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Tier 1 Banks' Diversification Channels and Its Effects on Their Financial Resilience: Nigerian Perspective

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Abstract: *The present study looked at whether bank diversification channels influence banks' financial resilience or not. The study focused on Tier 1 Banks. The study disaggregated bank diversification strategies into four (4) which are: deposit-DEDV, asset-ASDV, income-INDV, and loan diversification-LODV. Meanwhile, banks' financial resilience is measured by bank z-score. The study spanned from 2009 to 2021. The panel least square-PLS estimate served as the main estimation technique adopted. The result evidenced that, DEDV has a positive (Coef= 0.6089) significant (p-value=0.0303<5%) effects on FIRE. More so, ASDV and LODV have positive (Coef= 0.5337 and 0.8949) significant (p-value= 0.0236 and 0.0039 <5%). By implication, the more the DEDV, ASDV, and LODV, the more resilient the FUGAZ banks become. Meanwhile, INDV improves the financial resilience of Tier banks minimally. Consequently, this paper concludes that, bank diversification improves the resilience of Tier banks in Nigeria over the targeted time frame. Consequently, the study was of the view that, managements of Tier 1 banks should diversify their deposit base, asset base, income base and credit (loan) creation base.*

Keywords: Tier 1 Banks' Diversification Channels, Financial Resilience, Nigerian Perspective

1. Introduction

Globally, the banking industry is critical to the achievement of a country's macroeconomic objective of higher economic growth. This is due to the fact that the industry helps bridge the funding gaps which may exist between the savers and borrowers. Following the assertion that, a highly diversified banking industry is critical to any economy, efforts have been made by scholars to think that light. This is borne out of the fact that, efficient match of deposits and credits/loan portfolios will increase the likelihood of banks recording better performance. Consequently, many Deposit money banks-DMBS in recent time opened up different branches and agency banking outlets so as to ensure that, a shortfall in one outlet is being compensated for. This approach has tremendously increased the banks' deposit, transactions, and operational activities and thus led to a rise in volumes of banking and investment portfolios. As a matter of fact, the increasing number of banking portfolios presents both risks and returns thereby necessitating the need for an optimal set of banking portfolio that minimizes risks while maximizing returns. As such, finance managers in the banking industry are under pressure to find the best strategy to raise returns while minimizing losses in order to improve overall financial performance of the banks (Nwakoby, & Ihediwa, 2018).

Accordingly, the emergence of the pandemic which disrupted banking activities has made most Nigerian banks to see the need for bank diversified. According to . However, the question of whether bank diversification strategy makes the banking industry to be resilient to financial crises or not remains a major condensing issue. This formed the major factor which motivated the study.

Furthermore, existing related studies though were conducted outside the Nigerian context but are mixed, contradictory and are centered on bank performance with little or no attention on banks' financial resilience in Nigeria (Philita, 2018; Makokha, Brahmana, Kontesa, & Gilbert, 2018; Mulwa & Kosgei, 2018; Namusonge, & Sakwa, 2016). This became another issue which justified the need for the current study. The major justifying perceived reasons may not be far from limited time scope as well as differences in methods adopted. To address these lacunae, the present study looked at whether bank diversification strategies influence banks' financial resilience or not. The study focused on Tier 1 Banks. The study disaggregated bank diversification strategies into four (4) which are: deposit, asset, income, and loan diversification. Meanwhile, banks' financial resilience is measured by bank z-score. The study spanned from 2009 to 2021.

For ease of reference, the next sections of this research article covered the literature review (conceptual linkages, theoretical underpinning and empirical review), methodology, results and discussions and conclusions and recommendations.

2. LITERATURE REIVEW

2.1. Conceptual Review

The term 'bank diversification channels' accounts for the various means through which banks diversify their portfolio base. In other words, it is the dispersion of both the assets and liabilities of the banking industry across various markets-investment avenues. As defined by Chepkorir (2018), bank diversification being a risk mitigation approach that is designed and pursued in the banking industry to mitigate against unsystematic risk inherent in the banking industry, address the turbulent markets and operational environments, increase bank revenues, reduce volatility of bank profits, as well as enhance the overall bank performance by combining various investments, assets or products.

Yegon and Kimosop (2019) argues that bank managers responsible for funds accept diversification to a level that is worthwhile and sensible for the served client and customers given its risk preferences and come up with a list of intended holdings consequently.

Predictively, a good portfolio mix realized on the above banking operations will result to improved financial performance and stability such that a shortfall in investment will be compensated for by the investment that is performing well. Therefore, portfolio diversification is a strategy many institutions have adopted in order to identify best set of investments which realized meaningful return with low risk.

Obisesan and Ogunsan (2018) & Philita (2018) submitted the followings as bank diversification scale:

Table 1: Bank Diversification Scale

Ranking	Activity Judgement
0.00-0.25	Highly Diversified
0.26-0.50	Diversified
0.51-0.75	Low Diversified
0.76-100	High Concentrated

Source: Obisesan and Ogunsan (2018); Philita (2018)

Additionally, financial resilience is the ability of the banking industry to withstand macroeconomic instabilities/fluctuations (Agbogun, Ehiedu, Bayem, & Onuorah, 2022). More so, it is the ability of banks to perform their intermediation role admist macroeconomic instabilities such as the financial repression (Ighosewe, Akan, & Agbogun, 2021, Okwuise, 2019). The idea behind a resilient banking industry is traceable to the fact that, it ensures that, banks are well positioned to withstand economic downturn/depression. This in turn reduces employee cynicism (Olokoyo, Worlu, Babatope, & Agbogun, 2022; Ugherughe, Okwuise, & Ukwandi, 2020).

2.2. Theoretical Underpinning

Beyond the traditional modern portfolio theory/approach, the study anchored on the market power theory (MPT). This theory emanated from the Porter's competitive theory propounded in 1980. This theory stressed that, firm diversification strategy is an efficient tool with which a firm's level of competitiveness can be ascertained. This is because, firms that are highly diversified/less concentrated builds up market power to compete favourably with others within the same line of business. Furthermore, this theory stressed that; firm/bank diversification channels increases a firm's/bank's profit base which in turn makes the firm/bank to be resilient to financial crises. This indeed is the position of this study.

2.3. Empirical Review

Using the multivariate analysis, Yegon and Kimosop (2019) examined whether income diversification strategies have statistical effect on the performance of 31 Kenyan banks from 2008 to 2017. The study the more Kenyan Banks diversifies their income base, the more they became profitable. Again, such effect is statistically significant.

Shim (2019) investigated whether the loan diversification and market concentrations are result to bank's financial stability or not. The result revealed that, higher loan diversification and lower market concentrations improves bank's financial stability.

Using the panel data approach, Brahmana, Kontesa, and Gilbert (2018) reported that, income diversification improves the performance of Malaysian banks from 2005-2015. However, Shoaib, Ke, Susheng, and Badar (2018) discovered that, revenue diversification into non-interest income improves both profitability and stability of South Asian banks while fees and commission incomes reduces the profitability and stability of South Asian banks, other non-interest income has a positive impact. By implication, South Asian banks can only benefit from revenue diversification if they diversify into specific types of non-interest income-generating activities. Nepali (2018) found that income diversification-amongst others are the most dominant factors that affect the risk return trade off in the context of Nepalese commercial banks

Oluitan and Balogun (2018) examined whether it is potent in ensuring financial stability for the system from 1960 to 2015 through the aid of error correction model. Meanwhile, income diversification improves financial stability.

Yan, Talavera and Fahretdinova (2016) examined the effects of product diversification on profitability of Azerbaijan banks. The study used six (6) forms of loans and four (4) forms of deposits. The study reveals that loan-based portfolio diversification reduces bank profitability significantly while deposit-based diversification improves bank profitability marginally.

3. METHODOLOGY

The expost facto research design since the study variables are secondary in nature (already existing), verifiable, and cannot be therefore manipulated. Meanwhile, both the sample size and study populations are all the five (5) Tier 1 Banks quoted on the Nigerian Exchange Group as at 31st December, 2021. Hence, the census sampling approach was adopted since the population equals the sample size. Data was sourced from the Central Bank of Nigeria an also from banking journals, and newspapers. The estimation technique is Ordinary Least Square. This is with a view to check whether bank diversification strategies have statistical effect on banks' financial resilience from 2009 to 2021 or not. The statistical package that was used to run the regression is economic views version 9.0. The choice of this statistical technique is based on its global acceptability and that it is more amenable for time series data. Accordingly, various pre-estimation tests considered are: The descriptive statistics, and correlation analysis. Econometrically, the modified model is stated as:

$$FIRE = \beta_0 + \beta_1(DEDV) + \beta_2(ASDV) + \beta_3(INDV) + \beta 4(LODV) + \mu it$$

DEDV = Deposit Diversification

ASDV = Asset Diversification
INDV = Income Diversification
LODV = Loan Diversification
β_0 Constant
β_1-β_4 = Regression coefficients
ɥ = error term

Table 2: Measurement of Variables

S/N	Symbols	Measures	
1	FIRE	Z-Scores of Each Banks	Nil
2	**DEDV**	$\left(\frac{Demand\ Deposit}{Total\ Deposit}\right)^2 + \left(\frac{Savings\ Deposit}{Total\ Deposit}\right)^2 + \left(\frac{Time\ Deposit}{Total\ Deposit}\right)^2$	Positive
3	**ASDV**	$\left(\frac{Current\ Asset}{Total\ Asset}\right)^2 + \left(\frac{Non-current\ Asset}{Total\ Asset}\right)^2$	Positive
4	**INDV**	$\left(\frac{Bank\ Interest}{Total\ Bank\ Revenue}\right)^2 + \left(\frac{Commissions}{Total\ Bank\ Revenue}\right)^2 + \left(\frac{Other\ Income}{Total\ Bank\ Revenue}\right)^2$	Positive
5	**LODV**	$\left(\frac{Loans}{Total\ Loans\ and\ Advances}\right)^2 + \left(\frac{Advances}{Total\ Loans\ and\ Advance}\right)^2 + \left(\frac{Overdraft}{Total\ Loans\ and\ Advance}\right)^2$	Positive

Source: Researcher's Compilation (2022)

RESULTS AND DISCUSSIONS

4.1. Pre-Estimation Tests

Table 3 and 4 records the pre-estimation tests conducted:

Table 3: Descriptive Statistics

	Mean	Std. Dev.	Maximum	Minimum
FIRE	2.6826	2.1707	6.8200	5.1700
DEDV	0.3787	0.0497	0.5709	0.3432
INDV	0.6032	0.1106	0.8613	0.5000
ASDV	0.0182	0.0115	0.0386	0.0017
LODV	0.7352	0.1982	0.9933	0.5053

Source: E-Views version 9.0. (2022).

Table 3 reported that, FIRE, DEDV, INDV, ASDV, and LODV had average values of 2.6826, 0.3787, 0.6032, 0.0182, and 0.7352 but fluctuated by 2.1707, 0.0497, 0.1106, 0.0115, and 0.1982. This suggests that, the variables clustered/oscillated around their average values. Again, they reported maximum values of 6.8200, 0.5709, 0.8613, 0.0386, and 0.9933 and minimum values of 5.1700, 0.3432, 0.5000, 0.0017, and 0.5053.

Table 4: Correlation Analysis

	FIRE	DEDV	INDV	ASDV	LODV	VIF
FIRE	1.0000					Nil
DEDV	0.7345	1.0000				1.0643
INDV	0.4212	0.1780	1.0000			2.4229
ASDV	0.6359	0.1842	0.1722	1.0000		1.4644
LODV	0.8130	0.2784	0.1855	0.1718	1.0000	1.6254

Source: E-Views version 9.0. (2022).

Both the correlation and Variance inflation factors-VIF revealed that none of the regressors are multi-collinear since none of the regressors were not up to cut of 70—80%. By implication, the model can be relied upon.

4.2. Regression Result

The Panel Least Square-PLS estimate is presented in table 4:

Table 5: Panel Least Square (PLS) Estimate

Regressand: FIRE

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.2638	0.2849	4.4358	0.0044
DEDV	0.6089	0.2505	2.4304	0.0303
INDV	0.0239	0.0331	0.7229	0.5021
ASDV	0.5337	0.1660	3.2153	0.0236
LODV	0.8949	0.1969	4.5462	0.0039
R-squared	0.9637	F-statistic		5.3437
Adjusted R-squared	0.9458	Prob.(F-statistic)		0.0001
Durbin-Watson stat	1.5956			

Source: E-Views 9.0. (2022).

From table 5, the R-squared stood at 0.9637 while the adjusted R-squared stood at 0.9458 signaling that, the Model has a high predictive power. Again, the Durbin Watson Statistics estimated at 1.5956 affirmed that the model did not auto-correlate. Meanwhile, the Prob-F-statistics evidenced that the model is highly statistically significant. By implication, bank diversification strategies predict the financial resilience of Tier 1 banks significantly. Individually, DEDV has a positive (Coef= 0.6089) significant (p-value=0.0303<5%) effects on FIRE. More so, ASDV and LODV have positive (Coef= 0.5337 and 0.8949) significant (p-value= 0.0236 and 0.0039 <5%). By implication, the more the DEDV, ASDV, and LODV, the more resilient the FUGAZ banks become. Meanwhile, INDV improves the financial resilience of Tier banks minimally.

CONCLUSIONS AND RECOMMENDATIONS

This paper concludes that, bank diversification improves the resilience of Tier banks in Nigeria over the targeted time frame. Consequently, the study was of the view that, bank managements should ensure that they should diversify the deposit base, asset base, investment base and loan portfolio.

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