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Credit Risk and Financial Performance of Listed Deposit Money Banks in Nigeria

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Abstract

The study analyses the effect of credit risk on the financial performance of listed deposit money banks in Nigeria. Credit risk is a proxy for capital adequacy ratio, non-performing loan and loan loss provision, while financial performance is a proxy for return on assets. The correlational research design was used in the study. Relevant data for the study were collected from thirteen adjusted populations of listed deposit money banks actively trading on the floor of the Nigerian Exchange Group (NXG) from 2014 to 2023. So, the data collected were analysed using generalized least square (GLS) regression analysis. The findings reveal that the capital adequacy ratio had a positive effect on the financial performance of listed DMBs. Based on the findings, the study concludes that the capital adequacy ratio affects financial performance positively. Among the important policies of the study is that the DMBs formulate credit risk related policies to enhance financial performance of listed DMBs in Nigeria. It is, therefore, recommended among others, that the CBN committee on credit risk management should monitor DMB's credit risk threshold for absolute compliance.

Introduction

Investors in any business-oriented organization are very concerned about maximizing returns on their investment (Abdullah et al. 2015). Maximizing return on investment provides sufficient evidence to both existing and prospecting investors in firm business assets to decide on whether to invest in a new business, adjust or maintain their stance or even withdraw completely (Abiodun & Mlanga, 2019). They are driven by the firm ability to maximize profit within a stipulated period, they added. It is an important tool for investment decisions therefore firms place it at the top list of their priority. Even though there are other activities which are of great concern to their growth and survival they are directly or indirectly related to maximizing return on shareholders' investment (Adegbie & Dare, 2020).

Many researchers have a broader perspective on business performance. They look at performance from any activity that would contribute to the success and growth of a

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business and by extension to the economy (Adesina et al.2015, Ajayi & Ajayi, 2017 Ajayi et al.2019). Business success depends on the degree to which an organization utilizes its human and material resources to achieve its main goal. Achievement of its main goal is not possible in isolation of engaging human and material resources. On the other hand, the external environment contributes to a certain degree towards business success. Both internal and external factors are crucial to global business performance, even though the factors vary from industry to industry within the same country but are essential to its growth and success which could be assessed in terms of financial performance (Alade, 2014). A Firm's financial performance depends on its ability to satisfy its demand and contribute to shareholders' return on investment (Alade, 2014). It is worthy of notice, therefore, that firms incorporate all parties involved to words profit maximization. Given the stakeholder theory, business stakeholders who are treated well tend to reciprocate with positive attitudes and behaviours towards the fulfilment of the organization's goals (Parmar et al.2010). Firm performance should reflect the efficient management of all stakeholders to give their maximum support to actualize the organization's objectives (Ahmad and Tahir, 2019).

The financial performance and long-term survival of deposit money banks (DMBs) are challenged by financial risk and corporate governance lapses in Nigeria (CBN Report, 2018, Premium Time, 2018 Vanguard, 2021). The Central Bank of Nigeria (CBN) in consultation with Nigerian Deposit Insurance Corporation (NDIC) withdrew the operating licence of Sky Bank. The CBN however, discovered some unacceptable corporate governance lapses and persistent failure of the bank to meet with minimum capital adequacy threshold which made the bank appear frequently at the CBN lending window. The report revealed that after a careful examination and forensic audit of Sky Bank, an urgent recapitalization was required as the bank could no longer continue to live on borrowed time due to poor performance (CBN report, 2018).

The recent quarterly report of First Bank Limited at the end of 31st March 2021 revealed that bad loans are a major challenge facing first-generation banks. The report, however, showed that impairment charges increased, depressing the group's core banking net income by 21.6% to ₦39.6billion in the first quarter, of 2021 as against ₦50.5 billion recorded in the comparable period of 2020 (Vanguard,2021). Furthermore, the report showed a double-digit decline across the key performance indicators. All these were attributed to drag on nonperforming loans among others. The effect on performance, however, can be seen on the financial statement of FBN revealed end of 31st March 2021. The gross earnings of the bank dropped from ₦159.68 billion in the first quarter of 2020 to ₦136.58 billion in in first quarter of 2021. The profit after tax had declined from ₦28.68 billion to ₦18.91 billion of the same period. The net profit also moderated from ₦25.70billion to ₦15.6 billion in the aforesaid period.

As mentioned earlier, profit-oriented businesses are majorly concerned about maximising return on shareholder's investment, but their activities vary from one industry to another. For example, DMB operations are quite different from insurance firms, even though they are within the same sector and aimed at profitability. Furthermore, DMBs uniqueness which characterised by deposit mobilization and giving out loans and advances to individuals, investors, and government to finance consumption, investment and expenditure thereby maximizing profit in the form of

interest income and contributing to economic growth and development of a nation. To perform this function, DMBs require a strong capital base. The central bank is saddled with the responsibility of coming up with policies related to DMB's operation (Argaw, 2016). For example, CBN, set policies on non-performing loans, capital adequacy ratio, and liquidity ratio and caution DMBs on loan loss provision. They all threaten the success or in extreme cases determine the failure of the industry. Based on these arguments presented the study intends to explore the effect of credit risk proxies by capital adequacy ratio, or CAR, non-performing loan, or NPL, loan loss provision, or LLP and financial performance proxy by return on assets, or ROA.

Literature Review

This section reviewed the relevant literature and theories on credit risk proxies (capital adequacy ratio, non-performing loan and loan loss provision) on the financial performance of listed DMBs in Nigeria.

Capital Adequacy Ratio (CAR) and Financial Performance

Banks 'capital can be viewed from two different directions. It could be seen from the initial amount pooled by the ordinary shareholders (paid-up capital). In return, they were given the right to enjoy the future earnings of the business. By extension, this definition includes proceeds from premiums arising from the selling of shares, all forms of the reserve, undistributed profits, and income accrued to minority shareholders subsidiaries, and associates, excluding preference shares holders and revaluation reserve (Osuagwu, 2014). Central Bank of Nigeria (CBN) readjust bank capital as ordinary share capital, reserves, and net provision for non-performing accounts, including losses arising from fraud, forgeries, theft etc. Another way of defining bank capital is the number of funds available for banking operations (Omobolade et al., 2020). The minimum ratio of bank capital to the risk-weighted asset is 10% (Adeleke, 2013). Bank assets should be made up of paid-up capital and reserves, the study added. It further suggests that banks' capital should maintain a ratio of 1:10 between credit to net provision and adjusted capital. The present study, therefore, views capital and reserves as suggested by CBN (2004). In line with CBN's requirement for a minimum capital base, capital adequacy could be defined as the amount of capital pooled by the shareholders that at least reaches the minimum capital base for the banking business.

Annor and Obeng (2018), Udom and Eze (2018), Hilit et al. (2019), Muhammad et al. (2019) Sunaryo (2020), and Keqa (2021) concluded their studies on capital adequacy ratio and financial performance, strong capital proxy(capital adequacy ratio) have a positive greater effect on financial performance proxy(Return on asset). Similar studies by Puspitiasari (2021), Echobel and Okika (2019) and Asari and Endri (2019) however concluded that the capital adequacy ratio does not affect financial performance. Financial performance proxied as either return on asset (ROA), return on equity (ROE) and liquidity ratio among other accounting measurements, provides valuable information to stakeholders that aids them in evaluating past and current performance (Kakanda et al., 2018). Some literature used ROA and ROE to evaluate the efficiency at which DMBs utilize their resources to maximize return on investment (Jabet & Wepuktulu, 2020). ROA reveals efficient utilization of material resources to generate earnings he added. Looking closely at the banking business, therefore, it shows the efficiency at which interest income drives return on

investment. In a similar vein, ROE reveals efficient and effective top management and board of directors to maximize shareholders' return. One of the advantages of these proxies is, that they are readily available to the stakeholders within and outside the business environment (Jones, 2012).

HO_1: There is no relationship between the Capital adequacy ratio and the financial performance of listed DMBs in Nigeria.

Non-performing Loan (NLP) and Financial Performance

A non-performing loan is one of the variables proxies' credit risk in the literature. It is one of the factors used to evaluate the performance of DMBs across the globe. In general, the quality of bank assets is determined to a great extent by the NLP. In Nigeria, the CBN 's threshold for evaluating DMB performance is 5.0. (CBN, Annual Report, 2020). A ratio higher or lower than 5.0 could be seen as performance or otherwise. As a result of this, the definition of NPL differs from country to country. A Bank loan is considered NPL when neither principal nor interest was paid for than 90 days or three months. This means that failure to meet up with either of the two conditions for loan repayment for at least three months would exclude it from being performed. However, a loan that has been served within the aforesaid period provides a bank with interest income and increases the bank's capacity to accommodate loan requests from customers and maximize shareholders' returns on investment. By extension, these activities would have a long-term effect on the economic well-being of the country. Banks are required by law to set aside their threshold on nonperforming loans because it not only fails to create interest income but also reduces their capacity to extend additional loans to support another sector of the economy. Even though NPL has been explored by many authors it has been characterised by loan repayment which the principal and interest remain unpaid or unserved before it has been classified as nonperforming.

The International Monetary Fund or IMF describes NPL as a bank loan that reached 90 days or more without yielding interest income. The guidelines further defined loans as non-performing when payment interest of principal and interest are due for at least three months or more or when the debtor files for bankruptcy the document further explains that it could also, be described as non-performing when the debtor files for bankruptcy. In Nigeria, NPL is categorised as standard, doubtful, very doubtful and loss (Oyelade, 2019). It comprises substandard, doubtful, and virtual loss and loss, and is categorized as per their degree of collection difficulty. However, if the borrower starts making payments again on a non-performing loan, it becomes a re-performing loan, even though the borrower has not repaid all the unpaid amount, the study added. The present, therefore, views NPL as a bank loan which has not been served for a period longer than three months and appears on banks' annual reports as a non-performing loan. Doa et al. (2020), Ihsan et al. (2021) and Chimkono et al. (2016), reported a positive effect of non-performing loans on financial performance. Asari and Endric (2019) and Aliu and Collaku (2021) concluded the negative effect of non-performing loans on financial performance measures (return on assets). However, in another study, Mrindoko et al. (2020) and Olaoye and Fajuyagbe (2020) reported the interaction between non-performing loans did not affect financial performance. , therefore, proposes hypotheses as follows:

H_{O2}: There is no relationship between CSR customer/product-related activities and the financial performance of listed industrial goods firms in Nigeria.

Loan Loss Provision (LLP) and Financial Performance

An estimate of loan recoveries which might not be recovered from customers is another name for loan loss provision (LLP). The estimate lies on the quantum of losses from the credit portfolio that would be affected by how much recovery from the expected loans is (Isa and Fie, 2013). The study further illustrated that bank loans with recovery expectations of 80% for more than 90 days would necessitate an LLP of 20%. The LLP is seen as an amount set aside to recover principal and interest which ordinarily ought to have been recovered from customers (Mamun, 2004). The loan is classified as NPL when both principal and interest are due more than three months, automatically calling for LLP to be set at 20%, the study further explained. In many studies reviewed, managers exercise their discretion in coming up with LLP which gives room for earning management (Abdullah et al. 2017, Wood & Skinners, 2018 Zheng et al. 2019). Notwithstanding, the described LLP is the amount unanimously set aside by the management team to provide a cushion effect in the event of loan repayment default. Egziabhere (2015) and Ahmad and Tahir (2019) reported a positive effect of loan loss provision on financial performance. On the other extreme, Teshome et al. (2018) and Alhadab and Alsahawneh. (2016) concluded loan loss provision has negative effects on financial performance. Therefore, the study proposes hypotheses as follows:

H_{O3}: There is no relationship between CSR customer/product-related activities and the financial performance of listed industrial goods firms in Nigeria.

Credit Risk Theory

The theory sheds light on the risk associated with the banking business. The banking business is characterised by giving out loans to businesses and investors and accepting deposits from the public. The former is the major source of income banks or DMBs in the case of Nigeria. The process, however, exposes the industry to credit risk. There is a tendency for some borrowers might not pay the principal and the interest income as and when due. The DMBs should exercise due diligence in performing their function and reduce credit risk (Anderson et al., 2012). Failure to do so would give rise to what is known as a non-performing, loan loss provision, reducing the tendency to extend loans and advance, consequently affecting interest income and financial performance (Owojori, et al., 2011).

Methodology

A correlation research design is adopted to assess the credit risk and the financial performance of listed deposit money banks in Nigeria. The population consists of all the listed deposit money in the Nigerian Exchange Group (NXG) that have complete financial statements available on their websites or in the office of the Nigerian Exchange Group (NXG) for the periods 2014-2023. As of December 2023, seventeen (15) deposit money banks were listed out of the number only ten (13) deposit money banks met the criteria and census sampling techniques were used to analyse thirteen deposit money banks. The study used secondary data which was obtained from the

annual reports and accounts of the thirteen listed thirteen DMBs in Nigeria for the period of the study. Panel Corrected Standard Error (PCSE) was adopted for the panel data analysis to establish the relationship among the variables of the study. Multiple regressions were considered appropriate because they help not only establish a relationship between dependent and independent variables but also provide the causes and effects of their relationship.

Variable Definition and Measurement

The variables of this study consist of the dependent variable which is firm financial performance measured by return on asset (ROA), and the independent variable is credit risk (Capital adequacy, non-performing loan, loan loss provision and sectoral credit risk concentration), while the control variables as proxied by and Liquidity (LQDT) and Firm.

Size (FS) are presented in Table 3.1

Variables	Type	Measurement & Validation
Return on Assets (ROA)	Dependent	Profit Before Tax To Total Assets (Noruwa & Nonson, 2021).
Capital Adequacy Ratio (CAR)	Independent	Ration of Shareholders Fund To Risk Weighted Assets (Natufe & Osagie 2023)
Non-Performing Loan (NPL)	Independent	Ration of Non-Performing Loan to Total Loan And Advances (Natufe & Osagie, 2023)
Loan Loss Provision (LLP)	Independent	Ration of Loan Loss Provision To Non-Performing Loan (Natufe & Osagie 2023)
Liquidity (LQDT)	Independent	Ratio Of Cash And Cash Equivalent To Total Assets (Natufe & Osagie, 2023)
Firm Size (FS)		Log of Total Assets Natufe & Osagie, 2023)

Source: Compiled by the author from previous studies

Model Specification

The models used to empirically test the hypotheses formulated are as follows:

$ROA_{it} = o + 1CAR_{it} + 2NPL_{it} + 3iLLP_{it} + \beta 8LQDT_{it} + \beta 8FS_{it} + t\ \mu_{it}$

Where:

ROA = Return on Assets
CAR = Capital adequacy ratio
NPL = Non-performing loan

LLP	=	Loan loss provision
LQDT	=	Liquidity
FS	=	Firm Size
o	=	Constant
1 – 5	=	Coefficient of explanatory variables
μ	=	Error term
it	=	Industrial firms and time (Panel Indicator)

Results and Discussions

This section presents the descriptive statistics and summary of the regression result model used in the study.

Descriptive Statistics

The descriptive statistics of the model of the study are given in table 4.1 below:

Table 4.1 descriptive statistics

Variables	Obs.	Mean	Std. Dev.	Min.	Max.
ROA	130	0.278	0.682	-0.09	0.617
CAR	130	0.230	0.08	0.073	0.655
NPL	130	0.066	0.095	0.073	0.878
LLP	130	0.232	0.253	0.014	0.971
LQDT	130	0.155	0.151	0.09	0.954
FS	130	17.98	0.86	13.787	23.435

STATA OUTPUT 2024

Table 4.1 shows that the minimum and maximum values of return on assets are -0.09 and 0.28 respectively. This implies that listed DMBs with a return on assets perform more than the ones with a lower return on assets. Because the return on assets signifies the actual amount that each unit of listed DMB assets is capable of generating. Even though some of the DMBs made losses, which could be seen from the minimum value, but mean value of 0.03 proves that the sector is financially profitable.

The average value of DMB's capital adequacy ratio is 0.14, signifying that for DMBs to have average performance, they should have at least 0.14 as their capital adequacy ratio. The minimum and maximum capital adequacy ratios of listed DMBs are 0.02 and 0.655 respectively. The standard deviation coefficient of the capital adequacy ratio is 0.47, which implies the capital adequacy ratio contribution to financial performance.

The average value of DMBs' non-performing loans is 0.58, meaning that for firms to perform on average, they should have a 0.58 ratio of non-performing loans. The minimum and maximum ratios of non-performing loans by listed DMBs are 0 and 0.07 respectively. The coefficient value of the standard deviation of sustainability reporting environment-related activity is 0.254, which shows the level of sustainability environment-related activity contribution to financial performance.

In the case of ROA from Table 4.2 below capital adequacy ratio, non-performing loan and loan loss provision have a positive and negative correlation concerning financial performance proxy (return on asset) and among themselves. The correlation was very weak and weak. Thus, it proves to be collinearity-free. This has been confirmed from the output of variance inflation factor (VIF) in table 4.3 displayed below the correlation matrix table. The VIF result provides evidence of collinearity free among the predictors of the study. The highest VIF confirmed the absence of collinearity since it is less than 5. The explanatory variables are said to be collinearity-free. The study assumes no multi-collinearity on the independent variables (Gujurati, 2004).

Table 4.2 Correlation matrix

	ROA	CAR	NPL	LLP	LEV	FS
ROA	1.000					
CAR	-0.133	1.000				
NPL	0.044	0.023	1.000			
LLP	0.058	-0.013	-0.208	1.000		
LQDT	0.568	-0.165	-0.053	-0.070	1.000	
FS	0.023	0.326	0.315	-0.147	-0.178	1.000

STATA OUTPUT 2024

Table 4.3 Variance Inflation Factor (VIF)

Variables	VIF	1/VIF
CAR	1.27	0.788
FS	1.26	0.791
NPL	1.15	0.868
LQDT	1.15	0.873
LL [P	1.07	0.937

Source: STATAOUTPUT 2024

Diagnostic Test

Before the study ran the final regression, diagnostic analysis was conducted to maintain the unbiasedness of the parameters as argued by Wooldridge (2011). In addition to multicollinearity, the Hausman test was conducted to choose between random and fixed effect models. With a p-value of 0.064. This provides sufficient evidence to reject the null hypothesis which said that the random effect model is not appropriate. Comparisons were conducted between OLS and RE regression, LM test result rejects a statement that prefers OLS to RE To take care of the heteroscedasticity in the random effect regression model, we conduct panel corrected standard error PCSE) to make the result more robust.

Generalise Least Square (GLS)
The study presents panel panel-corrected error results in Table 4.3 below

Table 4.3.1 GLS Regression Result for Model

Variables	Coeff.	Stand. Err.	Z	Significance
Constant	-0.169	0.031	-0.54	0.000
CAR	0.033	0.064	0.53	0.000
NPL	0.283	0.053	0.52	0.603
LLP	-0.326	0.511	-0.64	0.594
R2	0.398			
Adj. R^2	0.373			
Wald $chi^2(3)$	65.34			
Wald chi^2-prob.	0.000			

Source: *Stata Output 2024*

The GLS regression is presented in Table 4.3.1 for the establishment of a relationship between the dependent and independent variables. From the results thus, the models of the study are:

ROA=0.430-0.381CSRSORA+0.249CSRENVRA-0.634LEV+1.81FS

The model depicts the constant (β_0) value of -0.169. This means that in the absence of CAR, NLP, LLP and SCRC, the value of the return on assets is -0.169. Similarly, the capital adequacy ratio has a coefficient of 0.033 and a p-value of 0,000. This implies a positive, very weak and significant effect on the financial performance since the corresponding p-value is significant at a 1 per cent level of significance. This means there is statistical justification for saying an increase in the proportion of shareholders fund to risk-weighted asset ratio by one, the DMBs are seen to improve financial performance by the value of 0.033 as seen in the parameter of the model β_2. The hypothesis developed earlier that said capital adequacy ratio has a significant effect on financial performance is not supported.

In a similar vein, a non-performing loan has a coefficient of 0.283 and a p-value of 0,603. This implies a positive, weak but significant effect on the financial performance since the corresponding p-value is significant beyond all levels of significance. This means there is statistical justification for saying an increase in the proportion of non-performing loans to total loans and advances by one, appeals to have zero effect on DMB's financial performance. The presumed hypothesis that non-performing loan has no significant effect on financial performance is supported.

In a related development, loan loss provision has a coefficient value of -0.326 and a p-value of 0.594. This implies a negative and insignificant effect of loan loss provision with financial performance measures (ROA). This is a clear justification that with one increase in the proportion of loan loss provision to non-performing loans, the loan loss provision does not affect financial performance is not supported.

Conclusion and Recommendations
The study focused on establishing the effect of credit risk (CAR, NPL& LLP) and financial performance measures (ROA) on listed DMBs in Nigeria. The estimated

GLS regression analysis revealed that the capital adequacy ratio had positive effects on the financial performance of listed industrial goods firms in Nigeria. However, in the same vein sustainability reporting customer / product-related activities had negative effects on the financial performance of the firms. The outcome of credit risk proxy, capital adequacy has positive effects on the financial performance of listed DMBs in Nigeria. Following these facts, therefore, the study recommends that the Central Bank of Nigeria (CBN) should strengthen its capital base in the light of the occurrence and reoccurrence of naira devaluation in recent years against the dollar to carry out their normal banking business and optimize return on investment.

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