VALUE RELEVANCE OF FINANCIAL DERIVATIVE INSTRUMENTS UNDER IFRS 7: A PANEL STUDY OF NIGERIAN INTERNATIONALLY LICENSED BANKS (2015–2024)

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ABSTRACT

This study examines the value relevance of financial derivative instruments among listed internationally licensed banks in Nigeria. The study appraised Ohlson's Residual Income Valuation framework and the disclosure architecture established by IFRS 7. Focusing on financial derivative assets, derivative liabilities, derivative trading income, and derivative risk sensitivity disclosure, the investigation evaluates how derivative-related accounting variables shape market valuation as captured by share price. The study employed the ex-post facto research to collate data and examine the nexus between the variables. The secondary data required were sourced from the Nigerian Exchange Group (NGX) Fact books and other related companies' annual financial records. The study collected panel data covering 2015–2024 for the analysis. The sample consists of all eight (8) internationally licensed banks listed on the NGX. The sample was arrived at using a census sampling technique. The study employs a panel data regression technique to estimate the panel data. The findings reveal that while derivative assets exhibit a significant negative link with market value, other derivative dimensions, including liabilities, trading income, and disclosure, do not exert statistically significant valuation effects, indicating a clear asymmetry in how investors interpret different aspects of derivative activities. In conclusion, the results highlight the dynamic and non-linear nature of market reactions to derivative information, suggesting that conventional assumptions about the uniformly positive or transparent signaling role of derivative reports and disclosures may not hold in real-time situations.

INTRODUCTION

As global financial systems evolve, the demand for transparent derivative reporting has intensified among academics, regulators, and investors. Derivatives such as forwards, options, swaps, and futures are now integral to modern banking, particularly for internationally active banks operating in volatile, interconnected markets. While these instruments serve critical hedging and speculative functions, they also introduce complex valuation and risk measurement challenges that can undermine investor confidence and destabilize share prices (Kumar & Saluja, 2025). Consequently, the value relevance of derivative disclosures that is, their capacity to explain variations in market price has become a central research priority within market-based accounting theory and investor decision making frameworks (Barth et al., 2001; Abiodun, 2012).

The introduction of IFRS 7, *Financial Instruments: Disclosures*, marked a structural turning point in how banks report derivative activities. The standard mandates both qualitative and quantitative disclosures on financial instruments, fair value measurements, and risk exposures spanning market, credit, and liquidity risks. A critical component is sensitivity analysis, which reveals how changes in underlying market variables such as interest and exchange rates affect the fair value of derivative positions (Bean & Irvine, 2015; Sribunnak & Wong, 2004). By reducing information asymmetry between banks and investors, these disclosures are intended to enhance transparency, deepen risk understanding, and improve investment efficiency (Healy & Palepu, 2001; Sribunnak & Wong, 2006; Potin et al, 2016; Spector, 2009). For internationally licensed banks listed on the Nigerian Exchange Group (NGX), comprehensive derivative reporting is especially consequential given the rising volatility of cross-border capital flows and the heavy reliance on derivatives for asset-liability matching, currency hedging, and speculative income generation.

In Nigeria, the post 2012 adoption of IFRS requires all listed banks, including internationally licensed institutions, to comply with IFRS 7, which superseded the earlier IAS 30 and IAS 32 disclosure regimes. This transition was designed to align Nigerian banks with global best practices in risk reporting, enforced by the Central Bank of Nigeria (CBN), the Securities and Exchange Commission (SEC), and the Financial Reporting Council (FRC). Although the volume and granularity of disclosures have increased, a critical question remains: are derivative disclosures actually priced by the market? The extant literature offers mixed guidance. Some studies argue that enhanced disclosures improve valuation accuracy and reduce information uncertainty (Chalmers & Godfrey, 2004; Ahmed et al., 2006), while others contend that the complexity and opacity of derivative accounting obscure rather than illuminate firm risk and performance (Song et al., 2010). This study addresses this ambiguity by applying Ohlson's (1995) Residual Income Valuation Model to examine how financial derivative information influences the share prices of Nigerian internationally licensed banks. Specifically, it pursues four interrelated objectives. First, it determines whether the fair value of financial derivative assets is reflected in bank share prices. Second, it investigates whether financial derivative liabilities exert a discernible influence on market valuation. Third, it analyzes whether realized and unrealized gains or losses from derivative trading activities carry pricing weight in the market. Fourth, it evaluates whether IFRS 7 mandated derivative risk-sensitivity disclosures provide incremental explanatory power for equity value beyond traditional accounting fundamentals. Within the Ohlson framework, value relevant derivative information should exert a statistically significant influence on share price, reflecting its importance to market participants amid the growing impact of derivative activities on bank risk profiles and earnings quality

Statement of Problem

In recent years, the increased use and complexity of financial derivatives in banking, raising concerns about transparency, risk, and valuation, especially among Nigerian listed banks. While derivatives help hedge risks and generate income, they pose valuation and interpretation challenges due to their off-balance sheet nature and volatility. Though IFRS 7 requires disclosures, it's unclear whether that information has value in Nigeria. Specifically, does the market price of equity reflect or respond to banks' derivative disclosures?

This uncertainty is exacerbated first by the limited availability of localized empirical

literature specifically addressing the value relevance of financial derivatives in Nigeria. Most Nigerian studies focus on general financial instruments or derivative disclosures without a proper framework for relevance. For example, research by Oba et al. (2012), Echobu et al. (2021), Abuaja and Ukpong (2022), and Peters and Zukbee (2023) examines disclosure issues but uses valuation models not recognized in mainstream literature. Beisland (2009) highlights three main value-relevance models: Ohlson (1995), Easton and Harris (1991), and Feltham and Ohlson (1995). Yet, many Nigerian studies do not use these models, leading to weak theory and dubious conclusions.

The knowledge gap extends to the lack of studies on internationally licensed banks, a subset of Nigerian deposit money banks with cross-border transactions and derivative exposure. While international research shows derivative disclosures influence investor valuation (Ahmed et al., 2006; Chalmers & Godfrey, 2023), local evidence is limited. Additionally, insights on the market valuation effect of IFRS 7's derivative disclosures, like risk-sensitivity analyses, are underreported or misinterpreted in Nigeria. This is concerning given Nigeria's status as a major African financial market (Takayama, 2018), where derivative exposures grow amid volatility, exchange risks, and speculation.

Statistics further highlight this urgency, noting that between 2015 and 2023, financial derivative instruments reported by internationally licensed banks in Nigeria more than doubled in fair value terms, yet less than 20% of the banks consistently disclosed sensitivity analysis for derivative risk in their annual financial statements. Such a stark inconsistency in disclosure raises questions about whether market participants can accurately interpret or price derivative risks. Hence, this study is motivated to bridge the foregoing gaps in the literature by applying Ohlson's (1995) Residual Income Valuation Model, a theoretically robust, empirically tested framework, to assess the value relevance of financial derivative instruments disclosed under IFRS 7 by listed internationally licensed banks in Nigeria.

REVIEW OF RELATED LITERATURE

Conceptual Review

Value Relevance of Accounting Information

The term 'value relevance' was first used by Amir et al. (1993), though the concept dates back to the 1960s–70s (Ball & Brown, 1968; Beaver & Dukes, 1972). Decades later, the literature continues to affirm its centrality in capital markets research, with recent studies documenting its evolution in developed markets (Barth et al, 2020) and its applicability in emerging IFRS adopting economies such as Saudi Arabia (Chehade & Procházka, 2023), Vietnam (Thinh et al., 2023), and Indonesia (Putri et al., 2023).

For financial derivatives, value relevance is the extent to which derivative disclosures explain variations in stock prices (Tahat et al., 2016). From a predictive perspective, data is relevant if it helps forecast firm value and future earnings (Chang et al., 2008; Scott, 2003). Drawing on signalling theory (Dawkins & Ngunjiri, 2015), the study defines the value relevance of derivative disclosures as their ability to reflect information that influences market equity value.

Classical Measurement of Value Relevance of Accounting Information

In finance, equity market value remains widely accepted as a reliable indicator of firm value, typically operationalized through market capitalization or Tobin's Q, which captures the market's forward looking assessment of corporate worth (Vo et al., 2023; Permata & Alkaf, 2020). Ohlson (1995) formalized this relationship by modeling equity value as a linear function of book value, accounting earnings, and an unspecified set of other value-relevant non-financial information. This framework has

since been extensively extended beyond traditional accounting variables to corporate social responsibility and sustainability research, with recent studies employing it to test the incremental value relevance of ESG performance (Rahman et al., 2024), integrated reporting disclosures (Aalto University, 2023), and broader non-financial information sets (Saha, 2017). Accordingly, this study applies Ohlson's (1995) accounting-based valuation framework to model the value relevance of financial derivative instruments, expressing the market value of equity as a function of book value, earnings, and derivative-related information.

Financial Derivative Asset

Financial derivatives are instruments whose value derives from underlying assets (e.g., interest rates, commodities, currencies). IFRS 9 defines them by three features: value changes with the underlying, minimal initial investment, and future settlement. Derivatives serve hedging, arbitrage, and speculation. Scholars note their complexity (Opoku & Ampofo, 2019) and dual use in risk management vs. speculation. While Stulz (2019) highlights speculative risks, Hull (2020) emphasizes hedging benefits. IFRS 9 also requires separate accounting for embedded derivatives (e.g., in convertible bonds) under certain conditions. Instruments include options, futures, forwards, and swaps. Overall, derivatives blend innovation with systemic risk, and IFRS 9 aims to improve transparency and comparability amid market volatility**.**

Financial Derivative Liability

Under IFRS 9 and IFRS 13, a financial derivative liability is an obligation tied to underlying variables that requires settlement under potentially unfavorable terms. It is initially recognized and subsequently remeasured at fair value, with changes generally reported in profit or loss unless hedge accounting applies. Bugeja et al. (2019) highlight its contingent, market-sensitive nature. Classification as liability vs. equity depends on whether the settlement involves fixed or variable resource transfers (Eberhartinger & Klostermann, 2017). Key elements include the underlying variable, notional amount, minimal investment, and settlement terms. IFRS 7 emphasizes fair value and risk disclosure. Andersen et al. (2020) note valuation challenges in volatile markets stemming from subjective inputs, highlighting ongoing measurement and comparability issues.

Financial Derivative Trading Income

Financial derivative trading income gains or losses from instruments tied to underlying assets are governed by IFRS 9. It requires fair value recognition through profit or loss unless hedge accounting applies (Charumathi, 2018). This income is a double-edged sword: it offers return potential but introduces earnings volatility, especially when driven by speculation (Duh, Hus & Alves, 2018). Hedging uses align with stewardship. Components include realized/unrealized gains, interest impacts, and hedge adjustments. While fair value recognition enhances relevance and comparability, Whittington (2015) notes concerns about volatility. Ultimately, derivative trading income signals both performance and the quality of governance and risk decisions.

Financial Derivative Information Disclosure

Financial derivative information disclosure is essential for transparent reporting due to the complexity and systemic risk associated with instruments such as options, futures, forwards, and swaps (Gope, 2023). IFRS 7 sets the global standard, requiring qualitative and quantitative disclosures on credit, liquidity, and market risk, including sensitivity analyses. Adopted in Nigeria in 2012 (replacing IAS 30/32), IFRS 7 expanded reporting to all sectors and emphasizes narrative risk disclosures (Spector, 2009). This framework directly supports the assessment of the value

relevance of financial derivatives in capital markets.

Theoretical Review

Residual Income Valuation Theory

Ohlson (1995) Residual Income Valuation Theory provides a robust theoretical foundation for investigating the value relevance of financial derivative instruments. Developed by James A. Ohlson, the theory bridges traditional accounting metrics with firm valuation by proposing that a firm's market value can be modeled as a linear function of its current book value and the present value of expected future abnormal earnings, which includes earnings that exceed a firm's cost of equity capital. One of its key assumptions is that the market is semi-strong efficient, meaning it reflects all publicly available information, including accounting disclosures. The model also assumes clean surplus accounting and relies heavily on the decision usefulness framework, where financial statement items should capture relevant and timely information about firm value.

In the context of IFRS 7, which mandates disclosure of fair values, risk exposures, and sensitivity analyses for financial instruments, the theory offers a meaningful lens for evaluating the market's reaction to such derivative disclosures. IFRS 7 requires that entities disclose both qualitative and quantitative dimensions of derivative instruments, aligning directly with the residual income valuation model's emphasis on how disclosed accounting data informs equity valuation. According to Barth, Beaver, and Landsman (2001), the essence of value relevance lies in the significant statistical association between accounting information and share price, reinforcing the Ohlson model's predictive power. The theory is therefore particularly apt for this study because it allows a financial derivative disclosure which is understood as either amplifier of future earnings volatility or signals of sophisticated risk management, to be examined not just for compliance value, but for their capacity to influence investors' expectations and share pricing. In this way, the residual income valuation framework provides deeper insight into how derivative-related accounting information, when aligned with IFRS 7, can impact equity valuation through the lens of market-based accounting theory.

Empirical Review

Jasim and Chaibi (2025) examined how disclosure of market, credit, liquidity, and operational risks influences investor behavior in Iraq, using data from 20 banks on the Iraq Stock Exchange from 2015-2023. Their quantitative study found that market risk disclosure significantly affects investor responses, liquidity risk disclosure has a minor effect, and operational risk disclosure shows no significant impact.

Okoka and Okolie (2025) examined the impact of derivatives like currency forwards, credit default swaps, and fair value accounting on the market value of DMBs in Nigeria from 2015 to x-post facto design and purposive sampling of 13 banks (130 observations), analysis with Panel GLS random effects found that currency forwards positively impact market value significantly. Credit default swaps had a negative but insignificant effect, and fair value accounting showed limited investor responsiveness.

Catea (2024) conducted a study aimed at evaluating the significance of applying international financial reporting standards impact the quality of financial reporting in Iraqi banks during 2023, using data from the Iraq Stock Exchange. The quantitative research involved 226 accountants and auditors, analyzed with AMOS and SPSS through structural equation modeling, confirmatory factor analysis, and simple regression. Results showed that applying these standards significantly improves the transparency, comparability, and reliability of financial reports.

Costa Neto, Oliveira, Silva, and Barbosa (2023) investigated the relevance of accounting information, focusing on financial risk disclosures of Brazilian banks. The aim was to see if risk disclosures affect how financial institutions are valued by capital market participants. Data from Brazil's B3 stock exchange (2017-2019) covered 24 listed companies, using a longitudinal panel with 72 observations. They used a Random Effects Regression model, supported by Hausman and Breusch-Pagan tests. Results showed the financial risk disclosure index did not significantly impact share prices.

Alsarayreh et al. (2022) examined how International Financial Reporting Standards affect the value relevance of financial instrument disclosures. Data from 847 EU firms listed on the London Stock Exchange's main market, spanning 2007-2019 across sectors like trading, services, industrial, real estate, and financial, were used. A stratified random sample of 35 firms yielded 468 observations. Using the Ohlson valuation model and fixed effects panel regression, the study found that only disclosures about the nature and extent of risk exposure positively impacted value relevance.

Gupta (2022) investigated the influence of derivative use affects firm value among Indian non-financial companies listed on the Bombay Stock Exchange from 2010 to 2017. Using panel data of 78 firms and 624 observations, the study employed OLS regression and Propensity Score Matching. Results showed foreign exchange forwards, options, and commodity derivatives positively impact firm value. Interest rate derivatives do so only under high leverage. Hedge accounting boosts value in volatile firms, but high leverage and volatility reduce derivative benefits.

Razafinandrasana (2022) conducted a study that investigated whether financial instrument risk disclosures mandated by IFRS 7 possess value relevance to investors in Indonesian bank investors from 2018-2019. Using a quantitative method, it analyzed secondary data from 41 banks' reports. Regression tests showed both qualitative and quantitative disclosures have no significant impact on share prices; suggesting investors find IFRS 7 disclosures not value-relevant.

Thitinun and Yomchinda (2021) analyzed whether disclosing credit and liquidity risks, as defined under IFRS 7, affects firms' cost of capital. They used data from 225 non-financial firms in seven European countries from 2005-2014, covering the post-IFRS 7 era. The analysis employed a random-effects Tobit model and Python-based textual analysis of risk disclosures. Results showed that increased disclosures of credit and liquidity risks significantly raised firms' capital costs, even after controlling for uncertainty proxies. This suggests that more specific risk disclosures heighten perceived investor uncertainty, raising capital costs.

Giner et al. (2020) determined whether financial risk disclosures mandated by international standards are useful for investors. The focus was on European banks listed in France, Germany, Italy, Spain, and the UK from 2007 to 2014. Using a value relevance approach based on the Ohlson framework and OLS regression, with robustness checks via Hierarchical Linear Models, 509 observations from financial statements were analyzed. Disclosure scoring involved manual content analysis. Results showed that both qualitative and quantitative risk disclosures are positively associated with market value, thereby enhancing the relevance of accounting metrics. The effect was stronger in countries with strong banking supervisory authorities.

Gap in Literature

A synthesis of the literature reveals a clear gap: no study has examined the value relevance of financial derivative instruments in Nigerian banking, especially for internationally licensed banks with significant derivative exposures. Most prior

work (e.g., Ahmed, Kilic & Lobo, 2006; Venkatachalam, 1996) focuses on developed economies. The few Nigerian studies (e.g., Oba, Fodio & Soje, 2012; Peters & Zukbee, 2023) are methodologically flawed, using unrecognized valuation models rather than globally validated frameworks such as Ohlson (1995). More critically, no Nigerian research has assessed IFRS 7–mandated sensitivity analysis disclosures for derivative risk, nor focused on listed internationally licensed banks. Given Nigeria's growing use of derivatives and financial integration, a theoretically grounded, context-specific study is urgently needed.

METHODOLOGY

Research Design

This study examines the value relevance of financial derivative instruments among Nigerian international licensed banks. It employs descriptive and ex-post facto research designs. The descriptive design helps describe data and find correlations, while the ex-post facto design shows cause-and-effect relationships using historical financial statement data.

Nature and Source of Data

In this study, the secondary nature of the data requires sourcing it from the Nigerian Exchange Group (NGX) Fact books, related companies' annual financial records, and published journals, textbooks, etc., for the periods under review. The study collected panel data covering 2015–2024 for the analysis.

Population of the Study

This study includes all eight internationally licensed banks on the NGX as of December 31, 2024, authorized by the Central Bank of Nigeria to operate internationally. They are Access Bank, Fidelity Bank, First City Monument Bank, First Bank Nigeria, Guaranty Trust Bank, United Bank of Africa, and Zenith Bank.

Sample and Sampling Technique

The sample consists of all eight (8) international licensed banks listed on the Nigerian Exchange Group (NGX) as at 31st December, 2024. The sample was arrived at using a census sampling technique. This is justified because the population is small, well-defined, and all banks provided the necessary information, thus eliminating bias.

Variable Description and Operationalization

Tabular presentation of variable' operationalization has been presented in Table 3.1

Table 3.1 Operationalization of Variables

Variable	Variable Acronym	Measurement	Source	apriori
Dependent Variable				
Value Relevance of Accounting Information	SHAPR	Share Price obtained from "Ohlsons' (1995) Firm Valuation Model" computed as the December closing share price of the sampled firm.	Linnainmaa and Roberts (2018).	
Independent Variable				
Financial Derivative Asset	FIDAA	computed as the log of positive fair values reported in the notes to financial statements	Lee, (2025).	+

Financial Derivative Liability	FIDLL	computed as log of negative fair values reported in the balance sheet.	Ryan and Seitz (2023).	+
Financial Derivative Trading Income	FIDTIN	computed as Realized + unrealized gain/loss from derivative value changes as obtained from the income statement.	Manchiraju, Hamlen, and Kross, (2016).	+
Financial Derivative Information Disclosure	FIDID	computed in Binary as '1' for listed International Licensed bank that discloses sensitivity analysis for derivative risk in the annual report, otherwise '0'	Leote, Pereira, Brites, & Godinho, (2020).	+
Accounting Fundamental Explanatory Variables				
Earnings Per Share	EPSHARE	computed in per share basis as net profit after tax divided by outstanding common shares.	Aigienohuwa and Ezijiofor, (2022).	+
Book Value Per Share	BVPSHARE	computed as Total Shareholders' Equity minus Preferred Equity divided by total outstanding common shares	Nissim, and Penman, (2001).	+

Source: Authors' Compilation (2025)

Model Specification

This study uses stock price as the dependent variable, consistent with Ohlson's (1995) value-relevance model, which links firm value to accounting fundamentals. Derivative-related variables (assets, liabilities, trading income, and disclosures) serve as explanatory variables to test their incremental value relevance. Earnings per share (EPS) and book value per share (BVPS) are the fundamental accounting explanatory variables in the Ohlson model, representing key drivers of equity value.

In line with the specific objectives of this study, an econometric model is specified and presented as:

$$SHAPR_{i,t} = \beta_0 + \beta_1 EPSHAREi_{,t} + \beta_2 BVPSHARE_{i,t} + \beta_3 FIDAA_{i,t} + \beta_4 FIDLL_{i,t} + \beta_5 FIDTIN_{i,t}\ \beta_6 FIDID_{i,t} + \mu_{i,t}$$

Where: SHAPR = Share Price, EPSHARE = Earnings Per Share, BVPSHARE = Book Value Per Share, FIDAA = Financial Derivative Asset, FIDLL = Financial Derivative Liability, FIDTIN = Financial Derivative Trading Income, FIDID = Financial Derivative Information Disclosure, μ = Stochastic Error term.

Data Analysis Technique

Data were analyzed using descriptive statistics (summary statistics, normality tests, correlation) and inferential statistics. For hypothesis testing, panel data regression was initially employed, using fixed and random effects with the Hausman test to select the appropriate model. Due to limitations of the chosen random-effects estimator in handling mixed-effects errors, hypotheses were ultimately tested using a mixed-effects multilevel regression. The explanatory power of independent and control variables (accounting fundamentals) on the dependent variable was tested at the 5% significance

level. A p-value < 0.05 leads to rejection of the null hypothesis (Ho)

DATA PRESENTATION

In testing the value relevance of financial derivative instruments from the perspective of IFRS 7 in Nigeria, several preliminary analyses are conducted. They include:

Descriptive Statistics Analysis

In the descriptive statistics, each variable is examined based on its mean, standard deviation, maximum, and minimum values. Table 4.1 displays the results obtained from the descriptive statistics.

Table 4.1 Descriptive Statistics Result

Stats	SHAPR	EPSHARE	BVPSHARE	FIDAA	FIDLL	FIDTIN	FIDID
Mean	10.45537	2.397875	15.09975	16.97562	14.81303	12.97353	.9375
p50	7.525	1.855	14.415	17.21461	15.49454	15.91193	1
SD	9.176113	1.975356	7.415858	2.098256	1.917481	8.498955	.2435887
Min	.84	.24	5.59	11.19375	8.264363	-15.98205	0
Max	40.75	7.79	40.76	20.61403	18.01772	20.03291	1

Source; Authors' Computation (2025)

Table 4.1 shows that share prices in the Nigerian banking sector cluster in the lower range with occasional spikes. Mean share price (10.46, SD = 9.18) and median (7.53) indicate dispersion, with a few high-priced banks pulling the distribution upward. Earnings per share (2.40, SD = 1.98) and book value per share (15.10, SD = 7.42) show moderate variation, while share price volatility suggests price adjustments reflect not only accounting performance but also derivative-related risk exposures under IFRS 7.

Derivative-related variables justify inclusion in value-relevance tests. Derivative assets (mean ≈ 16.98, SD = 2.10) and liabilities (14.81, SD = 1.92) show consistency, while derivative trading income exhibits pronounced volatility (SD = 8.50, range – 15.98 to 20.03), affecting investors' perception of earnings persistence. The disclosure variable (mean 0.94) indicates near-full compliance with IFRS 7 sensitivity analysis requirements, suggesting investors can integrate derivative information into market valuation.

Data Normality Test

In this study, the normality of data test using the Shapiro-Wilk test procedure is conducted as shown in Table 4.2.

Table 4.2 Normality of Data Statistics Result

Variable	Obs	W	V	Z	Prob>z
SHAPR	80	0.84073	10.932	5.241	0.00000
EPSHARE	80	0.85721	9.801	5.001	0.00000
BVPSHARE	80	0.91693	5.702	3.814	0.00007
FIDAA	80	0.97582	1.660	1.111	0.13338
FIDLL	80	0.85390	10.028	5.051	0.00000
FIDTIN	80	0.68188	21.836	6.756	0.00000
FIDID	80	0.66614	22.916	6.862	0.00000

Source; Authors' Computation (2025)

Table 4.2 shows that most variables deviate significantly from normality per the Shapiro–Wilk tests. Share price (W = 0.8407, p = 0.000), EPS (0.8572, p = 0.000), BVPS (0.9169, p ≈ 0.00007), derivative liabilities (0.8539, p = 0.000), derivative trading income (0.6819, p = 0.000), and the disclosure variable (0.6661, p = 0.000) all reject normality. Only derivative assets (FIDAA) are normal (W = 0.9758, p = 0.133), likely due to log transformation compressing extremes.

Such non-normality is expected in capital markets research due to size differences, shocks, and heterogeneous fundamentals. It does not invalidate panel regression, where normality is not a strict requirement, but justifies using robust estimators to ensure efficient and reliable estimates in the Ohlson value-relevance model.

Correlation Analysis

Table 4.3 Spearman Rank Correlation Result

	SHAPR	EPSHARE	BVPSHARE	FIDAA	FIDLL	FIDTIN	FIDID
SHAPR	1.0000						
EPSHARE	0.8295	1.0000					
BVPSHARE	0.7301	0.7693	1.0000				
FIDAA	-0.2037	0.0366	0.1017	1.0000			
FIDLL	-0.3161	-0.1376	-0.0262	0.5041	1.0000		
FIDTIN	0.5816	0.6796	0.7408	0.1475	-0.0783	1.0000	
FIDID	0.0268	0.1487	0.0246	0.2046	0.2180	0.0593	1.0000

Source; Authors' Computation (2025)

Correlation analysis shows share price strongly correlated with EPS (0.8295) and BVPS (0.7301), supporting Ohlson (1995), earnings and book value jointly explain market valuation. Derivative trading income (FIDTIN) also correlates moderately with EPS (0.6796), BVPS (0.7408), and price (0.5816), suggesting market rewards stronger derivative outcomes. Derivative assets and liabilities show weak negative correlations with price (approx. -0.20), reflecting fair-value fluctuations around risk management rather than long-run performance.

No harmful multicollinearity is present. The highest pairwise associations (EPS–price: 0.8295; BVPS–FIDTIN: 0.7408; EPS–BVPS: 0.7693) remain below the 0.80–0.85 risk threshold, and involve dependent-independent pairs. Derivative predictors show weaker associations (e.g., FIDAA–FIDLL: 0.5041), and the disclosure dummy (FIDID) has all correlations below 0.22. Thus, all variables are suitable for regression without collinearity issues.

Regression Analyses

As obtained from table 4.4, the fixed-effect result show a within R-squared value of 0.3910, indicating that the model explains about 39 percent of the variation in share price after controlling for time-invariant bank characteristics, while the F-statistic of 7.06 with Prob > F = 0.0000 confirms that the regressors jointly exert a statistically significant explanatory effect in the Fixed Effect framework. The F test that all $u_i = 0$ (F (7,66) = 13.51, Prob = 0.0000) in the fixed effect model indicates a significant rejection of the null hypothesis, suggesting that bank-specific effects are important. In the random-effects model, the between R-squared value of 0.9172 demonstrates a very strong ability of the regressors to explain cross-bank differences, and the Wald chi-squared statistic of 53.42 (Prob > chi2 = 0.0000) similarly indicates overall model significance under the Random Effect structure. Breusch–Pagan Lagrangian Multiplier test yields $chibar^2 = 50.97$ with Prob > $chibar^2 = 0.0000$, confirming that pooled OLS is inappropriate and that panel estimators (FE or RE) are preferred. The Hausman specification test, with Prob > $chi^2 = 0.9186$, indicates no systematic difference in coefficients, supporting the random-effects model as the preferred estimator which confirms that Random Effect provides efficient and consistent estimates for the data structure under consideration.

In this study, multicollinearity diagnostics show that BVPSHARE (VIF = 15.53) and EPSHARE (VIF = 8.58) exceed conventional thresholds, indicating collinearity between the core Ohlson fundamentals. The remaining variables show VIF values that are below 7, suggesting that multicollinearity is not a concern for the derivative-related regressors. Overall, this study relies on the mean VIF value of 6.09, which although high, but still maintains a value lower than 10, which meets the conventional threshold against which multicollinearity issues become a critical concern.

Table 4.4 **Value Relevance of Financial Derivative Regression Analysis Result**

	FIXED EFFECT	RANDOM EFFECT	MIXED EFFECT ML
CONS	14.13	15.458	21.406
	(0.006)	**(0.003)	***(0.000)
FIDAA	-0.419	-0.493	-1.013
	(0.185)	(0.099)	***(0.000)
FIDLL	0.056	0.018	-0.081
	(0.853)	(0.951)	(0.772)
FIDTIN	0.040	-0.034	0.008
	(0.400)	(0.464)	(0.898)
FIDID	-0.897	-0.795	0.191
	(0.533)	(0.570)	(0.920)
F-Stat/Wald Stat	7.06	53.42	368.10
	***(0.0000)	*** (0.0000)	***(0.0000)
R- Squared	0.3910	0.9172	

VIF TEST = 6.09

Hausman Test
Chi^2 = 2.01, Probability = 0.9186

Test for Fixed Effect Errors = F- test 13.51, Prob > F = ***0.0000

Test for Random Effect Errors = 50.97 (0.0000) ***

*NOTE: (1) Bracket () are P-values; (2) **, ***, Implies Statistical Significance at 5% and 1% Levels Respectively*

Discussion of Findings

The mixed-effect multilevel regression analysis result shows that financial derivative assets (FIDAA) have relevant value by exerting a statistically significant negative effect on share price [Coefficient = –1.0133; p = 0.000] among internationally licensed banks in Nigeria during the period in context. This implies that, holding earnings, book value, derivative liabilities, trading income, and disclosure levels constant, an increase in the fair value of derivative assets corresponds with a decrease in market valuation. In the Ohlson (1995) framework, the finding suggests that the market does not interpret fair-value gains on derivative asset positions as value-enhancing but rather as risk-laden exposures that may increase uncertainty about future abnormal earnings. Derivative assets can rise either because the institution is taking on more speculative positions (Szepanski, 2024; Chernenko & Faulkender, 2011) or because volatility in underlying markets temporarily inflates mark-to-market values (Vatanen, 2025). Investors may discount such gains due to concerns about sustainability.

This outcome aligns with the view that investors in developing markets take a conservative stance toward complex instruments when transparency and risk management quality are hard to verify. Similar findings include Donwa & Edoja (2020) for Nigerian banks; Ahmed, Kilic & Lobo (2006) and Chalmers & Godfrey (2004) for U.S. and Australian banks; and Song, Thomas & Yi (2010) in Asia, showing that derivative asset fair values are negatively priced due to measurement errors, volatility, and valuation uncertainty. Overall, fair-value derivative assets are not consistently viewed as value-enhancing; instead, they signal exposure to volatility, prompting negative weighting in the Ohlson valuation model.

For the second objective, mixed-effects ML regression shows that financial derivative liabilities (FIDLL) have no statistically significant effect on the market value of internationally licensed Nigerian banks. Investors likely perceive FIDLL as a routine part of risk management and hedging, not a value-relevant signal in the Ohlson framework. This aligns with prior evidence: Oyerinde (2014) found similar results for Nigerian banks, citing measurement uncertainty and weak derivative-risk transparency. In the U.S., Ahmed et al. (2006) noted that derivative liability fair values lacked explanatory power for equity prices, as they were viewed as temporary accounting adjustments. Chalmers and Godfrey (2004) in Australia found derivative liabilities generally not value-relevant due to volatility and interpretive difficulties. Overall, FIDLL does not significantly influence market value in environments where derivative disclosure quality and valuation remain uneven.

The findings also show that derivative trading income (FIDTIN) is not value relevant, indicating that fluctuations in realized and unrealized gains from derivative activities do not significantly shape the market valuation of Nigeria's internationally licensed banks. This suggests that investors may treat FIDTIN as volatile, transitory income rather than as a persistent value-relevant component within the Ohlson valuation structure. Consistent with similar earlier literature that have applied the Ohlson (1995) model to fair-value and income-related derivative measures, Nwude and Udeh (2021) found that trading gains and fair-value adjustments from financial instruments are not significantly priced by the market, arguing that such income streams are often discounted because they lack predictability and are heavily influenced by short-term market swings. Devalle, Onali, and Magarini (2010) reported that fair-value gains from financial instruments are not value-relevant for European banks, mainly because investors viewed such earnings as noisy signals with limited forecasting usefulness. Likewise, Barth, Landsman, and

Rendleman (2018) document that valuation models consistently assign weak or insignificant weights to volatile trading-related fair-value income due to concerns about earnings persistence. Overall, these outcomes reinforce the conclusion that FIDTIN contributes insignificantly to investor valuation decisions, as derivative trading gains are perceived as unstable and insufficiently informative about long-term firm value.

For objective four, the study found that derivative-instrument information disclosure (FIDID) does not exert a significant influence on share price (i.e., is not value relevant), indicating that the mere presence or absence of sensitivity-analysis disclosure of derivative risk does not shape how investors value internationally licensed banks in Nigeria. This suggests that the market neither rewards nor penalizes banks for complying with disclosure expectations under IFRS 7, possibly because investors perceive FIDID as a routine compliance requirement rather than a value-relevant informational signal within the Ohlson valuation structure. Uwuigbe et al. (2019) reported a similar outcome that risk-related disclosure indices do not significantly influence market value, noting that investors tend to discount compliance-driven disclosures that lack depth or comparability. Hassan and Power (2009) found that risk-disclosure compliance under IFRS did not significantly affect firm value for UK and Irish listed firms, largely because investors considered such disclosures generic and insufficiently informative for pricing decisions. Likewise, Oliveira, Rodrigues, and Craig (2011) observed that mandatory financial-instrument disclosures for Portuguese banks are not value relevant when estimated within an Ohlson-type valuation model, arguing that the market often views standardized disclosure practices as low-signal events. Collectively, the findings from this study, together with similar earlier findings, reinforce that FIDID, even when presented in line with IFRS-based expectations, provides limited incremental valuation insight and therefore attracts little investor pricing attention.

CONCLUSION AND RECOMMENDATIONS

This study examines the value relevance of financial derivative instruments among listed internationally licensed banks in Nigeria from the perspective of Ohlson (1995) Residual Income Valuation framework and the disclosure architecture established by IFRS 7. Focusing on financial derivative assets, derivative liabilities, derivative trading income, and derivative risk-sensitivity disclosure (FIDID), the investigation evaluates how derivative-related accounting variables shape market valuation as captured by share price. The findings reveal that while derivative assets exhibit a significant negative link with market value, other derivative dimensions to include liabilities, trading income, and disclosure, do not exert statistically significant valuation effects, indicating clear asymmetry in how investors interpret different aspects of derivative activities. In conclusion, the results highlight the dynamic and non-linear nature of market reactions to derivative information, suggesting that conventional assumptions about the uniformly positive or transparent signaling role of derivative reports and disclosures may not hold in real-time situations.

The study makes the following recommendations:

1. Regulators and bank boards should strengthen policies on transparency, risk governance, and strategic justification of derivative asset positions. Banks should provide clearer disclosures on purpose, hedge effectiveness, counterparty risk, and valuation methods to help investors distinguish productive hedging from speculative exposures.

2. Policy efforts should avoid overemphasizing reforms targeted specifically at derivative liabilities; as such interventions are unlikely to influence investor perception or firm valuation.
3. Stakeholders should avoid investing regulatory effort into enhancing or reforming derivative trading income. Attention should shift to performance drivers and disclosure areas where investor responsiveness is stronger and policy action can yield meaningful impact.
4. Banks should avoid dedicating resources to expanding disclosure practices specifically for derivative information. Instead, refocus policy attention on broader governance, profitability, and risk-quality indicators where the market demonstrably reacts.

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