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NON PERFORMING LOANS AND FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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Abstract: The study sought to investigate the impact of nonperforming loans on the financial performance of deposit money banks in Nigeria from 1991 to 2021. Specifically, the study hypothesizes that non performing loans do not have significant impact on the financial performance of deposit money banks in Nigeria. Using data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin for various years and with the aid of the Ordinary Least Square (OLS) Regression technique as embedded in Eview8.0 econometric software for data analysis, the findings revealed that nonperforming loans have negative significant impact on the financial performance of deposit money banks in Nigeria. Based on the foregoing finding, the study recommended that, the Central Banks of Nigeria (CBN) as the major regulatory authority of the money market in Nigeria in which Deposit Money Banks (DMBs) are active participants should formulate policies that would help to reduce the incidence of high proportion of nonperforming loans in the banking system. There should be regular intervention of the Central Bank of Nigeria in regulating the operational modalities of deposit money banks in Nigeria such that would moderate the excessive lending rate being charged by them. This will go a long way in reducing the incidence of banks' failures occasioned by high proportion of nonperforming loans in their loan portfolio.

Keywords: Non Performing Loans, Deposit Money Banks, Financial Performance

INTRODUCTION

Financial system is a conglomerate of various markets, instruments, operators and institutions that interact within the economy to provide financial services. According to the Central Bank of Nigeria (CBN, 2022), Nigeria with versatile financial system

consists of Twenty three (23) deposit money banks (8 with international authorization, 11 with national authorization, and 4 with regional authorization).

Deposit Money Banks (DMBs) in any country act as intermediary between surplus unit (supply side) and deficit unit (demand side) of the economy (Ozili, 2019). Banks grant loans and advances to individuals, business organizations as well as government in order to enable them undertake investments and other developmental activities as a mean of contributing towards the development of the economy in general and aiding economic growth in particular. But in time of economic recession, loan default could be more rampant resulting from low quality of assets, high non-performing risk assets (credit risk) that may result in huge loan losses and thus reduction in bank financial performance.

However, if such assets do not generate any income, the banks' ability to repay the deposit amount on the due date would be in jeopardy. Therefore, banks with such asset would become weak and such weak banks will lose the faith and confidence of their customers (Shoaib, 2016). Ultimately, unrecoverable amounts of loans are classified as non-performing loan (Sere-Ejembi, Udom, Salihu, Atoi, & Yaaba, 2014). Thus, since nonperforming loans have an adverse effect on the banking sectors survival, the causes of nonperforming loans have to be given due consideration. In Nigerian financial system, nonperforming loans (NPLs) refer to loans which for a relatively long period of time do not generate income. This implies that the principal and or interest on these loans have been left unpaid for at least ninety (90) days.

According to Atoi (2018), Non-performing Loans (NPLs) have become a critical issue of discourse in finance literature because of the close link between banking crises and massive accumulation of NPLs. The causes of NPLs vary from country to country, which might not be unconnected to situational factors, as the level of economic condition in which the banking sectors are operating and also bank level factors. Macroeconomic variables are external forces of determinants of credit assets quality while banks' specific policies, staff quality, morale, asset management mechanism and so on are internal drivers of the corporate and financial performance of banks. Banking sector in Nigeria has faced a lot of problems, the most destructive problems is the huge and ever increasing amount of NPLs which has influence on banks' efficiency and growth as well as endanger the growth and development of the Nigerian economy.

The magnitude of nonperforming loans in Nigeria increased from N260.19 billion as at end of December, 2003 to N2.9 trillion as at end December 2009 then reduced to N649.63 billion at the end of December 2015 (CBN, 2019).

According to Nsobilla (2015), NPLs are monetary assets from which banks will not collect interest, or when the payment of loans will not be paid as per the original loan schedule. For all loans delayed, banks are obliged to share reserves, or as is known

in professional jargon "provisions", which erode a large part of the profit and thus directly attack the financial performance (Klein, 2013; Mwangi, 2012). Further, banks with higher credit risk exposure are forced to recruit new collection staff, establish new departments, increasing of legal representation costs, offering facilities payment terms for clients in delay, or selling loan portfolios below market value to bad debt collection companies. According to Sharila (2014), credit risk has an inverse influence with customer relationships, emphasizing here trust of bank depositors. An increase in credit risk exposure has direct impact on deposit levels and so on at loan disbursement potential of deposit money banks. The financial crisis of 2007/2008 presented an original example of how well-known banks can go bankrupt as a result of the loss of trust. In this context, it is in the interest of banks and regulatory bodies to manage effectively credit risk, because it's impacts the bank's financial stability, the stability of the system, and distribution of capital in the economy (Psillaki et al., 2010).

Huge NPLs may negatively affect the level of private investment, increase deposit liabilities and constrain the scope of bank credit to the private sector. Also they can negatively affect private consumption which may lead to economic contraction. The phenomenal increases necessitate the investigation of the effect of nonperforming loans on the financial performance of deposit money banks in Nigeria.

CONCEPTUAL REVIEW

Performance of Deposit Money Banks in Nigeria

Financial measures are considered the most used parameter of business performance measurement, especially in the current economic climate. These performance indicators are important to the shareholders and depositors who are major beneficiaries of a bank. Profitability is the most important measure of success of a business and it measures the extent to which a business generates a profit from the factors of production; labor, management and capital. Most growing businesses ultimately target increased profits. Bank profitability is the bank's ability to create revenue in excess of cost, in relation to its capital base. A sound and profitable banking sector contributes significantly to financial system stability as it is better placed to withstand negative economic shocks Brissimis, Athanasoglou, & Delis, (2005). Profitability and liquidity are indicators of corporate health and performance of commercial banks and all profit oriented ventures, (Eljelly, 2004). Profitability analysis focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business (Mesquita & Lara, (2003). It is measured by ratios; ROA, ROE and NIM that summarize large quantities of financial data to make qualitative judgment on performance (Velnampy & Niresh, 2012).

Non-performing Loans and its Measurement

Non-performing loans are those loans that are not earning income and full payment of principal and interest is no longer anticipated, principal or interest is ninety days or more delinquent or the maturity date has passed and payment in full has not been made (Hou & Dickinson 2007). Non-performing loans cause insolvency of financial institutions and ultimately hurt the whole economy by causing reluctance by banks to provide credit (Hou, 2007). In a high nonperforming loans condition, banks increasingly tend to carry out internal consolidation to improve asset quality which minimizes granting of loans. High level of nonperforming loans require banks to raise provision for nonperforming loans which decreases the banks' revenue and reduces the funds for new lending impairing the corporate sector as they have difficulties in expanding their working capital (Agung et al, 2001). Therefore, many banks focus on the corporate or wholesale lending, which poses a challenge for the management to maintain the required liquidity position (Akhtar, 2007). This lending may starve the bank the available cash since it is majorly in long-term and hence plunge the bank into liquidity problems (Kashyap et al., 2002). The loan retirement process slows down in banks during periods of poor production of resources in the economy giving rise to nonperforming loans. In the event of a rapid increase in nonperforming loans volume, liquidity crisis becomes inevitable; hence banks should minimize the possibility of having nonperforming loans by carrying out adequate analysis of the creditworthiness of a borrower.

There are various ways of evaluating the credit worthiness of a borrower, one of which is the 5Cs of credit, which means Character, Capacity, Condition capital and Collateral. According to Onyia and Oleka (2010), they are also known as the Canons of good lending. In the same vein, Mather as cited in Aremu, Suberu and Oke (2010) described three basic principles of evaluating credit as Safety, Suitability and Profitability. First, they maintained that the safety of any advance or loan is of utmost importance. Under this principle, the character, amount generated from cash flow and acceptable securities were equally emphasized.

Secondly, they contended that the purpose of the loan must be legal and not conflicting with the economic and monetary policies of the government, Central Bank of Nigeria (CBN) guidelines and Banks and Other Financial Institutions Act (BOFIA). Finally, that profitability is a guiding force to any operation of the bank. They argue that as profit oriented institutions, banks usually expect their facilities to yield certain level of profit. That was why Pandey (as cited in Ayodele, 2010), believed that bad debts are familiar words to bankers; and people wonder occasionally why bad debts occur despite all the rules and regulations guiding banks. Yet the best way to avoid bad debt is to make zero lending, but banks cannot afford zero lending since greater proportion of their earnings come from interest earned on loan and advances.

There are numerous ways to measure the non-performing loans (NPLs). Among them, quantitative and qualitative methods are mostly used. If the bank can calculate the probability of default, it is the quantitative method. On the other hand, using qualitative method can only help estimating the number. In the quantitative method, according to Basel II, deposit money banks are allowed to use the method called Foundation Internal Rating Based (F-IRB) to evaluate and calculate the credit risks. The F-IRB method is a fresh seed in Basel II, providing banks with the calculation of risks. This method is suitable with banks of various sizes and based on different ranking of risks. The literature of the F-IRB is based on a stimulation model applying on credit risks, in which, the probability of customer's default is evaluated based on the difference between value of collateral assets and the face value of the loan. The value of an asset is varying over time, affected by random factors such as the change in market trend orthe policy. The probability of default will incur when the value the collateral assets is lower than the face value of such loan.

Despite the above methods of evaluating credit in the banking industry in Nigeria a lot of its advance and loans end up as non-performing loans. However, Hou and Dickinson (2007) definition do summarize the elements of non-performing loans as defined in many jurisdictions including Nigeria. He defined non-performing loans as a loan that is not earning income and: full payment of principal and interest is no longer anticipated, Principal or interest is 90 days or more delinquent, or The maturity date has passed and payment in full has not been made.

According to the Central bank of Nepal, a loan is categorized as a pass loan, substandard loan, doubtful loan, and poor loan. Pass loan, sub-standard loan, doubtful loan, and loan loss are also included under non-performing loans; note that Non-Performing loans arises from the extension of credit facilities to customers (Inekwe, 2010). This exposes banks constantly to credit risk due to the possibility that the borrower will default. Usually banks try to avoid or minimize credit risk in their portfolio.

THEORETICAL REVIEW

Information Asymmetry Theory

The theory was proposed by George Akerlof (1970); it holds that in the event where one party to a potential transaction is more informed than the other party, markets can fall apart completely. It may be difficult to distinguish good one from bad borrowers (Auronen, 2003 & Richard, 2011), which may result into adverse selection and moral hazards problems. The party that has more information on a specific item to be transacted is in a position to negotiate optimally for the transaction than the other party, (Auronen, 2003). The less informed party in a transaction may either make a

right or wrong decision about the transaction. Increase in nonperforming loans is as a result of adverse selection of borrowers and moral hazard on borrowers who fail to discharge their duty regarding a transaction, (Bester, 1994).

This theory is relevant in this study since the consequences of asymmetry and insider lending as well as unsecured loans to the political class has further developed the moral hazards resulting in high level of nonperforming loans and hence credit risk which eventually results to liquidity risk problems of Deposit Money Banks. Thus, Deposit Money Banks should possess more information on specific items they transact with borrowers in order to negotiate optimally to avoid non-performing loans.

Transactions Costs Theory

The theory was first developed by Schwartz (1974) is the anchor theory for this study. The theory infers that suppliers may have an advantage over traditional lenders in checking the real financial situation or the credit worthiness of their clients. Suppliers also have a better ability to monitor and force repayment of the credit. All these superiorities may give suppliers a cost advantage when compared with financial institutions. Three sources of cost advantage were classified by Petersen and Rajan (1997) as follows: information acquisition, controlling the buyer and salvaging value from existing assets. The first source of cost advantage can be explained by the fact that sellers can get information about buyers faster and at lower cost because it is obtained in the normal course of business. That is, the frequency and the amount of the buyer's orders give suppliers an idea of the client's situation; the buyer's rejection of discounts for early payment may serve to alert the supplier of a weakening in the credit-worthiness of the buyer, and sellers usually visit customers more often than financial institutions do.

EMPIRICAL REVIEW

Many researchers have carried out studies related to non performing loans and deposit money banks performance with mixed findings. The study therefore x-rays a number of these studies and their findings.

Ozurumba (2016), examined the Impact of Non-Performing Loans on the Performance of Selected Commercial Banks in Nigeria covering the period 2000 – 2013. The study utilized secondary data obtained from annual report and accounts of the selected banks for the period under study and was analyzed using ordinary least square method and ratio analysis. The results indicated that nonperforming loans have an inverse relationship with bank performance measured by ROE and an increase in nonperforming loans will cause a decrease in ROE.

Ebba (2016), examined the relationship between non-performing loans and financial performance of commercial banks in Ethiopia using a descriptive research design methodology. Secondary data for a 5 year period from 2011 to 2015, using Multiple Regression Models, the study found that nonperforming loans have a significant negative effect on banks performance and concluded that the performance of the banks increased from the year 2011 to 2015 due to a significant decrease in nonperforming loans in the same period.

Sohaimi (2013), examined the relationship between liquidity risk and financial performance measures of commercial banks in Malaysia covering 6 years from 2007 to 2012 using secondary data. The study used deposits, cash, liquidity gap and nonperforming loans as independent variables. Using Ram (1986) model, the findings of this study showed that liquidity risk affects banks' capital and reserves significantly. nonperforming loans, was the important factor in intensifying the liquidity risk by having a negative relationship with deposits, cash and liquidity gap, hence affecting financial performance negatively and concluded that nonperforming loans should be monitored prudently to safeguard a sound liquidity position for the bank.

Arif & Anees (2012), studied Liquidity risk and performance of banking system in Pakistan focusing on conventional banks Unstructured interviews were used to gather primary data while secondary data from annual reports was extracted for 22 banks covering a period of 6 years from 2004 to 2009 and used a correlational research design. The study found that nonperforming loans negatively affects bank's profitability since nonperforming loans show the presence of credit risk, which can rapidly turn into a severe liquidity crisis.

Saba et al. (2012) also investigated the bank specific and macroeconomic variables of nonperforming loans in US banking sector from 1985 to 2010 period using OLS regression model. They considered total loans, lending rate and Real GDP per capita as independent variables. The finding reveals that real total loans have positive significant effect whereas interest rate and GDP per capita has negative significant association with non-performing loans.

Kablam (2010) assessed the determinants of banking system efficiency in Sub-Sahara Africa, and asks what, besides the degree of efficiency, explains the low level of financial development in the region. The sample of his study consisted of 137 banks in 29 African countries for the period of 1998-2002. Method of measurement of efficiency is stochastic frontier analysis for cost-effective frontier as well as the generalized method of moments for explaining financial development. Generalized method of moments makes it possible to take into account simultaneity bias reserve causality by using lagged independent variables as instruments. Variables included for cost-efficiency analysis included ratio of private loans to GDP, GDP precipitate, share

of rural population as well as capitalization and bank size ownerships. Variables included for financial development were grouped into five categories, and these are market structure of the financial system, macroeconomic conditions, geography and legal tradition of countries, political environment and the regulation of financial system. It was discovered nonperforming loans negatively affects the efficiency of banks in Sub-Sahara Africa.

Kingu (2018), in his study in Tanzania with 16 commercial banks for a time span of 2007 to 2015, concludes the inverse relationship of non-performing loans with ROA. The pooled OLS regressions showed that for each 1% increase on non-performing loans, the ROA is affected by -0.19%. Another group of studies concludes that non-performing loans has no impact or statistically is not significant on profitability. Kaaya and Pastory (2013), conducted a study in Tanzania with 11 commercial banks. The results showed that non-performing loans does not impact statistically significant banks' performance or ROA. Similarly, Islam (2018) examined the impact of credit risk on the profitability of 56 commercial banks in Bangladesh (2009-2017), and an increase in non-performing loans is not statistically significant. The same line of results is also Do (2020), he found that the ROA is not affected significantly by non-performing loans, or for each one 1% increase on non-performing loans, and the effect on ROA is -0.05%.

Yu and Gan (2010) examined the determinants of banking sector development in Malaysia using real income, real interest rates, trade openness and financial openness as explanatory variables. The study employed three models of banking sector development namely, liquid liabilities (M3), private sector credit and domestic credit. The analysis was made with ordinary least squares (OLS) method. The findings, were that real income encourages banking sector development. Consistent growth in GDP means that business entities respond to the demand of goods and services. This cycle will be brought about by increased lending and borrowing activities. The findings also suggest that financial openness have a negative impact on banking sector development.

Kalapo (2012) used a panel data set from 2000 to 2010 for 5 Nigerian commercial banks to conduct the research on impact of nonperforming loans on commercial banks performance in Nigeria. Using the Ordinary Least Squares Technique (OLS), the outcome implied that with non-performing loans rate was statistically significant and negatively influenced banks' profitability.

Kargi (2011) explored (2004 to 2008) the relationship between credit risks and profitability of Nigerian commercial banks reveled a negative relationship loansthe relationship between credit risks and profitability of Nigerian commercial banks and profitability relationship has been in the center of banking studies due to its potential for regulatory policies. Based on previous studies, non-performing loans may have a

negative influence on profitability or making banks inefficient. Researchers on banks' profitability have started to consider asset quality, which includes here non-performing assets.

METHODOLOGY

The study employs longitudinal and causal research design. This is because the subject of investigation has already occurred and is not subject to manipulation. It also entails measuring the cause and effect relationship between the dependent and independent variables over a long period of time. The periods covered by the study are 1991 to 2021. The choice of this period is because it is the period which precedes major economic reforms-Structural Adjustment Programmes (SAP) of the Federal government of Nigeria and political transition from the Military to civilian administration in Nigeria. The data for this study were collected from the Central Bank of Nigeria (CBN) statistical bulletin for various years, statement of financial position of deposit money banks in Nigeria and the National Bureau of Statistics (NBS) Quarterly Reports.

Model Specification

The study adopted Jalloh (2017) model with slight modifications to suit the nature of the study as specified below:

$$TAS = f (NPL, LR, INFR)$$
 (i)

However, the econometric form of the model is stated below:

$$TAS = a_0 + a_1 NPL_1 + a_2 LR_1 + a_3 INFR_1 + e$$
 (ii)

Where;

TAS = Total Assets

NPL = Non performing loans

LER = Lending Rate

INF = Inflation Rate

 a_0 = Intercept or constant term

 $a_1 - a_3 =$ Coefficients of independence variables

e = Error term which is usually 5% (0.05)

Analytical Technique

The study used Ordinary Least Square (OLS) with the aid of E-view 8.0 econometric software to analyse the data. The various tests carried out are descriptive statistics, Unit Root test as well as the Regression result. The Ordinary Least Square (OLS) was chosen because of its BLUE (Best Linear Unbiased Estimator) characteristics

Descriptive Statistics

Table 1 below shows the individual descriptive statistic for Total Asset (TA) for deposit money banks in Nigeria, Non Performing Loans (NPLs), Lending Rate (LR) and Inflation Rate (INF) from 1991 – 2021.

Table 1: Descriptive Statistics

	TAS	NPL	LER	INF	
Mean	14.83935	65.57613	18.16452	18.40677	
Median	12.96000	20.14000	17.95000	12.88000	
Maximum	26.00000	358.8100	29.80000	72.84000	
Minimum	6.280000	2.960000	11.48000	5.390000	
Std. Dev.	5.146375	98.46888	3.423583	16.51726	
Skewness	0.332382	1.876122	1.094422	2.127941	
Kurtosis	2.207839	5.396153	6.109506	6.423944	
Jarque-Bera	1.381347	25.60199	18.67758	38.53807	
Probability	0.501238	0.000003	0.000088	0.000000	
Sum	460.0200	2032.860	563.1000	570.6100	
Sum Sq. Dev.	794.5554	290883.6	351.6276	8184.596	
Observations	31	31	31	31	

Source: Author's computation, 2023 with Eview 8.0

From the descriptive statistics in table 4.2 above, TAS has a mean value of 14.83935, NPL has a mean value of 65.57613, LER has a mean value of 18.16452 and INF has a mean value of 18.40677. All these values show the average returns of the variables within the period. The median values as shown in the table reveal that the variables cluster around the mean except for NPL and INF. This means that NPL and INF are a bit distant from the mean value. The standard deviation also confirmed this as low values in relation to the mean suggest low degree of variation of the data over the period, while high values mean high variation of the data within the period. As for the skewness of the distribution, all the variables are positively skewed, indicating that values for the respective variable lie to the left of their respective means. The kurtosis of the distribution shows that all the variables are leptokurtic (fat tail) as their values are more than three (3) except TAS which is platykurtic(flat tail) as its value is less than three (3). The J-B values for the variables are low and they are not all significant at 5 percent level except for TAS. This calls for the unit root test to be conducted for the variables.

Unit Root Test

The unit root test was conducted using the Augmented Dickey-Fuller (ADF) test to find out whether the variables exhibit unit roots property. The table below shows the result of the unit root test.

Table 2: Summary of Unit Root Test Results

Variables	ADF Test Statistic	95% Critical ADF Value	Order of Integration	Remarks
TAS*	-4.100408	-2.971853	1(1)	Stationary
NPL*	-3.120757	-2.981038	1(1)	Stationary
LER*	6.026613	-2.971853	1(1)	Stationary
INF*	-4.306758	-2.971853	1(1)	Stationary

Source: Author's computation, 2023 with Eview 8.0

From the table above, it is observed that all the variables are stationary at first difference. This is confirmed from the ADF statistic which is greater than the 95% critical ADF values for all the variables. This shows that the time series properties of the data were relatively stable as there is no biasedness of information; as such the result is reliable.

Table 3: Model Regression and Interpretation

Dependent Variable: TAS Method: Least Squares Date: 02/16/23 Time: 15:42 Sample (adjusted): 1992 2021

Included observations: 30 after adjustments Convergence achieved after 10 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	18.70047	3.701127	5.052642	0.0000
NPL	-0.023507	0.008683	-2.707152	0.0121
LER	0.019457	0.124127	0.156754	0.8767
INF	0.008462	0.039643	0.213457	0.8327
AR(1)	0.840634	0.087212	9.639018	0.0000
R-squared	0.806458	Mean dependent var		15.12467
Adjusted R-squared	0.775491	S.D. dependent var		4.978751
S.E. of regression	2.359050	Akaike info criterion		4.705406
Sum squared resid	139.1279	Schwarz criterion		4.938939
Log likelihood	-65.58110	Hannan-Quinn criter.		4.780116
F-statistic	26.04272	Durbin-Watson stat		1.593231
Prob (F-statistic)	0.000000			
Inverted AR Roots	.84			

Source: Author's computation, 2023with Eview 8.0

Interpretation

From the regression result above, it can be seen that the R-square of 0.8 is very high, explaining 80 percent of the systematic variation of the impact of nonperforming loans on the performance of deposit money banks in Nigeria is captured by the model. The model could not explain the other 20 percent as forces outside the model specification could be responsible the unexplained percentage. The adjusted R-square of 0.77 is also very high, implying that the model has 77 percent predictive ability. The Durbin Watson (DW) statistic of 1.59 is within the acceptable range. The F-statistic is very significant and it shows the overall performance of the model.

On the significance of the individual variables, NPL is found to have significant but negative effect on TAS (NPL Prob. 0.0121< 0.05), LER has no significant but positive effect on TAS (LER Prob. 0.8767 > 0.05), INF has no significant but positive effect on TAS (INF Prob. 0.8327>0.05).

On the direction of the effect of the independent variables on the dependent variable, NPL has negative significant effect on TAS. A unit increase in TAS will result in 2.3507% reduction in TAS. LER has a positive but not significant effect on TAS. A unit increase in LER has a positive effect of 1.9457% on TAS. A unit increase in INF will result in 0.8462% direct and consequential increase in TAS. It can be mathematically expressed as:

$$TAS = -0.023507*NPL + 0.019457*LER + 0.008462*INF$$

From the empirical analysis the study therefore states that nonperforming g loans have significant negative effect on the performance of deposit money banks in Nigeria (NPL Prob. = 0.0121 < 0.05). Lending rate (LER) does not significantly affect but has positive effect on the performance of deposit money banks in Nigeria as measured by total assets (LER Prob. = 0.8767 > 0.05). Also, Inflation rate does not significantly affect but have positive effect on the performance of deposit money banks in Nigeria (INF Prob. 0.8327 > 0.05).

Hypothesis Testing

Ho1: There is no significant effect of nonperforming loans on the financial performance of deposit money banks in Nigeria.

From the estimated regression result in table 3, the calculated t-statistic of -2.707152 is greater than the critical t-tabulated value of 2. Meanwhile, the t-statistic decision rule on test of hypothesis is to reject the null hypothesis and accept the alternate hypothesis when the computed t-value is greater than the tabulated t-value or decide otherwise when the computed t-value is less than the tabulated t-value. Hence, the study rejects the null hypothesis and concludes that there is significant negative effect of nonperforming loans on the financial performance of deposit money banks in Nigeria.

DISCUSSION OF FINDINGS

It can be seen from the result of the study that nonperforming loans do have impact on the performance of deposit money banks in Nigeria. Nonperforming loans in the result is significant in the model estimation. The relationship is though negative but it is significant as revealed from the table above. This finding is consistent with Ozurumba (2016) and Ebba (2016) who examined the impact of nonperforming loans on the performance of selected commercial banks in Nigeria between 2000 and 2013 and the impact of nonperforming loans on the financial performance of commercial banks in Ethiopia respectively.

Also, as can be observed from the result in the table above, lending rate was not significant in the model. The relationship between lending rate and the performance of deposit money banks in Nigeria though positive but not significant. This implies that lending rate has no significant influence on the performance of deposit money banks in Nigeria. This may be due to exorbitant rate being charged borrowing customers by deposit money banks in Nigeria; and as a result bank customers shy away from obtaining credit from banks and look to other alternative sources of funds. This finding is however contrary to the findings of Saba et.al (2012) who reported negative significance and association between interest rate and non performing loans.

It is observed from the result in the table above that inflation rate does not have any significant relationship with the performing of deposit money banks in Nigeria in the model. The relationship is though positive but not significant.

CONCLUSION AND RECOMMENDATIONS

The banking sector in Nigeria needs special attention in view of the spate of banks failures the sector has witnessed over the years and the critical role played by the sector in facilitating economic development. As the study observes, a number of banks failures are caused by high proportion of nonperforming loans in their loan portfolio. The significant and negative impact of nonperforming loans on the performance of deposit money banks in Nigeria as revealed in this study cannot be overemphasized.

Based on the findings of the study, the following recommendations were therefore made;

- (i) The Central Banks of Nigeria (CBN) as the major regulatory authority of the Deposit Money Banks (DMBs) in Nigeria should formulate policies that would help to reduce the incidence of high proportion of nonperforming loans in the banking system.
- (ii) There should be regular intervention of the Central Bank of Nigeria in regulating the operational modalities of deposit money banks in Nigeria such

- that would moderate the excessive lending rate being charged by them. This will go a long way in reducing the incidence of banks failures occasioned by high proportion of nonperforming loans in their loan portfolio.
- (iii) The monetary authority should intensify its effort at reducing inflation rate to a single digit in Nigeria. This will go a long way in attracting investors in the economy.

References

- Akerlof, Petersen and Monday Rajan (1997). The market for 'lemons': Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488-500.
- Akhtar Atemkeng, & Matthew. N. Zongang (2006). The impacts of non-performing loan on profitability: An empirical study on banking sector of Dhaka stock exchange. *International Journal of Economics and Finance*, 9(3), 126-132.
- Atoi, V. N (2018). Non-performing loan and its effects on banking stability: evidence from national and international licensed banks in Nigeria. CBN Journal of Applied Statistics 9 (2),
- Aremu, D., Suberu & Oke (2010). Non-Performing Loans and Terms of Credit of Public Sector Banks in India. RBI Occasional Papers. 24. 2003.
- Arif A. & Anees A. (2012). Liquidity risk and performance in the banking system. *Journal of Financial Regulation and Compliance*, 20(2), 182-195.
- Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money*, 18(2), 121-136.
- Auronen, A. (2003). The effect of credit risk management on financial performance of the Jordanian commercial banks. *Investment Management and Financial Innovations*, 12(1), 338-345.
- Ayodele, M. 2010). Determinants of Non-Performing Loans in India: A System GMM Panel Approach. Vol. XLVII. 37-56.
- Brissimis, Athanasoglou, & Delis, (2005). Bank specific andmacroeconomic determinants of commercial bank profitability: Empirical evidence from Turkey. *Business and Economics Research Journal*, 2(2), 139.
- Central Bank of Kosovo. (2019). Regulation for Credit Risk Management. Prishtina:Central Bank of Kosovo. Retrieved from https://bqkkos.org/repository/docs/2019/Rregull.
- Dash, Hou & Dickinson (2007). The determinants of non-performing assets in Indian commercial bank: *An Econometric Study*', viewed November 2012,
- Ebba, M.K. (2016). Non-performing loan and profitability: The case of state owned commercial banks in Bangladesh. *World Review of Business Research*, 5(3), 171-182.
- Eljelly, B. (2004). The relationship between capital and earnings in banking. *Journal of Money, Credit and Banking*, 27(2), 432-456.

- Inekwe,2010. AComparative Analysis on NonPerformingLoans(NPLs) in the Banking Sector of Bangladesh. *International Journal of Research Granthaalayah*.
- Kashyap, K.& Balango, T.K. (2002), The impact of non-performing loans on 7rm profitability: A focus on the Kenya banking industry. *American Research Journal of Business and Management*, 1(4), 17.
- Kargi, H.S. (2011). Credit Risk and the Performance of Nigerian Banks, AhmaduBello University, Zaria.
- Kingu, P.S., Macha, D.S. & Gwahula, D.R. (2018), "Impact of Non-Performing Loans on Bank's Profitability: Empirical Evidence from Commercial Banks in Tanzania", *International Journal of Scientific Research and Management*
- Kolapo, T., Ayeni, R., & Oke, M. (2012). Credit risk and commercial banks' performance in Nigeria: A Panel Model Approach. *Australian Journal of Business and Management Research*, 2 0228
- Nsobilla, T. (2016). The effect of non-performing loans on the financial performance of selected rural banks in the western and ashanti regions of Ghana(doctoraldissertation).retrievedfromhttp://129.122.16.11/bitstream/1234567 9/8526/1/talata%20nsobilla.pdf
- Onyia & Oleka (2010). Impact of Non-Performing Loan on Profitability. *Global Journal of Management and Business Research: C*, 19(1).
- Ozili,P.K.(2019).Nonperformingloansandfinancialdevelopment:newevidence. *The Journal of Risk Finance*. Retrieved from https://www.emerald.com/insight/content/doi/10.1108/JRF-07-2017-0112/full/html.
- Ozurumba, B. A. (2016). Impact of non-performing loans on the performance of selected commercial banks in Nigeria; Research Journal of Finance and Accounting www.iiste.org ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online) Vol.7, No.16, 2016 95.
- Psillaki, M., Tsolas, I. E., & Margaritis, D. (2010). Evaluation of credit risk based onfirmperformance. *European Journal of Operational Research*, 201(3), 873-881.Retrieved from https://ideas.repec.org/a/eee/ejores/v201y2010i3p873-881.html.
- Sohaib I K. & Naveed, QM. (2016). The determinants of credit risk in commercial banks of Pakistan. *Journal of Poverty, Investment and Development*, 25.(65)
- Sohiami, A.N.A. (2013), Liquidity Risk and Performance of Banking System in Malaysia, Mara University of Technology Johor, Malaysia.
- Udom, I.S., Salihu, A., Atoi, N.V., and Yaaba, B.N., (2014). Developing banking system stability index for Nigeria. CBN Journal of Applied Statistics, Vol. Sk European countries, Financial Theory and Practice 38(1) 37-59
- Velnampy and Niresh, (2012). Effect of non-performing loan on the profitability of commercial banks in Nepal. Prestige *International Journal of Management and Research*, 10(2), 1-9.