

Credit Risk Management and Market Performance of Quoted Deposit Money Banks in Nigeria

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Abstract

This study investigated the effect of credit risk management on market performance of deposit money banks in Nigeria. Market performance was used as dependent variable proxy as net assets per share while management quality ratio, capital adequacy ratio, sensitivity to market ratio, credit to deposit ratio and asset quality ratio were used as independent variables. A sample of 12 deposit money banks were used for the period of ten years spanning 2012 to 2021. The study employed ex-post facto and longitudinal research design. The secondary sources of data were collected from annual reports of the selected deposit money banks and five (5) specific objectives and hypotheses were subjected to some preliminary data tests like descriptive statistics, Pearson correlation analysis and Variance Inflation factor (VIF) were analyzed using panel regression analysis. Using a sample of 120 banks-year observations, the result revealed that management quality ratio, credit to deposit ratio and asset quality ratio have negative and statistically significant effect on market performance proxy as net assets per share of deposit money banks in Nigeria which was statistically significant at 5% level of significance. Conversely, Capital adequacy ratio and sensitivity to market ratio was found to have positive but non-significant effect on market performance of deposit money banks in Nigeria. Based on the findings above, the study recommends among others, that managers of Banks in Nigeria should enhance their management quality and capacity in credit analysis to reduce the risk of default in repayment as this will stem the cyclical nature of net assets per share and increase their market performance. Moreover, adequate provision against loan loss should be made and Nigeria banks should adopt an aggressive deposit mobilization to increase credit availability and develop a reliable credit risk management strategy with adequate punishment for loan payment defaults. The study contributed to knowledge as first robust indigenous study to investigate the effect of credit risk management strategy across Nigeria deposit money banks. Secondly, our model modified and extended the model tested by prior studies and panel least square was adopted for the purpose of hypothesis testing.

Keywords: Credit Risk Management, Market Performance, Capital Adequacy, Sensitivity to Market, Asset Quality, Management Quality and Credit to Deposit

Introduction

The operation of financial institutions, particularly banking institutions, determines whether the financial system is successful or unsuccessful (Alfiyan et al., 2023). Financial institutions serve as a bridge between fund administrators and fund holders (Mankiw, 2018), and this makes banks closely related to economic growth through the financial services they provide. The intermediary role of banks is considered as the accelerator of economic growth. Therefore, the stability of the banking sector is considered as a precondition for economic stability and growth (Halling & Hayden, 2016) while stability of the banking sector depends on its profitability and credit risk management (Naser, Ahmadi & Emami, 2013).

According to Koch and MacDonald (2014), banks face many risks due to its dynamic structure and complex nature of the economic environment in which they operate. Hence, the risks faced by banks can be classified into 6 categories. These categories are; credit risk, liquidity risk, market risk, operational risk, nominal risk, and legal risks. Each of these risks especially the credit risk may lead to negative impacts on financial institutions profitability, market value, liabilities, and equity. However, the primary source of income of the banking sector consists of loans granted by them. Therefore, credit risk is one of the most important risks faced by banks. The Basel Committee on Banking Supervision (2011), views credit risk as the probability of partial or total loss of outstanding loan due to non-payment of the loan on time. An increase in credit risk raises the marginal cost of debt and equity. Correspondingly, the cost of the banks funding increases. As a bank exposure to credit risk increases, banks tendency to experience a financial crisis increases.

A growing body of literature in this aspect of credit risk management is available in developed countries but not much has been discussed in developing countries, especially Nigeria. Due to different methodologies, particularly in the definition of proxies used as surrogates for credit risk management, mixed results were produced by prior studies. Also, literature on credit risk management in the banking sector focused on single types of credit risk like non-performing loans while missing out on the interdependence of other measurements. Thus, the present study tries to mitigate the above shortcomings in the literature by developing a model fit on credit risk management using management quality ratio (MQR), sensitivity to market ratio (SMR), credit to deposit ratio (CDR), asset quality ratio (AQR) and capital adequacy ratio (CAR) covering all the listed deposit money banks in the Nigerian business environment to test the relationship between the variables. In the Nigerian context, risk management is at a rudimentary stage because of the poor knowledge of risk management possessed by the management board members of many banks, an inadequate number of professionals, lack of training and education on the subject of risk and a defective framework that restricts the development of capable workers in the industry (Uwalomwa, Uwuigbe & Oyewo, 2015).

From the previous studies on credit risk management and banks performance in Nigeria produced mixed results thereby leaving the academia and policy makers in quandary. Some of the studies showed that credit risk management strategies impact banks performance, but the impacts are of highly uncertain magnitude and conflicting direction. The implication that emerges from these studies is that the impacts of credit risk management on banks performance are theoretically ambiguous. For instance, the studies of Hamza (2017), Ajayi and Ajayi (2017), Adebawo and Enyi (2014), Ejoh, Okpa and Egbe (2014), Epure and Lafuente (2013) amongst others found evidence that credit risk management does not impact

positively on banks profitability while Ogbulu and Eze (2016), Abiola and Olausi (2014) found evidence that credit risk management indicators significantly impact banks performance. Consequent to the unsettled empirical evidence, it is against this backdrop that the present study set out to empirically ascertain the impact of credit risk management on banks performance using all the listed deposit money banks in Nigeria.

As also noted from the literature, not much have been done empirically in the area of credit risk management in developing countries like Nigeria and only accounting measures of firm performance were used ignoring market measures such as stock price, net assets per share and the Tobin Q measure. The neglect of market measures may not provide a well-rounded perspective to bank's performance. Also, only the credit to deposit ratio (CDR), non-performing loan ratio (NPLR) and capital adequacy ratio (CAR) are considered as measurements for banks credit risk management in the previous studies in Nigeria. While management quality ratio (MQR), asset quality ratio (AQR) and sensitivity to market ratio (SMR) are ignored by studies in Nigeria but were considered in the studies carried out in the developed nations, which amounts to a gap in the body of knowledge. Hence, the need to investigate the effect of credit risk management on market performance of listed deposit money banks in Nigeria using management quality ratio, sensitivity to market ratio, credit to deposit ratio, capital adequacy ratio and asset quality ratio in a single model as a measurement for credit risk management which no study had used in Nigeria to the best of our knowledge.

Against this backdrop, the present study deems it plausible in this area to examine the relationship which exists between credit risk management and market performance with reference to all the listed deposit money banks in Nigeria. The following hypotheses were stated in the null form to facilitate testable outcomes;

H₀₁: Management quality ratio does not have significant effect on market performance of listed deposit money banks in Nigeria

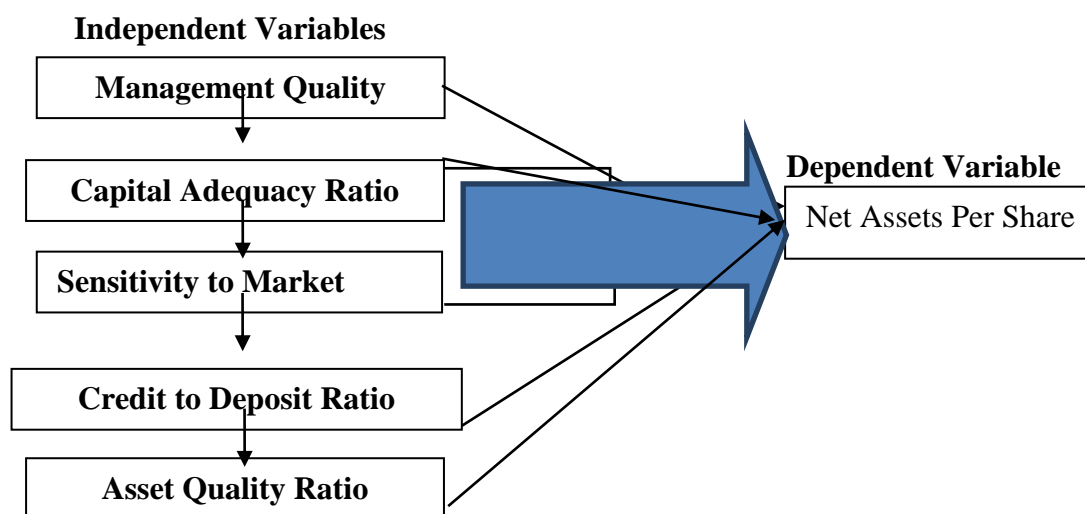
H₀₂: Capital adequacy ratio does not have significant effect on market performance of listed deposit money banks in Nigeria

H₀₃: Sensitivity to market ratio does not have significant effect on market performance of listed deposit money banks in Nigeria

H₀₄: Credit to deposit ratio does not have significant effect on market performance of listed deposit money banks in Nigeria

H₀₅: Asset quality ratio does not have significant effect on market performance of listed deposit money banks in Nigeria

Conceptual Framework



Source: Researchers Concept (2023).

Theoretical Framework

Modern Portfolio Theory (MPT)

This study is anchored on the theory of Modern Portfolio theory, this was introduced by Harry Markowitz in 1952. It attempts 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 choosing the proportions of various assets. The portfolio theory integrates the process of efficient portfolio formation to the pricing of individual assets.

It emphasized that risk is an inherent part of higher reward. 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. Some of the issues not addressed by the theory include; how banks can form a portfolio of loans that minimize risk and maximize return. It does not outline ways of determining a risk free portfolio. Lastly, the theory does not address various risks other than credit risk that are faced by banks when managing a loan portfolio. Therefore, the theory cannot apply holistically when managing credit risk in banks. Thus, theory of multiple lending was introduced as shown below:

Empirical Review

Adeusi and Dada (2017) examined the impact of credit risk management on deposit money banks performance in Nigeria using panel regression model on ten selected banks for the period 2001-2015. The performance proxy Profit after Tax (PAT) was made as function of Non-performing Loan Ratio (NPLR), Loan Loss Provision Ratio (LLPR), Loan to Total Asset Ratio (LTAR), Interest Rate (INTR) and Inflation Rate (INFR). Fixed effect, Random effect and Hausman test was conducted on the variables. The result from the panel analysis indicated that NPLR, LLPR and INTR exhibit a negative relationship while LTAR and INFR depict a positive relationship with deposit money bank performance. Based on this result, the study concluded that despite the various initiatives and reforms carried out by the government and the monetary authorities, high incidence of credit risk resulting from poor management is

still prominent among the deposit money banks due to increased default in loans and advances recorded. Based on this finding, the study recommended that deposit money banks in Nigeria should always pay particular attention to their credit risk management policies in order to reduce the occurrence of non-performing loans recorded. Also, ensures compliance with banks' philosophy and set up effective system of internal control to monitor the risk control mechanisms so as to enhance the performance of deposit money banks' in Nigeria.

According to John and Okika (2019), banking businesses worldwide are often bedeviled with the risk of providing credit facilities to borrowers. The performance, in terms of economic and financial stability of these banks is adversely affected by credit risks. Deposit Money Banks (DMBs) in Nigeria are not left out of this challenge. It is essential to understand how credit risks impact the financial performance of DMBs so as to mitigate and control its unfavorable effect on banks' performance. The study examined the impact of credit risks on the financial performance of listed DMBs in Nigeria, from 2006-2017. Data for the study were secondary in nature and gotten from audited financial reports of all the 15 listed DMBs in Nigeria as on 31st December, 2017. Regression tools were employed for data analysis, and the results show that non-performing loans and impairment loan charge-off have negative and significant impact on the financial performance of banks. The impact of capital adequacy on financial performance is negative but statistically insignificant. The study recommends that DMBs should improve their risk management strategy to reduce the increase of default loans. In addition, a short-term periodic review of prudential guidelines and other regulations governing the issuance of credit facilities by DMBs is advocated, so that current realities and intrigues about credit risks will be captured in policies.

Ajayi and Ajayi (2017) examined the effect of credit risk management on the performance of deposit money banks in Nigeria from 2001-2015. The study employed panel regression analysis in which Profit after Tax (PAT) was used as proxy for bank performance while Non-Performing Loan Ratio (NPLR), Loan Loss Provision Ratio (LLPR), Loan to Total Asset Ratio (LTAR) and Cost per Loan Ratio (CPLR) were used as indicators of credit risk management. Fixed effect, random effect and Hausman test were conducted on the variables. The study revealed that banks profitability is negatively influenced by NPLR, LLPR and CPLR while LTAR influences performance of banks positively. The study therefore concluded that deposit money banks in Nigeria have a high growth rates on loans and advances, with corresponding high rate of non-performing loans by customers. Also, the provisions for loan loss were slightly below the required amount 8% by Basel Accord with high administration costs. The study thus recommended that Nigerian banks should ensure high quality credit management and strict adherence to professional banking ethics. Also, deposit money banks should make adequate effort toward deposit mobilization and reduce credit administrative cost so as to be more efficient and enhance profitability.

Ogbulu and Eze (2016) investigated the impact of credit risk management on the performance of deposit money banks in Nigeria using the ECM and Granger causality techniques in addition to the IRF and VDC methodology. Data for the study were sourced from the CBN Statistical Bulletin and the Annual Reports and Accounts of the NDIC for the period 1989 to 2013. The findings indicated that the selected credit risk management indicators significantly impacted on the performance of deposit money banks measured as return on equity, return on total assets, and return on shareholders fund respectively. However, the findings reported no evidence of significant granger causality relationship

between the various credit risk management indicators and the various measures of performance except for a uni-directional granger causality relationship from ROE to RNPD and from ROTA to RNPS respectively. Based on the foregoing, the study recommended that deposit money banks in Nigeria should always pay particular attention to their credit risk management policies in order to significantly improve on the performance of these banks.

Ogundajo, Oyedokun and Okwuosa (2020) investigated credit management and bank profitability especially the factor of the non-performing loan, loan loss provision and loan and advances and their impact on profitability. This study made use of ex-post facto research design. Data from audited annual reports of 5 sampled deposit money banks listed on the Nigerian stock exchange for the year 2013-2017 were used. Data were analyzed panel regression analysis. The result shows that credit risk management has a significant positive effect on the profitability of Nigerian banks. The non-performing loan has a significant negative effect on return on capital employed, loan loss provision has an insignificant positive effect on return on capital employed and loan and advances has a significant positive effect on return on capital employed. Based on the result obtained, management should employ measures to manage non-performing loan so that its negative effect on profitability might be limited while loan loss provision and loan and advances advantage on profitability should be capitalized upon, bank managers should implement a sound credit risk policy to minimize the incidence of non-performing loans as a default credit risk and bank managers should create a credit rating system for bank loan customers in order guarantee the performance of the loans given out to customers.

Etale, Ayunku, and Etale (2016) study on impact of non-performing loans and bank performance in Nigeria, generated data for its research from annual reports of the listed banks domiciled with the CBN and NDIC. Statistical measures of unit root test, descriptive statistics, and regression techniques were used to analyze the data. Specifically, results indicated that bad loans and doubtful loans impacted negatively, and in a significant manner, on return on capital employed, which was used as a measure of bank performance; while substandard loans did not have a significant impact on return on capital employed with both having a negative relationship.

The study of Omitogun, Olanrewaju, and Alalade (2016) sought to know the relationship between loans default, which they referred to as 'problem loans' financial performance in five (5) Nigerian banks. These banks' financial statements for five years (2010-2014) were examined using the ordinary least squares regression technique, and the result of the regression revealed a positive and significant relationship between default loans and returns on assets. The study also reported that, at a significant level of 10%, a negative relationship existed between loans and advances and returns on assets. This level of significance of 10% (being more than 5% benchmark for most researches in the social sciences) between loans and advances and performance may be seen as not significant enough to conclude that increasing loans and advances lead to declining returns on the banks' assets.

Odion and Yusuf (2019) examined the effect of credit risk management on the profitability of deposit money banks in Nigeria using non-performing loans, loan loss provision and growth in interest earnings on loans and advances as proxies for credit risk management. Therefore, for a period of 5 years, between 2015 and 2021, the impact of these proxies on the profitability of deposit money banks was analyzed in this study using correlation and regression analysis processed on STATA 13 statistical software. Three hypotheses were formulated in

null form and were tested by the study. Based on the empirical analysis, the study found a positive non-significant relationship between non-performing loans and profitability. The study also found a positive insignificant relationship between loan loss provision and bank profitability. On the contrary, the study found a negative but significant relationship between growth in interest earnings on loans and advances and the profitability of deposit money banks. Therefore, it is recommended that given the current supervisory and regulatory policy frameworks for banks, credit risk managers should be less concerned with adjustments in the ratios of non-performing loan and loan loss provision as the values of these ratios have no significant effects on performance but should instead be more prudent on the management of the growth in interest earnings on loans and advances as it has a significant effect on performance.

Nwanna and Oguezue (2017) conducted a study on Effect of credit management on profitability of deposit money banks in Nigeria. The study employed multiple regression analysis in E-views 9. The findings of the study reveal that loans and advances and loan loss provision have positive and significant effect on profitability, while nonperforming loan has a negative and insignificant effect on profitability. The study concludes that management of banks should evaluate credit request before granting any form of loan to customer(s) to circumvent high rate of non-performing loan. It recommends that the banks should ensure that customers have verifiable guarantors and collateral before granting them loan. The rapid increase in Non-performing loan in most deposit banks shows that some deposit money banks may not be complying with guidance issued by regulating agencies in charge of loan facilities across the banks.

Anetoh, Nwadiolor, Anetoh and Okeke (2021) investigated the effect of credit and operational risks on firm value of listed deposit banks in Nigeria. The study adopted an ex-post facto research design. The target population of the study was all the deposit money banks listed in Nigeria Stock Exchange. The study used secondary sources of data from Central Bank of Nigeria as well as from annual reports and financial statement of accounts of deposit money banks under review from 2010-2019. The Structural Equation Modeling was used to test the formulated hypotheses at 5% level of significance. The findings showed that credit risk had a significant but negative effect on firm value of deposit money banks in Nigeria. Operational risk had a significant and positive effect on firm value of deposit money banks in Nigeria. The study recommends that banks should ensure that their credit exposures are adequately secured through proper scrutiny of loan processing in order to identify viable projects so as to reduce loan defaults by bank customers. They should continue to employ qualified and competent workers who are experts in banking professionalism as well as ICT competence in order to reduce unsound banking practices.

Methodology

This study adopted *Ex-post facto design* to evaluate the effect of credit risk management on market performance, the study used secondary data, that covered 10 years from 2012-2021. the population of the study comprised of 14 deposit money banks in Nigeria, purposive sampling techniques was used to select 12 deposit money banks in Nigeria exchange group as sample size Out of the total population, the choice was made based on those firms that are consisted with the publication of the annual financial statement within the period of coverage. The study was conducted in Nigeria focusing deposit money banks in Nigeria.

Multiple regression analysis was used to evaluate the effect of the independent variables on the dependent variable.

Operationalization of Variables (table 1)

Variable	Measurement	A priori Expectations
Net Assets Per Share	NA/Paid up Capital	Omaliko and Mordi (2023), Omaliko, Nweze and Nwadiakor (2020), Nahiba (2017), Nwaobia, Kwarbai and Fregene (2019) etc
Independent Variable		
Management Quality Ratio (MQR)	Operating Income/Total Assets	ICAN (2021)
Capital Adequacy Ratio (CAR)	Shareholders Fund/Total Assets	Kajola, Olabisi, Adedeji & Babatolu (2018), Ahillis and Ahrife (2017)
Sensitivity to Market Ratio (SMR)	Profit/Non Performing Loan	ICAN (2021)
Credit to Deposit Ratio (CDR)	Total Loans/Total Deposits	Mutua (2014), Njoku, Ezeudu and Ekemezie (2017)
Asset Quality Ratio (AQR)	Total Loans/Total Asset	Mohammad Khan Gghauri, S. and Aktan, B. (2016)

Model Specification

The study adapted and modify the Model of Ojiakor, Ezeudu and Ekemezie (2017) in determining the effect of credit risk management on market performance of listed deposit money banks in Nigeria. This is shown below as thus:

$$\text{Ojiakor, Ezeudu and Ekemezie (2017): } P_{it} = \beta_0 + \beta_1 NPL_{it} + \beta_2 CAR_{it} + \beta_3 AQR_{it} + \mu$$

The Functional Model expressed in a Mathematical Form is shown below as thus:

$$NAPS_t = F(MQR, CDR, SMR, CAR \& AQR) \text{-----1}$$

The econometric form of the regression for the study is expressed as thus:

$$NAPS_t = \beta_0 + \beta_1 MQR_t + \beta_2 CAR_t + \beta_3 SMR_t + \beta_4 CDR_t + \beta_5 AQR_t + \mu \text{-----II}$$

Where:

NAPS = Net Assets Per Share

MQR = Management Quality Ratio

CAR = Capital Adequacy Ratio

SMR = Sensitivity to Market Ratio

CDR = Credit to Deposit Ratio

AQR = Asset Quality Ratio

ϵ_{it} = Radom error term or stochastic variables of the model capturing other unexplanatory variables. Subscripts i denote number of banks, t denotes years or time-series dimensions ranging from 2012-2021, and $\beta_0, \beta_1, \beta_2, \beta_3, \beta_4, \beta_5$, Stands for Regression model coefficients

Decision Rule:

Accept Null hypothesis if P-value is greater than 5% otherwise reject alternate

Random Effects Regression Result

Cross-section random effects test equation:

Dependent Variable: NAPS

Method: Panel Least Squares

Date: 06/16/23 Time: 14:46

Sample: 2012 2021

Periods included: 10

Cross-sections included: 12

Total panel (balanced) observations: 120 (table 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.13013	4.527956	2.458092	0.0156
MQR	-6.344399	4.946420	-2.282625	0.0225
CAR	1.481211	1.118082	1.324779	0.1882
SMR	4.126177	6.884737	0.599322	0.5503
CDR	-2.219012	3.370558	-2.619057	0.0085
AQR	-3.661452	1.393643	-2.627254	0.0099

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	5.024637	R-squared	0.449975
Mean dependent var	2.540000	Adjusted R-squared	0.333466
S.D. dependent var	5.826180	S.E. of regression	5.423464
Akaike info criterion	6.349917	Sum squared resid	3029.638
Schwarz criterion	6.744812	Log likelihood	-363.9950
Hannan-Quinn criter.	6.510286	F-statistic	2.145543
Durbin-Watson stat	2.235149	Prob(F-statistic)	0.011384

Source: Researchers Random Regression result (2023) from Eview 12

The table 2 above shows the panel regression analysis of 12 deposit money banks in Nigeria. From the table above, the F-statistics value of 2.145 and their P-value of 0.0113 showed that the overall regression analysis of our variables in the regression model was generally significant at 5% level of significance and it shows that the model was well specified in

explaining market performance of 12 deposit money banks in Nigeria. With this, the researcher affirms the validity of the regression model adopted in this study.

In addition to the above, the specific finding from each explanatory variable from the model as shown on table 2 is provided below as follows:

H₀₁: Management Quality Ratio has no significant effect on market performance of deposit money banks in Nigeria.

It can be observed from the regression table 2 above that management quality has a negative coefficient value of -6.344. This reveals a strong and negative effect on market performance of Nigeria banks. As indicated in table 2 above, there is a negative relationship between MQR and NAPS. By implication, this means that a 1% increase in management quality leads to a corresponding decrease in the risk that affects market performance of banks. This means that increases in the management quality ratio of Nigeria banks decreases the likelihood for them to fall prey to market predators. By implication, if the management capability to point out, measure, look after and control risks of the institutions daily activities decreases, the risk exposure will increase and vice versa. The t-value of -2.2826 reveals that banks management quality ratio has a strong effect on market performance of selected banks and its effect is statistically strong enough to drive its net assets per share and market performance. The probability value of 0.0225 reveals that the effect of management quality ratio on banks market performance in Nigeria is statistically significant at 5% level of significance. As a result of this significant result found, this study therefore rejected the first null hypothesis (H₀₁), and therefore conclude that management quality ratio has no statistical significant effect on market performance of deposit money banks in Nigeria which was statistically significant at 5% level of significance.

H₀₂: Capital adequacy ratio has no significant effect on market performance of deposit money banks in Nigeria.

It can be observed from the regression table 2 above that capital adequacy ratio has a positive coefficient value of 1.4812. This reveals a very strong and positive effect on net assets per share of Nigeria banks. As indicated in table 2 above, there is a positive relationship between CAR and NAPS. The minimum CAR requirement of deposit money banks in Nigeria is 15% whereas our average CAR was 75% (see descriptive statistics) which is higher than the minimum requirement, even though that capital adequacy ratio was found to be statistically insignificant but positively associated with the market performance of banks. By implication, this means that a 1% increase in capital adequacy leads to a corresponding increase in net assets per share of banks. This means that increases in the ratio of capital adequacy ratio of Nigeria banks increases the likelihood for them to make profit. The bank has a reserve beyond the necessary amount enough to handle unexpected risk. As banks with strong capital base has every tendency of making profit in the long run. It maintains stability and protection against depositors and confidence on the deposit money banks in Nigeria. Thus banks with higher capital adequacy ratio have more incentive to increase their market performance as a result of effective management of shareholders fund. The t-value of 1.324 reveals that banks capital adequacy ratio has a strong effect on net assets per share of selected banks but its effect is not statistically strong enough to drive its market performance. The probability value of 0.1882 reveals that the effect of capital adequacy ratio on banks profitability in Nigeria is statistically insignificant.

Ho3: Sensitivity to market ratio has no significant effect on market performance of deposit money banks in Nigeria.

The regression result in table 2 above revealed that sensitivity to market ratio has positive and insignificant effect on net assets per share of quoted deposit money banks in Nigeria with a positive coefficient value of 4.126% and t-statistics value of 0.5993 and a probability value of 0.5503 which is statistically insignificant not even at 10% level of significant. This positive effect implies that a 1% increase in the sensitivity of information given to bank managers informs managers about where there are some supervision problems and thus the enough preparations will be made to avert such problems thus increasing the net asset per share of banks. Increase in sensitivity to market ratio helps to measure the banks level of risk at the interest rates and exchange rates that may affect the capital adequacy of banks. This awareness increases the net assets per share of deposit money banks in Nigeria. The t-values of 0.5993 reveal that banks sensitivity to market ratio has a strong effect on market ratio of selected banks. The probability value of 0.5503 reveals that the effect of sensitivity to market ratio on banks market performance in Nigeria is statistically insignificant. As a result of this insignificant result documented, this leads to the acceptance of our third null hypothesis, therefore we conclude that there exist a strong and positive but insignificant effect between sensitivity to market ratio and market performance of deposit money banks in Nigeria.

H04: Credit to deposit ratio has no significant effect on return on assets of Deposit Money Banks in Nigeria.

The analysis result of the effect of credit risk management on market performance of quoted deposit money Banks in Nigeria showed a coefficient value of -2.219, t-value of -2.619 and a P-value of 0.0085 for credit to deposit ratio variable. The coefficient value of -2.219 shows that credit to deposit ratio is negatively related to net assets per share of deposit money banks in Nigeria. The result suggests that Non-Performing Loans (NPL) which measures the extent of credit default risk sustained by deposit money banks have a negative effect on NAPS. The result in this study suggests the need for strong credit risk management to keep the level of NPL as low as possible which will help to maintain the high profitability level of the deposit money banks in order to increase the banks net assets per share. In order to reduce NPL, deposit money banks in Nigeria should evaluate the potential risk that may cause the borrower to default on its loan obligation. Therefore, based on t-statistics values of credit risk management and its coefficient, banks credit to deposit ratio (CDR) appears to be statistically significant and negatively associated with the market performance for banks in financial year. This indicates that an increase in the net assets per share level of banks leads to a decrease in their credit risk of selected banks to the tune of -2.21%. By implication, this means that a reduction in the banks nonperforming loans level will result to about 2.21% increase in banks net assets per share. There is evidence that lower non-performing loans values are significantly associated with a slight decrease in profitability level of banks. The higher the credit risk of banks, the lower the market performance of banks and this attract loss of potential investors to their banks. That is, it may not be the level of nonperforming loans that is significantly related to the level of net assets per share; rather, it is the amount of provision made that is negatively associated with the profit. The t-value of -2.619 reveals that banks credit to deposit ratio has a strong effect on net assets per share of selected banks. The probability value of 0.0085 reveals that the effect of credit to deposit ratio on Nigeria banks

market performance is statistically significant at 5% level of significance. The p-value result re-affirms the t-test statistics result.

H0₅: Asset quality ratio has no significant effect on market performance of deposit money banks in Nigeria.

The regression result in table 2 above revealed that assets quality ratio has negative and significant effect net assets per share of quoted deposit money banks in Nigeria having recorded a strong and negative coefficient value of -3.661% and t-statistics value of -2.627 and a probability value of 0.0099 which is statistically significant at 5% level of significant. This implies that a 1% increase in the fraction of total loan loss provision is associated with a percentage increase in the ratio of net assets per share by a minimal magnitude of 0.0099. The management of deposit money banks in Nigeria clearly recognized the risk arising from lending business and strengthens their credit risk management capability. The more banks give unsecured and unrepaid loans to customers, the more their net assets per share depreciates. The t-value of -2.627 reveals that banks assets quality has a very strong effect on net assets per share of selected banks. The probability value of 0.0099 reveals that the effect of assets quality ratio on banks market performance in Nigeria is statistically significant. Thus, banks have the tendency to increase or reduce loan loss provision or expected loan Loss for the purpose of market performance measures. It was discovered that asset quality ratio is used for capital management which led to higher net asset per share level. The bank has a reserve beyond the necessary amount enough to handle unexpected risk. As banks with strong assets quality base has every tendency of reducing the credit risk of banks and therefore making profit in the long run that increases the banks net assets per share. As a result of this significant result documented, this leads to the rejection of our last null hypothesis and conclude that asset quality ratio has negative and significant effect on market performance of deposit money banks in Nigeria which was statistically significant at 5% level of significance.

Discussion of Findings

Management Quality Ratio and Market Performance.

Based on coefficient value of -6.344 shown on the regression table 2 above reveals a strong and negative effect of management quality ratio on market performance of Nigeria banks. As indicated in table 2 above, there is a negative relationship between MQR and NAPS. By implication, this means that a 1% increase in management quality leads to a corresponding decrease in the risk that affects market performance of banks. This means that increases in the management quality ratio of Nigeria banks decreases the likelihood for them to fall prey to market predators. By implication, if the management capability to point out, measure, look after and control risks of the institutions daily activities decreases, the risk exposure will increase and vice versa. The t-value of -2.2826 reveals that banks management quality ratio has a strong effect on market performance of selected banks and its effect is statistically strong enough to drive its net assets per share and market performance. The probability value of 0.0225 reveals that the effect of management quality ratio on banks market performance in Nigeria is statistically significant at 5% level of significance. As a result of this significant result found, this study therefore rejected the first null hypothesis (H_{01}), and therefore conclude that management quality ratio has statistical significant effect on market performance of deposit money banks in Nigeria which was statistically significant at 5% level of significance.

This finding therefore supports our apriori expectation as well as the findings of Bishnu (2019), suggests that management soundness is a qualitative variable that expresses the control of board of directors over the resources of the bank to protect shareholders interest. Management assessment determines whether an institution is able to properly react to financial stress. This component rating is reflected by the management capability to point out, measure, look after and control risks of the institutions daily activities. It covers management ability to ensure the safe operation of the institution as they comply with the necessary and applicable internal and external regulations.

Capital Adequacy Ratio and Market Performance

Based on coefficient value of 1.4812. Shown in table 2. This reveals a very strong and positive effect of capital adequacy on market performance of Nigeria banks. As indicated in table 2 above, there is a positive relationship between CAR and NAPS. The minimum CAR requirements of deposit money banks in Nigeria is 15% whereas our average CAR was 75% (see descriptive statistics) which is higher than the minimum requirement, even though that capital adequacy ratio was found to be statistically non-significant but positively associated with the market performance of banks. By implication, this means that a 1% increase in capital adequacy leads to a corresponding increase in net assets per share of banks. This means that increases in the ratio of capital adequacy ratio of Nigeria banks increases the likelihood for them to make profit. The bank has a reserve beyond the necessary amount enough to handle unexpected risk. As banks with strong capital base has every tendency of making profit in the long run. It maintains stability and protection against depositors and confidence on the deposit money banks in Nigeria. Thus banks with higher capital adequacy ratio have more incentive to increase their market performance as a result of effective management of shareholders fund. The t-value of 1.324 reveals that banks capital adequacy ratio has a strong effect on net assets per share of selected banks but its effect is not statistically strong enough to drive its market performance. The probability value of 0.1882 reveals that the effect of capital adequacy ratio on banks profitability in Nigeria is statistically non-significant.

This finding therefore supports our apriori expectation as well as the findings of Mardiana and Dianata (2018), Ogilo (2012) and Khouri (2011) that recorded negative and weak effect but disagrees with the findings of Hosna and Manzura (2009), Grace (2012), Hosna et al. (2009), Khouri (2011), Boland (2012), Li yugi (2007) and Adeusi, Akeke, Adebisi and Oladunjoye (2013) that documented a positive and strong effect between capital adequacy risk and performance of banks. As a result of this insignificant result found, this study therefore accepts the second null hypothesis (H02), which states that capital adequacy ratio has no significant effect on market performance of deposit money banks in Nigeria.

Sensitivity to Market Ratio and Market Performance

Based on the coefficient value of 4.126% Shown in table 2, above reveals a positive effect of sensitivity to market on market performance. This positive effect implies that a 1% increase in the sensitivity of information given to bank managers informs managers about where there are some supervision problems and thus the enough preparations will be made to avert such problems thus increasing the net asset per share of banks. Increase in sensitivity to market ratio helps to measure the banks level of risk at the interest rates and exchange rates that may affect the capital adequacy of banks. This awareness increases the net assets per share of deposit money banks in Nigeria. The analysis shows t-statistics value of 0.5993 and a

probability value of 0.5503 which is statistically non-significant at 10% level of significant. The t-values of 0.5993 reveal that banks sensitivity to market ratio has a strong effect on market ratio of selected banks. The probability value of 0.5503 reveals that the effect of sensitivity to market ratio on banks market performance in Nigeria is statistically non-significant. As a result of this non-significant result documented, this leads to the acceptance of our third null hypothesis, therefore we conclude that there exist a strong and positive but non-significant effect between sensitivity to market ratio and market performance of deposit money banks in Nigeria.

This finding therefore supports our apriori expectation as well as the findings of Masoud and Sema (2018), which noted positive effect of sensitivity to market ratio on market performance of deposit money bank in Nigeria.

Credit to Deposit Ratio and Market Performance

Based on the coefficient value of -2.219 in table 2 above, shows that credit to deposit ratio is negatively related to net assets per share of deposit money banks in Nigeria. The result suggests that Non-Performing Loans (NPL) which measures the extent of credit default risk sustained by deposit money banks have a negative effect on NAPS. The result in this study suggests the need for strong credit risk management to keep the level of NPL as low as possible which will help to maintain the high profitability level of the deposit money banks in order to increase the banks net assets per share. In order to reduce NPL, deposit money banks in Nigeria should evaluate the potential risk that may cause the borrower to default on its loan obligation. Therefore, based on t-statistics values of credit risk management and its coefficient, banks credit to deposit ratio (CDR) appears to be statistically significant and negatively associated with the market performance for banks in financial year. This indicates that an increase in the net assets per share level of banks leads to a decrease in their credit risk of selected banks to the tune of -2.21%. By implication, this means that a reduction in the banks nonperforming loans level will result to about 2.21% increase in banks net assets per share. There is evidence that lower non-performing loans values are significantly associated with a slight decrease in profitability level of banks. The higher the credit risk of banks, the lower the market performance of banks and this attract loss of potential investors to their banks. That is, it may not be the level of nonperforming loans that is significantly related to the level of net assets per share; rather, it is the amount of provision made that is negatively associated with the profit.

This finding therefore supports our apriori expectation as well as the findings of Onyefulu, Okoye and Orjinta (2020), Etale, Ayunku and Etale (2016), Kagi (2011), and Alper and Anbar (2011) who documented negative and significant result between credit risk and firm performance but negates the findings of Harvey and Merkowsky (2008), Akonga (2014) that found positive and significant results. This result therefore rejects our fourth null hypothesis (H₀₄), which states that credit to deposit ratio risk has no significant effect on market performance of deposit money banks in Nigeria and therefore accept our alternate hypothesis and conclude that credit to deposit ratio has significant effect on market performance of banks which was statistically significant at 5% level of significance.

Asset quality ratio and Market Performance

Based on the coefficient value of -3.661% above in table 2 shows assets quality ratio has negative on net assets per share of quoted deposit money banks in Nigeria and a probability value of 0.0099 which is statistically significant at 5% level of significant. This implies that a 1% increase in the fraction of total loan loss provision is associated with a percentage increase in the ratio of net assets per share by a minimal magnitude of 0.0099. The management of deposit money banks in Nigeria clearly recognized the risk arising from lending business and strengthens their credit risk management capability. The more banks give unsecured and unrepaid loans to customers, the more their net assets per share depreciates. The t-value of -2.627 reveals that banks assets quality has a very strong effect on net assets per share of selected banks. The probability value of 0.0099 reveals that the effect of assets quality ratio on banks market performance in Nigeria is statistically significant. Thus, banks have the tendency to increase or reduce loan loss provision or expected loan Loss for the purpose of market performance measures. It was discovered that asset quality ratio is used for capital management which led to higher net asset per share level. The bank has a reserve beyond the necessary amount enough to handle unexpected risk. As banks with strong assets quality base has every tendency of reducing the credit risk of banks and therefore making profit in the long run that increases the banks net assets per share. As a result of this significant result documented, this leads to the rejection of our last null hypothesis and conclude that asset quality ratio has negative and significant effect on market performance of deposit money banks in Nigeria which was statistically significant at 5% level of significance.

This finding therefore supports our apriori expectation as well as the findings of Cheruiyot (2016) which came to the conclusion that asset quality positively impacted Kenyan banks' ROA and suggested that asset quality would decrease when default rates decreased, and vice versa. Ogbulu and Eze (2016) found a strong positive link between asset quality and performance. Masood, O. (2016) et al. (2016) used the CAMEL model to discover the profitability of impacted by the quality of their credit used such as the asset quality as a variable to assess credit risk level which are used as a yardstick for credit risk management.

Conclusion:

To identify the effect of credit risk management on the market performance of deposit money banks in Nigeria, Descriptive statistics and Panel data regression analysis were employed on data collected from the deposit money banks in Nigeria over 10 years period from 2012 to 2021. The ratio of non-performing loan which measures credit risk management is sharply declining in recent years. This indicates that the credit risk management of deposit money banks in Nigeria had been improving during the study period. The capital adequacy ratio and sensitivity ratio was also found to be a little bit higher than the regulatory requirement.

On that note, Nigeria banks should enhance their capacity in credit risk management by devising effective and efficient process to identify measure, monitor and control risks. The study therefore recommended that credit reporting agencies and supervising authorities should be strengthened in order to reduce the high level of non-performing loans in the banking sector of Nigeria. Therefore, to stem the cyclical nature of non-performing loans and increase their profits, the banks should adopt an aggressive deposit mobilization to increase

credit availability and develop a reliable credit risk management strategy with adequate punishment for loan payment defaults.

Recommendations

On the basis of the findings and conclusions of the study, the study makes the following recommendations:

1. Managers of Banks in Nigeria should enhance their management quality and capacity in credit analysis to reduce the risk of default in repayment as this will stem the cyclical nature of net assets per share and increase their market performance.
2. Nigeria Banks should maintain strong capital base to boost their capital adequacy ratio even though it was found to have insignificant result.
3. The study recommended that banks should manage sensitivity risks involved during their operations to minimize potential risks and losses involved even though it was found to have insignificant result.
4. Adequate provision against loan loss should be made and Nigeria banks should adopt an aggressive deposit mobilization to increase credit availability and develop a reliable credit risk management strategy with adequate punishment for loan payment defaults.
5. Emphasis on maintaining assets quality to should be minimized to help improve the market performance of banks via their net assets per share.

Generally, based upon results, banks should fully concentrate on the loan assessment procedure, policies and quality of loans and liquidity management. Nigeria banking industry should inculcate a balance credit risk management culture to mitigate risks and shocks.

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