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EFFECT OF LOAN-TO-ASSET RATIO ON NON-PERFORMING LOANS IN DEPOSIT MONEY BANKS IN NIGERIA.

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ABSTRACT

This study examined the effect of loan-to-asset ratio (LAR) *on Non-Performing loans in deposit money banks in Nigeria. The study used an ex post facto research design. The population of the study comprised all the 14 quoted deposit money banks in Nigeria with a sample size of eight (8) deposit money banks licensed with international authorities consisting of Access Bank Plc., Fidelity Bank Plc., First City Monument Bank Plc., First Bank Nigeria Ltd., Guarantee Trust Bank Plc., Union Bank of Nigeria Plc., United Bank for Africa Plc and Zenith Bank Plc. Data was generated from the annual financial reports and accounts of the sampled deposit money banks, the Central Bank of Nigeria, and the Nigerian Exchange Gro*
up respectively. Descriptive statistics, correlation tests and Panel regression were used for analysis. Panel regression was used to analyze the data and the findings showed that loan-to-asset ratio *has a negative and significant effect on non-performing loans of deposit money banks in Nigeria. Furthermore, bank size has a positive and insignificant effect on non-performing loans of deposit money banks in Nigeria. The study recommends that the CBN should constantly update its supervisory skills and strategies while enforcing its lending policy guidelines to achieve stability in the banking sector. Similarly, management of Deposit Money Banks should avoid charging high-interest rates on loans and advances as well as lending to high-risk borrowers to bring cases of loan defaults to the barest minimum. This measure will no doubt curtail the excessive accumulation of bad loans and financial crises in the banking sector.*

Keywords: Loan to Asset Ratio, Deposit Money Banks, Non-performing Loan and Bank Size.

1. INTRODUCTION

The economic downturn caused by the Covid-19 pandemic has brought unprecedented uncertainty to the global banking system. Banks are facing critical market challenges driven by uncertain monetary policies, deterioration in credit quality, regulation and compliance pressures. These challenges highlight the importance of better understanding of the new role of financial intermediations in facilitating efficient capital allocations and economic development. However, banks in Nigeria are faced with numerous challenges in their money creation and risk taking characteristics which includes credit risk, market risk, interest rate risk, default risk, operational risk and exchange rate risk (Iwedi & Onuegbu, 2014). Similarly, loan defaults that deteriorate banks' asset quality and profitability are believed to have adverse effect on the health and efficiency of the banking system (Morad, et al., 2020). Generally, the persistent increase in the level of non-performing loans usually constitutes serious threats to the profitability and intermediation function of banks. This is a clear indication that the banking sector still remains the pillar of every economy; hence any shock to the industry would certainly affect the financial system and the economy as a whole.

Profuse evidence also depicts that the major causes of financial crises and bank failure among other things in the Nigerian banking sector is the continuous deterioration of the quality of risk assets held by deposit money banks (Akpan, 2017; Salihu & Idih, 2020). Consequently, Iwedi (2017) observed that bank shocks is often occasioned by non-performing assets which affects a nation's development plans and hampers economic prosperity. For instance, the 2012 end of year reports of Nigerian Deposit Insurance Corporation (NDIC) points out that in every N1 loan granted by Nigerian Banks, only 57 kobo was capable of being recovered. Although the current review has shown a slight improvement in the recovery rate, the volume of bad loans being recorded still remains large and worrisome. In view of the injuries suffered as a result of losses prompted by bad debts, timely detection and management of non-performing loans cannot be underscored. Also, during the financial crisis of 2007, many banks with high level of NPLs found their sources of capital dried up, which occurred because of bad management. Furthermore, a large amout of NPLs signified serious decay in management methods and insufficient capital. Consequently, the high level of NPL impacted negatively on the banks' lending activity, causing great concern and panic on bank management and the future of the whole banking system (Anastasiou, 2016).

An analysis of Loan-to-asset ratio (LAR) describes the correlation between loan amounts and total assets. It is often used to measure leverage and liquidity of bank assets tied to loan (Makri, et al., 2014). Loan- to-asset ratio describes the debt ratio that measures the percentage of assets that are being financed with debt; the higher the ratio, the greater the degree of leverage and financial risk. Generally, investors rely on this ratio to determine the firm's ability to meet its present and future obligations. Furthermore, the problem of credit risk and bank distress are not area or time specific, hence, studies on the determinants of non-performing loans of banks should be intensified and conducted on a continuous basis to curtail the rising cases of loan losses in the banking sector. Empirical studies conducted by Kayode, et al., (2015) observe that the systemic decisions of bank management, particularly in transition economies, have greatly enhanced the growth of nonperforming assets and bank failure. Similarly, Atoi (2018) observes that an increasing trend in non-performing loans is experienced by deposit money banks all over the world and that problematic loan is determined by both macroeconomic and bank-specific factors.

Over the years, deposit money banks in Nigeria have used loan-to-asset ratio to assess loan worthiness in relation to their asset's quality. This is because non-performing loan not only lowers profitability and creates serious liquidity problems with large-scale economic catastrophe but also diminishes cash flow and the available capital needed to advance new credit to other borrowers (Eniafe, 2020). In spite of this, deposit money banks in Nigeria always experience a constant increase in the level of non-performing loans.

Extant research conducted by prominent scholars have shown that interest income constitutes about 75-80% of banks' revenue generating capacity, but at the same time tied with the highest risk and can be the main loss generator of banks (Kargi, 2011; Kingu, *et al*., 2018). However, this objective cannot be if the bulk of these loans become non-performing. It can paralyze the activities of the banks and also injure the economy as a whole. Similarly, other scholars like Vatansever and Hepsen (2013); Hu (2015); Ekanayake and Azeez (2015); Rajha (2016); Irwan, et al., (2019) examined the effect of loan-to-asset ratio on non-performing loan using various listed banks but only a few number of these studies used deposit money banks in Nigeria.

Similarly, only a few of these studies used the variables currently being studied. Furthermore, few of these studies use control variable (bank size) to moderate or stabilize the study.

The objective of the study is to examine the effect of loan-to-asset ratio on Non-Performing loans in deposit money banks in Nigeria.

The hypothesis is stated below:

H_{01}: Loan-to-asset ratio has no significant effect on non-performing loans in deposit money banks in Nigeria

The scope of this study consists of the following 14 Deposit Money Banks listed on the floor of the Nigerian Stock exchange, now known as Nigerian Exchange Group Plc as at 31 December, 2021: Access Bank Plc, Ecobank Transnational Inc., First Bank Holdings Plc, First City Monument Group Plc, Fidelity Bank Plc, Guarantee Trust Holding Company Plc, Jaiz Bank Plc, Stanbic IBTC Holdings Plc, Sterling Bank Plc, Union Bank Plc, United Bank for Africa Plc, Unity Bank Plc, Wema Bank Plc and Zenith Bank Plc. The eight (8) deposit money banks licensed with international authorities includes: Access Bank Plc., Fidelity Bank Plc., First City Monument Bank Plc., First Bank Nigeria Ltd., Guarantee Trust Bank Plc., Union Bank of Nigeria Plc., United Bank for Africa Plc and Zenith Bank Plc. The choice of all the eight banks licensed with international authorities is based on the fact that they are greater in scope of operation, serve a greater proportion of beneficiaries of financial service, and are by far more representative of the entire banking service providers in Nigeria. The research period is five years (2016-2020).This period is considered appropriate in order to have a proper assessment of nonperforming loans in Nigerian deposit money banks after the consolidation and recapitalization exercise of 2004/2005 alongside the global financial crises of 2007/2009 which affected the performance of banks worldwide due mainly to the problem of credit risk.

2. LITERATURE REVIEW

This study is conceptualize into three framework such as the conceptual Review, empirical review and theoretical review.

Conceptual Review

The Central Bank of Nigeria (CBN, 2015) defines non-performing loan and advances as a loan facility whose credit quality has depreciated and full collection of principal and/or interest as per the contractual repayment terms of the loan and advances are uncertain. This definition appears narrow as non-performing loan or impaired credit may deteriorate to a level in which the chances of recovery of both principal and interest are not only doubtful or uncertain but very critical and impossible due to inability of lenders to adhere strictly to credit guidelines. A loan is also regarded as non-performing when the principal or interest is due and unpaid for six months or more from the first day of default (Prudential Guidelines, 2014).

Non-performing loans (NPLs) can be described as the percentage of loan values that are not serviced for 90days or assets that are not generating income (Ahmed & Ariff, 2007). Basically, non-performing loans can also be considered as the deteriorating assets of deposit money banks which adversely affect their efficiency in terms of liquidity and profitability (The Motley Fool, 2018). The Central Bank of Nigeria (CBN, 2015) defined non-performing loan and advances as a loan facility whose credit quality has depreciated and full collection of principal and/or interest as per the contractual repayment terms of the loan and advances are uncertain. This definition

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The term bad loan as described by Kingu, *et al.,* (2018) is used interchangeably with non-performing loans and impaired loans. Bad loan is also referred to as toxic assets, delinquent loans, non-performing assets, or non-performing advances in the bank's records (Bexley & Enninger, 2012). The International Monetary Fund (IMF) compilation guide on financial soundness indicators (2015) defined non-performing loans as any credit facility in which interest and/or principal payments are past due by 90 days or interest payments equal to 90 days or more have been capitalized, refinanced or delayed by agreement or payments that are less than 90 days overdue, but there are good reasons, such as a debtor filing for bankruptcy, to doubt that payments will be made in full.

Loan-to- total asset ratio is the relationship between total loans amount and total assets. It measures the total loans outstanding as a percentage of total assets. It is determined by dividing total loan amount by total assets. A higher loan-to-assets ratio represents high credit level and an increasing chance of credit risk to assess the liquidity status of a bank by comparing its total loans to its total deposit for the same period. A higher ratio also indicates that a bank is loaned up and its liquidity is low. That is, the higher the ratio, the more risky a bank may be to higher defaults. Conversely, a lower-loan-to-asset ratio indicates a stronger financial structure, just as a higher loan-to-asset ratio suggests higher risk. Generally, a ratio of 0.4% to 40% or lower is considered a good debt ratio. It also measures leverage and liquidity of bank asset tied to loan (Makri et.al, (2014). It follows the reasoning that increases in loan size is often associated with declining bank loan quality and thus, increased NPLs.

Loan-to-assets ratio (LAR) is an indicator of liquidity that reflects credit and shows the percentage of bank assets to total debt in a year (Sufian & Habibullah, 2010; Sufian, 2011). Loan to assets ratio (LAR) is ratio that used for measure the level of bank liquidity that shows the ability of banks to meet the demand for credit with total assets owned (Martono, 2004). According to Rivai (2007), loan-to-assets ratio (LAR) is the ratio used to demonstrate the ability of banks to meet the demand for loans by using the total assets owned by banks. The higher this ratio, the better the credit performance level as well as the loan component given in the total structure of the assets. However, it has a negative effect on liquidity, because the higher this ratio means that existing funds are widely used for credit allocation and less for short- term liabilities.

Loan-to-asset ratio (LAR) can improve the quality of assets that have sufficient provisions against potential losses, or avoid the concentration of assets in one economic sector (Hassan & Bashir, 2002). According to Chronopoulos, *et al.,* (2013) loan-to-asset ratio (LAR) is expressed in most of the studies with total loans-to-total assets. Similarly, Saeed (2014) views loan-to-asset-ratio (LAR) as one source of income generated by the bank by dividing the total loan by total assets.

Empirical Review

Vatansever and Hepsen (2013) analyzed the impact of non-performing loans on loan-to-asset ratio in Turkish banking sector. Study used Ordinary Least Square (OLS) method of data analysis and established that loan-to-asset ratio, debt ratio, confidence index real sector, consumer price index, money supply, interest rate, GDP growth rate, and volatility of the stock

market index have no significant relationship with NPLs ratio on multivariate perspective. Conversely, industrial production index, Istanbul stock exchange, inefficiency ratio of all banks negatively affected bad loans while unemployment rate, ROE, capital adequacy ratio positively affected loan losses. The outcome of this finding may not be applicable to other countries due to differences in financial structure. However, this current study will fill the gap as it relates to Nigerian situation.

Irwan, et al., (2019) conducted a study to establish the effect of loan-to-asset ratio (LAR), loan-to-deposit ratio (LDR), Bank size, operational efficiency (OPE) and Net interest margin (NIM) on no-performing loans in Indonesia listed banks. Population of the study was 44 banks in Indonesia Stock Exchange for the period 2012- 2018. Purposive sampling method was used to select a sample of 40 banks. Secondary data was sourced from annual report ratios with 280 observations while method of analysis employed is pooled data regression. Findings of simultaneous test revealed that loan-to-asset ratio, capital adequacy ratio, loan-to-deposit ratio and net interest margin have no significant effect on NPLs, while Bank size and operation efficiency have positive relationship with bad loans. Study is quite current, rigorous and analytical. However, its findings may not suit the circumstances in foreign countries like Nigeria due to financial and structural differences. Hence, this current study on Nigerian deposit money banks will fill this gap.

Rajha (2016) undertakes a study on the causes of bad loans in the Jordanian banking sector during the period of 2008–2012. Study employed both macroeconomic and bank specific factors and used panel data regression model combined with time series and cross-section data. Findings showed that lagged NPLs and ratio of loans-to-total-assets affect bad loans positively, while GDP growth rate and inflation had negative and significant correlation with toxic assets. The study also attributes to the high level of bad loans in Jordanian banking sector during the last global financial crises of 2007/2009. The findings of this study may not apply to all economies due to the peculiarity in economic structure and financial system. However, the current study may fill this gap.

Hu (2015) analyzes the determinants of problematic loans in the Vietnam's banking sector for the period of 2009 to 2012. The study employs Ordinary Least Square (OLS) Method and panel data to analyze the association between non-performing credit and bank specific variables like loans-to-asset ratio, total assets and the lag of NPLs in the previous year. Finding indicates that loan-to-asset ratio influences the growth of bad loans in Vietnamese banking sector. This study lacks details on method used. Similarly, the outcome of this study may not be applicable to other countries due to cultural and structural differences. However, this current study will fill the gap by providing results that will reflect the actual situation in the Nigerian banking sector.

Ekanayake and Azeez (2015) examine the causes of bad loans in the commercial banking sector of Sri Lanka from 1999 to 2012 with a sample of nine (9) licensed banks. The researchers used panel data regression model and found a positive association between loan-to-asset ratio and non-performing loans. Other findings indicate that big banks experience low cases of bad credit compared to smaller banks. The findings of this study are somehow outdated. However, this current study will contribute to the body of knowledge by providing more recent findings regarding the effect of bank-specific attributes on non-performing loans of Nigerian deposit money banks.

Theoretical Review

The theory that underpins this work is Bad Management Hypothesis which was first introduced by Berger and De Young (1997). It stipulates that in responding to the increase in non-performing loans which occurs from adverse selection of borrowers, bank management tends to inject more resources in to the managing and monitoring of this impaired loans. This development leads to an increase in operating expenses over interest income in the long run, which translates to higher cost-to-income ratio. In actual fact, higher-cost-to-income ratio is an indication of weak bank management in underwriting, monitoring, and control of loan portfolio (Vardar & Ozguler, 2015; Muratbek, 2017). The relevance of this theory to the study is that bad management is usually associated with adverse selection of borrowers, poor supervision and monitoring, increase in operating cost with associated hike in the level of bad loans. Consequently, we expect a negative relationship between NPLs and ROA. Bad management theory is the ideal theory that can underpin this study.

3. METHODOLOGY

Research Design

The study used ex-post facto research design which is based on measurable variables and secondary data for 10 years' period covering 2011 to 2020 for deposit money banks in Nigeria. This is because the study tried to establish the cause and effect relationship between loan-to-asset ratio and non performing loans in deposit money banks in Nigeria. Furthermore, ex-post facto research design is a systematic empirical inquiry in which the researcher does not have direct control over the variables because their manifestations have already occurred and they cannot be easily manipulated.

Population and Sample size of the Study

The population of this study comprises of all the 14 listed deposit money Banks in Nigeria trading currently on the floor of the Nigerian Exchange Group as at December 2021. The study adopted simple convenience sampling technique to collect data from the published annual accounts of the deposit money banks in Nigeria, Central of Nigeria (CBN) statistical bulletin and the quarterly capital market service report because all the needed data in this study are documented and can only be obtained from these available sources.

The study used purposive sampling to restrict the sample size to eight (8) deposit money banks in Nigeria (Access Bank Plc, Fidelity Bank Plc, First City Monument Bank Plc (FCMB), First Bank Nigeria Limited, Guaranty Trust Bank Plc, Union Bank of Nigeria Plc, United Bank of Africa Plc (UBA) and Zenith Bank Plc). The criteria for this selection are based on the fact that only these eight (8) tier one (1) or international banks are perceived to be the largest by assets and deposit and they are listed with international operational authorizations as at December 31, 2020. It is important to note that only banks licensed with international authorizations are of paramount interest to major investors. The study used secondary data from banks' annual reports and the data for the study were analysed using correlation and panel regression. The panel regression was used for the test of hypotheses.

Table 1: Measurement of the Variables

Variables	Measures	Authors
Non-performing loan ratio	Measured as Non-Performing Loans/Total Loans and Advances	El-Maude, et.al (2017)
Bank size	Logarithm of total assets	Odundo & Orwaru, (2018); Onuoga(2014); Turk-Ariss (2010)
loan-to-asset ratio	Total loan- to-Total assets.	Chronopoulos, et al., (2013)

Statistical Tool

However, panel regression is used for this study given its superiority over pure-cross section or pure time series. Verbeek (2004) sets out the framework for panel study as:

$y_{it} = \alpha + x_{it}\beta_{it} + \varepsilon_{it}$.....1

The model is stated below:

$NPL_{it} = a+\beta TLTA_t+\beta BS_{it}+\pi_{it}$ …….2

Where NPL = non-performing loan ratio of the i at time *it*

$TLTA_{it}$= Total-loan to total asset of the i at time *it*

BS_{it}= bank size of the i at time it

β= coefficient

a= constant

π= error terms

Hausman Test

Hausman test is used to decide on most appropriate model to be adopted either between fixed or random effects model. It is believed that the null hypothesis is the preferred model. Random Effect Model is the null hypothesis while the alternative is the fixed effects. It tests whether the unique errors (ui) are correlated with the repressors; the null hypothesis is they are not. That is

Ho = Random Effect
HA = Fixed Effect
Hausman test uses a statistical distribution chi square with degree of freedom as many as k, where k is the number of independent variables. If there is a rejection of hypothesis zero where the value of statistics is greater than the critical value (the value of the table chi square) then the model fixed effect is used and the reverse is the case where calculated value is less than the critical or table value

In this study, Hausman test is used to test the fixed effects model and random effects model (REM).

***H*0: Random effects model is better than fixed effects model.**

Random effects assume that the entity's error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables. These characteristics that may or may not influence the predictor needs to be specified.

Fixed Effects model explores the relationship between predictor and outcome variables within an entity. Each entity has its own individual characteristics that may or may not influence the predictor variables.

Decision Rules

Decision Rule: Reject *H*0 if p-value is less than the significance level. Otherwise, do not reject *H*0.

Decision: Reject *H*0 since the p-value is less than the significance level of 5%.

Results and Discussions

Table 1: Descriptive statistics of the Variables

	NPL	TLTA	BS
Mean	0.051940	0.880331	9.345447
Median	0.041215	0.409131	9.332880
Maximum	0.253466	30.93399	9.928461
Minimum	0.000965	0.041761	8.743907
Std. Dev.	0.048603	3.288884	0.292840
Skewness	2.365202	8.662721	0.070390
Kurtosis	8.775504	79.27641	2.092052
Jarque-Bera	208.9994	22943.48	3.165707
Probability	0.000000	0.000000	0.205388
Sum	4.674580	79.22979	841.0902
Sum Sq. Dev.	0.210243	962.6914	7.632238
Observations	90	90	90

Source: E-view, version 9.00

The mean value of non-performing loan ratio (NPL) is 0.05 and the median value is 0.04. This shows the presence of an outlier as can be confirmed from the difference between minimum value and maximum value. The mean value of total loan to total asset (TLTA) is 0.88 and the median value is 0.41. This shows the presence of an outlier as can be confirmed from the difference between minimum value and maximum value. The mean value of bank size is 9.35 and the median value is 9.33. This shows the presence of an outlier as can be confirmed from the difference between minimum value and maximum value.

Table 2: Correlation Matrix of the Variables

	NPL	TLTA	BS
NPL	1.000000	-0.158889	0.071117
TLTA	-0.158889	1.000000	-0.238868

BS	0.071117	-0.238868	1.000000

Source: E-view, version 9.00

Table 2 indicates that there is a negative/positive association between the dependent variable and independent variables in the study. This implies that there is weak negative association between non-performing loan ratio and total loan to total asset in deposit money banks in Nigeria. Also, there is weak positive association between non-performing loan ratio and bank size in deposit money banks in Nigeria. There is no strong correlation between the variables and then there is no problem of multicolinarity.

Table 3: Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section and period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.060159	2	0.9704
Period random	1.066567	2	0.5867
Cross-section and period random	2.647854	2	0.2661

Cross-section random effects test comparisons:

Source: Researcher's Computation Using E-Views 9.0, 2022

The Hausman test indicates that random effect model is the most appropriate to fixed effect model given the probability value of more than 0.05. Thus, the null hypothesis which states that random effect model is more appropriate is accepted.

Table 4: Panel Regression result

Dependent Variable: NPL
Method: Panel EGLS (Period random effects)
Date: 01/08/22 Time: 22:28
Sample: 2011 2020
Periods included: 10
Cross-sections included: 9
Total panel (balanced) observations: 90
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.11E-05	0.170634	6.49E-05	0.9999
TLTA	-0.002218	0.001620	-5.999729	0.0043
BS	0.005766	0.018213	0.316559	0.7523
	Effects Specification			
			S.D.	Rho
Period random			0.001995	0.0017
Idiosyncratic random			0.048763	0.9983

	Weighted Statistics		
R-squared	0.626211	Mean dependent var	0.051553
Adjusted R-squared	0.513825	S.D. dependent var	0.048565
S.E. of regression	0.048472	Sum squared resid	0.204413
F-statistic	1.170861	Durbin-Watson stat	1.300030
Prob(F-statistic)	0.014938		
	Unweighted Statistics		
R-squared	0.526412	Mean dependent var	0.051940
Sum squared resid	0.204690	Durbin-Watson stat	1.300169

Source: E-view, version 9.00

Decision rule: 5%

The regression result shows that the model is fit for the study since the f-statistics is significant at 5% level of significance. The result also shows that total loan to total asset (TLTA) has negative effect on non-performing loan of deposit money banks in Nigeria while bank size has positive effect on non-performing loan of deposit money banks in Nigeria. These effects are significant and insignificant since the P-value is less or greater than 5%. Thus, we can reject the null hypotheses and conclude that total loan to total asset (TLTA) has negative and significant effect on non-performing loan of deposit money banks in Nigeria. Also, bank size has positive and insignificant effect on non-performing loan of deposit money banks in Nigeria.

The $R^2 = 0.62$ indicates that only 62% of variation on total loan to total asset (TLTA) can be used to explain non-performing loan of deposit money banks in Nigeria while 38% can be explained by other factors not noted in the regression model which is referred to as error term.

4. DISCUSSION OF FINDINGS

The study found out that total loan-to-total asset (TLTA) has negative and significant effect on non-performing loan of deposit money banks in Nigeria. However, bank size has positive and insignificant effect on non-performing loan of deposit money banks in Nigeria. The study is in line with the findings of Vatansever and Hepsen (2013) who found that there is negative and significant effect of the variable while the study disagreed with the findings of Irwan, et al., (2019) who found that there is positive and significant effect of the variables. The study is also in line with adverse selection theory which describes the situation where the probability of loan default increases with rising interest rate while the quality of borrowers worsens as the cost of borrowing rises (Musara & Olawale, 2012). The theory is founded on the assumption that banks are not certain in selecting credit-worthy borrowers from a pool of loan seekers with different credit risk exposures ex-ante. Thus, financial intermediaries are more likely to lend to high-risk borrowers who are not concerned about the harsh lending conditions and are prone to loan default (Ezeoha, 2011).

5. Conclusion and Recommendations

The study concluded that the total loan to total asset (TLTA) has negative effect on non-performing loan of deposit money banks in Nigeria. This implies that total loan to total asset (TLTA) has negative effect on non-performing loan of deposit money banks in Nigeria.

Also, the total loan to total asset (TLTA) helps to show how well a bank is attracting and retaining customers. If a bank's deposits are increasing, new money and new clients are being mobilized or on-boarded. As a result, the bank will likely have more money to lend, which should enhance earnings. Although it's counterintuitive, loans are an asset for a bank since banks earn interest income from lending. Deposits, on the other hand, are liabilities because banks must pay interest on those deposits, albeit at a low rate.

The total loan to total asset (TLTA) can help investors determine if a bank is managed properly. If the bank isn't increasing its deposits or its deposits are shrinking, the bank will have less money to lend to existing and new borrowers. In some cases, banks will borrow money to satisfy its loan demand in an attempt to boost interest income. However, if a bank is using debt to finance its lending operations instead of mobilizing cheap funds or deposits, the bank will have to incur debt servicing costs since it will need to pay interest on the borrowed funds.

The study recommended that Deposit Money Banks in Nigeria should adopt strict measures in their lending activities to avoid granting credit to high-risk borrowers who may become incapable of repaying such facilities. Similarly, banks should adhere strictly to lending policies and credit guidelines through moderate charges on their loan facilities to reduce rampant cases of default that are associated with high interest charges. A careful evaluation of borrowers' character by loan professionals can curtail the rampant cases of loan losses and financial crises being experienced by deposit money banks.

Implication of this study

The implication is study is that loan-to-total asset ratio shows the inability of deposit money banks to cover loan losses and withdrawals by its customers. It is pertinent to note that investors monitor the total-loan-to total asset (TLTA) of banks to make sure that there's adequate liquidity to cover loan facilities in the event of an economic downturn resulting in loan defaults. Also, the bank will likely have more money to lend, which should enhance earnings. Although it is counter intuitive, loans constitute the greatest assets that generate the highest income for banks since banks earn interest income from lending. Deposits, on the other hand, are liabilities because banks must pay interest on those deposits, albeit at a low rate.

Suggestion for Further Studies

There are several potential opportunities to be considered in the future for further studies and improvements. Subsequent studies can look at the composite effects of total asset ratio and non-performing loan of Deposit Money Banks in Nigeria using multivariate techniques like canonical correlation, structural equation modelling, etc. Further studies can be carried out by examining the effect of total asset ratio, total equity ratio on non-performing loan.

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Appendix I

Years	Companies	Non-Performing Loans	Total loans	NPL	Total Assets	BS	Loan to asset ratio	NONS
2011	Access Bank	46098591.03	558305158	0.0825688	1629003195	9.211921936	0.342728093	2,233,406,953.67
2012	Access Bank	31153234.59	618950113.6	0.0503324	1745471745	9.241912823	0.354603342	2,395,575,102.83
2013	Access Bank	17964979.99	76650581.3	0.234375	1835466000	9.263746344	0.041760829	1,930,081,570.83
2014	Access Bank	26267580	1485577580	0.0176817	2104360539	9.323120149	0.705952023	3,616,205,709.05
2015	Access Bank	19051820.88	1289173213	0.0147783	2591330151	9.413522748	0.497494776	3,899,555,194.81
2016	Access Bank	34121595.04	1658959454	0.0205681	3094960515	9.490655113	0.536019586	4,788,041,574.09
2017	Access Bank	87723462.77	1915295604	0.0458015	3499683980	9.54402883	0.54727673	5,502,703,056.91
2018	Access Bank	43975945.33	1803013758	0.0243902	3968114609	9.598584207	0.454375424	5,815,104,322.40
2019	Access Bank	180999419	2662623090	0.0679779	6307588216	9.799863333	0.422130139	9,151,210,735.29
2020	Access Bank	119042539	2937918270	0.0405194	7624979718	9.882238693	0.385301782	10,681,940,537.31
2011	Fidelity Bank	20766252	287000252	0.0723562	737732000	8.867898622	0.389030504	1,045,498,513.33
2012	Fidelity Bank	13996476	372880476	0.0375361	914360000	8.961117219	0.407804886	1,301,236,961.41
2013	Fidelity Bank	16378013	459027013	0.0356798	1081217000	9.033912866	0.424546611	1,556,622,035.49
2014	Fidelity Bank	24602028	583739028	0.0421456	1187025000	9.074459866	0.491766414	1,795,366,065.61
2015	Fidelity Bank	26355032	6255333032	0.0042132	1231722000	9.090512699	5.078526674	7,513,410,078.17
2016	Fidelity Bank	49026912	791858912	0.0619137	1298141000	9.113321867	0.609994532	2,139,026,833.79
2017	Fidelity Bank	50900160	846215160	0.0601504	1379214000	9.139631657	0.613548847	2,276,329,329.81
2018	Fidelity Bank	44424527	951047527	0.0467112	1719883000	9.235498904	0.552972224	2,715,355,063.84
2019	Fidelity Bank	51415000	1178389000	0.0436316	2114037000	9.325112584	0.55741172	3,343,841,009.93
2020	Fidelity Bank	67518000	1393624000	0.0484478	2758148000	9.440617566	0.505275279	4,219,290,009.99

2011	First Bank Holding	55062000	1393624000	0.0395099	2861693000	9.456623041	0.48699284	4,310,379,009.98
2012	First Bank Holding	41106286	1340566000	0.0306634	3226367000	9.508713767	0.415503258	4,608,039,295.95
2013	First Bank Holding	53400890	1622117286	0.0329205	3869001000	9.587598842	0.419259981	5,544,519,186.04
2014	First Bank Holding	59069491	18948110890	0.0031174	4343737000	9.637863522	4.36216808	23,350,917,395.00
2015	First Bank Holding	348344754	2095948491	0.1661991	4166189000	9.619738968	0.503085312	6,610,482,255.29
2016	First Bank Holding	584324856	2305337754	0.2534661	4736806000	9.675485598	0.486686124	7,626,468,620.42
2017	First Bank Holding	519906804	2979098856	0.1745181	5236537000	9.719044176	0.568906294	8,735,542,670.46
2018	First Bank Holding	535945074	2800199804	0.1913953	5568909000	9.745770121	0.502827359	8,905,053,888.44
2019	First Bank Holding	78911000	2605231074	0.0302894	6203526000	9.792638607	0.419959725	8,887,668,084.24
2020	First Bank Holding	74277000	1931322000	0.0384591	7689028000	9.885871442	0.251178953	9,694,627,010.18
2011	First City Monumental Bank	9584646	2291545000	0.0041826	601616494	8.779319734	3.808979679	2,902,746,152.59
2012	First City Monumental Bank	9090012	341243615	0.0266379	908545756	8.958346804	0.375593208	1,258,879,392.36
2013	First City Monumental Bank	11838000	366888810	0.0322659	1008280170	9.003581226	0.363875856	1,387,006,989.40
2014	First City Monumental Bank	15395000	474209000	0.0324646	1169364784	9.067950011	0.405527006	1,658,968,793.51
2015	First City Monumental Bank	21638654	648770000	0.0333534	1159534176	9.064283554	0.559509166	1,829,942,839.66
2016	First City Monumental Bank	25474529	632698355	0.0402633	1172778078	9.069215839	0.539486853	1,830,950,971.65
2017	First City Monumental Bank	33221362	705957590	0.0470586	1186524939	9.074276871	0.594979142	1,925,703,900.72
2018	First City Monumental Bank	40195497	708322362	0.0567475	1431298022	9.155730071	0.494881116	2,179,815,890.71
2019	First City Monumental Bank	38500000	721521910	0.0533594	1668505795	9.222327719	0.432435963	2,428,527,714.71
2020	First City Monumental Bank	46500000	754380600	0.06164	2058393492	9.3135284	0.366489985	2,859,274,101.74
2011	Guaranty Trust Bank	25229000	869272612	0.0290231	1608652646	9.206462278	0.540373097	2,503,154,267.78
2012	Guaranty Trust Bank	16820000	729838000	0.0230462	1734877860	9.239268905	0.420685523	2,481,535,869.68
2013	Guaranty Trust Bank	20001000	759257000	0.0263429	2102846415	9.322807554	0.361061557	2,882,104,424.71
2014	Guaranty Trust Bank	30620000	966985000	0.0316654	2355876526	9.372152525	0.410456571	3,353,481,535.81
2015	Guaranty Trust Bank	25499142	1213045000	0.0210208	2524593709	9.402191496	0.480491176	3,763,137,860.90
2016	Guaranty Trust Bank	71818874	1317015370	0.0545315	3116393439	9.493652281	0.422608825	4,505,227,692.97
2017	Guaranty Trust Bank	57658000	1562967654	0.0368901	3351096659	9.525186955	0.466404826	4,971,722,323.03

2018	Guaranty Trust Bank	74667995	1383698000	0.0539626	3287342641	9.516844973	0.420916878	4,745,708,645.99
2019	Guaranty Trust Bank	69023933	1233648798	0.055951	3758918770	9.575062941	0.32819246	5,061,591,510.96
2020	Guaranty Trust Bank	52582455	1569595979	0.0335006	4944653293	9.694135845	0.31743297	6,566,831,737.05
2011	Stanbic Ibtc Holding	16554000	17153114154	0.0009651	554507000	8.743907033	30.93399029	17,724,175,193.68
2012	Stanbic Ibtc Holding	14340000	282636000	0.0507366	676819000	8.830472542	0.41759466	973,795,009.30
2013	Stanbic Ibtc Holding	13222000	293813000	0.0450014	761451000	8.881641961	0.385859366	1,068,486,009.31
2014	Stanbic Ibtc Holding	17951000	297777000	0.0602834	941919000	8.974013557	0.316138649	1,257,647,009.35
2015	Stanbic Ibtc Holding	27036000	440205000	0.0614168	937564000	8.972000923	0.469519947	1,404,805,009.50
2016	Stanbic Ibtc Holding	18675000	433246000	0.0431048	1053523000	9.022644021	0.411235445	1,505,444,009.48
2017	Stanbic Ibtc Holding	31712000	393991000	0.0804891	1386416000	9.141893562	0.284179496	1,812,119,009.51
2018	Stanbic Ibtc Holding	17714000	435564000	0.0406691	1663661000	9.221064836	0.261810549	2,116,939,009.52
2019	Stanbic Ibtc Holding	21594000	476660000	0.0453027	1876456000	9.273338385	0.254021411	2,374,710,009.57
2020	Stanbic Ibtc Holding	26492000	553718000	0.0478438	2486306000	9.395554578	0.2227071	3,066,516,009.67
2011	Union Bank Of Nig	7478793	651631000	0.011477	1047269000	9.020058248	0.622219315	1,706,378,802.65
2012	Union Bank Of Nig	10623185	154121793	0.0689272	1014806000	9.006383026	0.151873159	1,179,550,987.23
2013	Union Bank Of Nig	12396962	169178185	0.0732775	1002756000	9.001195269	0.168713211	1,184,331,156.24
2014	Union Bank Of Nig	16596828	222514962	0.0745875	1008451000	9.003654801	0.220650247	1,247,562,799.30
2015	Union Bank Of Nig	25937000	342024828	0.0758337	1042346000	9.018011904	0.328129842	1,410,307,837.42
2016	Union Bank Of Nig	37026000	396886000	0.0932913	1252682000	9.097840837	0.316829012	1,686,594,009.51
2017	Union Bank Of Nig	110685000	555375000	0.1992978	1455540000	9.163024145	0.381559421	2,121,600,009.74
2018	Union Bank Of Nig	38496000	642492000	0.0599167	1463858000	9.16549895	0.438903227	2,144,846,009.66
2019	Union Bank Of Nig	44685000	511892000	0.0872938	1872231000	9.272359432	0.273412843	2,428,808,009.63
2020	Union Bank Of Nig	43909000	595298000	0.0737597	2191026000	9.340647531	0.271698282	2,830,233,009.69
2011	United Bank For Africa	9088000	736712000	0.0123359	1920435000	9.283399612	0.383617253	2,666,235,009.68
2012	United Bank For Africa	2910000	617961000	0.004709	2272923000	9.356584723	0.271879426	2,893,794,009.63
2013	United Bank For Africa	8374000	582207000	0.0143832	2642296000	9.421981467	0.220341324	3,232,877,009.66
2014	United Bank For Africa	10653000	987736000	0.0107853	2762573000	9.441313763	0.357542045	3,760,962,009.81

2015	United Bank For Africa	6031000	841768000	0.0071647	2752622000	9.439746577	0.305805883	3,600,421,009.75
2016	United Bank For Africa	17107000	1137203000	0.015043	3504470000	9.544622347	0.324500709	4,658,780,009.88
2017	United Bank For Africa	31212000	1586941000	0.019668	4069474000	9.609538278	0.389962192	5,687,627,010.02
2018	United Bank For Africa	60311000	1334423000	0.0451963	4869738000	9.687505596	0.274023572	6,264,472,010.01
2019	United Bank For Africa	86136000	2147283000	0.0401139	5620907000	9.7498064	0.382017173	7,854,326,010.17
2020	United Bank For Africa	111347000	2666322000	0.0417605	7697980000	9.886376778	0.346366449	10,475,649,010.27
2011	Zenith Bank	37290000	2147283000	0.0173661	2326695000	9.366739457	0.922889764	4,511,268,010.31
2012	Zenith Bank	28457000	2666322000	0.0106728	2604504000	9.415725029	1.023735037	5,299,283,010.45
2013	Zenith Bank	27977000	931124000	0.0300465	3143133000	9.497362758	0.296240725	4,102,234,009.82
2014	Zenith Bank	26407000	1018271000	0.0259332	3755264000	9.574640474	0.271158299	4,799,942,009.87
2015	Zenith Bank	30871000	175591400	0.1758116	4006842000	9.602802217	0.043822891	4,213,304,409.82
2016	Zenith Bank	57577000	2020184000	0.0285009	4739825000	9.675762307	0.426214892	6,817,586,010.13
2017	Zenith Bank	91738000	2192100000	0.0418494	5595253000	9.747819729	0.391778531	7,879,091,010.18
2018	Zenith Bank	92630000	1915741000	0.048352	5955710000	9.774933543	0.321664587	7,964,081,010.14
2019	Zenith Bank	27754000	2333319000	0.0118946	6346879000	9.802560219	0.367632501	8,707,952,010.18
2020	Zenith Bank	37439000	2816466000	0.0132929	8481272000	9.928460992	0.332080612	11,335,177,010.27