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EFFECT OF CREDIT RISK MANAGEMENT ON THE PROFITABILITY OF COMMERCIAL BANKS IN NIGERIA

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Abstract

Banks provide comprehensive financial services as compared to any other financial institutions by collecting money from individuals who want to make savings and provide these collected amounts to those who are in need to set up their enterprises and as such, they are exposed to the risk of failure due to the huge amounts of money that are provided to the customers through loans, which may threat the stability and growth of the banks. Therefore, the study determined the effect of credit risk management on profitability of Commercial Banks in Nigeria from 2014 to 2023. The study adopts ex-post facto research design while panel regression technique was used for the analysis. Credit risk management was measured by non-performing loan, loan to deposit ratio, loan loss provision and leverage ratio while profitability was measured by return on asset and from the analysis, the study found that non-performing loan has negative significant effect on profitability, loan to deposit ratio has negative insignificant on profitability while loan loss provision has positive significant effect on profitability and leverage ratio has negative insignificant effect on profitability of commercial bank in Nigeria. The study concludes that credit risk management has significant effect on profitability of Commercial banks in Nigeria therefore, the study recommends that Management of commercial banks in Nigeria should mitigate against adverse selection risks when advancing loans to minimize occurrences of nonperforming loans. This can be achieved by good credit appraisal procedures, effective internal control systems, diversification along with efforts to improve asset quality in the balance sheets. Also, Bank management should improve on the management of bank assets and liabilities, especially on the quality of assets portfolio and deposit liabilities in order to improve on the achievement of corporate objectives.

Keywords: Credit Risk Management, Profitability, Commercial Banks

Introduction

The banking sector stimulates growth and development in an economy by serving as the transmission channel for resources to the real sector. Commercial banks provide financial services by collecting money on deposit from surplus unit and lending it to deficit unit for interest and improvement of the economy. This has however made the banking industry an important in the Nigerian economic environment and it's influence plays a predominant role in granting credit facilities.

The Bank's capital plays an important role in maintaining the safety and durability of the banks and the integrity of banking systems in general, capital represents the wall or barrier that prevents any unexpected loss can be exposed to the bank that affect depositors' money, as well known, the banks generally operate in an environment with high degree of uncertainty which result in exposure to many risks. The main source of income for commercial banks is the interest earned on loan and advances. By giving out loans, banks are exposed to different forms of risks, for instance, liquidity risk, credit risk, market risk among others (Kargi, 2011).

The issue of credit risk in extending loans to customers is a serious concern because of the high levels of perceived risks resulting from their activities and their business environment which can easily cause them loss and reduction in their profitability (Kayode, et al., 2015). It is argued that the strong association between bank credit risk policy, inadequate internal supervision and weak management, bank credit risk management coupled with poor lending practices could be taken as the most serious causes of distress in the Nigerian financial service industry. Thus, inappropriate management of credit risk leads to the accumulation of non-performing loans (NPLs), which has become a serious problem in the Nigerian banking sector. Therefore, NPLs reduces the liquidity of banks, credit expansion and it slows down the growth of the real sector with direct consequences on the performance of banks, the firm which is in default and the economy at large.

Osuka and Amako (2015) opined that between 1999 and 2009, NPLs was seriously high at 35% in commercial banks in Nigeria. Thus, the increase in the level of NPLs of the banks was as a result of poor corporate governance practices, lax credit administration processes and the absence or non- adherence to credit risk management practices, (Taiwo et al, 2017). Iwedi, & Onuegbu, (2014) asserted that the economic recession of 2008 and the adverse effect of fallen oil price hampered the quality of loan assets in the Nigerian banking sector.

Low debt recovery hindered banks from extending further credit into the economy which adversely affected productivity. The Federal Government of Nigeria through the Act of National Assembly, established the Asset Management Corporation of Nigeria (AMCON) in July, 2010 to buy off trillions of toxic assets to save Nigerian commercial banks from total collapse, (Kayode et al 2015). AMCON succeeded in buying off about 95% of the non-performing loans, which shows that it has achieved the primary purpose for which it was formed, with a caveat not to buy new non-performing loans. Before the establishment of AMCON, the country experienced a consolidation and clean-up of the commercial banks under former Central Bank of Nigeria (CBN) governors: Charles Soludo and Sanusi Lamido, because most of the banks were to a large extent undercapitalized, arising mainly from non-performing loans. When the banking licenses of 14 banks were revoked in January, 2006 due to their failure to meet the minimum re-capitalization directive of the CBN, the ratios of non-performing loans of some commercial banks were up to 80% of their loan portfolios (Kayode et al, 2015). For example, in the year 2000, the ratio of non-performing loans to total loans in the banking sector stood at 21.5% and by the end of 2001, the ratio had improved to 16.9%. However, in 2002, 2003 and 2004, the ratio worsened to 21.3%, 21.6% and 23.8% respectively. Furthermore, in 2005, 2006, 2007 and 2008 there were consistent improvement of; 18.1%, 8.8%, 8.4% and 6.3% respectively, (Kayode et al, 2015).

The commercial banks recorded a N56.31 billion increase in non-performing loans from August 2013 to August 2014. The increase in non-performing loans from N344.26 billion as at August, 2013, to N400.57 billion, as at August 2014, represents a 16.36% increase, (Kayode et al 2015). Offiong (2018) stated that the non-performing loan ratio increased steadily from 4.4% to 12.8% in 2015 and 2016 respectively. Offiong also stated that the non-performing loan ratio has risen recently to 16.21%.

Commercial banks play important role in mobilizing financial resources for investment by extending credit to various businesses and investors. Lending represents the main activity of the banking industry and loans and advances are the dominant assets as they generate the largest share of operating income. Loans however expose banks to high risk which may result from default in repayment. Many banks that collapsed in the late 1990's and up to the recent restructuring of the commercial banks in Nigeria were as a result of poor management of facilities which was portrayed in the high levels of non-performing loans.

Looking at the emphasis that is laid on credit risk management by commercial banks in recent time, it is important to have a closer look at the effect of credit risk on the profitability of commercial banks in Nigeria.

In an attempt to address the issue of non-performing loans, the Federal Government of Nigeria through the Act of National Assembly established the Asset Management Corporation of Nigeria (AMCON) in July, 2010 to provide a lasting solution to the recurring problems of non-performing loans militating against Nigerian banks. The Central Bank of Nigeria (CBN) has made efforts to ensure a sound and efficient financial institutions' performance in Nigeria by initiating the recapitalization policy of July 2004, issuance of Prudential Guidelines, establishment of Nigeria Deposit Insurance Corporation (NDIC) in 1988 to protect depositors' funds, minimum reserve requirements, fines and sanctioning of management, withdrawal of licenses, among others.

In addressing challenges posed by the issue of credit risk management, many researchers have carried out empirical investigations to determine the effect of credit risk management on the profitability of banks. Among the studies were Ajayi and Ajayi (2017), Uwuigbe et al (2015) and Felix and Claudine (2008) who found inverse relationship between credit risk management and the profitability of banks. On the other hand, Alshatti (2015) and Abiola and Olausi (2014) established a positive relationship between credit risk management and banks' profitability.

As pointed out above, a lot of studies have been carried out on the effect credit risk management on profitability of banks, however none of the study period extent to the current period used in this study and as such their findings and conclusion cannot be apply in 2023 which create gap in the scope of the study with other studies conducted in this area. Furthermore, this study used non-performing loan, loan to deposit ratio, loan loss provision and leverage as measure of credit risk management as against other studies that just used less than four credit risk management in their studies. It is against this background and the divergent views of other studies that this study determined the effect of credit risk management on the profitability of commercial banks in Nigeria.

The study examined the effect of credit risk management on the profitability of commercial banks in Nigeria. Other specific objectives are to:

i. Assess the effect of non-performing loan and advances on the profitability of commercial banks in Nigeria.
ii. Ascertain the effect of loan and advances on the profitability of commercial banks in Nigeria.
iii. Determine the effect of loan loss provision on the profitability of commercial banks in Nigeria.
iv. Evaluate the effect of leverage on the profitability of commercial banks in Nigeria.

Literature Review

Credit Risk

Credit risk is the risk that counterparties in loan transactions and derivative transactions will default (Nguyen, 2016). Nguyen (2016) further stated that credit risk is not only limited to loan products but also exist in other products such as letter of credit and guarantees-a contract in which a bank agrees to act on behalf of a client if such a client fails to execute what he committed in business contracts, investment services or asset finance. Credit risk arises when counterparties are unable to repay the principal and or the interests in time. In banking operations, lending generate most of the profits, however, it also contains potential risks.

According to Kayode, et al (2015), credit risk arises from the potential that a borrower is either unwilling to perform an obligation or his ability to perform such obligation is constrained, resulting in economic loss to the bank. Therefore, if this occurs or becomes persistent, bank's performance obviously will be affected. Kayode et al (2015) also posited that in a bank's portfolio, losses often stem from outright default due to inability or unwillingness of a customer to meet commitments in relation to lending, trading, settlement and other financial transactions. Alternatively, losses may result from reduction in assets value due to actual or perceived deterioration in credit quality. Credit risk emanates from a bank's financial exposure to dealing with individuals, corporation, financial institutions or a sovereign. However, commercial banks cannot succeed without taking such risk because the success of any bank depends on how risks taken are effectively managed. According to Funso, et al. (2012), credit risk is the extent to which banks are exposed to borrower (customer) defaults in honouring debt obligations on due date or at maturity. Funso, Kolade and Ojo further stated that credit risk management strategies are measures adopted by banks to contain the adverse effect of credit risk. They also asserted that a sound credit risk management framework is important for banks in order to enhance profitability and guarantee their survival.

According to Akinlo and Emmanuel (2021), credit risk is traditionally the greatest risk faced by financial institutions. Banks exist not only to accept deposits but also to extend credit facilities to customers, therefore they are unavoidably exposed to credit risk. Therefore, for banks to be financially sound and effective, credit risk management should be given adequate attention to ensure that risk arising from credit exposure is curtailed.

Bank Profitability

Profit optimization is one of the most important objectives of every organization, of which bank is not an exception. Banks generate their income through two main sources, (Li, 2015). One is the fees that a bank charges for the services it renders to its customers and the other is the interest that accrues on its assets. Li (2015) further asserted that profitability indicates a bank's performance. It reveals how efficiently a bank is managed as well as the strategies adopted by its management team.

According to Adeusi, et al. (2014), profitability is the outcome of effective management and optimal utilization of resources which enhances higher return on capital employed. The management of a bank owed a duty to identify its strength and weakness, and exploit its opportunities and tackle threats if it is determined to make profits. A bank is said to be 'profitable' if it can generate financial gains from the capital invested into its operational activities, (Adeusi, et al., 2014). The soundness of a bank depends on how well the bank makes profit in the course of a financial period. For banks to be profitable, they have to take some calculated risks.

According to Li and Zou (2014), profitability indicates banks' capacity to take risk and/or increase their capital. It shows banks' competitive ability and measures the quality of its management. Olalekan and Adeyinka (2013) stated that profitability is the ability to make profit from all the business activities undertaken by an organization, company, firm, or an enterprise. It shows how effective and efficient management utilizes the resources available at its disposal to optimize the business value. Olalekan and Adeyinka (2013) also asserted that the term 'profitability' is not synonymous with the term 'efficiency'. They further argued that profitability is an index of efficiency; and is regarded as a measure of efficiency and a roadmap to greater management efficiency.

Modern Portfolio Theory (MPT)

Modern Portfolio Theory (MPT) was developed by Harry Markowitz in 1952. MPT seeks to maximize portfolio expected return for a given amount of portfolio risk, or equivalently minimize risk for a given level of expected return, by carefully selecting the proportions of various assets (Ajayi & Ajayi, 2017). The theory assumes that investors are risk averse, that is, given two portfolios that offer the same expected return, investor will prefer the less risky one. Thus, an investor will take on increased risk only if compensated by higher expected return. Conversely, an investor who want higher expected returns must accept more risk.

The portfolio theory harmonizes the process of efficient portfolio formation to the pricing of individual assets (Ajayi & Ajayi, 2017). It emphasizes more on the risk that yields more return. The theory also explained that some sources of risk associated with individual assets can be eliminated or diversified away, by holding a proper combination of assets (Ajayi & Ajayi, 2017). The theory shows that investment is all about diversification, hence, it is concerned about selecting a combination that optimizes return.

Although the MPT is widely used in practice in the financial industry, in recent years, some of its basic assumptions have been widely criticized by economists (Omisore, et al., 2012). The MPT improves on traditional investment models, and has contributed immensely in the mathematical modelling of finance. The theory emphasized asset diversification to mitigate against market risk. The theory (MPT) is an advanced investment decision approach that enables an investor to classify, estimate, and control both the kind and the amount of expected risk and return; also called Portfolio Management Theory (Omisore, Yusuf & Christopher, 2012). Essential to the portfolio theory are its quantification of the relationship between risk and return and the assumption that investors must be compensated for assuming risk.

The MPT mathematically formulates the concept of diversification in investing, with the aim of selecting a collection of investment assets that collectively has lower risk than any individual asset. According to Omisore, et al. (2012), diversification lowers risk even if assets' returns are not negatively correlated. By using a combination of different assets whose returns are not perfectly positively correlated, MPT seeks to minimize the total variance of the portfolio return (Omisore, et al., 2012). MPT can also be viewed as an assumption that investors are rational and markets are efficient.

The fundamental concept behind the MPT is that assets in an investment portfolio should not be selected individually, each on their own merits. Rather, it is pertinent to consider how each of these assets changes in price with reference to how every other asset in the portfolio changes in price. For a given amount of risk, the MPT describes how to select a portfolio with the highest possible expected return (Omisore, et al., 2012). Put in another way, for a given expected return, the MPT explains how to select a portfolio with the lowest possible risk.

Portfolio theory deviates from traditional security analysis in shifting emphasis from analysing the characteristics of individual investments to determining the statistical relationships among the individual securities that comprise the overall portfolio (Edwin & Martins, 1997). However, some of the drawbacks not addressed by the theory include; how banks can form a portfolio of loans that minimize risk and optimize return. It does not outline ways of assessing a risk-free portfolio. Lastly, the theory does not address various risks that are faced by banks when managing a loan portfolio.

Empirical Review

Waqas et al. (2020) examined the impact of NPLs on the profitability of commercial banks in Pakistan using panel data from 2005 to 2018. The study applied a dynamic panel data methodology, using the generalized method of moments (GMM) to account for potential endogeneity issues. The findings revealed that an increase in NPLs significantly reduced bank profitability, as measured by return on assets (ROA) and return on equity (ROE). The study also noted that higher levels of NPLs increased provisioning expenses, which further reduced profitability. While the methodology was robust, the study is critiqued for not exploring external factors, such as macroeconomic conditions, which may also influence profitability.

In another recent study, Akinlo and Emmanuel (2021) explored the relationship between NPLs and profitability in Nigerian banks. The authors used panel data from 10 commercial banks over the period of 2010 to 2019 and applied fixed and random effects models. Their findings showed a strong negative relationship between NPLs and profitability (ROA), attributing this to the increased cost of provisioning for loan losses and a decline in interest income. The study's strength lies in its focus on the Nigerian context, but a key critique is its lack of focus on bank-specific characteristics, such as capital adequacy or management efficiency, which could also affect profitability.

Similarly, Salim and Raheman (2022) investigated the relationship between NPLs and profitability in South Asian countries, specifically focusing on India, Pakistan, and Bangladesh. Using a dataset covering 2007 to 2020, the authors employed a fixed effects model to assess how NPLs affect profitability (ROA and ROE). The study concluded that higher levels of NPLs significantly reduce profitability due to increased provisioning and reduced credit creation capacity. A critique of the study is its limited analysis of how regulatory frameworks or government interventions might mitigate the impact of NPLs on bank profitability.

Hossain et al. (2021) conducted a study on the effects of NPLs on the profitability of commercial banks in Bangladesh. Using data from 2008 to 2019, the authors utilized a random effects model to determine the relationship between NPLs and profitability. The findings showed that NPLs have a significant negative impact on both ROA and ROE, driven by increased provisions and declining asset quality. The study is methodologically sound, but it could be critiqued for its narrow focus on a single country, limiting its applicability to other banking systems.

Saba and Azam (2022) analyzed the impact of NPLs on profitability in the Middle East and North Africa (MENA) region. The study employed panel data from 15 banks across five countries between 2011 and 2020, applying a GMM estimator to account for endogeneity issues. The results showed that NPLs negatively affect profitability by increasing loan loss provisions and reducing the interest margin. The study’s strength is its focus on a region with high political and economic volatility, but a critique is that it did not adequately address how bank size or governance structures might influence the NPL-profitability relationship.

Rahman and Islam (2023) recently studied the effect of NPLs on bank profitability in the Southeast Asian region, focusing on Malaysia, Indonesia, and the Philippines. The study utilized a panel data approach from 2010 to 2021 and applied both fixed effects and random effects models. The findings confirmed that NPLs have a significant negative effect on profitability, primarily through increased loan loss provisions and declining lending activity. The study is well-rounded, but its critique lies in its failure to explore how different regulatory measures in these countries impact the NPL-profitability relationship.

Hapsari (2018) examined the effect of Loan to Deposit Ratio and Non Performing Loans Ratio toward Financial performance proxied by Return on Assets (ROA) with Size as a moderating variable of commercial banking in Indonesia during 2012-2016 periods. Samples were taken by purposive sampling method and obtained 65 data from 13 banks of Business Group Commercial Banking Bank (BUKU) 3 and 4. Moderating Regression Analysis with absolute difference method was used to examine the research. The result showed that Loan to Deposit Ratio has a positive effect toward financial performance, Non-Performing Loan has negative effect toward financial performance, while Size is not moderating both the effect of Loan to Deposit and Non-Performing Loan toward financial performance.

Methodology

This study adopts ex-post-facto research design in an attempt to examine the effect of credit risk management on profitability of commercial banks in Nigeria. This design is most appropriate giving the fact that the subjects in the sample come to the researcher already made, as it were, and it is therefore not practicable for the researcher to manipulate them and randomly assign them to various text and control groups for the purpose of exercising control over their behaviour.

The population of the study is 14 commercial banks. The study used census sampling method to adopt all the population of this study since the data needed for the study are all available. The data was analysed using multiple regression analysis. The study adopts Ordinary Least Square (OLS) method in estimating the parameter of the model.

$$ROA_{it} = \beta 0 + \beta_1 NPLR_{it} + \beta_2 LTDR_{it} + \beta_3 LLPR_{it} + \beta_4 LR_{it} + e_{it}$$

Where:

ROA_{it} = Return on assets (ratio of profit after tax to total assets) of bank i in period t
$NPLR_{it}$ = Non-performing loan ratio of i bank in period t
$LTDR_{it}$ = Loan to deposit ratio of i bank in period t
$LLPR_{it}$ = Loan loss provision ratio of bank i in period t
LR_{it} = Leverage ratio of i bank in period t
B0 = The intercept (constant)
$\beta_1, \beta_2, \beta_3, \beta_4$ = The slope which represents the degree with which bank performance changes as the independent variable changes by one unit variable.
e_{it} = error term.

Table 1: Variable Definition and Measurement Units

S/NO	Abbreviation of variables	Description	Measurement
1.	NPLR	Non-performing loan ratio	Non-performing loan and advances divided by total loan
2.	LTDR	Loan to deposit ratio	Loan and advances divided by total deposit
3.	LLPR	Loan loss provision ratio	Loan loss provision

4.	LR	Leverage ratio	Debt-equity
5.	ROA	Return on asset	Profit after tax divided by total assets

Source: Owner's Computation, 2024.

Result and Discussion

Table 2: Descriptive Statistics

	ROA	NPL	LTDR	LLPR	LR
Mean	1.511071	44534064	0.726159	588555513.1857141	0.556221
Median	1.418489	22515547	0.641996	448570461.5	0.581687
Maximum	3.720000	570738000	13.80014	2217991000	3.428265
Minimum	0.121719	513268.0	0.162028	-40609105	-4.138209
Std. Dev.	0.857471	76090818	1.127710	512385870.2407693	0.707497
Skewness	0.329849	4.792521	11.24371	1.292043	-1.768249
Kurtosis	2.308190	28.89202	130.9029	3.971128	18.61970
Jarque-Bera	5.330515	4446.572	98378.18	44.45346	1496.143
Probability	0.069581	0.000000	0.000000	0.000000	0.000000
Observations	140	140	140	140	140

Source: Generated by the Author, 2024

The result above is the summary of the non-performing loan, loan to deposit ratio, loan loss provision, leverage ratio as well as the dependent variable which is the return on asset. Return on asset has a mean value of 1.511071 while the standard deviation is 0.857471 and the probability of 0.069581 which means that return on asset is normally distributed because the probability is greater than 5% level of confidence. Also, the median is 1.418489 with maximum addition to commercial banks in return on asset as 3.720000. The minimum value shows a value of 0.121719 while the skewness and kurtosis is 0.329849 and 2.308190 accordingly. The total observation of return on asset is 140 which cut across the 14 listed banks and the years of the study.

Furthermore, non-performing loans has a standard deviation of 76090818 lower than the mean value of 44534064. This signified that non-performing loan is not closely netted as such and the probability of 0.000000 indicates not normally distributed of the variable. In like manner, its median is 22515547 with maximum non-performing loan experience by commercial banks in Nigeria as 570738000 while the minimum value is 513268.0. The total observation across the period of the study is 140. Loan to deposit ratio has a closely netted mean value with standard deviation of 0.726159 and 1.127710 respectively. From the probability which is less than 5%, it means that loan to deposit ratio is not normally distributed and the maximum and minimum collected by commercial banks is 13.80014 and 0.162028 respectively while the skewness is 11.24371 and Kurtosis is 130.9029.

Also, the study found out that loan loss provision has a mean value and standard deviation of 588555513.1857141 and 512385870.2407693 accordingly. From the probability of 0.000000 which is less than 5%, it means that loan loss provision is not normally distributed and the maximum and minimum value is 2217991000 and -40609105 respectively while the skewness is 1.292043 and Kurtosis is 3.971128. In like manner, leverage is not normally distributed because it has a probability which is less than 5% level of confidence and the maximum LR ratio of 3.428265. The result also indicates that leverage has a minimum value of -4.138209 and a mean of 0.556221 while the median and standard deviation are 0.581687 and 0.707497. Furthermore, the LR skewness and kurtosis values are -1.768249 and 18.61970 accordingly.

Table 3 Correlation Matrix

	ROA	NPL	LTDR	LLPR	LR
ROA	1.000000				
NPL	-0.189353	1.000000			
LTDR	-0.094602	0.048583	1.000000		
LLPR	0.286861	0.276025	-0.055695	1.000000	
LR	-0.068160	0.033357	-0.013219	0.006679	1.000000

Source: Generated by the Author, 2024

The relationship of the variables was ascertained with the correlation matrix above. Non-performing loan has a negative correlation with return on asset with approximately 18.9% (-0.189353) while loan to deposit ratio is correlated with return on asset with approximately 9.5% which shows a negative relationship. Furthermore, loan loss provision has a positive correlation with return on asset with approximately 28.7% while leverage ratio is correlated to return on asset to the extent of 6.8%. From the correlation result, the correlations lie between 28.7% and 6.8% which is below 80% thus, the independent variables have no collinearity problem because the collinearity between them is low.

Table 4 Variance Inflation Factor

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
NPL	8.52E-19	1.464100	1.088541
LTDR	0.003592	1.428701	1.007816
LLPR	1.88E-20	2.534144	1.088127
LR	0.009067	1.624717	1.001349
C	0.015763	3.502849	NA

Source: Generated by the Author, 2024

The variance inflation factor is used to test for the multicollinearity between the independent variables and from the result NPL has a VIF of 1.088541 and LTDR have VIF of 1.007816. Also, LLTR has VIF of 1.088127 and 1.001349 for LR which indicates there is no multicollinearity between the independents of the study because the VIF values are all below 10.

Table 5 Heteroskedasticity Test

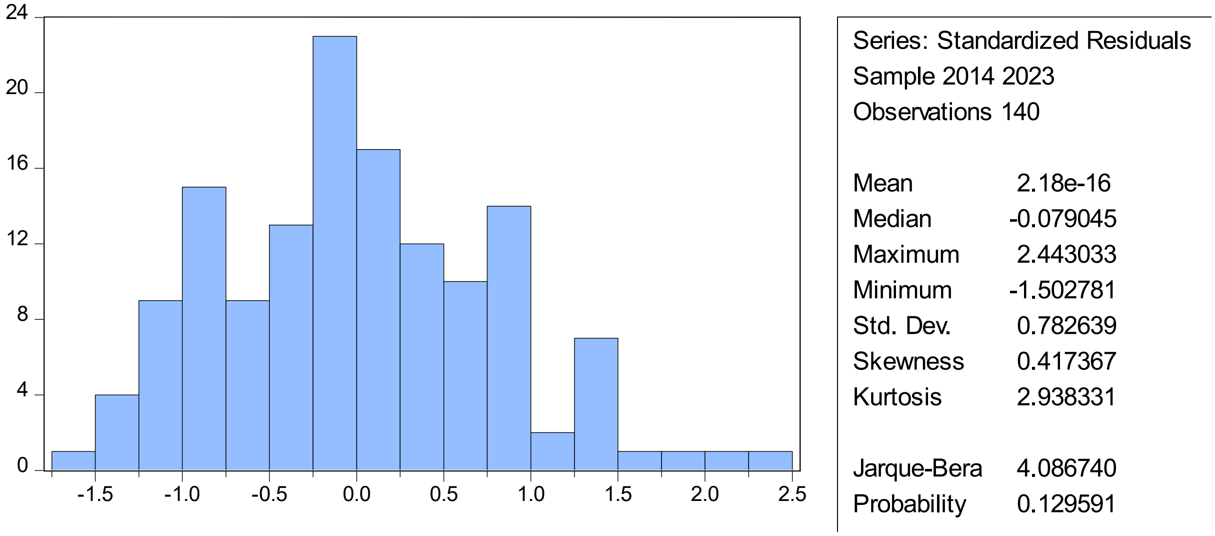
Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.633201	Prob. F(4,135)	0.6397
Obs*R-squared	2.578240	Prob. Chi-Square(4)	0.6307
Scaled explained SS	2.278443	Prob. Chi-Square(4)	0.6847

Source: Generated by the Author, 2024

The result indicates that there is no heteroskedasticity problem with the variables because the Obs. R-Squared of 2.578240 and Prob. of 0.6397 are more than 5% level of confidence.

Figure 1: Histogram Normality Test



Source: Generated by the Author, 2024

The residual normality test which was used to ascertain the normality of the variable residual indicates that they variables are normally distributed because it has a probability of 0.129591 which is greater than 5% level of confidence.

Table 6 Summary of Regression Analysis

Variables	Coefficient	T-Statistics	P-values
Constant	1.345265	9.846620	0.0000
NPL	-2.966713	-3.213792	0.0016
LTDR	-0.039618	-0.664986	0.5072
LLPR	6.290634	4.477739	0.0000
LR	-0.078286	-0.830271	0.4079
R^2	0.164682		
Adj. R^2	0.139932		
Hausman p-value	0.3203		
F-stat.	6.653766		
F-sig.	0.000064		

Source: Generated by the Author, 2024

To choose between Fixed and Random effect model, a Hausman specification is carried out which help to chosen the most appropriate model for the study. If the Hausman P-value is less than 5%, fixed effect model is more appropriate but if the Hausman P-value is more than 5%, Random model is more appropriate. From the Hausman specification result with p-value greater than 5% level of confidence, it is evident that Random model is more appropriate for the study. Therefore, Random model is interpreted while the fixed effect is attached in the appendix.

The result above indicated that non-performing loan has negative significant effect on return on asset of commercial banks in Nigeria with p-value of 0.0016. This signified that the higher the bank experienced non-performing loan, the lower their profitability will be by -2.966713. This could be cause by total acquired cash where upon the account holder has not made his booked installments for no less than 90 days. The non-performing loan has a t-value of -3.213792. From the overall, the higher the non-performing loan, the lower the bank will witness decrease in profitability.

Also, loan to deposit ratio has negative but insignificant effect on profitability of commercial in Nigeria with p-value of 0.5072. This means that increase in loan to deposit ratio will not have a significant effect on the bank profitability but however, there is a need for banks to manage their credit risk effectively because it affects their profitability negatively. Furthermore, loan loss provision has positive significant effect on return on asset with p-value of 0.0000 which indicates any increase in loan loss provision will increase bank profitability by 6.290634.

The study also indicate that leverage ratio has negative insignificant effect on return on asset with a p-value of 0.4079 but however, there is a need for banks to manage their leverage (debt) risk effectively because it affects their profitability negatively.

The coefficient of determination showed that credit risk management variables explained variation on profitability of Commercial Banks in Nigeria to the extent of 0.164682 which is approximately 16.5% while the remaining variation on the profitability is explained by other variables not captured in the model with the Adjusted R_2 of 0.139932. The model is fit with f-significance value of 0.000064 which is less than 5% level of significance.

Conclusion and Recommendations

This study examined the effect of credit risk on profitability of commercial banks in Nigeria from 2014 to 2023. The study concludes that any increase in non-performing loan of deposit money banks in Nigeria will decrease return on asset. This could be that the total acquired cash by customers has not been repay as at when due which turn to be non-performing. Also, this means that account holders neglect to repay their debt within 90days of collection. The implication of this is that banks will experience decrease in the resources to carry out business activities.

In the same way, the study concludes that any increase in loan to deposit ratio will decrease return on asset of deposit money banks in Nigeria at long run because there is inverse relationship between the variables. This may due to the interest accrued on the advance given to the customers were not repay. In like manner, this could be that the banks advances given to customers were not repay as at a due period of time.

Also, the study concludes that loan loss provision has positive significant effect on profitability of commercial bank in Nigeria. This means that as loan loss provision increases, it will directly increase profitability of the banks. Furthermore, the study concludes that leverage of the banks has negative but statistical insignificant effect on the profitability within the period of this study hence, the banks should maintain appropriate leverage in order to facilitate banks transaction.

From the findings, the following recommendations were made:

i. Management of commercial banks in Nigeria should mitigate against adverse selection risks when advancing loans to minimize occurrences of nonperforming loans. This can be achieved by good credit appraisal procedures, effective internal control systems, diversification along with efforts to improve asset quality in the balance sheets. Maintaining profitability is a challenge too for commercial banks in Nigeria and commercial banks should remain innovative especially on cost cutting techniques which include leveraging in technology and minimizing occurrences of nonperforming loans.
ii. Banks should evaluate account holders to ensure that they are credit worthy before granting them loans so as not to experience too much non-performing loans and reduction in loan to deposit ratio. Also, Banks should frequently send a remainder to the account holders who are almost due for the repayment before the 90days of the loan collected in order to meet up with their obligation.
iii. Bank should give a credit facility such as short-term loans, overdraft, cash credit and bills purchased to credit worthy customers to enables them facilitate their business activities. These will invariably increase their financial performance.
iv. Bank management should improve on the management of bank assets and liabilities, especially on the quality of assets portfolio and deposit liabilities in order to improve on the achievement of corporate objectives.

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