

FINANCIAL PERFORMANCE AND SHARE PRICE VOLATILITY OF SELECTED DEPOSIT MONEY BANKS IN NIGERIA

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Abstract

This study assessed the influence of financial performance on the share price volatility of selected Deposit Money Banks in Nigeria. Specifically, the effect of return on equity, dividend per share and earnings per share on the share price volatility of selected Deposit Money Banks in Nigeria were investigated in this study. Ex post facto research design was adopted in this study. The population of the study is made up of twenty-four (24) deposit money banks on the Nigerian Exchange Group (NGX) while a sample of 13 DMBs was utilized using a purposive sampling technique. The study employed descriptive statistics, cross-sectional dependence test, second generation panel unit root test, variance inflation factor, Kao residual cointegration and dynamic ordinary least squares (DOLS) estimation method to analyse data collected (between 2013 and 2022) through EVIEWS 13 package. Also, the Wald Test was conducted to examine the combined significance effect of the explanatory variables on the explained variable. The study observed that return on equity and dividend per share significantly contribute to the volatility in share prices of the selected DMBs in Nigeria. However, earnings per share was observed to have a negative and insignificant impact on share price volatility. The study concluded that financial performance indicators are the single most significant factor influencing decisions to buy shares as it has a significant effect on share price fluctuations. Therefore, the study recommends among others that market analysts and stock brokers should include key financial performance indicators in their advice to investors/potential customers because financial performance has a statistically significant effect on share price volatility in the Nigerian banking sector.

Key words: Return on equity; earnings per share; dividend per share; market price per share; share price volatility & financial performance indicators.

JEL classification: G32, G35

INTRODUCTION

The responsibility of offering financial services and fostering economic expansion, make the banking sector vital to the Nigerian economy (Jacob, Idaka & Goodwill, 2023). Due to its ability to offer financial services to the public, the banking sector is a significant global component of the financial sector that is vital to economic growth. One cannot overstate the vital role banks play as financial intermediaries in mobilizing and directing capital from surplus to deficit sectors of the economy (Jacob, Idaka & Goodwill, 2023). Fast growth and progress in a modern economy that aspires to be referred to as a developed or emerging economy are contingent upon having a well-articulated banking system (Atseye, Mboto, Ugah, & Okio, 2022). Investors frequently view banks as superior investment options because of their track record and capacity to pay dividends (Lawal, Nurudeen, & Okunola, 2012). However, the industry has experienced significant challenges in recent years, including financial instability, regulatory changes, and economic uncertainty (Central Bank of Nigeria (CBN), 2020).

Financial performance is a serious facet of bank management, as it disturbs the bank's ability to create value for shareholders, manage risk, and maintain financial stability. It is important to remember that an investor would only consider relevant accounting data when assessing a listed company's share price. One of the core goals of financial reporting, according to Beisland (2009), is to give equity investors information that is necessary for determining the worth of the company. Various stakeholders rely their judgments about the performance and standing of a company on the accounting information that the firm provides in its yearly financial reports and accounts. Lawal, Nurudeen, and Okunola (2012) state that a firm's financial reporting, performance, and other factors are issues that influence stock price prediction. Consequently, Athanasoglou, Brissimis, and Delis

(2008) argue that the performance of Deposit Money Banks (DMBs) can influence share price drive in the capital market.

Conversely, investors are understandably worried about the stability of share prices because it has an impact on both their own investment returns and the stock market as a whole. Many people make significant investments in the stock market, but doing so carries risk because share and stock prices can fluctuate quickly (Adil, Usmani, Raza & Ali, 2016). Due of this, predicting stock prices is a difficult issue for which numerous scholars are working, despite the fact that economists, analysts, and investors have developed a number of theories and methods by which investors might profitably predict movements in share prices. Attempting to estimate the future value of business stock or other financial instruments traded on any capital market is the process of predicting share price movement, which is dependent on a variety of factors (Lavanya, Debeeru & Sharanya, 2020).

According to Santoso and Astuti (2018), stock prices might reveal a company's performance. When a business's stock price rises, stockholders may jump at the chance to purchase shares because they anticipate receiving dividend payments; conversely, a consistent decline in stock prices suggests that the business is not operating profitably. The value of stock prices encourages investors in the stock market since they may be used to establish if a concern is profitable or not as well as to measure the rewards accruing to different stakeholders (Osundina, Jayeoba & Olayinka, 2016 as cited in Daramola & Siyanbola, 2023).

Despite the critical role deposit money banks play in Nigeria's financial system, the volatility of their share prices on the Nigerian Exchange Group (NGX) has become a pressing concern for investors, regulators, and bank managers. The fluctuation in share prices can be attributed to various factors, including financial performance, macroeconomic variables, and industry-specific factors. However, the specific relationships between these factors and share price volatility in the banking industry in Nigeria is still uncertain. The performance of shareholders' stocks, as determined by the NGX Banking Index, has been extremely volatile over the past ten years (2013 to 2022). The NGX Banking Index fell from 446.32 in June 2013 to 216.4 in January 2016. Additionally, the banking index increased from 287.24 in June 2016 to 405.03 in June 2017. In January 2016 and March 2020, the NGX Banking Index fell as low as 216.4 and 230.89, respectively. The worth of shareholders' wealth is reflected in the different fluctuations in the NGX Banking Index. The NGX Banking Index peaked in January 2018 at 589.34; however, the issue of excessive volatility in shareholders' wealth is still a worry, particularly for clients' investment choices and portfolio investors (NGX Share Index, 2024).

There have been various studies on financial performance and share price volatility with mixed conclusions. While some (Daramola & Siyanbola, 2023; Jacob, Idaka & Goodwill, 2023; Adeniyi, 2023; Wang, Fu & Luo, 2013) believe that the financial performance has a positive and significant association with share price fluctuation, others (Jacob, Idaka & Goodwill, 2023; Uniamikogbo, Ezennwa & Bennee, 2018) believe that there is no meaningful connection at all between financial performance and share price volatility. Also, accounting performance variables have been employed as stand-in variables for market values of companies' shares over time by evaluating historical data, but the question of the reliability of these performance variables in predicting share price is an issue of concern. Furthermore, very few studies used return on equity (ROE) as a measure of financial performance indicators to explain share price behaviour in Nigerian Exchange Group (NGX). Due to these gaps, a follow-up investigation was required on the effect of financial performance (return on equity, dividend per share, and earning per share) on share price volatility in the selected DMBs in Nigeria.

CONCEPTUAL REVIEW

FINANCIAL PERFORMANCE

According to Tungo (2014), a firm's financial performance can be measured objectively by looking at how efficiently it utilizes its primary mode of business assets to generate revenue.

Comparing the long-term financial standing of several businesses, sectors, or industries is another use for it. Financial performance can be measured in a variety of ways, but they must all be considered together. Line items like operating income, operating revenue, or cash flow from operations can be used to calculate total unit sales. To put it briefly, financial performance is the outcome of an entity's or business's financial operations during a specific time frame, usually assessed using financial statements like the cash flow, balance sheet and income statements. It offers perceptions into the profitability, effectiveness and solvency of a business (Tungo, 2014).

Financial performance indicators (Revenue Growth, Profitability “(Gross Profit Margin, Operating Profit Margin, Net Profit Margin, Return on Investment, Return on Equity, Cash Flow Generation, Debt-to-Equity Ratio, Current Ratio, Asset Turnover, Earnings Per Share, Price-to-Earnings Ratio (P/E Ratio) and Dividend Per Share)” are economic measures that safeguard investors' interests in corporate organizations and serve as a guide for their financial decisions. Returns, security, safety net, cyclical financial demands, or the desire for a majority share in the business could all have an impact on these investment decisions (Pettinger, 2019). For regular investors, mutual fund managers, foreign institutional investors, and anybody else participating in the equities market for whatever purpose, financial performance indicators are essential tools for making decisions. According to Skousen et al. (2007), it allows an investor to do a comprehensive financial study of all available options before deciding on the asset that best fits his investing style.

According to Akinmade et al. (2020), it is also defined “as a fundamental statistic that securities analysts use to forecast the direction of the market, including investment advisory sentiment, volume of stock trading, direction of interest rates, and buying or selling by corporate insiders.”

RETURN ON EQUITY (ROE)

Return on Equity (ROE) reflects how effectively a company utilises the capital invested by its shareholders. It is a key financial ratio that evaluates profitability by relating net income to shareholders' equity (Wang, Fu & Luo, 2013). ROE is widely regarded as an essential tool for analysts, investors, and company executives in assessing a firm's financial health and earnings capacity. A high ROE suggests that the business is efficiently generating income from its equity base, indicating strong management and profitability. On the other hand, a low ROE may signal underlying inefficiencies or weak financial stewardship.

DIVIDEND PER SHARE (DPS)

This is the dividend amount divided by the total number of outstanding shares for ordinary shareholders for a given period (Mwila & Meena, 2018). DPS is a financial performance indicator. It calculates the dividend a business pays each share of common stock to its owners. DPS is calculated by dividing the “total amount of dividends paid out by the company by the total number of outstanding shares” (Mwila & Meena, 2018). A consistently high DPS can indicate a business's financial health and stability, while a falling DPS may raise apprehensions about its financial performance.

EARNINGS PER SHARE (EPS)

According to IAS 33, EPS is determined by dividing the net income or loss available to ordinary shareholders by the weighted average number of ordinary shares in circulation during the reporting period. In cases of liquidation, it indicates the amount each shareholder would receive. EPS serves as a measure of a firm's profitability, reflecting the portion of profit allocated to each outstanding share (Menaje, 2012). The formula for this is to divide a company's net income by the total number of common shares that have been issued. According to Corporate Finance Institute (CFI). (2024), EPS is available in two main types which are “Basic EPS, which is the predominant

form of EPS, determined by dividing the establishment's net income by the total number of outstanding shares; Diluted EPS which considers the potential influence of convertible securities, such as options and warrants, on the company's earnings per share".

SHARE PRICE VOLATILITY

A firm's share price, which is the cost of a single share among numerous tradable stocks of a company, derivative, or other financial instrument, affects the firm's worth (Mohtadi & Agarwal, 2004). When there is an excess of shares and minimal demand resulting from the company's suboptimal performance, the share price will decline (Callahan & Iyer, as cited in Onibiyo et al., 2022). In a similar vein, Pech et al. (2015) contend that share prices are set by the market, which is the point at which supply from sellers and demand from buyers collide.

Share price volatility refers to the fluctuations in the market price of a firm's shares over a given period (Corporate Finance Institute (CFI), 2022). It is a measure of the uncertainty or risk associated with the share's value (Mgbame & Ikhatua, 2013). Share Price Volatility is a measure of the rise and fall in share prices resulting from impulses or unexpected of economic events (Malkiel, 2003 as cited in Gupta & Mishra, 2024). Volatility in share prices demonstrates risks which induces investors to be rational among investment options. Rationally, the higher the volatility (indicating higher risk), then, the higher the returns on investment.

High volatility in market price per share can indicate higher risk, uncertainty about the company's future performance, market sentiment and investor emotions, economic or industry-specific factors and liquidity issues (Gupta & Mishra, 2024). Low volatility, on the other hand, can indicate stability and consistency in the company's performance, lower risk, strong fundamentals, investor confidence and a stable market environment. Understanding market price per share volatility is essential for stockholders, analysts, and dealers to make informed decisions about buying, selling, or holding shares. It can also help in: risk management, portfolio diversification, option pricing, trading strategies and performance evaluation.

THEORETICAL FRAMEWORK

The study is anchored on the Ohlson Equity Valuation Model Theory, also known as the Ohlson Clean Surplus Theory. It is a valuation model conceived by Professor James Ohlson and published in 1995. The Ohlson model (1995) posits that market value is determined by book values and earnings, which constitute the two fundamental components of a company's worth (Rocío, Arturo, & Humberto, 2007). This idea suggests that a company's market value is dictated by figures in the financial statements (Akileng, 2013). Shih-Cheng, Jiun-Lin, and Ming-Shann (2014) observed that the Ohlson model provides a more accurate forecast of future market values. This model establishes a linear connection between a firm's value and its earnings and book value per share. It analyses the influence of accounting figures such as earnings, changes in earnings, and book value on share prices. Essentially, it explores how financial information shapes the market value of equity. In particular, the model assesses the impact of book value per share (BVPS) on stock performance. Historically, both profitability and book value have played a significant role in determining the relevance of financial information to firm valuation (Ohlson, 1995). Numerous researchers, including Barth et al. (1998), Habbib and Azim (2008), Vijitha and Nimalathasan (2014), Olowolaju and Ogunsan (2016), Ngoc et al. (2018), and Ali et al. (2018), have applied Ohlson's theoretical foundation in their empirical work. Holthausen and Watts (2001) disputed the theory since it relies on a linear valuation model instead of a non-linear valuation model. Due to its association of accounting variables with share market value and its application in studies by Vijitha & Nimalathasa (2014), Ngoc, Manh & Thi (2018), Ali, Maher & Abdelfettah (2018), and Rosikah, Dwi, Dzulfikri, Muh & Miswa (2018), the Ohlson Clean Surplus theory served as the theoretical framework for this investigation.

EMPIRICAL REVIEW

Wang, Fu, and Luo (2013) explored how accounting data influences stock price reactions among companies listed on the Shanghai Stock Exchange. Their findings indicated that Return on Equity (ROE) and Earnings Per Share (EPS) had a significant positive relationship with stock prices, while metrics such as the liquidity ratio, inventory turnover, and the price-to-earnings (P/E) ratio did not demonstrate any meaningful connection. Similarly, Mgbase and Ikhatua (2013) studied stock price volatility within Nigeria's capital market in relation to accounting indicators. Their results showed that dividend per share (DPS), book value, and EPS were key factors linked to fluctuations in stock prices.

In the same context, Olowolaju and Ogunsan (2016) assessed the usefulness of financial data in explaining share prices of publicly quoted Nigerian deposit money banks. Although EPS exhibited a positive association, it was not statistically significant; in contrast, both DPS and book value per share (BVPS) had a strong and positive effect on market value per share. Uniamikogbo, Ezennwa, and Bennee (2018) investigated the effect of accounting data on Nigerian stock market volatility using a cross-sectional approach, with a sample of 22 listed firms from 2013 to 2017. The analysis revealed that BVPS positively and significantly influenced stock prices, while EPS and DPS had negative yet significant effects.

Another study by Anthony, Adefemi, Mary, and Grace (2018) examined 15 listed banks in Nigeria between 2000 and 2014 to assess the impact of EPS and DPS on stock values. The outcome suggested that EPS did not have a significant effect on share prices. Conversely, Amahalu, Abiahu, Obi, and Nweze (2018) found that DPS, ROE, and EPS collectively influenced the market share price of listed companies in Nigeria from 2010 to 2016.

Further evidence was provided by Onibiyo et al. (2022), who evaluated the role of financial performance indicators such as net interest margin, free cash flow, and economic value added on the share prices of 13 listed Nigerian commercial banks over the period 2010 to 2020. Using panel OLS regression, they found that free cash flow had a significant positive impact, whereas both net interest margin and economic value added negatively influenced share prices.

Daramola and Siyanbola (2023) focused on ten Nigerian banks from 2010 to 2019, establishing that accounting figures had a significant effect on share prices, with firm size and age acting as moderating factors. Similarly, Jacob, Idaka, and Goodwill (2023) used an ex-post facto approach to examine whether accounting performance measures such as ROE, ROA, EPS, and P/E ratio could predict share price behaviour. Their study confirmed a long-term relationship between these variables and market values.

Finally, Adeniyi (2023) analysed the effect of EPS, DPS, and ROE on the share prices of selected consumer goods manufacturing companies listed on the Nigerian Exchange Group. Through multiple regression using the OLS technique, the findings showed that although DPS had a positive effect, it was not statistically significant. In contrast, ROE exhibited a significant and positive relationship with share price movements.

RESEARCH METHODS

Given that the data were sourced from secondary materials like the annual reports of banks and the yearly publications of the Nigerian Exchange Group, this study adopted an ex post facto research design. A purposive sampling method was employed to select 13 deposit money banks out of the 24 listed on the Nigerian Exchange Group (NGX) as of December 31, 2022. The selected banks were those with accessible financial statements either on their official websites or through the NGX platform, covering the period from 2013 to 2022.

MEASUREMENT OF VARIABLES

In this study, share price volatility serves as the dependent variable, while the independent variables include key financial performance indicators such as return on equity, dividend per share, and earnings per share. To mitigate the risk of specification bias, firm size is incorporated as a control variable, with market capitalization used as its proxy. Based on foregoing, Table 3.1 presents the description of the aforementioned variables using the measurement of volatility as stated by Gujarati and Porter (2008).

Table 3.1: - Variable Description Summary

Dependent Variable:	Proxy/Measure	Definition
Share price volatility (<i>SPV</i>)	Variance of the share price using the mean-adjusted relative change.	$SPV_{i,t} = [\Delta \ln(SP_{it}) - \bar{\Delta \ln(SP_{it})}]^2$ $\Delta = \text{Difference operator}$ $\ln(SP_{it}) = \text{Natural logarithm of share price}$ $\frac{\Delta \ln(SP_{it})}{\Delta \ln(SP_{it})} = \text{Relative change in share price}$ $\frac{\Delta \ln(SP_{it})}{\Delta \ln(SP_{it})} = \text{Mean-adjusted relative change in share price}$
Independent Variable:	Proxy/Measure	Definition
Financial performance	(a) Return on equity (<i>ROE</i>)	$ROE_{i,t} = \frac{PAT}{\text{Total equity shares in issue}}$
	(b) Dividend per share (<i>DPS</i>)	$DPS_{i,t} = \frac{\text{Total dividend}}{\text{No. of issued ordinary share}}$
	(c) Earnings per share (<i>EPS</i>)	$EPS_{i,t} = \frac{EATSH}{\text{No. of share issued}}$ $EATSH = \text{Earnings available to shareholders}$
Control Variable	Proxy/Measure	Definition
Firm's Size (<i>FSZ</i>)	Market capitalization	The sum of a company's outstanding shares times the share's current market price

Source: Authors' Compilation (2024).

MODEL SPECIFICATION

The model of the study was adapted from the work of Adeniyi (2023) and it is stated below:

$$SPV_{it} = \beta_0 + \beta_1 ROE_{it} + \beta_2 DPS_{it} + \beta_3 EPS_{it} + \beta_4 FSZ_{it} + \varepsilon_{it}$$

Where:

SPV = share price volatility

EPS = Earnings per share

DPS = Dividend per share

ROE = Return on equity

FSZ = firm size

β_0 = Intercept Coefficient

$\beta_1, \beta_2, \beta_3, \beta_4$ = The slope of coefficient

t = Time dimension of the variant

i = (1, 2, . . . 13) is the given deposit money banks measurement of Variables

The *a priori* expectation β_1

The *a priori* expectations are defined as follows:

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0.$$

Following the above statements, the policy variables (financial performance measures) may exert positive or negative influence on share price volatility depending on the prevailing market or economic conditions.

DATA ANALYSIS AND RESULTS

DESCRIPTIVE ANALYSIS

The summary statistics of the variables being examined in the study are showed herein. The variables include share price volatility (*SPV*), return on equity (*ROE*), dividend per share (*DPS*), earnings per share (*EPS*) and firm size (*FSZ*).

Table 4.1-: Summary Statistics
Sample Structure-: $N = 13$, $T = 10$ (2013 – 2022)

Statistics	Variables				
	SPV	ROE	DPS	EPS	FSZ
Obs.	130	130	130	130	130
Mean	0.388	12.718	0.705	1.963	16.774
Maximum	7.444	34.500	4.000	7.780	24.088
Minimum	7.30E-06	-56.689	0.000	-1.276	10.488
Std. Dev.	1.071	10.652	1.024	2.186	1.786
Skewness	4.702	-2.056	1.525	1.178	-1.289
Kurtosis	27.087	15.635	4.029	3.270	12.798

Source: Authors' Computation (2024).

Table 4.1 shown that with the exception of *ROE* and *FSZ*, all other panel variables, including the share price volatility, have their standard deviations above their corresponding mean values. The foregoing statistical account submits that the variables exhibit high variability in their distributions, thus, are likely to have low forecasting capability across the selected deposit money banks. More importantly, the high variability observed in share prices of the selected entities demonstrates the inherent unpredictability such that the variance of the share price varies overtime.

On the contrary, *ROE* and *FSZ* exhibit low dispersion having the standard deviations below the corresponding mean values. The coefficients of skewness indicate the *SPV*, *DPS* and *EPS* are positively skewed. However, *ROE* and *FSZ* appear to be negatively skewed. Meanwhile, all the panel variables appear to be peaked (leptokurtic) in relation to a normal distribution with kurtosis coefficients above the acceptable point of 3.

PRE-DIAGNOSTICS

MULTI-COLLINEARITY TEST

To test for the existence or otherwise of multicollinearity among the independent variables, the variance inflation factor (VIF) was utilized. The Variance Inflation Factor (VIF) indicates the degree to which multicollinearity among explanatory variables inflates the variance of the estimated coefficients. In simpler terms, VIF helps to identify whether there is a presence of multicollinearity among the independent variables used in a model.

Table 4.2 presents the Variance Inflation Factors (VIFs) and their corresponding tolerance values (calculated as $1/VIF$) for the explanatory variables. Typically, VIF values below the threshold of 10 suggest that multicollinearity is not a concern among the variables. In this study, all VIF values fall below 10, indicating that the independent variables in the model are not strongly correlated and do not exhibit signs of multicollinearity.

Table 4.2-: Variance Inflation Factor

Variable	Response variable: SPV	
	VIF	Tolerance
DPS	8.40	0.119
EPS	7.22	0.138
ROE	1.79	0.557
FSZ	1.04	0.960
Mean VIF	4.610	.

Source: Authors' Computation (2024).

CROSS-SECTIONAL DEPENDENCE TESTS

The cross-sectional dependence (CD) test was used to determine whether or not the chosen DMBs had interdependence, or undiscovered shared causes. So, the Pesaran CD test type was used for the test based on the null hypothesis of no cross-sectional dependence among the selected DMBs because the number of the selected entities ($N = 13$) is greater than the time period ($T = 10$), that is, $T < N$.

Table 4.3: Cross-section Dependence (CD) Test Results

Sample Structure-: $N = 13, T = 10$ (2013 – 2022)

Test	CD Statistic	p-value
Pesaran CD	8.9644	0.0000

Source: Authors' Computation (2024)

The CD test results utilising the Pesaran CD testing protocol are shown in Table 4.3. According to the significant test statistics of the CD test, as indicated in table 4.3, there seems to be cross-sectional reliance (interdependence) among the chosen deposit money banks. The null hypothesis, according to which there is no cross-sectional dependence, is thus disproved.

PANEL UNIT ROOT TESTS

To determine the stationarity of the panel variables under study, panel unit root testing was conducted. The results of the Cross-Sectional Dependence (CD) test revealed the presence of cross-sectional dependence among the selected deposit money banks (DMBs). As a result, a second-generation panel unit root test, which accounts for this dependence was deemed appropriate. Accordingly, the Cross-sectionally Augmented Im, Pesaran, and Shin (CIPS) test developed by Pesaran (2007) was employed. This method, an extension of the original IPS test, adjusts for cross-sectional dependence in panel data. The CIPS test produced both the test statistics and their corresponding p-values.

Table 4.4-: SG Panel Unit Root Test Results

Sample-: $N = 13, T = 10$ (2013 – 2022)

Variable	CIPS Stat.		
	Level	Δ	$I(d)$
SPV	-2.9125	-3.1070***	I(1)
ROE	-2.2265	-4.8038***	I(1)
DPS	-1.9798	-2.1701***	I(1)
EPS	-1.6045	-2.2816***	I(1)
FSZ	-1.0684	-1.8139***	I(1)

Source: Authors' Computation (2024)

Note: ***, ** and * indicate statistical significance at 0.01 and 0.1 levels, respectively. Δ = first difference operator

The panel unit test results employing the second-generation testing procedure's CIPS test are shown in Table 4.4. The panel variables are all clearly first-difference-form stationary. According to the aforementioned, every variable under consideration adheres to I(1) processes. That is,

according to substantial CIPS test statistics at first-difference data transformation, the variables are integrated of order one.

PANEL COINTEGRATION TEST

Given that the variables were found to be stationary at their first differences using the CIPS unit root testing approach, it became necessary to carry out a cointegration test to determine whether a long-term relationship or linear combination exists among the panel variables in the study. Accordingly, the Kao cointegration test was adopted. This method is grounded in the Engle-Granger (EG) single-equation framework for cointegration testing. Since the EG approach incorporates the Augmented Dickey-Fuller (ADF) unit root procedure, the Kao test similarly relies on the ADF methodology in assessing cointegration.

Table 4.5-: Kao Residual Co-Integration Test Result
Sample-: $N = 13$, $T = 10$ (2013 – 2022)

	t-Statistic	Prob.
ADF	-3.4300	0.0003
Residual variance	1.3859	
HAC variance	1.0699	

Source: Authors' Computation (2024).

The table 4.5 shows the co-integration test result using Kao residual test procedure. Evidently, the ADF test (stat. = -3.4300, $p = 0.0003$) appears to be significant and thus, signifying that there is presence of long run connection among the variable under investigation. In other words, test result indicates that share price volatility (*SPV*), *ROE*, *DPS*, *EPS* and *FSZ* converge in the long-run, thus do not exhibit a spurious relationship.

MODEL ESTIMATION RESULT

The study used panel cointegrating regression estimate techniques, such as "fully-modified ordinary least squares (FMOLS) and dynamic ordinary least squares (DOLS)," in response to the findings of the pre-diagnostic tests. The adjusted R-squared values determine which of the aforementioned competing estimating methods should be used (greater adjusted R-squared value for the estimator). However, long-term estimates are provided by the estimation.

Based on the findings presented in Table 4.6, it is evident that the DOLS estimator is thought to be more effective than the other two competing estimate techniques, as seen by its higher adjusted R-squared value of 0.7568. Therefore, for inferences, the DOLS estimate approach is chosen. Consequently, the following are the significance tests for each individual coefficient.

Table 4.6-: Panel Cointegration Estimation Results
Sample-: $N = 13$, $T = 10$ (2013 – 2022)
Response Variable: SPV

Estimation Method:	FMOLS	DOLS
Independent Variable		
<i>ROE</i>	-0.0505 (0.2400)	0.5211** (0.0178)
<i>DPS</i>	-1.8318*** (0.0001)	8.6758** (0.0245)
<i>EPS</i>	0.9029*** (0.0004)	-1.3164 (0.5158)
<i>FSZ</i>	-0.0786 (0.1483)	0.7866*** (0.0029)
Additional Tests and Statistics		
Explanatory Influence		
R-squared	0.3810	0.8699
Adjusted R-squared	0.3031	0.7568
Post Diagnostics		
Normality Test		
Jarque-Bera Stat	4.8249 (0.0896)	5.1515 (0.0761)
Autocorrelation Test		
Ljung-Box Q-stat.	27.014 (0.001)	13.977 (0.082)

Source: Authors' Computation (2024).

Note: *** & ** denote statistical significance at 0.01 and 0.05. Meanwhile, values in parentheses are *p*-values.

INDIVIDUAL SIGNIFICANCE TESTS

As revealed in table 4.6, changes in each of (*ROE*, $\beta_1 = 0.5211$, $p = 0.0178 < 0.05$) and (*DPS*, $\beta_2 = 8.6758$, $p = 0.0245 < 0.05$) exert positive and statistically substantial effect on share price volatility (*SPV*) of the selected deposit money banks in Nigeria. However, changes in earnings per share (*EPS*, $\beta_3 = -1.3164$, $p = 0.5158 > 0.1$) yields negative and statistically insignificant effect on share price volatility. Evidently, in terms of magnitude, share price volatility responds more to dividend per share compared to other measures of financial performance. Meanwhile, changes in firm size (*FSZ*, $\beta_4 = 0.7866$, $p = 0.0029 < 0.01$) employ positive and substantial effect across the selected DMBs in Nigeria.

OVERALL SIGNIFICANCE TEST (WALD TEST)

This test is conducted to study the combined significance effect of the explanatory variables on the explained variable (*SPV*) using Wald test.

Table 4.7-: Wald Test Result
Sample-: $N = 13$, $T = 10$ (2013 – 2022)

Test Statistics	<i>p</i> -value
F-statistic	10.4590 0.0004
Chi-square	41.8360 0.0000

Source: Authors' Computation (2024).

As shown in Table 4.7 above presents the outcome of Wald test. Both the F-distribution (statistic = 10.459, $p = 0.0004$) and the X^2 (statistic = 41.836, $p = 0.0000$) indicate that the explanatory variables (*ROE*, *DPS*, *EPS* and *FSZ*) are as a group significant in explaining the response variable (share price volatility) since their corresponding *p*-values are less than 0.01. Thus, the selected financial performance measures are jointly significant predictors of share price volatility (*SPV*).

MODEL POST DIAGNOSTIC TESTS

Principally, the post diagnostic tests include normality test and serial correlation test. As revealed in Table 4.6, the insignificant test of normality (using Jarque-Bera statistic = 5.1515, $p = 0.0761$) and serial correlation test (using the Ljung-Box Q-statistic = 13.977, $p = 0.082$) suggests that the estimates obtained are efficient and valid for inferences.

SUMMARY OF HYPOTHESES TESTING RESULTS

A description of the estimated model's tests of significance is included in the table that follows the estimation result.

Table 4.8 summarizes the results of the hypothesis tests obtained from the model estimation outcomes. The table presents the significance test results for the hypotheses.

Table 4.8:- Summary of Tests of Hypotheses Result

Financial performance and share price volatility of the selected DMBs in Nigeria		
	Null Hypothesis (H_0)	Stat. Significance
1	"Return on equity does not significantly affects share price volatility of selected Deposit Money Banks in Nigeria".	+ Significant ($p < 0.05$)
2	"Dividend per share has no significant effect on share price volatility of selected Deposit Money Banks in Nigeria".	+ Significant ($p < 0.05$)
3	"There is no significant effect of Earning per share on share price volatility of selected deposit money banks in Nigeria"	- Insignificant ($p > 0.1$)

Source: Authors' Compilation (2024).

DISCUSSION OF FINDINGS

The panel cointegration regression method was utilized to examine the connection between financial performance and share price volatility of selected DMBs in Nigeria. The empirical analysis showed that ROE and DPS had positive and significant effects on share price volatility of deposit money banks in Nigeria. The aforementioned indicated that ROE and DPS substantially influence the volatility and unpredictability of share prices in the DMBs. The findings validated those of Wang, Fu, and Luo (2013); Olowolaju and Ogunsan (2016); and Jacob, Idaka, and Goodwill (2023). Nonetheless, earnings per share exhibited a negative and small impact on share price volatility.

This contrasts with the findings of Adeniyi (2023), which indicated that earnings per share significantly and positively affect share price movement. Nevertheless, the findings align with those of Anthony, Adefemi, Mary, and Grace (2018).

CONCLUSION AND RECOMMENDATIONS

In light of the findings of the empirical analysis, two significant conclusions have been made. First, the study discovered that individual positive and significant effects of ROE and DPS on share price volatility were observed in DMBs. While EPS was noted to have an adverse and inconsequential influence on share price volatility. Thus, it can be said that a variety of these aspects are considered by analysts and investors before deciding to purchase shares. Nevertheless, the second vital finding is that the combined influence of the main financial performance indicators had a considerable effect on share price volatility.

This leads to the conclusion that financial performance indicators are the single most significant factor influencing decisions to buy shares. Therefore, an investor must do a thorough financial analysis of all available investment possibilities before making an investment in the assets that best suit their investing appetite. The findings suggest that investors and regulators should pay

attention to financial performance metrics and bank-specific factors when assessing share price volatility in the Nigerian banking industry.

The study therefore recommended that:

- i. It is imperative for bank managers to enhance their capacity to yield more returns on the investment made by shareholders by focusing on improving financial performance in order to reduce share price volatility in Nigerian deposit money banks.
- ii. To draw in additional investors, managers should examine their dividend policy and make sure that dividends are paid out steadily and consistently. This will lessen conjectures about increased dividend payments and how they would affect the volatility of listed deposit money institutions' share prices.
- iii. Investors should consider financial performance indicators and bank-specific factors when making investment decisions in the Nigerian banking industry.
- iv. Regulators of the Nigerian deposit money banks should monitor closely to ensure financial performance indicators as published by these banks are not magnified to influence share price volatility. This would ensure financial stability in the banking industry.

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