

EFFECT OF NONPERFORMING LOAN ON RETURN ON ASSET OF DEPOSIT MONEY BANK IN NIGERIA: A CASE STUDY OF FIRST BANK OF NIGERIA PLC. AND FIDELITY BANK PLC.

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Abstract

The paper examined the effect of non-performing loans on the return on assets of deposit money banks between the periods 2007 to 2022. The study used ex-post facto research design. The secondary data collected from the Central bank of Nigeria statistical bulletin 2022 edition was used to analyze the effects. The data analysis was done using Panel least square regression and Granger causality test. The result showed that non-performing loans has negative effect on the return on assets of deposit money banks in Nigeria. The paper concludes that high non-performing loans leads to a decrease in the return on assets of deposit money banks in Nigeria. The study recommends that banks should assess every loan request with due diligence following various guidelines prescribed for them by the central bank of Nigeria and the banks policy on lending.

Keywords: *Non-performing, Loans, Bank, Return on assets, Credits and Deposit*

Introduction

Banks are financial institutions that accept deposits from customers and lend part of the deposits to individuals and organizations in need of it for profit. They use customer deposits to create credit which is a revenue-generating activity for banks. This credit creation process exposes the banks to high default risk which leaves a

large accumulation of non-performing loans in banks which if not paid could lead to financial distress and bankruptcy (Nwude and Okeke 2018). Loans and advances are the major banking functions of banks. In situations where credit is not adequately harnessed, managed, and handled, it has a crippling impact on banks, decreasing their efficiency, liquidity, profitability and further contributing to banking crises and losses and a lot of bad debts.

Over the years the banking sector had been engulfed with numerous bank crises which arise from management inadequacies in loan handling and loan mis-match. Loans attract the greatest risk for banks. The Central Bank of Nigeria (CBN), in trying to prevent the liquidation of deposit money banks (DMBs), enhances the quality of bank assets, and issues guidelines to ensure a prudent procedure in the creation of high-quality loans. In May 2010 (CBN) issued the revised Prudential Guidelines (PG) to Deposit Money banks in Nigeria to address various areas of bank operation which includes credit risk management.

Credit management is essential for the growth and survival of financial institutions. Without appropriate risk management, monitoring, and follow-up, loans will become non-performing. Also, when credit principles are breached, banks are set to accumulate large sums of non-performing loans. Banks should put in place good banking policies that will enable bank management to set criteria for examining and accepting loan applications to ensure that loans given are repaid (Ogunmakinju 2021). Good banking policies enable bank management to put in place ways of examining and accepting individual loan to ensure there is no default which may in turn adversely effects the financial performance of banks.

Despite the existence of corporate governance to monitor, screen, and recover loans for better performance, loans expose the bank to a high level of risk due to

default on the part of borrowers. High Non-performing threatens the financial stability of banks and banks existence. Hence the immediate Consequence of large amounts of non-performing loans (NPLs) in the banking system is bank failure and incessant sack of bank staff. This study therefore assesses the effect of non-performing loan on the return on assets of First bank of Nigeria Plc and Fidelity bank Plc. At the backdrop of this, the researchers formulated the below-mentioned hypothesis:

H₀ 1: Non-performing loans has no effect on return on assets of deposit money banks.

The remaining parts of this study was therefore arranged as follows; Review of related literature, Theoretical framework, Empirical reviews, Methodology, Results and Discussions and finally Conclusion and Recommendation.

Review of Related Literature

Conceptual Reviews

Large Accumulation of Non-performing Loans

Large accumulation of non-performing loans threatens the existence of bank, Nwite and Okoye (2012) observed that there is no global standard to define non performing default loans at the practical level as variation exists in terms of the classification system. They are of the view that poor asset quality in the form of nonperforming loan can seriously damage a bank's financial position having adverse effects on its operation. According to International Monetary Fund's (IMF) Compilation guide on financial soundness indicators (2015) "A loan is non-performing when payments of interest and/or principal are past due by 90 days or

more, or interest payments equal to 90 days or more have been capitalized, refinanced, or delayed by agreement, or payments are less than 90 days overdue, but there are other good reasons such as a debt or filing for bankruptcy to doubt that payments will be made in full.”

Hennie and Sonja (2009) reveal that NPLs are assets that do not generate income. This is when principal or interest is due and left unpaid for 90 days or more. Loan defaults are inevitable in any lending.

Non-Performing Loans (NPL)

A non-performing loan (NPL) is a loan for which the borrower has failed to make the required payments for a specified period, typically 90 days or more. In other words, it is a loan where the borrower defaults or is not meeting their repayment obligations as outlined in the loan agreement. The percentage of non-performing loans in Nigeria reflects the health of the banking system. Any loan facility that is not current in terms of repayment both in principal and interest, conflicting with the terms of the loan agreement is NPLs. The amount of non-performing loans measures the quality of any assets.

A loan proposal may satisfy all the requirements of a good exposure, but economic conditions may render the extension of the credit unwise. Hence, banks try to do some forecasting of economic trends. The essence is to determine those factors in the economic environment that might, in the future, affect the projections of the borrower and hence make the ability to repay impossible. It is important to note that the longer the maturity of the loan, the more the need for economic forecasting (Kawugana, 2022). Risk-based supervision by central banks has played a significant role in minimizing credit risk, especially NPLs and also ensuring sufficient capital adequacy (Muhammed, 2021). The devastating effect of non-

performing loans and advances makes sound evaluation of credit request paramount in all our banks. Osakwe et al (2019).

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Return on Assets (RoA)

Return on Asset (ROA) measures a bank's ability to generate profits from its total assets. It is calculated as net income divided by total assets. Return on Assets is one of the profitability ratios of money that can describe a company's condition. Kasmir (2016) says ROA is a ratio that states the return on the number of assets utilized in the company. ROA serves to know the level of effectiveness of the company's overall operations. The larger the ratio, the better because the company can use its assets effectively in bringing profit. This ratio is calculated as net profit after tax divided by the total assets. This ratio measure for the operating efficiency for the company based on the firm's generated profits from its total assets. Return on Assets (ROA) is the ratio of net income to total assets, measure how profitable and efficient a bank' management is, based on the total assets. How bank manage its assets to generate profit within a period. ROA can be disintegrated into the following components. $ROA = \text{Total Assets} / \text{Net Income}$

Theoretical Framework

Information Asymmetry Theory

This paper was anchored on Information Asymmetry Theory. The concept of asymmetric information was first introduced in George A. Akerlof 1970 in a paper titled "The Market for Lemons": Quality Uncertainty and the Market Mechanism Michael Spence continues the ideas of George A. Akerlof in 1973 in paper titled Job Market Signaling. Information asymmetry refers to the condition wherein one party (Manager or business owner) has more information about than the lender. The information asymmetry concept is widely diffused throughout management research, and its existence is a core assumption within leading theories on organization. The theory of asymmetric information tells us that it may be difficult to distinguish good from bad borrowers (Richard, 2011), which may result into

adverse selection and moral hazards problems. The theory explains that in the market, the party that possesses more information on a specific item to be transacted is in a position to negotiate optimal terms for the transaction than the other party (Auronen, 2003). The party that knows less about the same specific item to be transacted is therefore in a position of making either right or wrong decisions concerning the transaction. In banks, information asymmetry arises when a bank customer who takes a loan has more information and knowledge about potential risk and return involved with investment projects for which the loan was granted. The lender on the other hand does not have adequate information concerning the borrower. The perceived information asymmetry poses two problems for the banks, moral hazard (monitoring entrepreneurial behavior) and adverse selection (making errors in lending decisions). Credit risk management is often analyzed within the context of information asymmetry theory. Two problems of adverse selection (risk assessment/screening) and moral hazard (monitoring) are critical in credit risk management. They usually impact on the credit risk ratios and thus affect the financial performance of banks, Mohammed (2021).

Adverse selection and moral hazards have led to significant accumulation of non-performing loans in banks. The informational asymmetry studies focus on the bank/borrower and the bank/lender relation in particular. In bank lending one can basically distinguish transactions-based lending (financial statement lending, asset-based lending, credit scoring, etc.) and relationship lending. Effective credit management practices, such as transparent financial reporting and open communication channels, can help bridge this information gap. By providing lenders with accurate and timely information, firms can build trust and credibility, leading to improved access to credit and potentially enhancing financial performance.

Liquidity Preference Theory

Keynes describes liquidity preference theory saying that people value money for both the transaction of current business and its use as a store of wealth. Thus, they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution. On the other hand, when interest rates increase, they become willing to hold less money for these purposes in order to secure a profit.

According to Elgar (1999), one needs money because one has expenditure plans to finance, or is speculating on the future path of the interest rate or, finally, because one is uncertain about what the future may have in store so it is advisable to hold some fraction of one resources in the form of pure These motives became known as transactions, Purchasing Power speculative and precautionary motives to demand money. The banks liquidity preference approach suggests that banks pursue active balance sheet policies instead of passively accommodating the demand for credit. Liquidity and risk transformation are the two central roles performed by Commercial banks in the economy according to modern theory of financial intermediation. Analysis of banks role in creating liquidity and thereby spurring economic growth have a long tradition dating back to Adam smith (1776). The theory argues that commercial banks create liquidity on the balance sheet by financing relatively illiquid assets with relatively liquid liabilities. Keynes presents liquidity preference theory there as a liquidity preference theory of interest, a theory that is supposed to fill the vacuum left by what he regarded as a flawed classical savings theory of interest. In the early post General Theory literature, the notion of liquidity preference quickly became a synonym for the demand for money. Together with constant stock of money liquidity preference was the factor that determined the rate of interest in the money market of Hicks;(1937) seminal

investment saving to liquidity preference Money supply model (Jorg,2005).Working capital management practice contradicts with the theory. It involves managing the relationship between a firms short-term assets and its short-term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. For sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses positive working capital is desirable (Afza & Nazit, 2009), Compliance to solvency issues need be given another consideration. Solvency ratios are financial indicators that show the banks' ability and capacity to meet its liabilities from its assets. Solvency indicators are concerned with how much the commercial bank owe in relation to their asset valise, whether they are getting into heavier debt or improving their situation and whether their debt burden seems heavy or light. The Sharpe ratio characterizes how well the return of an asset compensates the commercial bank for the risk taken. Tobin;s q is the ratio between a physical assets market value and its replacement value. These ratios are important at managing liquidity risk.

Empirical Review

Collakua and Aliub (2021), investigated the impact of nonperforming loans on Kosovo banks' profitability over a time span of 2010 to 2019, using Non-Performing Loans, Liquidity Risk, and Bank Size Multivariable linear regression. The results showed that the effect of nonperforming loans on the profitability is statistically significant and shows that for each 1% increase in NPL, the Return of Assets decreases by 0.19%, holding other variables constant.

Mafumbo (2020) investigate effects of credit management on the financial performance of commercial banks in Uganda, using universal sampling techniques and multiple regression. The findings indicated a significant relationship ($r = 0.639$) between credit management and the financial performance of commercial banks in Uganda.

Ghaith and Tareq (2019) assessed the impact of credit risk (CR) on the financial performance of Jordanian commercial banks. A panel data analysis of both fixed and random effect models and GLS method were used. The results showed that CR has a negative and significant impact on return on assets (ROA) and return on equity (ROE). Further, the results indicated that CR (measured by the ratio of doubtful debts to total loans, nonperforming loans and loan losses to total loans) has a negative and significant impact on ROA, and ROE. While, the total deposits and bank size have positive and significant impact on financial performance of these Jordanian commercial banks.

Tan, Mpeqal, Isaac, Guoping and Mohammed (2019) evaluated the Nexus amid credit risk management and bank performance in a multivariate framework affecting Bank size, non-performing loans, real GDP, net income, inflation and return of total assets to loans, using PY homogeneity test, CIPS panel unit root test and Pedroni and Durbin-Hausman panel. The panel time series data are heterogeneous and cross-sectional dependent; 2) analyzed variables are integrated are of the same order ($I(1)$); 3) there exists a structural long-run relationship amongst the analyzed variables; 4) non-performing loan has a mitigating impact on bank performance, whereas net income and bank size have positive effect on bank performance. Real GDP and inflation impact negatively on bank performance but insignificant whilst the ratio of total assets to loans on the other hand also has a statically insignificant but positive effect on bank performance; 5) a variety of

causal relationships are identified amongst analyzed variables; 6) conclusions as well as policy implications are efficient and robust since this study utilizes econometric techniques addresses the issues of heterogeneity and cross-sectional dependence.

Osakwe, Ananwude, and Nduka (2019) evaluated Credit Risk Management and Efficiency in the Banking Industry of an Emerging Economy in Africa. The variables include Capital Adequacy ratio, Bank efficiency, total loan to total deposit and natural log of total asset. This study used multi-co linearity/correlation analysis. Credit risk management has significant effect on efficiency of the Nigerian banking industry.

Atoi (2019) investigated Non-Performing Loan (NPL) and its effects on the stability of Nigerian banks. GMM and Z-Score. Its variables include Panel vector autoregressive framework. The results reveal that drivers of NPLs vary across the two categories of banks, but, weighted average lending rate is a vital macroeconomic driver of NPLs for both.

Collins, Mepbari, Sira and Grend (2018) assessed the Impact of credit management and bank performance in Nigeria. Its variables include Credit Appraisal, Credit Risk Control, and Collection policy. The study applied systematic technique and purposive sampling technique were adopted. The study revealed that credit management has a significant impact on bank performance in Nigeria. The study also revealed that among the credit management variables considered, credit risk control has the highest driving force for bring about an effect financial performance of bank in Nigeria.

Fakir Tajul Islam (2018) assessed the impact of Loan Loss Provisioning for Non-Performing Loans on the Profitability of Commercial Banks in Bangladesh.

Variables include Non-Interest Income to Total Assets, Net Interest Income to Total Assets and Gross NPL to Total Loans Outstanding, Loan Loss Provision Maintained, and Surplus/ (Shortfall). The result showed that the profitability is very significantly influenced by the independent variables. Non-Performing Loss and loan loss Provision maintained by the commercial banks negatively related with the profitability of the business, especially Loan loss Provisions shown statistical significance to impact on profitability negatively.

Okonkwo and Nwokeji (2018) investigated credit risk management and the financial performance of deposit money banks (DMBs) in Nigeria from 2003 to 2016 credit default risk, credit concentration risk, loans to deposit ratio Nonperforming Loans and the Return on assets, applying Ordinary least square (OLS) regression model. The results showed that credit default risk has significant effect on the return on assets of Deposit Money Banks in Nigeria; credit concentration risk has significant effect on the return on assets of Deposit Money Banks in Nigeria; there is no significant relationship between Nonperforming Loans and the Return on assets of Deposit Money Banks in Nigeria; loans to deposit ratio has significant effect on the return on assets of total loans has a positive significant effect on the profitability of Deposit money banks.

Kargi (2011) assessed the impact of credit risk on bank profitability in Nigeria using non-performing loans, and deposits correlation and regression techniques. The findings revealed that credit risk management has a significant impact on banks' profitability in Nigerian.

Methodology

This study adopts the *ex-post facto* research design in conducting the research. The study used secondary data collected from the central bank of Nigeria statistical bulletin 2023 edition. The variables analyzed are return on assets and Nonperforming loans. Panel Least Square Regression and Granger causality tests was used to analyze the data.

Model Specification

$$ROA = f(NPL) \quad \text{eq 1}$$

The econometric model of the study which accounts for the constant term, the regression coefficients and the error term is stated as equation 2

$$ROA = \alpha_0 + \alpha_1 NPL + \mu_t \quad \text{eq 2}$$

Control variable

$$ROA = \alpha_0 + \alpha_1 CR + \mu_t \quad \text{eq 3}$$

$$ROA = \alpha_0 + \alpha_1 BS + \mu_t \quad \text{eq 4}$$

Where;

α_0 = the intercept or the constant term

α_1 = the coefficients of the regression.

ROA = Return on Assets

NPL =Non-performing Loans

CR = Credit risk

BS = Bank size

μ_t is the error term of the regression.

Analysis of Results and Discussion of Findings

Table 1: ROA and NPL for First Bank of Nigeria

	ROA_FBN (%)	NPL_FBN (%)
2007	2.76	2.27
2008	1.14	2.21
2009	2.16	12.22
2010	2.54	7.12
2011	1.46	4.11
2012	2.9	3.76
2013	3.76	3.06
2014	2.8	3.42
2015	2.7	3.56
2016	2.22	5.79
2017	3.96	8.54
2018	2.6	8.36
2019	1.67	7.16
2020	3.56	6.57
2021	1.93	5.46
2022	2.66	4.91

Source: *Osakwe (2023)*

Table 2: ROA and NPL for Fidelity Bank

	ROA_FID (%)	NPL_FID (%)
2007	2.85	1.15
2008	3.46	1.09
2009	1.74	11.1
2010	2.68	6
2011	2.99	2.99
2012	4.48	3.01
2013	3.95	2.84
2014	3.5	2.41
2015	3.33	2.47
2016	3.95	2.92
2017	4.46	6.9
2018	4.82	6.56
2019	4.85	5.79
2020	3.89	5.65
2021	2.63	5.3
2022	2.11	4.45

Source: *Osakwe (2023)*

Table 3: Descriptive Statistics

	ROA	NPL
Mean	2.933250	4.677875
Median	2.780000	4.070000
Maximum	5.590000	12.22000
Minimum	-0.400000	0.350000
Std. Dev.	1.187914	2.668181
Skewness	0.034794	0.800340
Kurtosis	3.104648	3.411223
Jarque-Bera	0.052646	9.104262
Probability	0.974020	0.010545
Sum	234.6600	374.2300
Sum Sq. Dev.	111.4800	562.4161
Observations	80	80

Source: *Osakwe (2023)*

The data reveals that the mean Return on Assets for the selected DMBs is 2.93% and this figure is quite volatile as the standard deviation is 1.18%. The highest ROA recorded by any of the selected Deposit Money Banks is 5.59% while the smallest figure is -0.4%. Within the reviewed period, non-performing loans amounted to 4.67% with a maximum value of 12.22% and a minimum value of 0.35%.

Panel Least Square Regression

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects)

Sample: 2007 2022

Periods included: 16

Cross-sections included: 5

Total panel (balanced) observations: 80

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
NPL	-0.016568	0.038731	-0.427772	0.6700
C	3.396174	0.754457	4.501480	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.845337	1.0000
Weighted Statistics				
R-squared	0.069465	Mean dependent var		2.933250
Adjusted R-squared	0.032734	S.D. dependent var		1.187914
S.E. of regression	1.168309	Sum squared resid		103.7360
F-statistic	1.891155	Durbin-Watson stat		0.865842
Prob(F-statistic)	0.138205			
Unweighted Statistics				
R-squared	0.069465	Mean dependent var		2.933250
Sum squared resid	103.7360	Durbin-Watson stat		0.865842

Source: Osakwe (2023)

The result of the Panel Least Square Regression shows that non-performing loans negatively predicts return on assets of deposit money banks in Nigeria. The prediction is however insignificant with a p-value of 0.6700 which is greater than 0.05. With regression coefficients of -0.016568, it can therefore be predicted that each percentage increase in the non-performing loans ratio of the DMBs will coincide with decrease in Return on Assets by 0.02%.

The R-squared value of 0.069465 indicates that only about 7% of the variations in ROA can be explained by the combined variations of non-performing loans ratio. The prob (F-statistics) value is 0.138 which is greater than 0.05, indicating an overall insignificance of the relationship between non-performing loans and ROA of DMBs in Nigeria.

Granger Causality Test for NPL and ROA

Pairwise Granger Causality Tests

Sample: 2007 2022

Lags: 5

Null Hypothesis:	Obs	F-Statistic	Prob.
NPL does not Granger Cause ROA	55	4.95399	0.0011
ROA does not Granger Cause NPL		2.14092	0.0782

Source: *Osakwe (2023)*

As shown in table 4.8, with a p-value of 0.0011 which is less than 0.05, it is revealed that non-performing loans do affect ROA. On the other hand, the p-value of 0.0782, which is greater than 0.05 indicate that ROA does not affect non-performing loans. It therefore shows that there is a unidirectional causation flowing from NPL to ROA in DMBs in Nigeria

Test of Hypothesis:

H₀ 1: Non-performing loans has no effect on return on assets of deposit money banks.

As shown in table 4.9, a p-value of 0.0011 is less than 0.05. Therefore, the null hypothesis is rejected. This indicates that non-performing loans has no effect on return on assets of deposit money banks in Nigeria.

Discussion of the Findings

This study examined the effect of non-performing loans on the financial performance of deposit money banks in Nigeria using data collected from selected DMBs. The financial performance of DMBs was proxied by return on assets (ROA). The researcher subjected the data to statistical examinations using the panel least square regression and the Granger causality test and the findings revealed that non-performing loan negatively predicted return on assets in DMBs. Despite the findings that this prediction was insignificant, the granger causality test revealed that non-performing loans have significant effect on return on assets of deposit money banks in Nigeria. Merging the findings of the Panel least square regression and the Granger Causality tests, it is revealed that non-performing loans negatively affects the profitability of DMBs in Nigeria. This in line with the findings of Muhammad (2021) also found that the ratio of loss loans to total loans (non-performing loans) negatively affects the financial performance of deposit money banks in Nigeria. Collakua and Aliub (2021) also recorded similar findings.

Conclusion

Based on the findings of the study, the study therefore concludes that non-performing loans has negative effect on the return on assets of deposit money

banks in Nigeria. This effect comes in the form of higher return on assets when the non-performing loans is reduced and lower return on assets when non-performing is increased in deposit money banks in Nigeria. The implication of these findings is that the greater the risk of credit default due to adverse macroeconomic conditions the lesser the return on assets of DMBs.

Recommendations

1. Deposit money banks should properly assess loan request from customers, strictly adhering to prudential guidelines and banks policy on lending so as to reduce the risk of non-performing loans. When the non-performing loans of DMBs reduce drastically, the return on Assets of DMBs will greatly increase.

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