

DIVERSIFICATION AND FINANCIAL PERFORMANCE OF QUOTED COMMERCIAL BANKS IN NIGERIA

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Abstract: This study examined the nexus between diversification and financial performance of quoted commercial banks in Nigeria. Diversification was measured with investment in debt securities, investment in equity securities and investment in subsidiaries while Return on Assets was used as a proxy for financial performance. Three hypotheses were formulated and statistically tested at 5 per cent level of significance. Thirteen (13) quoted commercial banks constituted the sample size of this study between 2009 and 2022. *Ex-Post facto* research design was adopted while secondary data were extracted from the annual reports and accounts of the sampled banks and were analysed using E-Views 10 statistical software. The study employed descriptive statistics and inferential statistics using Pearson correlation and Panel Least Square (PLS) regression analysis. Findings from the empirical analysis showed that investment in debt securities, investment in equity securities and investment in subsidiaries have a significant positive relationship with return on assets of quoted commercial banks in Nigeria at 5 per cent level of significance respectively. It was recommended inter alia that commercial banks should expound their diversification techniques so as to adequately manage the financial risks resulting from the increased financial innovations in the banking sector. Also, the banking institution should explore the use of derivatives to mitigate the financial asset risks.

Keywords: Investment in Debt Securities, Investment in Equity Securities, Investment in Subsidiaries, Return On Assets

Background of the Study

In the recent decade both macro and micro finance institutions have emerged in the banking industry limiting chances of survival to non performing institutions. The finance managers are therefore under pressure from every direction to find the best strategy of raising returns while minimizing losses or risks to improve performance. Poor bank performance may lead to banking failure and crisis, which have negative consequence on the economic growth. Managers tend to diversify their business to get more benefits from the current market with minimum risk (Amahalu & Osonwa, 2023). Globalization provides an opportunity to expand their business across the border for profit maximization. Thus, risk diversification strategy becomes important for the expansion and growth of firms in competitive and dynamic environments. The objective of diversification is to increase profitability, market share, growth opportunity, risk reduction, and the need to use human and financial resources efficiently (Okudo & Amahalu, 2023). Changes in economic or industrial conditions force management to diversify their business. Diversification also helps firms to explore different markets. Investors are generally risk averse and will do anything within their power to minimize risk without affecting the level of return that they can receive from their investment. One of the ways to achieve this is by diversifying the investment portfolio into many assets' classes such as stocks, bonds and real estate. Individual investors approach the markets from a very different perspective from institutions. Due to the size of an individual investor's asset pool, he or she may not be able to tolerate short-term fluctuations in the stock market. One way to address this issue is through diversification.

Financial performance influences investment decisions and is therefore significant in the determination of firm value and resource allocation in capital markets. To meet challenges and survive in the markets, firms make diversification decisions. Management of the firms decide whether to go for related or unrelated diversification. If firms opt for related diversification, that provides good output and reduces total risk. However, if management goes for unrelated diversification, it may have a negative impact on firm value (Ezechukwu & Amahalu, 2020). However, firms may engage in expanding its product line and activities to different sectors where environmental uncertainty is reduced and, profitability is higher, such that a company may confirm its survival which will make its cash flow more reliable.

Statement of the Problem

Corporate diversification and firm performance have attracted much attention from scholars and investors in the past few decades yet most empirical works on corporate diversification have been concentrated on few developed countries such as China, U.S., Germany and U.K. while studies in the context of developing nation such as Nigeria are scarce. Despite several attempts however, the issue to establish a consistent and clear relationship between patterns of diversification and performance are inconclusive with conflicting results reported from some of the investigations (Amahalu & Ezechukwu, 2019; Ranka, Vladimir, & Dragan, 2017) found that more diversified insurers have better financial performance. Mukamana and Mulyungi (2019) documented a significant negative relationship between diversification and financial performance., while the study by Ferreira, Zanini and Alves (2019); Amahalu, Okoye and Nnadi (2023) exerted a non-significant positive relationship between diversification and financial performance. These conflicting results paved way for a gap in knowledge which this study tends to fill.

Objectives of the Study

The main objective of this study is to determine the relationship between diversification and financial performance of quoted commercial banks in Nigeria.

The specific objectives of this study were to:

- i. Ascertain the relationship between investment in debt securities and return on assets of quoted commercial banks in Nigeria.
- ii. Evaluate the relationship between investment in equity securities and return on assets of quoted commercial banks in Nigeria.
- iii. Determine the relationship between investment in subsidiaries and return on assets of quoted commercial banks in Nigeria.

Research Hypotheses

Based on the objectives of this study, the following null hypotheses guided this study:

H₀₁: Investment in debt securities has no significant relationship with return on assets of quoted commercial banks in Nigeria

H₀₂: Investment in equity securities has no significant relationship with return on assets of quoted commercial banks in Nigeria

H₀₃: Investment in subsidiaries has no significant relationship with return on assets of quoted commercial banks in Nigeria

Conceptual Review

Diversification

Diversification is a technique of allocating portfolio or capital to a mix of different investments. The ultimate goal of the diversification is to reduce the volatility of the portfolio by offsetting the losses of one asset class by the gains of another asset class. A phrase commonly associated with diversification is “*Do not put all your eggs in one basket*”. Having eggs in multiple baskets mitigates risk as if one basket breaks, not all eggs are lost (Okudo & Ndubuisi, 2021). Diversification is the process of allocating capital in a way that reduces the exposure to any one particular asset or risk. A common path towards diversification is to reduce risk or volatility by investing in a variety of assets (Amahalu & Ezechukwu, 2020).

Investment in Debt Securities

A debt security is an investment in bonds issued by the government or a corporation. A bond is a debt security. When an investor buys a corporate bond, he is essentially loaning the corporation money, and he has the right to be repaid the principal and interest on the bond (Thune, 2019; Okudo, Amahalu & Oshiole, 2023). Debt security refers to a debt instrument, such as a government bond, corporate bond, certificate of deposit (CD), municipal bond or preferred stock, that can be bought or sold between two parties and has basic terms defined, such as notional amount (amount borrowed), interest rate, and maturity and renewal date (Amahalu, Agbionu & Obi, 2017). It also includes collateralized securities, such as collateralized debt obligations (CDOs), collateralized mortgage obligations (CMOs), mortgage-backed securities and zero-coupon securities.

Investment in Equity Securities

An equity security is an investment in stock issued by another company. The accounting for an investment in an equity security is determined by the amount of control of and influence over operating decisions the company purchasing the stock has over the company issuing the stock. Equity securities are stock (shares) that represents ownership of a firm (Amahalu & Okudo, 2023). Equity securities usually provide steady income as dividends but may fluctuate significantly in their market value with the ups and downs in the economic cycle and the fortunes of the issuing firm. Shareholders' equity (or stockholders' equity, shareholders' funds or shareholders' capital) represents the equity of a company as divided among shareholders of common or preferred stock (Amahalu, Obi, Abiahu, & Ezechukwu, 2017). An equity investment generally refers to the buying and holding of shares of stock on a stock market by individuals and firms in anticipation of income from dividends and capital gains.

Investment in Subsidiaries

In the corporate world, a subsidiary is a company that belongs to another company, which is usually referred to as the parent company or the holding company. The parent holds a controlling interest in the subsidiary company, meaning it has or controls more than half of its stock. In cases where a subsidiary is 100% owned by another firm, the subsidiary is referred to as a wholly owned subsidiary. A parent company buys or establishes a subsidiary to provide the parent with specific synergies, such as increased tax benefits, diversified risk, or assets in the form of earnings, equipment, or property. Still, subsidiaries are separate and distinct legal entities from their parent companies, which reflects in the independence of their liabilities, taxation, and governance (Amahalu & Okudo, 2023). If a parent company owns a subsidiary in a foreign land, the subsidiary must follow the laws of the country where it is incorporated and operates (Amahalu, Abiahu, Obi, & Okika 2016).

Financial Performance

Performance refers to the accomplishment of a given task measured against preset standards of accuracy, completeness, cost, and speed. In other words, performance to the degree to which an achievement is being or has been accomplished (Amahalu & Ezechukwu, 2020). Financial performance refers to the act of performing financial activity. In broader sense, financial performance refers to the degree to which financial objectives being or has been accomplished. It is the process of measuring the results of a firm's policies and operations in monetary terms.

Return on Assets (ROA)

Return on assets (ROA) is a financial ratio that shows the percentage of profit a company earns in relation to its overall resources. It is commonly defined as net income divided by total **assets**. Net income is derived from the income statement of the company and is the profit after taxes (Marshall, 2019). Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage (Ezechukwu & Amahalu, 2019). Return on assets (ROA), in basic terms, tells you what earnings were generated from invested capital (assets).

The Formula for Return on Assets (ROA):

$$\text{Return on Assets (ROA)} = \frac{\text{Net Income}}{\text{Total Assets}}$$

Theoretical Exposition

Investment in Debt Securities and Financial Performance

Leveraged businesses have additional capital available to finance its operations and expansions compared to an unleveraged business solely dependent on equity (Omabu, Okoye, Pius & Amahalu, 2021). In financial markets there are more institutes that are willing to lend the businesses and less of those who wish to invest. Comparing financial leverage with the financial performance indicated that the leverage has significant effect on financial performance and the changes in value that occurs overtime (Pandya, 2016). Mbonu and Amahalu, (2021b) found a positive relation between leverage and financial performance. Raising capital through debt increases overall base of capital and hence the leverage multiplier allowing firms to become more profitable (Tom-West, Okoye and Amahalu, 2021), while Baños-Caballero, García-Teruel and Martínez-Solano (2014) revealed a negative relationship between debt and profitability.

Investment in Equity Securities and Financial Performance

The association between equity investment and performance is for long a matter of substantial deliberations for scholars and practitioners. Consequently, firms should be able to improve their market share, finance operations and grow in the long run to improve value added and profits. Firms going through financial distress also have issues with its operational functions, high labour turnover and the organization objective shifted from key corporate objectives since the current issue is funding debt instruments (Mbonu & Amahalu, 2021a). Capital structure depicts systems in which equity as well as debt are employed for funding the firm's activities to yield optimum returns for the stakeholders to maximise firm's returns given a level of risk (Dada & Ghazali, 2016). Amahalu, and Obi (2020) showed that equity financing has positive relationship with financial performance. On the other hand, Boadi and Li (2015) found a negative relationship between equity financing and financial performance.

Investment in Subsidiaries and Financial Performance

The decreasing dependence of subsidiaries on the parent has led scholars to conceptualize the multinational corporation (MNC) as a network of semi-autonomous units, which control differentiated stocks of resources (Amahalu & Obi 2020). This view has had important implications for the role of subsidiaries, headquarters and their relationships. Subsidiaries are seen as semi-autonomous actors that set strategic priorities and have the ability to influence the scope of their own operations as well as firm-wide strategy. Representing the flip side of the coin, headquarters are perceived as an orchestrator of knowledge and resources (Ndum, Okoye & Amahalu, 2019) rather than an authoritarian planner. Thus, their task is to facilitate and coordinate the exchange of knowledge and best practices within the network, engage in portfolio management and investment planning, and craft the strategic agenda jointly with subsidiaries.

Theoretical Framework

This study focuses on Modern Portfolio Theory (MPT) and Agency Theory

Modern Portfolio Theory (MPT)

Modern portfolio theory (MPT) is a theory on how risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. According to the theory, it's possible to construct an "efficient frontier" of optimal portfolios offering the maximum possible expected return for a given level of risk. This theory was pioneered by Harry Markowitz in 1952. Modern portfolio theory argues that an investment's risk and return characteristics should not be viewed alone, but should be evaluated by how the investment affects the overall portfolio's risk and return (Nwafor & Amahalu, 2021). MPT shows that an investor can construct a portfolio of multiple assets that will maximize returns for a given level of risk.

Empirical Review

Ferreira, Zanini and Alves (2019) determined the impact of bank revenue diversification on Brazilian banks' risk and return. In 2003, noninterest income accounted for 17.80% of the operating revenue of the banks analyzed, and in 2014, this share increased to 27.40%. The study analyzed the sample for the period from 2003 to 2014, using dynamic panel data GMM (Generalized Method of Moments) to address endogeneity, heteroscedasticity and autocorrelation problems. The main results showed that noninterest income has a major role in the performance of the banks studied; the analysis of financial intermediation activities showed that loan operat

Mehmood, Ahmed and Muhammad (2019) examined the impact of corporate diversification and financial structure on the firms' financial performance. The study collected data from 520 manufacturing firms from Pakistan, India, Sri Lanka, and Bangladesh. The study used panel data of 14 years from 2004–2017 to analyze the results. The study applied a two-step dynamic panel approach to analyze the hypotheses. The study found that product diversification and geographic diversification significantly affected the firms' financial performance. The study further found that dividend policy and capital structure had a significant impact on the firm's financial performance.

Wioletta and Dziurski (2019) identified the effect of diversification strategy on performance of a business group in Poland from 2012-2016. The research made us ordinary least square method. The study found that business groups in Poland showed that business groups in Poland are moderately diversified. The study showed also that the diversification strategy does not differentiate the performance of business groups.

Methodology

Research Design

The research design employed in this study is the *ex-post facto* research design.

Population of the Study

The population of the study consisted of the entire fourteen (14) quoted commercial in Nigeria as at 31st December, 2022 (see appendix I).

Sample Size and Sampling Technique

Purposive sampling technique was adopted to select the deposit money banks with up to date and complete annual reports and accounts for the study period (2009-2022). The sample size of this study consists of thirteen (13) commercial banks.

Source of Data

This study primarily made use of secondary data. Precisely. The data were sourced from publications of the Nigerian stock exchange (NSE), fact books and the annual report and accounts of the sampled commercial banks.

Table 3.1: Variables Definition and Measurement Units

Variable Type	Indicators	Variable Symbols	Variables Explanation
Independent Variable (Diversification)			
	Investment in Debt Securities	INVDS	Investment in Debt Securities /Total Investment Portfolio
	Investment in Equity Securities	INVEQS	Investment in Equity Securities /Total Investment Portfolio
	Investment in Subsidiaries	INVSUB	Investment in Subsidiaries /Total Investment Portfolio
Dependent Variable (Financial Performance)			
	Return on Assets	ROA	Net Profit / Total Assets
Control Variables			
	Liquidity Risk	LQR	Non-Performing Loans /Total Loans
	Credit Risk	CDR	Total Loans and Advances /Total Deposits

Model Specification

The model of this study was adapted from the work of Mukamana and Mulyungi (2019):

$$ROE = \alpha + \beta_1BDV + \beta_2PDV + \beta_3CDR + \beta_4LQR$$

Where:

α = Constant

BDV = Business Diversification

PDV = Product Diversification

CDR = Credit Risk

LQR = Liquidity Risk

The following research models were formulated in line with the research hypotheses in order to empirically determine the relationship between diversification and financial performance of quoted commercial banks in Nigeria:

$$ROA_{it} = \beta_0 + \beta_1INVDS_{it} + \beta_2INVEQS_{it} + \beta_3INVSUB_{it} + \beta_4LQR_{it} + \beta_5CRD_{it} + \mu_{it} \quad \text{--- equ (1)}$$

Where:

β_0 = Constant term (intercept) of the study model

$\beta_1- \beta_3$ = Coefficients of the independent variable (Diversification)

$\mu_{i,t}$ = Component of unobserved error term of bank *i* in period *t*

$INVDS_{it}$ = Investment in Debt Securities of bank *i* in period *t*

$INVEQS_{it}$ = Investment in Equity Securities of bank *i* in period *t*

$INVSUB_{it}$ = Investment in Subsidiaries of bank *i* in period *t*

LQR_{it} = Liquidity Risk of bank *i* in period *t*

CDR_{it} = Credit Risk of firm *i* in period *t*

Data Presentation and Analysis

Table 2: Pearson Correlation Matrix

	ROA	INVDS	INVEQS	INVSUB	LQR	CDR
ROA	1.0000					
INVDS	0.5589	1.0000				
INVEQS	0.2169	0.1906	1.0000			
INVSUB	0.4362	0.0732	-0.2167	1.0000		
LQR	0.1045	0.4328	0.0213	0.2232	1.0000	
CDR	0.4926	0.5545	0.1787	-0.0478	0.4714	1.0000

Source: E-Views 10 Correlation Output, 2023

Interpretation of Pearson Correlation Matrix

From the findings on the correlation analysis in table 2, the study found that there was positive correlation coefficient between INVDS, INVEQS, INVSUB, LQR, CDR and ROA by correlation factors of 0.5589, 0.2169, 0.4362, 0.1045 and 0.4926 respectively.

Test of Hypotheses

Table 3 Panel Least Square Regression Analysis between Diversification Metrics and ROA of quoted Deposit Money Banks in Nigeria

Dependent Variable: ROA
 Method: Panel Least Squares
 Date: 05/30/23 Time: 13:15
 Sample: 2009 2022
 Periods included: 14
 Cross-sections included: 13
 Total panel (balanced) observations: 156

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.132987	0.024537	5.419827	0.0000
INVDS	0.110077	0.013177	5.764767	0.0000
INVEQS	0.167523	0.014214	11.78576	0.0000
INVSUB	0.005276	0.007228	2.729971	0.0071
LQR	0.002940	0.014330	2.205145	0.0338
CDR	0.078943	0.027973	2.822060	0.0055
R-squared	0.555934	Mean dependent var		0.144718
Adjusted R-squared	0.535411	S.D. dependent var		0.140024
S.E. of regression	0.137522	Akaike info criterion		-1.102298
Sum squared resid	2.609906	Schwarz criterion		-1.019035
Log likelihood	82.26314	Hannan-Quinn criter.		-1.068463
F-statistic	43.75428	Durbin-Watson stat		1.651476
Prob(F-statistic)	0.000000			

Source: E-Views 10, Regression Output 2023

Interpretation of Regression Result

In table 3, a panel least square regression analysis was conducted to test the relationship between INVDS, INVEQS, INVSUB, LQR, CDR and return on assets. Adjusted R squared is coefficient of determination which tells us the variation in the dependent variable due to changes in the independent variable. From the findings in the table 3, the value of adjusted R squared is 0.535, an indication that there was variation of 53.5% on ROA due to changes in INVDS, INVEQS, INVSUB, LQR and CDR. This implies that only 53.5% changes in ROA of deposit money banks could be accounted for by INVDS, INVEQS, INVSUB, LQR and CDR, while 46.4% was explained by unknown variables that were not included in the model. The probability of the slope coefficients indicate that; $P(x_1 = 0.0000 < 0.05; x_2 = 0.0000 < 0.05; x_3 = 0.0071 < 0.05; x_4 = 0.0338 < 0.05; x_5 = 0.0055 < 0.05)$. The co-efficient value of; $\beta_1 = 0.110077; \beta_2 = 0.167523; \beta_3 = 0.005276$; implies that ROA is statistically significant and positively related to INVDS, INVEQS and INVSUB at 5% level of significance.

The linear regression model becomes;

$$ROA = 0.132987 + 0.110077INVDS + 0.167523INVEQS + 0.005276INVSUB + \mu$$

The coefficient of INVDS implies that if investment in debt securities increase by 1%, then return on asset would increase by 11.01%. Also, a unit increase in INVEQS and INVSUB would exert 0.167523 units and 0.005276 units increase on ROA respectively. The Durbin-Watson Statistic of 1.651476 suggests that the model does not contain serial correlation. The F-statistic of the ROA regression is equal to 43.75428 and the associated F-statistic probability is equal to 0.000000, so the null hypothesis was rejected and the alternative hypothesis was accepted.

Decision

Since the Prob(F-statistic) of 0.000000 is less than the critical value of 5% (0.05), then, it was upheld that diversification has a significant positive relationship with return on assets of quoted deposit money banks in Nigeria at 5% level of significance, thus, H_1 is preferred over H_0 .

Findings, Conclusion and Recommendations

Summary of Findings

Based on the analysis of data, the following findings emerged:

- i. There is a significant positive relationship between investment in debt securities and return on assets of quoted commercial banks in Nigeria at 5% level of significance.
- ii. There is a significant positive relationship between investment in equity securities and return on assets of quoted commercial banks in Nigeria at 5% level of significance.
- iii. There is a significant positive relationship between investment in subsidiaries and return on assets of quoted commercial banks in Nigeria at 5% level of significance.

Conclusion

This study examined the nexus between diversification and financial performance of quoted commercial banks in Nigeria for a period of fourteen years (14) years spanning from 2009 to 2022. Panel data were sourced from the annual reports and accounts of the sampled banks. Inferential statistics using correlation analysis and panel least square regression were employed via E-Views 10 statistical software. Data analysis revealed that a significant relationship exists between diversification techniques and financial performance of quoted banks in Nigeria. As disaggregated components, investment in debt securities, investment in equity securities and investment in subsidiaries have a significant positive relationship with return on assets. Consequently, this analysis supports

growing evidence that diversification techniques have a significant relationship and exerts significant effect on financial performance at 5% significant level.

Recommendations

The following recommendations were made in line with the findings and conclusion of this study:

- i. Based on the positive relationship between investment in debt securities and return on assets, commercial banks should embrace forward contract in hedging against currency and interest rate risks. Presence of forward contracts among commercial banks will ensure that their buyers are obligated to buy, and the commercial banks to sell a given asset at a predetermined price and date in the future. This will enhance the overall financial results of the commercial banks as future fluctuations in interest rates or exchange rates will have been taken care of.
- ii. Considering the positive relationship between investment in equity securities and return on assets, commercial banks should focus on promoting the confidence of investors in portfolio diversification, develop marketing policies that would encourage its use and establish the best combination of assets that can yield an efficient portfolio.
- iii. Since investment in subsidiaries has a positive relationship with return on assets, it is recommended that commercial banks should engage in more subsidiary investment.

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Appendix I

Nigerian Exchange Group

Listed Banks As At 31st December, 2022

A) Population of the Study

- 1) Access Bank Plc
- 2) Eco Bank Plc
- 3) FCMB Bank Plc
- 4) Fidelity Bank Plc
- 5) First Bank Plc
- 6) Guaranty Trust Bank Plc
- 7) Jaiz Bank Plc
- 8) Stanbic IBTC Plc
- 9) Sterling Bank Plc
- 10) Union Bank Plc
- 11) United Bank of Africa Plc
- 12) Wema Bank Plc
- 13) Zenith International Plc
- 14) Unity Bank Plc

B) Sample Size of the Study

- 1) Access Bank Plc
- 2) Eco Bank Plc
- 3) FCMB Bank Plc
- 4) Fidelity Bank Plc
- 5) First Bank Plc
- 6) Guaranty Trust Bank Plc
- 7) Stanbic IBTC Plc
- 8) Sterling Bank Plc
- 9) Union Bank Plc
- 10) United Bank of Africa Plc
- 11) Wema Bank Plc
- 12) Zenith International Plc
- 13) Unity Bank Plc