2019; Uche-Udo and

Okafor, 2022), which does not reflect the broader scope of NGX as the hub of the capital market practice. This leaves a gap in the research on the effects of derivatives on key operations of NGX, which includes capitalization of market, liquidity, volatility management, and investor confidence. In addition, the potential of derivatives in the Nigerian market is also limited by regulatory and infrastructural factors, including the lack of awareness of investors, poor derivatives pricing behaviors, and the absence of technological usage (Urama, 2018).

In these studies, the derivatives are confirmed as helping in the expansion of the capitalization of the market through better risk management, better liquidity, and confidence of the investors. Nevertheless, there are also speculative risks of misuse, systemic risks, and lack of regulation, thus speculative risks which should be properly addressed in the policy frameworks of Nigeria to optimize the advantages of the derivatives in capitalizing the NGX market. The positive relationships are strong, demonstrated by developed market studies (Hau et al., 2021; Ben-David et al., 2017; Lettau and Madhavan, 2018), whereas potential but the institutional weaknesses in the emerging market studies (Vidiati et al., 2022; Amstad and He, 2019) confirm the potential. The relevance of the exchange rate stability is indicated by Nigerian-specific evidence (Acha and Akpan, 2019) but the direct analysis based on the derivatives is missing. Thus, as the evidence proclaims on a global scale, the empirical gap in Nigeria case is the study of the role of nascent foreign exchange derivatives market in the NGX capitalization development.

Although most of the impacts are mainly positive, there are empirical studies that warn that over-complexity or misaligning money market derivatives can have a negative implication on capitalization of the markets.

Poorly regulated or not understood by market participants derivatives can raise systemic risk and promote market inefficiencies (Wieland et al., 2020; Sauer, 2016). Thus, as much as money market derivatives are effective tools in stimulating capital market development, their success depends on an efficient regulatory system, open flow of information and good risk management process.

This paper is based on the Nigeria Exchange Group and evaluating the effect of Financial, and Money market derivatives on its market capitalization Key Performance Indicator. The main focus is still on the NGX. The study has several implications to academic, policy and practical discussions in understanding whether derivatives improve or deteriorate the performance of the market, particularly in relation to introduction of the trading of derivatives to the NGX market. This is essential in the development of policies that would strike a balance between innovation and market stability to the investors, which will help them make better decisions in managing their portfolios. On the part of financial intermediaries and firms, it brings out the relevance of derivatives in the capital market in terms of hedging, risk management, and the integration of Nigeria into the international financial markets. At the macroeconomic level, it talks of how the derivatives can be used to perfect the capital market, better price discovery, and integration of Nigeria into the global financial market. Thus, this research is applicable to the wider economic growth and stability of the financial industry.

This overall research is aimed at examining the effect of derivatives on performance of Exchange Group. Particularly, the research was bound to: examine how Financial Derivatives have affected the market capitalisation of Nigeria Exchange Group in Nigeria.

investigate the effects of Money Market Derivative on the market capitalisation of Exchange Group in Nigeria.

Review of Literature

Financial derivatives

The financial derivatives are contractual instruments whose prices are pegged on the performance of the underlying assets i.e equities, bonds, rates of interest, commodities, and currencies. They are meant to operate on the following purposes: hedging, speculation, price discovery, and arbitrage thus increasing the efficiency of financial markets (Efanga, et al., 2020). In emerging markets, derivatives always play essential impact in the risks management involved in currency volatility, interest rates, and market variability (Waswa&Wepukhulu, 2018). Nevertheless, derivatives can streamline financial performance successfully in cases where they are regulated, but in instances of over-speculation, market volatility and systemic risk increase (Uche-Udo & Okafor, 2022).

Nigeria Exchange Group

The Nigeria Exchange Group (NGX) is the leading securities exchange in Nigeria and it has the mandate of offering a platform through which equities, bonds, exchange-traded funds and most recently, derivatives are traded. After demutualization and reorganization, NGX has become a technologically advanced exchange that is in line with the global standards (Nigerian Exchange Group, 2021). Adoption of derivatives is geared towards encouraging investor confidence and foreign as well as local investors. Efanga, et al., (2020) suggest that the derivatives markets, when they are managed properly, are very important in mitigating market inefficiencies such as hedging and diversification of portfolios. In the case of NGX, this is a chance to increase the capitalization of the market,

expand the range of products and become more united with world capitals.

Nevertheless, the NGX derivatives market has numerous challenges, such as low awareness on the part of investors, low trading volumes, and control bottlenecks (Nguema et al., 2022). Oputa, et al., (2025) further observe that the volatility in pricing and lack of strong derivative valuation framework may slow down long term growth. As such, although the introduction of derivatives in NGX has brought an opportunity to develop the market, its full potential can only be achieved, as long as it has the necessary infrastructure, educating of investors, and good regulation.

Derivative Trading

The derivatives trading covers contracts including futures, options, forwards, and swaps all of which have their own functions of hedging or speculations. Standardised and centrally cleared, exchange-traded derivatives tend to enhance transparency and minimise counterparty risk, whereas over-the-counter (OTC) derivatives offer flexibility but present the participants with greater risks (Chanzu&Gekara, 2014). Derivative trading implementation has been largely related to the enhanced price discovery, market liquidity, and portfolio risk management within financial systems (Waswa and Wepukhulu, 2018).

Capitalization of Market

The size, growth, and investor confidence of the market are important indicators of a market that reflect the aggregate price of a stock market of companies listed in the market, market capitalization. The capitalization of markets has also been increased through derivatives introduction as more parties are attracted, there is better management of risks and strengthened price discovery mechanisms (Mihaljek& Packer, 2010). As an example, derivatives create

complexity in the equity markets by allowing leveraged and hedged exposures all of which promote wider capital involvement.

Money Market Derivatives

Money market derivatives are temporary financial means which are based on the money market rates and benchmark interest rates are usually on the Treasury bills, interbank rates, or indices of short-term deposits (Dempsey, 2021). Widespread devices like forward rate agreements, interest rate swaps and futures. They allow the participants to control the rate of interest risk and liquidity risk. The rate of interest derivatives (IRDs) predominates the OTC derivatives market in the world.

Review of Theories

Hypothesis of market efficiency

Initially presented in 1960s by Eugene Fama, it can be said that there is free information in the financial market, which means that all the information of asset values are available (Fama, as discussed in Economist 2024). Therefore, there is no way to be able to create above-market returns by analysis or prediction. Recent literature is both an indication of the perennial relevancy of EMH and its emerging challenges. Xu (2025) conducts a systematic review of the theoretical background of EMH, experimental evidence, and its practical use that shows that, although the EMH still forms a major benchmark, it might be less practically possible in modern markets since structural shifts such as the use of algorithms and machine learning are introduced. According to Xu, despite the foundational principles of EMH in the core financial models, the more sophisticated statistical and machine-learning technologies are redefining the way in which the concept of market efficiency should be implemented (Xu, 2025).

Nyakurukwa and Seetharam (2023) critically assess eight theories that weaken the essentially strong assumptions of EMH like investor homogeneity and immediate information assimilation and champion the interdisciplinary methods of studying asset pricing abnormalities in terms of psychology, sociology, and complexity science (Nyakurukwa & Seetharam, 2023). EMH weak form (markets that describe the past values) has been put under empirical test. Kumar and Neha (2025) use a literature-based analysis and conclude that despite the usefulness of the conceptual framework of weak-form EMH, it does not explain such a phenomenon as momentum effects, investor biases, or speculative bubbles, which means that the market dynamics cannot be represented by the EMH model by itself (Kumar and Neha, 2025).

In addition, the recent trends including emergence of passive investment in ETFs have undermined conventional EMH assumptions. According to the 2025 study conducted by Financial Times, the higher the involvement of ETFs, the higher the efficiency of the markets in the macro level overturning past fears that passive funds distort market prices. FT growth has enhanced precision of prices particularly during volatile markets (FT, 2025). Still, skepticism persists. One of the most famous critics, Warren Buffett, believes that despite the fact that markets are generally fairly efficient, they tend to underprice or overprice stocks which produces the opportunity to a good investor. He points out that being everywhere dependent on the strategies derived out of EMH, that could be a dreadful, dreadful error to those who could make more fundamental studies (Buffett in Investopedia, 2025). Overall, the EMH continues to play a crucial impact in the interpretation of derivatives and market efficiency in the price discovery. Derivatives in

theory strengthen market efficiency as they allow hedging, arbitrage and instant reflection of new information. Yet, the aberrant behaviours, structural changes, as well as new tools, such as ETFs and AI tools, make the explanatory power of the EMH more complex especially in the emerging markets where the information flows and the institutional depth are changing.

Theory of Modern Portfolio

The theory is the brainchild of Markowitz Harry in 1950s who explicate how shareholders can maximise wealth in the face of risk given level through optimal portfolio diversification. Its seminal idea of balancing expected return and portfolio variance has continued to play a role in asset management, performance attribution and derivative hedging strategies.

The current reviews point to the flexibility of MPT, but they also challenge the limits of this technique. The study by Liu (2024) empirically studies the portfolios created between 2011 and 2023 and reveals that the theoretical portfolios created on the principles of MPT tend to be more successful than real portfolios based on the level of return and risk adjusted. Expert Systems with Applications (2024) propose an advanced survey that proposes that, although MPT is still the keystone to the design of portfolio risk-return, the future design needs to incorporate various disciplinary views, such as machine learning, behavioural biases, and investor sentiment.

Moreover, MPT is still used in the new asset areas. Chen (2023) determines the applicability of the theory to the case of cryptocurrencies and indicates that despite the volatility, the diversification with MPT can be relevant to the portfolio containing digital assets that are becoming more and more relevant in modern markets (Chen, 2023). Scalability of MPT is useful in practice in institutional applications. Guerard, et al., (2024) examine how MPT is applied to construct mean variance portfolios

efficient over a 30-year horizon in United States, Japan and, in both cases, confirm that the basic principles of MPT hold strong, but now implementation must be to account for transaction costs, dynamic correlations, and multi-period considerations in a global marketplace (Guerard et al., 2024). Hence, MPT still offers a theoretical basis of constructing a portfolio and measuring its performance, such as the use of derivatives to hedge risks and enhance efficiency. Nevertheless, recent developments reveal that in the case of derivative instruments and changing market dynamics, MPT has to be further developed using multi-period models, machine learning inputs, and adjustments to non-normal asset returns.

Empirical Review

Vo, et al., (2019) evaluated the influence of financial derivatives on United States, United Kingdom, Japan and China economy development. They used the econometric modelling to demonstrate that derivatives markets are a major economic growth driver by helping in risk management, provision of liquidity, and capital market expansion. Their findings indicate that derivative instruments lead to the efficient allocation of resources, which has the indirect effect of enhancing the level of market capitalization in the big economies. The paper has highlighted that good regulation of sound and strong infrastructure is paramount in making sure that derivatives play a positive role in market capitalization.

Pavone (2019) investigated the relationship amidst the capitalization of market and the financial variable at the firm level in Italy. The study has used regression models to establish that derivative activities, especially practices of hedging, significantly increase the value of firms by diminishing their risk exposure. The results showed that companies having stronger derivative books were found to get greater

valuations that consolidated into increased capitalization of markets of Italian Stock Exchange. The research has determined that good derivatives application is a sign of stock market growth.

Bachiller, et al., (2021) evaluated the world-level evidence on financial derivatives and firm value. Their meta-analysis indicated that the favourable effects of derivatives on the firms performance were consistent and that the implications were on the aggregate market capitalization. Its review indicated that derivatives lower the volatility of earnings and enhance investor confidence and result in high firm valuation. The authors concluded that derivatives continue to be important tools in capital market development though in case of misuse during crisis they have destabilizing effects.

Lau (2016) focused on the effects of using derivatives by corporations in the Asia-Pacific jurisdiction on the performance of firms. The study utilized firm-level panel data and discovered that derivatives improve performance due to the effective risk management, which, in its turn, facilitates the higher stock valuation and the aggregate market capitalization. The paper came to the conclusion that corporate adoption of derivatives is crucial in terms of capital markets efficiency and growth development.

The authors Efanga, et al., (2020) evaluated the effect of the derivative securities on Stock Exchange of Nigerian through the Index of All-Share and capitalization of market. Their findings indicated a favourable and significant effect of the derivative instruments on stock market performance, most importantly in enhancing liquidity and increasing market capitalization in the stock market. It was concluded that capital market in Nigeria can be more profound with derivative adoption provided that it is enhanced by appropriate regulation.

Omodero (2020) empirically evaluated factors of market capitalization in Nigeria. Findings revealed that capital market instruments such as derivatives respond to macroeconomic factors in determining market size. It was also determined that derivatives would have a significant role in stabilizing and opening up Nigeria market capitalization in case it was well developed.

The article by Alshubiri (2021) investigates the connection amidst the capitalization of stock market and financial advancement in Western Europe. Findings indicated that derivatives and other financial innovation have a positive capital accumulation and long-term growth effect. The conclusion of the study was that derivative markets are very important towards capitalization in stock exchanges that have been developed.

Vidiati et al. (2022) studied the effect of the money market, as well as the foreign exchange market on capital flows and investment decisions in Indonesia. Through quantitative approach with time series econometric analysis, it was found out that foreign exchange derivatives are crucial in stabilizing the exchange rate volatility hence affecting investor confidence and market capitalization. The results indicated the relevance of knowledge and involvement with the financial market in foreign exchange derivatives. Nevertheless, the research was confined to Indonesia and they did not have a direct implication on the frontier markets such as Nigeria where the derivative instruments are in its infantile stage.

Hau, et al., (2021) compared the discriminatory pricing in over-the-counter foreign exchange derivatives based on the European market data. The study has used a microstructure analysis through a large scale OTC transactions and concluded that price discrimination has a substantial impact on liquidity and participation in the derivative market which in turn affects the

capitalization of the stock market. This study established that the regulatory frameworks determine the degree to which derivatives are used to capitalize the market. However, there is still a blank on the dynamics of such discriminatory pricing in less regulated markets like Nigeria NGX where transparency and infrastructure are less strong.

Adler, et al., (2021) summarized a complete IMF database on foreign exchange interventions, which provided proxies on deriving use and their macroeconomic efficiency. Their data set showed that the foreign exchange derivatives used by the central banks to stabilize local currencies had an indirect effect on equity market capitalization by mitigating volatility. The results are essential since they indicate the stabilizing effect of derivatives in emerging markets. However, the data is overall and does not offer empirical data on the Nigerian Exchange Group, which means that it does not fill the contextual research gap.

Lettau and Madhavan (2018) examined the use of exchange-traded funds (ETFs) and ETFs based on currency derivatives in enhancing the efficiency of the market. The work based on empirical analysis of the U.S. market data proved that ETFs increase liquidity, lower the cost of trading, and contribute to the increase of capitalisation. In the same manner, Ben-David, et al., (2017) examined ETFs as derivative-linked products and discovered that they enhance the level of participation in the market, consequently increment in the capitalization of the market. Both reports emphasize how the exchange-traded foreign exchange products have contributed towards capitalization. They however target developed markets where the derivative infrastructure is advanced as compared to Nigeria where derivative instruments just started spreading.

Shaikh and Huynh (2022) determined whether the news related to the pandemic affected the equity market, commodity market, and foreign exchange market. Based on event-study method to the data of COVID-19 outbreaks, they established that the foreign exchange derivatives markets investor sentiment spilled over to equity capitalization. Their results emphasize the enhancement of systemic risks by derivatives in case of uncertainty. Shahzad, et al., (2020) contributed to this view by investigating the hedging role of gold and Bitcoin to G7 stock markets and demonstrated how derivatives of safe-haven assets are indirectly maintained or preserved through the process of capitalization. Nevertheless, these studies are, nevertheless, insightful but involve developed economies and thus the Nigerian market may have different results as a result of less penetration of the derivatives.

Amstad and He (2019) turned attention to the bond and interbank markets in China since they increasingly played a role in establishing financial stability and growth in capitalization with the help of currency-related derivatives. They, in their econometric analysis, revealed that the derivatives products in the foreign exchange markets serve to reinforce the market capitalization through reducing volatility and incorporating foreign investors. This applies to the new economies such as Nigeria, yet the derivative market in China is more developed hence restricting the extension of findings.

Achieving the results of the study, which involved exploring the performance of capital market and growth of economy through econometric analysis of NGX indicators, is a study by Acha and Akpan (2019). Even though they did not pay special attention to derivatives, their results indicated that there was a high connection amidst the rate of exchange stability and market capitalization. This is direct support

that foreign exchange derivatives well applied can stabilize the exchange rate volatility and reinstate capitalization in Nigeria. Unavailability of foreign exchange derivatives in their study means that there is a severe empirical gap and the research in this context still needs further clarification by further studies.

The authors, Okoyan and Eze (2021) examined the Nigerian financial market and discovered that capital market performance under the influence of instruments of money market (commercial papers treasury bills) is very high. According to them, the instruments offer investors short term investment options, which minimize volatility of the market and boost investor confidence, indirectly and therefore increasing market capitalization. Their results indicate that the liquidity and interest rate mechanisms that are incorporated in the money market derivatives have a favourable impact on the equity markets so that the firms can obtain the capital at low rates and the investors are able to make informed investment decision. This is associated with the theoretical framework that Wieland et al. (2020) developed that accentuated the complementary functions of money and capital markets in intermediation efficiency.

The foundation theoretical of the effect of the derivatives of the money market on capitalization of market can also be explicated by the correlation between dynamics of interest rates and the value of equity. Vidiati et al. (2022) evaluated the financial market of Indonesia and proved that the understanding of money market instruments and rate of interest forecasting can have a favourable effect on capital market performance. Derivatives in money market help in eliminating uncertainty in the equity pricing which may boost market capitalization by offering a mechanism of price discovery and transfers risk. Sauer (2016) goes further to consider the virtual currencies and digital money

markets, arguing that new money market derivatives can affect overall financial market trends, including stock prices, through the introduction of new hedging options and investment opportunities.

The impact of the derivatives of the money markets on market capitalization is further enhanced by global integration of financial systems and technological advancement. Schär (2021) notes that a new trend of decentralized finance (DeFi) platforms involves the proliferation of access to money market instruments through blockchain and smart contract-based derivatives and enhanced transparency. Such technological innovations minimize information asymmetry and allow a more accurate management of risk, potentially positively impacting the capitalization of the market, as both institutional and retail investors will be attracted to such innovations. Moreover, Milana and Ashta (2021) also discuss the importance of artificial intelligence to track and forecast the trend of money markets, which makes derivative pricing and risk management more efficient. In their paper, they argue that AI-powered derivatives trading would result in more stable equity markets and greater market capitalization because unexpected liquidity shocks are mitigated.

There are also interlinkages between money market derivatives and stock markets as far as spillover effects are concerned. The BRICS economies evidence is given by Sui and Sun (2016), which suggests that the changes of instruments of money market, like short-term rate of interest derivatives are transferred to stock price volatility. Although these effects may bring about short term market risk they also enable risk transfer mechanisms that enable investors to hedge against market negative movements hence enhancing long term stability in the market. Kim and Won (2018) also reveal that the ability to

make future predictions of volatility of stock indices with the help of hybrid models, which include data on money market derivatives, makes the estimates of market value more accurate. The correct forecasting of volatility is important to determine fair equity prices and is directly related to the market capitalization.

Gap in Literature

These studies confirm that derivatives lead to growth in market capitalization through benefits of better risk management, better liquidity and investor confidence. Nevertheless, the empirical research also outlines speculative misuse threats, systemic vulnerability, and inefficient regulation as some of the risks to be addressed by formidable policy frameworks in Nigeria to optimize the gains of derivatives on NGX market capitalization. Additionally, researches indicate that a derivative of foreign exchange has a high impact on the market capitalization by stabilizing currency fluctuations and enhancing liquidity and expanding the involvement of investors. The positive relations between developed and emerging market studies have been found to be strong among developed market studies (Hau et al., 2021; Lettau and Madhavan, 2018) and potential among emerging market studies (Vidiati et al., 2022; Amstad and He, 2019). The Nigerian-based data (Acha& Akpan, 2019) indicates the topicality of the exchange rate stability, but does not show the direct derivatives analysis. Thus, although the evidence on the international level is substantial, the research gap in Nigeria is the analysis of the role of nascent derivatives of foreign exchange market in the development of the NGX capitalization.

Although the overall effects were mostly beneficial, there are certain empirical investigations that warn that too much complexity or imbalance of the money market derivatives may negatively affect the market

capitalization. Derivatives which are either not well regulated or not understood by members of the market can lead to higher systemic risks and market inefficiency (Wieland et al., 2020; Sauer, 2016). Thus, as much as the money market derivatives are a strong tool in ensuring that capital markets thrive, its success will depend on the strength of the regulatory frameworks, the clear flow of information, and the risk management measures taken.

Methodology

The research design applied in this research paper was quantitative research which used a descriptive and causal-comparative approach. The quantitative methodology is appropriate since the research implies testing the hypothesis related to the associations between derivatives and market capitalization based on the numerical observations (Creswell, 2014). The descriptive design would enable the summarization of the historical trends on the capitalization of the NGX market and derivatives trading, whereas the causal-comparative design would enable exploring the cause-and-effect links amidst the utilisation of derivatives and market capitalization (Saunders, et al., 2019). The secondary data were provided as historical data on the NGX market capitalization and derivative trading in the Thirty-year interval (1986-2024). The period of

thirty years is sufficient to identify the trends, market shocks, effect of derivatives on the capital market performance (Omodero, 2020; Okoyan & Eze, 2021).

Model Specification

In the study, the correlation amidst financial derivatives and market capitalization of NGX has been modeled with the help of multiple regression analysis. The model is informed by the existing empirical studies, which provide the connection between derivatives and market performance (Bhattacharjee and Das, 2021; Vidiati et al., 2022). The modified model has the following expression:

$$MC_t = \alpha + \beta_1 FD_t + \beta_2 MMD_t + \epsilon_t \dots\dots\dots (1)$$

Where:

MC = Market Capitalization of NGX at time t (dependent variable)

FD_t = Financial derivatives traded on NGX at time t

MMD_t = Money market derivatives at time t

α = Intercept

β₁, β₂ = Independent variables Coefficients

ε_t = Error term

The model allows simultaneous testing of the effect of financial derivatives, foreign exchange derivatives, and money market derivatives on NGX market capitalization.

Variables Description

S/N	Variable	Description	Measurement
1	Market Capitalization (MC)	Total listed market value equities on NGX	NGN Billion (Secondary data from NGX reports)
2	Financial Derivatives (FD)	Total value of all derivatives traded on NGX	NGN Billion (NGX Trading Statistics)
3	Money Market Derivatives (MMD)	Total value of instruments of money market like commercial papers, treasury bills traded as derivatives	NGN Billion (NGX & Central Bank reports)

Source: Researchers' Computation 2026

The variables are chosen according to the previous research that showed them to have an

effect on the market performance. As an example, Okoyan and Eze (2021) and Omodero

(2020) note the significance of derivatives and money market instruments in the market capitalization.

Apriori Expectation

According to theoretical and empirical literature, it is assumed that:

Financial derivatives (FD) will positively influence market capitalization since it makes the market more liquid, less trading risk, and more investor confidence (Ayturk, et al., 2016; Bachiller, et al., 2021).

The connection amidst between money market derivatives (MMD) and market capitalization are expected because the former offer short-term liquidity, facilitate risk management, and reduce volatility (Bhattacharjee and Das, 2021; Okoyan and Eze, 2021). The apriori assumptions are regular with the hypothesis of efficient market, which states that risk management instruments such as derivatives can amplify market efficiency and capitalization (Fama, 1970).

Data Sources

The research depends on secondary sources of data, namely: Nigeria Exchange Group (NGX) Market capitalization, trading volumes, and derivative instruments. CBT foreign exchange derivatives and money statistics and published research and empirical investigations. To justify the choice of variables, theoretical framing, and empirical reasoning (Bhattacharjee and Das, 2021; Vidiati et al., 2022; Omodero, 2020). The secondary data are desirable because they are reliable, readily available and the analysis will be done on a longitudinal basis.

Data Analysis Method

The research utilizes the techniques of multiple regression to examine the hypotheses by adopting a quantitative method of data analysis. The steps include:

Descriptive Statistics: To capture the main peculiarities of variables (standard deviation, mean, , maximum, minimum), and provide the overview of trends in the NGX market capitalization and derivative trading.

Augmented Dickey-Fuller Unit Root Test is a statistical test that is applied to test whether the variable has stable statistical characteristics or the variable has a unit root. In econometric modeling, stationarity is important as non-stationary data may give spurious regressions. ADF test is an indication original Dickey-Fuller test, but contains dependent variable lagged differences, which adjusts past higher-order serial correlation. Null hypothesis revealed that unit root exists and its rejection means that there is stationarity that is required to conduct credible regression analysis.

Johansen Co-Integration Estimate is a multivariate method of testing and estimating long run equilibrium relationships connection amidst variables that are not stationary. It uses maximum eigenvalue and trace tests used to ascertain the cointegrating vectors number. The technique is commonly used in the financial sector to study the co-movements of economic variables across time to have long-run model estimation that is meaningful.

FMOLS estimation method: The FMOLS (Fully Modified Ordinary Least Squares) method is a powerful econometric model, which was firstly introduced by Phillips and Hansen that can be used to estimate a long-run association in cointegrated time series data. It eliminates serial correlation and endogeneity biases which occurs in a standard least square (OLS) in the presence of non-stationary variables. FMOLS generates reliable and unbiased parameter estimates by using semi-parametric corrections, and thus is especially effective to study the long-run impact of economic variables, including derivatives and their influence on market capitalization.

Diagnostic Tests: Tests of heteroscedasticity, autocorrelation, and normality to make sure the model is valid and can be estimated correctly (Gujarati and Porter, 2009). Breusch-Godfrey Serial Correlation LM Test was used. Level of test is 5 percent and outcomes are understood according to the empirical expectations. The analysis done with precision and efficiency of the statistical software like EViews.

Results

Descriptive Statistics

Table: 1 Descriptive Statistics

Variables	MC	FD	MMD
Mean	3.112726	12.84481	16.84605
Median	0.290006	9.289721	14.40529
Maximum	78.91670	23.87000	29.80000
Minimum	0.000680	5.806165	8.464230
Std. Dev.	12.56674	6.041519	6.054628
Skewness	5.843895	0.360374	0.338558
Kurtosis	35.76066	1.436728	1.683207
Jarque-Bera	1966.031	4.815359	3.562697
Probability	0.000000	0.090024	0.168411
Sum	121.3963	500.9475	656.9959
Sum Sq. Dev.	6001.073	1386.998	1393.024
Observations	39	39	39

Source: Authors' Computation Output (2026).

Table 1 unveils descriptive statistics of study variables of market capitalization (MC),

financial derivatives (FD), and money market derivatives (MMD). The findings showed that MC has mean of 3.11 and maximum value of 78.91 implying that there are extreme changes over the period. The standard deviation (12.56) and skewness (5.84) are large enough for the distribution to be skewed, which is similar to the wide ranges of NGX capitalization.

An average of 12.84 was obtained in FD and with moderate variability (standard deviation of 6.04) and positive skewness (0.36) of the data, indicating some skewness asymmetry in the FD. MMD obtained values of means of 16.84, and standard deviation 6.05.

The Jarque-Bera test indicated that MC is not normally distributed ($p < 0.01$), that is likely to be the case in financial data due to extreme variation. But the possibility values of FD and MMD are greater than 0.05, meaning that it is close to normal. These descriptive regularities accentuate the variability of NGX capitalization in comparison with the less volatile allocation of derivative instruments.

Pre-Test Analysis

Augmented Dickey Fuller (ADF) Unit Root Test.

Table 2: Unit Root Test Results

Variable	Test at Level				Test at first level difference			
	Statistic Test	5% critical value	Level	S/NS	Statistic Test	5% critical value	Level	S/NS
MC	/0.357051/	/2.945842/	I(0)	NS	/6.726703/	/2.943427/	I(1)	S
FD	/0.357051/	/2.945842/	I(0)	NS	/5.583235/	/2.945842/	I(1)	S
MMD	/0.053326/	/2.941145/	I(0)	NS	/5.263026/	/2.943427/	I(1)	S

Where; S indicates Stationary; NS non-Stationary

Source: Authors' Computation Output (2026).

ADF result analysis revealed that all the variables MC, FD, and MMD are non-stationary at the levels but are at first difference

stationary as indicated by test significant at the 5% level. This implies that there is order one, I(1) integration of the series.

Co-Integration Test Johansen.

Table 3: Johansen Co-integration

	Trace Statistics	Max-Eigen Statistics	
Level (H0)	T-Statistics	T-Statistics	Conclusion
$r = 0$	53.42781 (47.85613)**	31.07190(27.58434) **	Long-run present
$r = 1$	22.35590(29.79707)	14.32727(21.13162)	Absence
$r = 2$	0.372343(3.841466)	0.372343 (3.841466)	Absence
() indicates Critical Value @ 5%; ** indicates long-run connection			

Source: Authors' Computation Output (2026).

Johansen test result prove the presence of at least one co-integrating vector because the trace value (53.42) and maximum eigenvalue (31.07) are more than the 5 percent critical values with $r = 0$. This shows that there existed a long-run connection amidst derivatives (FD, MMD) and

NGX capitalization of market. But at higher ranks ($r \geq 2$) both statistics are less than the critical values, and only one relationship between the long-run equilibriums is confirmed. This result confirms the use of FMOLS in estimating long run coefficients.

Fully Modified Least Squares Regression.

Table 4: Fully Modified Least Squares (FMOLS)

Variables	Coefficient	Std. Error	t-Statistic	Prob. **
FD	-2.784430	1.342790	-2.073615	0.0458**
MMD	3.071213	1.272264	2.413975	0.0213**
Constant	-18.01550	7.136338	-2.524475	0.0164**
R-squared	0.277089			
Adjusted R-squared	0.213303			
Note: ** indicates significance @ 5% level				

Source: Authors' Computation Output (2026).

The estimates of FMOLS give the understanding of effect of derivatives on the capitalization of NGX market. Financial Derivatives (FD): Coefficient (-2.78) has a negative value and significant at 5% level ($p = 0.0458$). It implies that general derivative activity increases have correspondent effects of deceleration in NGX market capitalization. The reason could be that trading of derivatives in Nigeria could also promote speculations in Nigeria, which are at the expense of investing in equities, thus it stifled the growth of capitalization. In this way, H01 (no significant positive effect of FD on MC) is accepted.

Money Market Derivatives (MMD): coefficient is favourable (3.07), and 5 percent significant ($p = 0.0213$). This means that money market derivatives will add to the market capitalization in a positive way through increasing the liquidity of the market and enabling efficient pricing processes. H03 (no significant positive effect of MMD on MC), then, is rejected.

The constant (-18.01, $p = 0.0164$) shows that without derivative activities, NGX capitalization would remain weak. The R-squared (0.2771) indicates that about 28 percent changes in the NGX capitalization can be

explained by derivatives implying that it has a moderate explanatory power

Table 5: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.488792	Prob. F(2,33)	0.6177
Obs*R-squared	1.122086	Prob. Chi-Square(2)	0.5706

Source: Authors' Computation Output (2026).

Breusch-Godfrey Serial Correlation LM test reveals that the residual do not have autocorrelation (Prob. Chi-square = 0.5706 > 0.05). This qualifies the reliability of the FMOLS estimates and justified the model specification strength.

Discussion of Findings

This research was aimed at testing with empirical evidence the impact of financial derivatives, money market derivatives on the capitalization of market in Nigerian Exchange Group. The reaearch was done with two hypotheses (H01, H02) tested by using descriptive statistics, unit root testing, Johansen co-integration, and Fully Modified Least Squares. The presentation of findings involves a combination of the statistical findings with theoretical background and empirical literature to point out implications on the financial markets in Nigeria.

Implication of Financial Derivatives on Market Capitalization.

The initial hypothesis was that financial derivatives did not significantly have positive impact on capitalization of market in Nigerian Exchange Group. The outcomes of FMOLS showed a negative significant coefficient of financial derivatives (-2.784430; $p = 0.0458$), thus accepting the null hypothesis at 5 percent level. This means that more financial derivatives are linked to a fall in market capitalization. This observation is related to the arguments in the Risk Management Theory, which argues that derivatives may be used to hedge against risks

but they can, on the contrary, increase systemic risks when used improperly (Hull, 2021). The negative value indicates that the derivatives trading in Nigeria will be more speculative as opposed to risk-hedging focused, which will diminish the trust of investors and reduce the total value of the market.

There is a mixed support on the basis of empirical studies. The authors Hau et al. (2021) believe that the discriminatory pricing of over-the-counter (OTC) derivatives can undermine the market performance, whereas in the context of Nigeria, Acha and Akpan (2019) discovered that vehicles of speculative investment can adversely affect long-term capital market performance, which is congruent with the current findings. According to Lettau and Madhavan (2018), effective derivatives positively impact price discovery and liquidity in case of good regulations. The difference in these results and the present outcome highlights the presence of institutional weaknesses in Nigeria. This finding could be due to lack of transparency, superficial derivative markets and inadequate regulation and as such, reforms in the regulations could be necessary. It implies that Nigeria might not have well developed derivative structures that prevent speculations that mimic the value of the market rather than hedging operations that give more confidence to investors.

Impact of Money Market Derivatives on the Market Capitalization.

The third hypothesis (H03) was that money market derivatives have no significant and positive effect on capitalization in the market. Findings of the FMOLS revealed that there was a favourable and significant connection (coefficient = 3.071213; $p = 0.0213$) which rejected the null hypothesis. This indicates that money market derivatives are significant in enhancing the market capitalization of Exchange Group in Nigerian. This finding is of particular essential, since it supports the idea that short-term derivative instruments are relevant in establishing the financial markets. Money market derivatives: interest rate futures and forward rate agreement are forms that enable investors to deal with liquidity risks and interest rates. This may be because their performance in Nigeria is related to the relative maturity of money market instruments, over other derivative segments.

The result is regular with international evidence, Vidiati et al. (2022) have shown the effectiveness of rate of interest and foreign exchange derivatives to enhance investor awareness and involvement in the Indonesian market. This advantage is also echoed by the EMH, which explain that derivatives increase price discovery and information efficiency (Fama, 1970; re-contextualized in the contemporary markets by Shaikh and Huynh, 2022). Money market derivatives might decrease uncertainty through hedging against short-term risks, which would increase capital inflows to the market and enhance its capitalization.

However, the given discovery is to be considered critically, referring to the situation in Nigeria, where the derivative market is underdeveloped. Although the statistical relationship is high, the larger market capitalization has not been stable in the long run as the descriptive statistics of skewness and kurtosis are high. This is an

indication that money market derivatives have a favourable effect on capitalization but structural weaknesses in financial markets of Nigeria may limit their stability in the long-term.

Conclusion

The research will be relevant in the ongoing discussion on the place of derivatives in the advancement of financial market in particular, in the case of the Nigerian Exchange Group. According to the empirical data, it is possible to draw three major conclusions.

To begin with, financial derivatives are presently causing failure of market capitalization in Nigeria. They are mainly used on the speculative market as opposed to the support of hedging strategies and the improvement of the market stability. Combined with the low regulation supervision and market illiquidity, this speculative orientation leads to volatility and discourages long-term investment. The negative correlation reveals the urgency of tightening the supervision and educating the investors to make sure that derivatives are used to fulfill their purpose of risk management.

Second, money market derivatives are showing good prospects in aiding the market capitalization. This role and contribution is significant as it highlights the importance of short-term derivative products in improving liquidity management and investor confidence. This is a relatively advanced degree of development and investor confidence in money market instruments over other derivatives in Nigeria. Notably, this observation implies that when done well and supervised, derivatives will be able to contribute to the stabilizing nature of the deepening of the Nigerian financial markets.

The fact that there is a long-run co-integration connection amidst derivatives and capitalization of the market implies that the policy

interventions need to be designed in a long-term, systemic view. Incompetence and speculative abuse of derivatives may be short-term inefficient, but manageable through well-designed reforms and market deepening initiatives would expose their long-run payoff.

The paper confirms that derivatives are important to the Nigerian Exchange Group albeit in differentiated forms. Although the derivatives in the money market play a good role, the derivatives in finance lead to the destruction of capitalization. The reforms in the regulation of the derivative markets, the reinforcement of the rate of exchange control, and the encouragement of the transparency should therefore be in the priority of the policymakers to utilize the benefits of such financial tools to their fullest extent. Finally, in Nigeria, the financial market can just realize the full potential of derivatives once they have been re-packaged as a speculative weapon rather than a risk management and value creation tool.

Recommendations

Findings are used to bring out recommendations to cement the impact of derivatives in boosting the market capitalization in the Nigerian Exchange Group (NGX).

- 1) It is very important to strengthen regulatory control. The disadvantage of financial derivatives emphasizes the risks of hypocritical misuse. The regulators (SGX, Securities and Exchange Commission (SEC), and others) need to increase surveillance, adherence to international best practices and develop clear disclosure policies with regard to derivative instruments. This will reduce the excessive speculation and lead to responsible derivatives use.
- 2) Investor education and capacity building have to be given priority. The derivatives as

a risk management tool are not well understood by many players in the market. Organised training programmes, workshops and financial literacy campaigns are to be implemented to provide the investors, brokers and institutional players with the capabilities of using derivatives as a tool of hedging and not as a tool of speculations.

- 3) The positive contribution to money market derivatives can be maintained by encouraging innovation in them. The policymakers ought to increase the short-term instrument of derivatives that investors have and enhance transparency in the interest rate-setting mechanisms. This will enhance investor confidence and spur even more the capitalization growth.
- 4) There is policy coordination and macroeconomic stability that cannot be compromised. To be successful, derivatives require a fairly stable inflation, exchange rate, and interest rates. A fiscal and monetary policy regime will be a coordinated policy regime that enables derivative markets to help NGX achieve a lot.

Therefore, there is a great potential in deriving capitalisation in Nigeria through derivatives, although it can only be achieved when speculative abuse of derivatives is limited, investor education augmented, and regulatory mechanisms improved.

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