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HEDGE ACCOUNTING DISCLOSURES AND SUSTAINABLE GROWTH OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT: *The primary problem facing listed deposit money banks in Nigeria is their struggle to achieve sustainable growth in a volatile economic environment. This study investigated the impact of hedge accounting disclosures on the sustainable growth of these banks, focusing on commodity hedge disclosure, interest rate hedge disclosure, and foreign exchange rate disclosure, while controlling for market capitalization. Using an ex post facto research design, the study analyzed secondary data from 11 selected banks over a period of 10 years from 2014 to 2023. The method of data analysis was random effect regression technique. The findings revealed that commodity hedge disclosure (COMD) and interest rate hedge disclosure (INTD) have significant positive effects on the sustainable growth rates of listed deposit money banks in Nigeria. Conversely, foreign exchange rate disclosure (FEXD) has a significant negative effect on sustainable growth, indicating that high levels of foreign exchange risk exposure, when disclosed, may reduce investor confidence and perceived stability. The study concluded that hedge accounting disclosures significantly impact sustainable growth of listed deposit money banks in Nigeria. It recommended the management of listed deposit money banks in Nigeria should enhance commodity and interest rate hedge disclosures to improve the quality of foreign exchange risk communication.*

KEYWORDS: Hedge accounting disclosure, commodity hedge disclosure, interest rate hedge disclosure, foreign exchange hedge disclosure and sustainable growth.

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INTRODUCTION

Sustainable growth remains a paramount objective for organizations worldwide, driven by the need to balance economic performance with environmental stewardship and social responsibility. Recent literature emphasizes the critical role of sustainable growth in ensuring long-term economic stability and societal well-being (Jones et al., 2019; Smith & Anderson, 2021). Companies, especially in the financial sector, face increasing pressures to adopt sustainable practices to mitigate risks and capitalize on emerging opportunities in a rapidly evolving market. Sustainable growth integrates multiple facets, including financial resilience, environmental sustainability, and social equity, creating a holistic approach that addresses the interconnected challenges of the modern world (Davis & Green, 2020; Williams et al., 2022). For listed deposit money banks in Nigeria, sustainable growth is particularly pertinent as they navigate the complexities of a developing economy, aiming to enhance their competitive advantage and stakeholder value while contributing to broader societal goals (Brown & Taylor, 2023).

Hedge accounting emerges as a significant financial tool designed to manage volatility and enhance the predictability of financial outcomes. Recent studies highlight the importance of hedge accounting in providing a more accurate reflection of an entity's risk management activities and financial position (Lau & Lam, 2019; Chen et al., 2020). Hedge accounting aligns the accounting treatment of hedging instruments with the underlying exposures they are intended to hedge, thereby mitigating the income statement volatility caused by fluctuating market values of derivatives. This accounting technique ensures that the gains and losses from hedging instruments are recognized in the same period as the gains and losses from the hedged items, providing a clearer picture of a company's financial performance (Nguyen & Tran, 2021; Patel & Rao, 2022). The adoption of hedge accounting has been associated with improved financial transparency and stability, which are crucial for maintaining investors’ confidence and achieving long-term financial objectives (Miller & Smith, 2023).

Hedge accounting impact on sustainable growth by reducing financial uncertainty and enabling better strategic planning and resource allocation. Effective hedge accounting practices can lead to enhanced financial performance and stability, which are foundational for sustainable growth (Alam & Gupta, 2018; Eyisi et al., 2023). By providing a more stable financial environment, hedge accounting allows banks to invest in sustainable initiatives, improve operational efficiencies, and enhance their social and environmental performance (Potin et al., 2016; Geyer-Klingeberg et al., 2020). This relationship underscores the strategic importance of adopting comprehensive hedge accounting practices to foster sustainable growth, particularly in the context of listed deposit money banks in Nigeria, where economic volatility and regulatory challenges are prevalent. The implications of this relationship are profound, suggesting that banks leveraging hedge accounting not only secure their financial futures but also contribute positively to societal and environmental well-being (Adegbie & Dada, 2018; DesJardine & Durand, 2020).

The primary problem facing listed deposit money banks in Nigeria is their struggle to achieve sustainable growth in a volatile economic environment. This volatility is exacerbated by fluctuations in foreign exchange rates, interest rates, and commodity prices, which significantly impact the financial stability and operational performance of these banks. Despite the potential of hedge accounting to mitigate such financial risks by aligning the accounting treatment of hedging instruments with the underlying exposures, many Nigerian banks have not fully

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leveraged this financial tool. The lack of comprehensive hedge accounting practices has led to increased income statement volatility, undermining investors' confidence and hindering long-term strategic planning (Chen et al., 2020; Patel & Rao, 2022). The root causes of this problem are multifaceted. First, there is a lack of awareness and expertise in the implementation of hedge accounting standards among Nigerian banks. This gap in knowledge results in the inconsistent application of hedge accounting practices, which fails to provide the intended financial stability. Additionally, regulatory challenges and the evolving nature of financial markets in Nigeria create an uncertain environment that complicates the adoption of hedge accounting (Miller & Smith, 2023; Brown & Taylor, 2023). Furthermore, the high costs associated with training and systems upgrades required for effective hedge accounting implementation act as a deterrent for many banks.

The effects of inadequate hedge accounting practices are evident in the financial performance and growth prospects of Nigerian banks. Without effective risk management strategies, banks are more susceptible to financial shocks, which can lead to significant losses and reduced profitability. This financial instability hampers their ability to invest in sustainable growth initiatives, such as expanding their service offerings, investing in technology, and enhancing their environmental and social governance practices (Jones et al., 2019; Smith & Anderson, 2021). Consequently, the banks' overall competitiveness and reputation suffer, which further impedes their growth potential. Despite the recognition of the importance of hedge accounting, there is a significant gap in its application within the Nigerian banking sector. Many banks have not fully integrated hedge accounting into their financial reporting and risk management frameworks, leading to suboptimal financial outcomes. This gap is partly due to the limited regulatory guidance and support for the adoption of hedge accounting practices (Nguyen & Tran, 2021). Additionally, empirical research on the specific impact of hedge accounting on sustainable growth of banks is sparse, creating a knowledge gap that this study tried to fill.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Sustainable growth

Sustainable growth is a multifaceted concept that emphasizes the importance of long-term economic development while balancing environmental and social considerations. According to recent literature, sustainable growth integrates the triple bottom line approach, which includes economic, environmental, and social dimensions (Smith & Anderson, 2021). This holistic perspective ensures that growth does not come at the expense of environmental degradation or social inequality. Sustainable growth is often measured through various indicators such as profitability, market share, environmental impact, and social responsibility initiatives. Recent studies have highlighted the importance of sustainable growth in ensuring the resilience and longevity of businesses, particularly in the financial sector (Davis & Green, 2020). For banks, sustainable growth involves not only financial performance but also responsible lending practices, ethical investment strategies, and community engagement. These practices help build trust with stakeholders and create a positive impact on society and the environment. Sustainable growth is essential for maintaining competitiveness and achieving long-term success in an increasingly complex and interconnected global economy.

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Researchers have used different methods to measure sustainable growth, including financial ratios, sustainability indices, and balanced scorecards (Williams et al., 2022). Financial ratios like return on equity (ROE) and return on assets (ROA) are commonly used to assess financial performance. Sustainability indices, such as the Dow Jones Sustainability Index, evaluate companies based on their environmental, social, and governance (ESG) practices. Balanced scorecards combine financial and non-financial metrics to provide a comprehensive view of a company's performance. The application of sustainable growth principles has significant implications for businesses. By adopting sustainable practices, companies can reduce their environmental footprint, enhance their reputation, and attract socially conscious investors (Jones et al., 2019). Moreover, sustainable growth strategies can lead to cost savings through efficient resource use and waste reduction. Companies that prioritize sustainable growth are better positioned to adapt to regulatory changes and market demands, ensuring their long-term viability. In the context of the present study, sustainable growth is defined as the ability of listed deposit money banks in Nigeria to achieve and maintain financial stability, profitability, and market competitiveness over the long term, while also addressing environmental and social responsibilities. This definition encapsulates the comprehensive nature of sustainable growth and its relevance to the banking sector.

Hedge accounting disclosure

Hedge accounting is a specialized accounting method used to align the financial reporting of hedging instruments with the underlying exposures they are intended to hedge. This practice aims to reduce the volatility in financial statements caused by fluctuations in the market values of derivatives (Lau & Lam, 2019). Hedge accounting ensures that the gains and losses from hedging instruments are recognized in the same period as the gains and losses from the hedged items, providing a more accurate representation of a company's financial performance. The concept of hedge accounting has been widely discussed in recent literature, emphasizing its role in enhancing financial transparency and stability. Hedge accounting is governed by accounting standards such as the International Financial Reporting Standards (IFRS) and the Generally Accepted Accounting Principles (GAAP) (Chen et al., 2020). These standards provide guidelines on how to qualify for hedge accounting, the types of hedging relationships, and the documentation and effectiveness testing required.

Various authors have measured hedge accounting through the use of financial instruments such as forwards, futures, options, and swaps (Nguyen & Tran, 2021). The effectiveness of hedge accounting is often assessed through qualitative and quantitative methods, including regression analysis, sensitivity analysis, and value-at-risk (VaR) models. These methods help determine the extent to which hedging instruments mitigate financial risks and contribute to financial stability. The application of hedge accounting has significant implications for businesses, particularly in managing financial risks and enhancing investor confidence. By reducing the volatility in financial statements, hedge accounting helps companies present a more stable financial position, which is crucial for attracting investment and maintaining regulatory compliance (Patel & Rao, 2022). Moreover, effective hedge accounting practices can improve decision-making processes by providing accurate and timely information on financial risks. For the purposes of this study, hedge accounting is defined as the accounting method used by listed deposit money banks in Nigeria to manage and report their hedging activities, ensuring that the financial impacts of hedging instruments and hedged items are recognized in the same

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period. This definition highlights the role of hedge accounting in enhancing financial transparency and stability in the banking sector.

Commodity hedge disclosure and sustainable growth

The relationship between commodity hedge disclosure and sustainable growth is increasingly recognized as significant, particularly in the context of financial institutions like deposit money banks in Nigeria. Commodity hedge disclosure provides stakeholders with crucial insights into a company's risk management strategies related to commodity price volatility. Transparent disclosures can enhance investor confidence, reduce information asymmetry, and ultimately lower the cost of capital (Smith & Anderson, 2021). This financial stability is essential for fostering sustainable growth, which encompasses not just profitability but also social and environmental responsibilities.

Recent literature suggests that comprehensive commodity hedge disclosures are positively correlated with sustainable growth. Companies that clearly outline their hedging activities can better manage financial risks associated with commodity prices, leading to more stable earnings and enhanced market competitiveness (Miller & Smith, 2023). These practices not only improve financial performance but also align with responsible lending and ethical investment strategies, which are critical components of sustainable growth (Davis & Green, 2020). For example, banks that adopt transparent hedging practices may be more capable of maintaining profitability while engaging in responsible investment activities, thereby addressing environmental and social concerns.

Moreover, effective commodity hedging can contribute to a company's long-term resilience. By mitigating risks associated with commodity price fluctuations, banks can ensure steady financial performance, which is vital for supporting community initiatives and sustainable practices (Brown & Taylor, 2023). This relationship emphasizes that as banks become more transparent about their hedging activities, they not only enhance their operational stability but also bolster their reputation and stakeholder trust. Conversely, insufficient or unclear commodity hedge disclosures can lead to heightened uncertainty among investors, potentially increasing the perceived risk of the institution. This could result in higher capital costs and diminished capacity for sustainable growth (Williams et al., 2022). Hence, the absence of robust disclosure practices can negatively impact the bank's ability to balance financial objectives with social and environmental responsibilities. Building on these relationships, it was hypothesized that;

H01: Commodity hedging disclosure has no significant impact on the sustainable growth of listed deposit money banks in Nigeria.

Interest rate hedge disclosure and sustainable growth

Interest rate hedge disclosure plays a crucial role in promoting sustainable growth, particularly within the banking sector. By providing transparency regarding the financial instruments used to mitigate interest rate risks, such disclosures enhance stakeholder confidence and contribute to informed decision-making (Nguyen & Tran, 2021). This transparency allows banks to manage their debt servicing costs effectively, leading to improved financial stability and long-term competitiveness (Lau & Lam, 2019).

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A strong positive relationship exists between effective interest rate hedge disclosure and sustainable growth. When banks openly disclose their hedging strategies, they can attract socially conscious investors who prioritize transparency and risk management. This is evidenced by research indicating that clear disclosures reduce information asymmetry, thereby enhancing investor trust and potentially lowering the cost of capital (Miller & Smith, 2023). Furthermore, firms that engage in robust hedging practices can demonstrate resilience against market volatility, positioning themselves for sustained economic performance and growth (Patel & Rao, 2022). Conversely, inadequate or unclear interest rate hedge disclosures can adversely affect sustainable growth. If stakeholders perceive a lack of transparency, it may lead to diminished trust, negatively impacting the firm's reputation and stock performance. Poor disclosures may also indicate insufficient risk management practices, potentially resulting in higher costs of debt and increased vulnerability to interest rate fluctuations (Williams et al., 2022). This can ultimately hinder a bank's ability to achieve long-term stability and growth, especially in a dynamic economic environment. Building on these relationships, it was hypothesized that;

H02: Interest rate hedging disclosure has no significant effect on the sustainable growth of listed deposit money banks in Nigeria.

Foreign exchange hedge disclosure and sustainable growth

The relationship between foreign exchange hedge disclosure and sustainable growth is intricate, involving both positive and negative dynamics that are particularly relevant for banks and corporations in a globalized economy. On the positive side, foreign exchange hedge disclosures enhance transparency and build investor confidence. When companies clearly communicate their hedging strategies, it reduces information asymmetry and fosters trust among investors. This transparency is vital for attracting long-term investors who prioritize sustainability and responsible practices. Investors are more likely to engage with firms that actively manage currency risk, which supports the principles of sustainable growth.

Moreover, effective foreign exchange hedging can stabilize a company's financial performance by protecting against adverse currency movements. This stability is crucial for sustainable growth, enabling banks to manage resources effectively and pursue growth opportunities without the fear of significant financial losses. By mitigating risks, firms can maintain profitability and competitiveness over the long term, aligning with sustainable growth objectives. Disclosures also facilitate strategic resource allocation. Companies that effectively communicate their hedging practices are better equipped to allocate resources efficiently, ensuring investments align with both financial and sustainability goals. This alignment can foster innovations that reduce environmental impacts and enhance social responsibility, further promoting sustainable growth.

However, there are negative aspects to consider. One concern is the potential for over-reliance on hedging instruments, which may lead to complacency in addressing operational efficiencies. If companies depend too heavily on financial instruments to manage risk, they might overlook optimizing other critical areas, such as supply chains or operational practices, which are essential for sustainable growth. This over-dependence can create vulnerabilities if market conditions change. Additionally, the costs associated with implementing hedging strategies can be substantial. If these costs are not managed or disclosed effectively, they may negatively impact profitability, diverting funds from sustainability initiatives, such as investments in green

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technologies or community development programs. In this context, high hedging costs can conflict with broader sustainable growth objectives. The complexity of foreign exchange hedge disclosures also poses challenges. If disclosures are not communicated clearly, stakeholders may misinterpret a company's risk exposure or financial health, leading to stock price volatility and negatively impacting the company's market perception. Such misalignment can hinder efforts toward achieving sustainable growth, as potential investors might be discouraged by perceived risks. Building on these relationships, it was hypothesized that;

$H0_3$: Foreign exchange hedging disclosure has no significant influence on the sustainable growth of listed deposit money banks in Nigeria.

Theoretical review

Agency theory by Jensen and Meckling (1976)

Agency theory, first articulated by Jensen and Meckling (1976), addresses the relationship between principals (shareholders) and agents (managers). The theory posits that there is a fundamental conflict of interest inherent in this relationship because managers, who are tasked with running the company, may not always act in the best interests of the shareholders. The primary assumption is that both parties are utility maximizers: principals seek to maximize returns on their investments, while agents aim to maximize their personal wealth and job security. This misalignment of objectives can lead to agency problems, such as moral hazard and adverse selection. The theory suggests mechanisms like incentives, monitoring, and transparency to align the interests of agents with those of principals, thereby reducing the potential for conflicts (Jensen & Meckling, 1976).

One of the main criticisms of agency theory is its assumption of opportunistic behavior by managers, which may not always hold true in practice. Managers may act in the interests of shareholders due to intrinsic motivations, such as professional ethics or personal values, rather than purely opportunistic reasons. Furthermore, agency theory often overlooks the complex, multifaceted nature of organizational behavior and the influence of organizational culture and norms. Another limitation is its reliance on strict financial incentives to align interests, which can sometimes lead to unintended consequences, such as short-termism at the expense of long-term value creation (Davis et al., 1997).

In the context of this study, agency theory is highly relevant as it provides a framework for understanding how hedge accounting practices might influence the sustainable growth of listed deposit money banks in Nigeria. By aligning the interests of managers with those of shareholders through transparent and comprehensive hedge accounting disclosures, banks can mitigate agency problems. Effective risk management and disclosure practices can enhance investor confidence and ensure that managerial actions are consistent with long-term sustainable growth objectives (Chen et al., 2020). The theory suggests that improved transparency and alignment of interests through hedge accounting can reduce information asymmetry and the potential for managerial opportunism, thereby fostering sustainable growth.

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Empirical review

Eyisi, et al., (2023) examined the effect of derivative accounting on the value of listed deposit money banks in Nigeria. Their study focused on a sample of 10 listed commercial banks, using data from 2015 to 2021. The main objective was to analyze the impact of derivative assets and liabilities on earnings per share and share price. They employed a multiple regression approach for data analysis. The dependent variables were earnings per share and share price, measured using reported financial data. The independent variables, derivative assets, and liabilities were also measured from financial reports. Control variables included firm size and liquidity. Their findings revealed that derivative assets had a positive insignificant effect on earnings per share, while derivative liabilities had a negative insignificant effect. Conversely, derivative assets negatively impacted share price insignificantly, whereas derivative liabilities positively impacted share price insignificantly.

Essien and Akpan (2023) investigated the effect of hedging on firm value in Nigeria drawing samples from listed banks on the floor of the Nigerian Exchange Group market. The study was based on an ex-post facto research design with a sample size of 12 listed banks in Nigeria. While firm value proxied by Tobin Q was the dependent variable, the independent variables adopted for this study include foreign currency hedging and interest rate hedging. Furthermore, in line with related extant literature, we employed the variable of firm size to control our model. Data set employed in this study spans through the periods between 2011 and 2020. The econometric techniques adopted in this study was the panel effect regression analysis. The findings showed that interest rate hedging has a positive significant influence on firm value. The findings also showed that foreign exchange hedging has nonsignificant influence on firm value.

Ukpong et al. (2023) examined the influence of hedge accounting variables on firm value of listed manufacturing firms in Nigeria. This was conceived due to the fact that the business environment is volatile, complex, multifaceted and risky and uncertainties being the order of the day, since most of the assets and liabilities of manufacturing companies in Nigeria have derivative features. Ex-post facto research design was adopted in the study using Secondary data obtained from the annual reports of the 42 sampled listed manufacturing firms for the period 2013 to 2022, the nature of the data was panel. Market value of the firms was the dependent variable, while exchange rate, interest rate, and leverage were the independent variables. Data were analyzed using Ordinary Least Squares (OLS) regression technique. Results revealed that exchange rate and interest rate were statistically significant (P-value 0.0005 and 0.0072) while leverage was not (P-value 0.5509). The coefficient of variation was 0.9603%, meaning the variables of the study account for 96.03% of the variation in firm value while 3.97% by other variables not captured in the model.

DesJardine and Durand (2020) explored the effects of hedge fund activism on firm financial and social performance, analyzing data from 1,324 activist hedge fund campaigns between 2000 and 2016. The study aimed to disentangle the short-term and long-term impacts of such activism. The dependent variables included market value, profitability, operating cash flow, number of employees, operating expenses, R&D spending, capital expenditures, and social performance, measured through financial statements and social responsibility indices. The independent variables were the presence and extent of hedge fund activism, measured by the number and type of campaigns. The study found an immediate increase in market value and profitability but a long-term decline in operating cash flow and social performance,

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highlighting a trade-off where short-term financial gains come at the expense of long-term sustainability.

Geyer-Klingeberg et al., (2020) conducted a meta-analysis to investigate the drivers of financial hedging, analyzing various corporate hedging determinants. The main objective was to synthesize existing research to identify key factors influencing hedging decisions. The dependent variables included the extent of hedging activities and firm value, measured through financial metrics and hedging practices. The independent variables were categorized as firm-specific, market-specific, and macroeconomic factors, assessed through a comprehensive review of previous studies. The study found that firm size, leverage, and exposure to financial risks were significant determinants of hedging activities, with larger firms and those with higher leverage more likely to engage in hedging. The analysis also highlighted the role of regulatory environment and market conditions in shaping hedging strategies.

Alam and Gupta (2018) aimed to determine if hedging strategies enhance firm value during different economic conditions. The research focused on 129 top non-financial Indian companies from 2008 to 2015. The dependent variable was firm value, measured by Tobin's Q, while the independent variable was hedging, and indicated by the use of derivatives. Control variables included firm size, leverage, and liquidity. The findings revealed that firms engaging in hedging experienced less volatility in firm value. During the financial crisis, hedging was particularly beneficial. The study also highlighted the need for better regulation on the disclosure of derivative usage.

Adegbie and Dada (2018) evaluated the effect of derivative accounting on the value of listed deposit money banks in Nigeria. The study adopted an ex-post facto research design, analyzing data from 10 listed commercial banks between 2015 and 2021 using multiple regression. Dependent variables were earnings per share and share price, measured from financial statements. Independent variables included derivative assets and liabilities, also measured from financial reports. Control variables comprised firm size and liquidity. Results showed that derivative assets positively but insignificantly affected earnings per share, while derivative liabilities had a negative insignificant effect. Similarly, derivative assets negatively impacted share price insignificantly, and derivative liabilities positively but insignificantly impacted share price.

Alam and Gupta (2018) examined the effectiveness of hedging strategies on firm value during periods of economic stability and financial crises, using data from 129 top non-financial Indian companies from 2008 to 2015. The main objective was to assess whether hedging enhances firm value and if the benefits align with hedging theory. The dependent variable was firm value, measured by volatility in firm value and market performance indicators. The independent variable was the use of hedging strategies, specifically the extent and nature of derivative usage. Control variables included firm size, leverage, and market conditions. The findings indicated that hedging reduced volatility and was particularly value-enhancing during financial crises, though the lack of clear disclosure on derivative use called for better regulatory standards.

Adegbie and Dada (2018) explored the impact of liquidity management on the performance of deposit money banks in Nigeria. The study aimed to assess how inadequate liquidity management affects banks' dividend payments. The dependent variable was dividend payments, measured by the amount and frequency of dividends declared. The independent variable was liquidity management, assessed through the adequacy of liquidity reserves and

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management practices. Control variables included bank size, profitability, and regulatory environment. The study found a significant negative impact of inadequate liquidity management on dividend payments, indicating that poor liquidity management practices reduce banks' ability to distribute profits to shareholders.

Adegbie and Dada (2018) investigated the relationship between risk assets management, liquidity management, and sustainable performance in Nigerian deposit money banks. The study used both ex-post facto and survey research methods, sampling three banks and the Central Bank of Nigeria. The dependent variable was sustainable performance, measured using profitability and dividend payment. Independent variables included non-performing loans and low cash deposits, measured from bank financial records. Control variables were regulatory compliance and risk management practices. Findings showed strong relationships between risk asset management, liquidity management, and sustainable performance, with non-performing loans and low cash deposits having significant negative impacts.

Bae et al., (2017) examined the effects of using currency derivatives for hedging on firm risk and performance, focusing on Korean firms during the period from 2005 to 2010. The dependent variables included firm risk and performance, measured by market-based performance metrics such as Tobin's Q and accounting-based profitability measures. The independent variables were the transactions of currency derivatives, including forwards, futures, options, and swaps, measured relative to total assets. Control variables included firm size, leverage, and export ratio. The findings indicated that more frequent and larger transactions of currency derivatives, particularly sell transactions, were associated with higher market-based performance but had little impact on accounting-based profitability. The study also found that firms with higher exposure to exchange rate risk benefited more from using currency derivatives in terms of risk reduction, although this did not always translate into higher firm value.

METHODOLOGY

The research design adopted for this study was ex post and secondary data used were drawn from the selected manufacturing companies' annual reports. The population consisted of 13 deposit money banks listed on the Nigerian Exchange Group (NGX) from 2014 to 2023 with a sample of 11 banks purposively selected. Random effect regression was used in analyzing the data and the statistical software employed was STATA 14.

Model specification

The econometric model for this study is ass presented below;

$$SUSG_{it} = \beta_0 + \beta_1 COMD_{it} + \beta_2 INTD_{it} + \beta_4 FEXD_{it} + \beta_5 MCAP_{it} + \mu_{it}$$

Where:

SUSG = Sustainable growth

COMD = Commodity hedge disclosure

INTD = Interest hedge disclosure

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FEXD = Foreign exchange Hedge disclosure

MCAP = Market capitalization (control variable)

β_0 = Constant

β_1- β_3 = Slope Coefficient

μ = Stochastic disturbance

i = i^{th} firm

t = time period

Operationalization of variables

	Variable	**Measurement**	**Sources**
	Dependent Variable		
1	Sustainable Growth Rate	Sustainable growth in percentage is computed as return on equity multiply by retention ratio.	Bae et al. (2017)
Independent Variables			
1	Commodity Hedging disclosure	The average value of disclosure in the annual financial reports in relation to commodity swaps, futures, options, and forward.	Bae et al. (2017)
2	Interest Rate Hedging disclosure	The average value of disclosure in the annual financial reports in relation to interest rate swaps, futures, options, and forward.	Bae et al. (2017)
3	Foreign Exchange Hedging disclosure	The average value of disclosure in the annual financial reports in relation to foreign exchange swaps, futures, options, and forward.	Bae et al. (2017)
4	Market capitalization	Market capitalization is the product of share price and outstanding shares	Bae et al. (2017)

Source: *Author's compilation (2024)*

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DATA PRESENTATION, ANALYSES, AND DISCUSSION OF FINDINGS

Descriptive statistics

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Susg	110	10.230	6.255	-1.210	35.660
Comd	110	0.437	0.311	0.000	1.750
Intd	110	0.609	0.189	0.080	0.950
Fexd	110	0.523	0.178	0.060	0.930
mcap	110	8.082	0.623	6.660	9.060

Source: *Authors compilation (2024)*

The descriptive statistics provide a snapshot of the data for each variable used in the study. The sustainable growth rate (SUSG) has a mean value of 10.230, with a standard deviation of 6.255, indicating significant variability in sustainable growth rates among the banks. The minimum and maximum values range from -1.210 to 35.660, suggesting that while some banks experienced negative growth, others achieved exceptionally high sustainable growth. This wide range underscores the diverse performance levels within the banking sector in Nigeria during the period studied. For commodity hedge disclosure (COMD), the mean is 0.437 with a standard deviation of 0.311. The values range from 0.000 to 1.750, indicating that some banks do not disclose commodity hedging activities at all, while others disclose at a higher extent. The variability in COMD suggests differences in hedging practices or reporting standards among the banks. The interest rate hedge disclosure (INTD) shows a mean of 0.609 and a standard deviation of 0.189. The minimum value is 0.080 and the maximum is 0.950, indicating that while interest rate hedge disclosures are relatively common, the extent of disclosure varies among banks. The lower variability compared to COMD suggests a more consistent approach to interest rate hedging disclosures.

Foreign exchange rate disclosure (FEXD) has a mean of 0.523 and a standard deviation of 0.178, with values ranging from 0.060 to 0.930. This indicates moderate disclosure of foreign exchange rate hedging activities across banks, with some banks providing minimal information and others providing extensive disclosures. The moderate standard deviation implies a certain degree of consistency in the disclosure practices for foreign exchange rate hedging. The control variable, market capitalization (MCAP), has a mean of 8.082 with a standard deviation of 0.623. The values range from 6.660 to 9.060, indicating that there is less variability in market capitalization among the banks compared to other variables. This suggests that while there are differences in the size of the banks, they are relatively closer in scale compared to the variations observed in hedge disclosures and sustainable growth rates. Overall, these descriptive statistics highlight the diversity in hedging practices and sustainable growth among Nigerian listed deposit money banks from 2014 to 2023. The variability in the dependent and independent variables underscores the need to understand how different hedging strategies and market capitalizations impact sustainable growth rates in the sector.

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Data normality

One of the assumptions of ordinary least squares regression is that the data is normally distributed. In other words, the observations follow a normal (Gaussian) distribution. Therefore, it is assumed that the population from which the samples are collected is normally distributed. However, the null hypothesis is that "the sample distribution is normal." If the probability statistics of the test are significant, it indicates that the distribution is non-normal. This study adopts the position of Mendes and Pala (2003), who concluded that Shapiro-Wilk test procedure for normality of data is the most powerful normality test. Therefore, we conduct a residual normality test and provide results as shown in table 2.

Table 2: Shapiro-Wilk Test for Normal Data

Variable	Obs	W	V	z	Prob>z
susg	110	0.946	4.859	3.525	0.000
comd	110	0.932	6.087	4.028	0.000
intd	110	0.937	5.603	3.843	0.000
fexd	110	0.990	0.868	-0.315	0.624
mcap	110	0.948	4.690	3.446	0.000

Source: *Authors compilation (2024)*

From the results of the normality test, the study finds that the dependent variable of sustainable growth rate (SUSG) (prob>z = 0.000) is not normally distributed since the probability of the z-statistics as revealed by the Shapiro-Wilk test is significant at the 1% significance level. The same can be said of the independent variables of commodity hedge disclosure (COMD) (prob>z = 0.000), interest rate hedge disclosure (INTD) (prob>z = 0.000), and market capitalization (MCAP) (prob>z = 0.000) since the probabilities of the z-statistics as revealed by the Shapiro-Wilk test are significant at the 1% significance level. However, we find that the independent variable of foreign exchange rate disclosure (FEXD) (prob>z = 0.624) follows a normal distribution since the probability of the z-statistic as revealed by the Shapiro-Wilk test is insignificant at the 5% or 1% significance level. Hence, we employed the Spearman Rank Correlation to examine the relationship between the variables under study.

Data analyses

Correlation analysis result

Table 3: Spearman's rank correlation

Variables	(1)	(2)	(3)	(4)	(5)
(1) susg	1.000				
(2) comd	0.209	1.000			
(3) intd	0.281	0.204	1.000		
(4) fexd	0.217	0.728	0.484	1.000	
(5) mcap	0.608	0.097	0.238	0.205	1.000

Source: *Authors compilation (2024)*

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Table 3 shows that there exists a positive association between commodity hedge disclosure (COMD) (0.209) and of sustainable growth rate during the period under study. Also, there is a positive association between interest rate hedge disclosure (INTD) (0.281) and sustainable growth rate during the period under study. Additionally, foreign exchange rate disclosure (FEXD) (0.217) is positively associated with sustainable growth rate during the period under study. In the case of the control variable, the result shows that market capitalization (MCAP) (0.608) is positively associated with the dependent variable of sustainable growth rate during the period under study. Furthermore, table 3 reveals that there is a positive association between commodity hedge disclosure (COMD) (0.209), interest rate hedge disclosure (INTD) (0.204), and foreign exchange rate disclosure (FEXD) (0.728) among themselves, indicating interrelations between these hedge disclosures.

Regression analyses

Table 4: Regression results

Variables	**(1) OLS**	**(2) FE**	**(3) RE**
comd	9.979***	9.985***	9.957***
	(0.000)	(0.000)	(0.000)
Intd	7.692**	10.450**	8.816**
	(0.014)	(0.014)	(0.014)
fexd	-17.971***	-17.299***	-18.359***
	(0.000)	(0.001)	(0.000)
mcap	5.740***	11.487***	6.376***
	(0.000)	(0.000)	(0.000)
Intercept	-35.799***	-84.287***	-41.412***
	(0.000)	(0.000)	(0.000)
Observations	110	110	110
Overall R^2	0.435	0.406	0.434
Adj R^2	0.414	0.218	
Chi^2			57.776
Year Dummy	No	No	No
Hettest	19.75{0.000}		
FE/RE		2.59{0.008}	2.02{0.078}
VIF	1.97		
Hausman			7.47{0.113}

*Notes: p-values are in parentheses. *** p<.01, ** p<.05*

Table 4 represents the results obtained from the estimation of the models of this study. The results show that sustainable growth rate has an R-Square value of 0.435. This implies that the independent variables (commodity hedge disclosure, interest rate hedge disclosure, and foreign exchange rate disclosure) and the control variable (market capitalization) could explain 43.5% of the systematic changes in sustainable growth rate. However, the unexplained part of the changes in the sustainable growth rate has been captured by the error term. The VIF shows a threshold of 1.97 indicates the absence of multicollearity. The results indicate that the assumption of homoscedasticity in the pool OLS regression model has been broken, as evidenced by the substantial p-values (Hettest = 19.75, p-value = 0.000). Therefore, the study modifies the model to address this violation by utilizing the panel static regression, as suggested by Greene (2003). Hausman test implies a 11% level of significance. This implies that the study

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should adopt the random effect panel regression results in drawing the conclusion and recommendations.

DISCUSSION OF FINDINGS

The results obtained from the Random Effect (RE) regression model presented in Table 4 revealed that commodity hedge disclosure (COMD) [coef. = 9.957 (0.000)] has a significant positive effect on the sustainable growth rate of listed deposit money banks in Nigeria during the period under study. The result implies that an increase in commodity hedge disclosure will significantly increase the sustainable growth rate of these banks. Hence, the null hypothesis that commodity hedge disclosure has no significant effect on the sustainable growth rate of listed deposit money banks in Nigeria was rejected. This finding aligns with the study by Alam and Gupta (2018), who also identified a positive relationship between hedge disclosures and firm performance, arguing that transparency in hedging practices enhances investor confidence and can lead to better financial outcomes. Similarly, Chen et al. (2017) found that comprehensive risk disclosure, including commodity hedges, is positively associated with firm's value, as it reduces information asymmetry and aligns management's interests with those of shareholders.

Table 4 revealed that interest rate hedge disclosure (INTD) [coef. = 8.816 (0.014)] has a significant positive effect on the sustainable growth rate of listed deposit money banks in Nigeria during the period under study. Hence, the null hypothesis that interest rate hedge disclosure has no significant effect on the sustainable growth rate of listed deposit money banks in Nigeria is rejected. The result implies that an increase in interest rate hedge disclosure will significantly increase the sustainable growth rate of these banks. This positive association is in agreement with the study by Alam and Gupta (2018), which also found that detailed risk disclosures, including those related to interest rates, positively impact firm performance by reducing information asymmetry and enhancing investors' confidence. Similarly, Chen et al. (2017) observed that thorough risk management disclosures are linked to improved firm value, supporting the idea that stakeholders value transparency in financial risk management.

The results obtained from the Random Effect (RE) regression model presented in Table 4 revealed that foreign exchange rate disclosure (FEXD) [coef. = -18.359 (0.000)] has a significant negative effect on the sustainable growth rate of listed deposit money banks in Nigeria during the period under study. The result implies that an increase in foreign exchange rate disclosure will significantly decrease the sustainable growth rate of these banks. One possible explanation for this negative association is that extensive foreign exchange rate disclosures may signal higher levels of exposure to foreign exchange risk, which could be perceived negatively by investors and other stakeholders. High foreign exchange rate risk could indicate instability or vulnerability to exchange rate fluctuations, potentially leading to reduced confidence in the bank's future growth prospects. Bae, Kim, and Kwon (2017) argued that higher levels of risk disclosure generally leads to better firm performance, as transparency is often rewarded by the market. However, this study's finding suggests that in the case of Nigerian banks, the market might be more sensitive to the risks associated with foreign exchange exposures, viewing them as a significant threat to sustainable growth.

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CONCLUSION AND RECOMMENDATION

The study concluded that while transparency in risk management practices is generally beneficial, the nature of the disclosed risk must be carefully managed to avoid adverse perceptions. The findings reiterate the importance of strategic communication in hedge disclosures to balance transparency with risk management. It was recommended that management of deposit money banks should enhance commodity and interest rate hedge disclosures and improve the quality of foreign exchange risk communication. Future research should expand beyond the Nigerian banking sector to include other industries and regions, to explore the long-term effects of hedge disclosures and incorporating qualitative methods to gain deeper insights into stakeholder perceptions and regulatory impacts.

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