TSU-International Journal of Accounting and Finance (TSUIJAF)
e-ISSN: 28811-2709, p-ISSN: 28811-2695.Volume 1, Issue 3 (September, 2022).

RISK PARAMETERS AND PROFITABILITY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

Is'haq Alhaji Sama'ila, Ph.D[1] & Musa Muhammad Bello[2]

[1]Department of Accounting, Bayero University, Kano, Nigeria ishaqabuhadaira@gmail.com
[2]Department of Accountancy, Kano State Polytechnic, Kano, Nigeria Musambello01@gmail.com

Abstract

This paper assesses the impact of risk parameters on the profitability of listed deposit money banks in Nigeria. Profitability was measured using return on assets (ROA), while risk parameter as the independent variable was proxied by Credit Risk (CRR) and Liquidity Risk (LQR). The population of the study are all fourteen (14) deposit money banks listed in the Nigerian Stock exchange as at 31St December 2020 out of which a sample of eleven (11) listed deposit money banks were used for the analysis. Quantitative correlational research design was used and data were generated from secondary sources, basically from the annual reports and accounts of eleven listed deposit money banks from 2009 to 2020. Descriptive statistics, correlation analysis as well as panel corrected standard error regression were utilized as tools of analysis for the study. The findings reveal that credit risk has a negative and insignificant impact on profitability measured by ROA of listed deposit money banks in Nigeria, while liquidity risk has a positive and significant effect on profitability of listed deposit money banks in Nigeria. The study recommends that Management of listed deposit money banks in Nigeria needs to control its credit risk by reducing its non-performing loans to the barest minimum because this ratio is severely affecting the profitability of banks. Also, management of listed deposit money banks in Nigeria should increase and moderates its concentration on loan and advances and also find strategies to increase customer deposits.

Keywords: Credit risk, Liquidity risk, profitability, Return on Assets

Introduction

The collapse of large financial institutions during the global financial crises between 2007 and 2008 made governments even in the wealthiest nations to come up with strategies in order to rescue their financial system. A lot of financial institutions have collapsed or at verge of collapse due to the fact that loans were granted to firms and people with unreliable credit reputation (Olalekan et al. 2018). Some credit facilities were granted to firms and individuals based on connection. As a result, loans were granted without collateral when taken and if there is collateral it might not be adequate. Therefore, global financial crisis became one of the major areas in the aftermath of financial risk among financial intermediaries, also financial risk dwells on the continuous financial position of an enterprise.

In the past, many deposits Money banks have failed due to inadequate exposure to risk management. This is because banks are seriously opened to huge number of both systematic and unsystematic risk when carrying out their activities. Insider abuse, poor corporate governance, liquidity risk, inadequate strategic direction, among others are types of risks faced by banks. The main income generating activity of the bank is credit creation. Nevertheless, it exposes bank to credit risk (Kargi, 2011). The credit function of banks enhances the ability of investors to exploit

desired profitable ventures. Credit Risk is the possibility that a bank borrower or counter party fails to meet the obligations on the agreed terms.

Credit risk management (CRM) has long been the focus of governments, regulators and financial institutions as most major banking problems have been either explicitly or indirectly caused by weaknesses in CRM. Similarly, increase in non-performing loans in the credit portfolio of banks is preventing banks from achieving their objectives. Ahmad and Ariff (2007), stated that non-performing loan is the percentage of loan values that are not serviced for three months and above. This issue of non-performing loans is some of problems that led to the collapse of some banks few years back in Nigeria. This is because some of the banks granted loans to close associates and even some of the directors which could not be recouped, this led to their collapse (Owojori et al., 2011). On the other hand, liquidity risk is the possibility that over a specific time period, a bank will become unable to settle financial obligations with immediacy (Drehmann &Nikolaou 2013). It is a risk arising from a financial institution's inability to meet its obligations when they come due without incurring unacceptable losses. This risk can adversely affect both Deposit Money Banks' earnings and the capital and therefore it becomes the top priority of a Deposit Money Banks management to ensure the availability of sufficient funds to meet future demands of providers and borrowers, at reasonable costs. The exposure of Deposit Money Banks to liquidity risk is determined by the funding risk and the market risk. (Otieno et al. 2016).

Moreover, Profitability represents quantifying the outcome of a business entire polices and operations in terms of money. In order to gauge firms' profitability diverse alternatives key

financial ratios can be employed for example, earnings per share, net profit ratio, gross profit ratio, return on equity, assets, and capital employed etc. (Bagh et al. 2016). Profitability is an important construct used by several scholars as a yard stick for measuring firm attributes. Hassan and Farouk (2014) use profitability as a proportion of profit after tax to total asset of a firm.

Most of the distress in the Nigerian banking industry was as a result of bad loans and advances. The Nigeria Deposit Insurance Corporation assessed bad loans and advances with a contribution of 19.5%. Despite the fact that there are guide-lines on credit policies, some banks still fail to adhere when granting loans. This might be the reason for this problem. For example, Section 18(1b) of the Banks and Other Financial Institution Act (BOFIA) of 1991, as amended, forbids a bank from granting any advance, loan or credit facility to any person, unless it is authorized in accordance with the rules and regulations of the banks.

Deposit money banks are engaged in the business of providing financial capital to the business community as well as individuals. This they do with the expectation of achieving targeted rate of returns as a result of credit granted to customer over a period of time. They are considered as the backbone of economic development because of financial services provided by them. It is on the basis of the above, the paper looks at the impact of risk parameters (credit risk and liquidity risk) on profitability of listed deposit money banks in Nigeria.

The following hypothesis are formulated in null form to guide the study:

H_1: Credit risk does not have a significant effect on profitability of listed deposit money banks in Nigeria.

H_2: liquidity risk does not have a significant effect on profitability of listed deposit money banks in Nigeria.

The rest of the paper is outlined as follows: section two reviews related literature on the subject matter; section three talks about the methodology employed in the study; section four centered on analysis and interpretation of findings and section five concludes the paper and suggests recommendations.

Review of related literature

Concept of Credit risk

Credit Risk is defined by Okere et al. (2018) as situation that occurs due to customers' failure to service bank borrowed fund as well as interest charged on the loan. When customers are unable to settle their debts, these defaults result in losses that can ultimately affect the bank's capital. Credit risk happens when the counterparty fails to meet its obligations timely and fully in accordance with the agreed terms. It is the risk of loss due to the other party defaulting on contracts or obligations. This can lead not only to an increase in the liquidity crises but also declines the quality of the bank assets (Gweyi, 2018). Sanusi, (2010), posit that whenever a bank provides credit facility it is susceptible to credit risk. Therefore, Credit risk is a situation whereby customers are not able to service the funds borrowed together with interests accruing to such funds at the stipulated time.

Similarly, another definition of Credit Risk is by Basel, (1999), is the potential that debtor or counter party default in satisfying contractually pre-determine obligation according to the agreed terms. This is because if a trading partner fails to repay his debt in full as at when due it can adversely affect the affairs of the other partner. Credit risk is the most critical and expensive risk associated with financial institutions, and its impact on performance is quite significant compared to any other type of risk. (Chijoriga 2011). Additionally, Luy (2010), stated that Credit risk arises whenever a lender is exposed to loss from a borrower, counterparty, or an obligator who fails to honour their debt obligation as they have contracted.

Nevertheless, credit risk happens when the counterparty fails to meet its obligations timely and fully in accordance with the agreed terms. It is the risk of loss due to the other party defaulting on contracts or obligations. This can lead not only to an increase in the liquidity crises but also declines the quality of the bank assets (Yousfi, 2014). According to Mokogi (2003), Credit management, or more precisely credit risk management, refers to the systems, procedures and controls, which a company has in place to ensure the efficient collection of customer payments thereby minimizing the risk of non-payment.

Basel Committee on Banking supervision(2006), stated that the main sources of credit risk include, limited institutional capacity, inappropriate credit policies, volatile interest rates, poor management, inappropriate laws, low capital and liquidity levels, directed lending, massive licensing of banks, poor loan underwriting, reckless lending, poor credit assessment, no non-executive directors, poor loan underwriting, laxity in credit assessment, poor lending practices, government interference and inadequate supervision by the central bank. To minimize these risks,

it is necessary for the financial system to have; well-capitalized banks, service to a wide range of customers, sharing of information about borrowers, stabilization of interest rates, reduction in non-performing loans, increased bank deposits and increased credit extended to borrowers. Loan defaults and non-performing loans need to be reduced.

Concept of Liquidity risk

Muriithi, (2016), define Liquidity risk as the possibility of negative effects on the interests of owners, customers and other stakeholders of the financial institution resulting from the inability to meet current cash obligations in a timely and cost-efficient manner. The likelihood of a bank lacking cash when needed to operational activities and settle the credit request of customers is seen as liquidity risk. Failure to have access to cash timely may lead to loss of customers and reduced earnings. If the cash crisis perseveres, the company may end in eventual collapse. (Okere, et al, 2018). Liquidity Risk relates to the probability of having a realization of a random variable different to the realization preferred by the economic agent. (Nikolaou, 2009).

In other words, it is the capability to acquire funding from short-term deposits in order to finance loans at a longer term.

Falconer (2001), stated that Liquidity risk may occur due to liquidity disparity which is measured in terms of liquidity gap. Liquidity gap is termed as the difference between a bank's assets and its liabilities. This liquidity gap can be positive or negative. A negative gap is a situation whereby a bank is netting less income than the amount of liabilities assumed. Positive gap is when the bank has liquid assets left over after all the liabilities have been covered.

Liquidity risk needs to be examined as part of the enterprise-wide risk management process, taking into account credit risk to ensure stability in the balance sheet and dynamic management of liquidity risk. Liquidity risk not only affects the performance of a DMB but also its reputation. However, it is associated with the potential of the company to use current assets that can be speedily converted into cash to settle up its short term liabilities. Effective control of liquidity entails giving out loans while also investing proceeds to maximize value and managing cash reserves to meet client needs. (Microfinance Network, 2000).

Concept of profitability

Bank’s profitability is of vital importance for investors, stakeholders and the economy at large. Investors are interested in the returns for their investment. Banks’ performance is the ability of a bank to achieve its objectives using its available resources. Bank’s performance appraisal is an evaluation which is done periodically and systematically in determining the achievements of the company’s objectives (Amelia, 2012).

Lymbiko (2015), opined that Profitability measures the extent to which a business generates profit from the factors of production: labor, management and capital. Profitability analysis focuses on the relationship between revenues and expenses and on the level of profits relative to the size of investment in the business. Heibati et al. (2009) concur that profitability is the variation between expenses and revenues through a fixed period of time, generally fixed period is consisting of one financial year. They further stated that a business is similar to a living organism that is, it stays alive and grow. It is therefore important for banks to produce income for their growth and survival.

Review of Related Empirical Literature

This part provides a review of related literature relevant to the study with a view of providing empirical evidence and rationale for each of the hypothesis developed in the study.

Credit Risk and Profitability

One of the major types of risk that threaten the continuous existence of deposit money banks and other financial institutions which engage in the disbursement of loan is credit risk. Studies on the relationship between credit risk and profitability have been carried out in various part of the world. Some of them include:

Poudel (2012), studied the impact of credit risk management on financial performance of commercial banks in Nepal for the period 2001-2011. Return on asset (ROA) was used to proxy for the dependent variable, while Default Rate (DR), Cost per Loan Asset (CLA) and Capital Adequacy Ratio (CAR) was used to proxy for the independent variable. Multiple regression analysis was adopted for the analysis, The findings of the study reveals that all these Parameters that is, Default Rate (DR), Cost per Loan Asset (CLA) and Capital Adequacy Ratio (CAR) have an inverse impact on banks' financial performance; however, the default rate is the most predictor of bank financial performance.

Using panel data regression, Funso et al. (2012) investigated credit risk and Commercial banks' performance in Nigeria for the period 2000-2010. Non-Performing Loans (NPL), Loan Loss Provision (LLP) and Loan and Advances (LA) were used as proxy for the independent variable while Return on Asset (ROA) was proxy for dependent variable. The results showed that the effect of credit risk on bank performance measured by the Return on Assets of banks is cross-sectional invariant. That is the effect is similar across banks in Nigeria, though the degree to which individual banks are affected is not captured by the method of analysis employed in the study. A 100 percent increase in non-performing loan reduces profitability (ROA) by about 6.2 percent, a 100 percent increase in loan loss provision also reduces profitability by about 0.65percent while a 100 percent increase in total loan and advances increase profitability by about 9.6 percent. Similarly, Soyemi et al. (2014) investigated risk management practices and financial performance from the Nigerian Deposit Money Banks, using a sample of eight (8) banks for the period of one (1) year that is, 2012. Non-performing Loan Ratio (NPLR), Liquidity Ratio (LR), Cost to Income Ratio (CIR) and Capital Adequacy Ratio (CAR) were the proxies for independent variable, while ROA and ROE were proxies for the dependent variable. Ordinary Least Square was the technique for analysis. The findings appear to be largely consistent with previous works as the explanatory variables significantly accounted for variations in the financial performance [ROA 92 %(71.78); ROE 84% (46.55)] in both models.

Additionally, Kurawa and Garba (2014), make an evaluation of the effect of Credit Risk Management (CRM) on the Profitability of Nigerian banks for a period of eleven years (2002-2012), using a sample of 6 banks out of sixteen (16) listed banks at that time. The independent variable was proxy by Default Rate (DR), Cost per Loan Asset (CLA) and Capital Adequacy Risk (CAR). On the other hand, ROA was proxy for the dependent variable. Age and Loan were the control variables. Generalized Least Square regression technique was used for the analysis. The findings establish that CRM as measured by three independent variables has a significant positive effect on the profitability of Nigerian banks as indicated by the coefficient of determinations "R^2 value" which shows the within and between values of 40.89% and 58.35% (which are impressive)

while the overall R^2 is 43.91%, indicating that the variables considered in the model account for about 44% change in the dependent variable, that is, profitability.

Hamza (2017), studied the impact of credit risk management on banks performance in Pakistan, using a sample of thirteen (13) banks out of a population of twenty-five (25) banks at the time. Non-performing loan ratio, Loan and advances ratio, Loan ratio Capital adequacy ratio, Loan loss provision ratio and Size were employed as proxies for independent variable, while ROA and ROE were used as proxies for dependent variable. Multiple regression analysis was the technique employed for data analysis. The findings of the study reveals that Credit risk management is inversely associated with bank performance. For ROA analysis revealed that Capital Adequacy Risk (CAR), Loan Loss Provision Ratio (LLPR), Liquidity Ratio (LR) and Non-Performing Loan Ratio (NPLR) variables have significant impact on ROA.

Similarly, Okere et al. (2018) studied risk management and financial performance of Deposit Money Banks in Nigeria. Non-performing Loans, Capital Adequacy Risk, Liquidity Risk and Loan Default Ratio were the proxy for independent variable. The proxy for dependent variable is the ROA. The sample of the study was ten (10) DMBs out of a population of fifteen (15) banks. Ordinary Least Square technique was used for data analysis. Results from the panel regression show a positive relationship between risk management and financial performance of money deposit banks. In another related study, Abubakar et al. (2019) examine credit risk management and financial performance of quoted deposit money banks in Nigeria for the period 2010- 2016 (7 years). Using a sample of ten (10) banks out of a population of eleven (11). Capital Adequacy Risk, Non- performing Loan Ratio, Cost to Income Ratio, ROA, Liquidity Ratio and Loan Default were the proxies for independent variable, while ROE was proxy for dependent variable. Panel regression was employed for data analysis. The findings revealed that CAR, ROA and LDR have positive and significant effect of the financial performance measured by ROE.

Liquidity Risk and Profitability

Liquidity risk is another type of risk which deposit money banks are exposed to. It is possibility that a bank is unable to settle obligation with immediacy over a specific period. Studies have shown that a relationship exist between liquidity risk and profitability. This includes the following studies:

Anam et al. (2012) investigated liquidity risk management making a comparative analysis between conventional and Islamic banks of Bangladesh for the period 2006-2010 (five years), using a sample size of ten (10) banks. Net working capital (NWC), Return on assets (ROA) and Capital adequacy risk (CAR) were employed as the proxies for independent variable and Liquidity risk was the proxy for dependent variable. Multiple regression analysis technique was used for data analysis. The results show that, For Islamic banks, a model estimation to predict the liquidity risk level was proven to be successful but the module failed to generate the desired result in case of the conventional banks. Moreover, net working capital in case of Conventional banks and size of the business in case of Islamic banks was found to be positive and significant at 5% significance level.

Oteino et al. (2016) analyzed the relationship between liquidity risk Management and financial performance of micro finance banks in Kenya for the period 2011-2015. A sample size of six (6) Micro finance banks out of a population of twelve (12) were considered for the study. Financial Gap Ratio (FGR) and Capital Adequacy Ratio (CAR) were the proxies for independent variable,

while ROAA and ROAE were the measure of the dependent variable. Portfolio theory was also used as the underpinning theory, while the study control for bank size, inflation rate and GDP growth rate. The GMM technique was employed for data analysis. The findings were that liquidity Risk management with FGR and CAR parameters had a strong positive correlation (r=0.45) giving a significant negative relationship with both ROAA and ROAE performance measures as depicted by regression coefficient of 0.3 estimated GMM. The study concluded the existence of significant relationship between liquidity risk Management and performance and that liquidity risk management impacts positively on performance of MFBs

Similarly, in Kenya, Muriithi and Waweru (2017), studied liquidity risk and financial performance of Commercial banks, using a total sample of forty-three (43) banks. Liquidity Coverage Ratio (LCR) and net stable funding ratio (NSFR) were the proxies for the independent variable and ROA serves as the proxy for dependent variable. The period of the study was ten years (2005-2014). Panel data regression was employed for the analysis. The findings of the study indicate that NSFR is negatively associated with bank profitability both in long run and short run, while LCR does not significantly influence financial performance of commercial banks in Kenya both at long run and short run. However, the overall effect was that liquidity risk has negative effect on financial performance.

Ebenezer et al. (2019) investigated the effect of liquidity risk and interest- rate risk on profitability and firm value among banks in ASEAN-5 Countries for nine years (2009-2017), using a sample of sixty-three (63) banks. The proxies for the independent variable are; Net interest margin, Asset interest yield, Total loan and advances to total deposits and Liquid assets to total assets ratio, while ROA, ROE and Enterprise value to operating value serve as proxies for the dependent variable. The study also controls for Bank size, Firm size, GDP and Consumer Price index (Inflation). Panel data estimation technique was employed for conducting the analysis. The empirical results reveal that loan to deposit ratio have a positive significant effect on firm value while liquid asset ratio, interest rate risk (net interest margin and asset interest yield) have a negative significant effect on firm value for *ASEAN*. The loan to deposit ratio has a positive significant impact on return on asset, interest rate risk and banks size have a significant negative effect on return on asset for *ASEAN* banks while *GDP* and inflation have a positive significant effect on return on asset. Also, the liquidity risk has a negative significant effect on return on equity while the interest rate risk has a positive significant effect, bank size has a significant negative effect on return on equity while inflation rate has a positive significant impact on return on equity. From the above review, it can be seen that many researches have been conducted on the area of risk and profitability and it produces different results. It is on this basis this current study is conducted.

Methodology

In conducting particular research, it is of immense importance to choose a particular research design. This is based on the nature and the problem of the research and how well the research objective can be achieved. Therefore, the correlational research design was employed for this study as the appropriate design. This is because it is more adequate in determining the relationship between two or more variables. The population of this study is all the fourteen (14) deposit money banks listed on the floor of the Nigerian Stock Exchange as at 31St December, 2019. The study covered the period from 2009 to 2020.The population of the study is shown in table 1

Table 1 Listed Deposit Money Banks in Nigeria

S\N	Company	Year of Listing
1.	Access Bank PLC	1998
2.	Eco Bank	2006
3.	Fidelity Bank Plc.	2005
4.	First bank holdings	1971
5.	First City Monument Bank Plc.	2013
6.	Guarantee Trust Bank Plc.	1996
7.	Jaiz Bank Plc.	2017
8.	Stanbic IBTC Bank Plc.	2012
9.	Sterling Bank Plc.	1993
10.	Union Bank Plc.	1971
11.	United Bank of Africa Plc.	1970
12.	Unity Bank Plc.	2005
13.	Wema bank Plc.	1991
14.	Zenith Bank Plc.	2004

Source: Nigerian Stock Exchange www.nigerianstockexchange.com December 2020

The sampling technique of this study is purposive sampling technique. The study sample size was selected based on the criteria that: the bank must have been listed on the NSE before 1St January 2009 and the bank must be publishing financial statements from the year 2009- 2020. However, three banks; First City Monument Bank Plc, Jaiz Bank Plc, Stanbic IBTC Bank Plc were left out of the sample as a result of not meeting the criteria of been listed on the NSE before 1St January 2009. The sample of the study is shown in table 3.2

Table 2 Sample Size of the Study

S/N	Company	Year of Listing
1.	Access Bank Plc.	1998
2.	Eco Bank	2006
3.	Fidelity Bank Plc.	2005
4.	First bank holdings	1971
5.	Guarantee Trust Bank Plc.	1996
6.	Sterling Bank Plc.	1993
7.	Union Bank Plc.	1971
8.	United Bank of Africa Plc.	1970
9.	Unity Bank Plc.	2005
10.	Wema bank Plc.	1991
11.	Zenith Bank Plc.	2004

Source: Nigerian Stock Exchange www.nigerianstockexchange.com December 2020

The study utilizes the secondary source of data. Data for the current study was collected from Nigerian Stock Exchange covering the period of twelve years from 2009 to 2020.

Variables and Their Measurements

This study used profitability as the dependent variable and was proxied by return on asset. Net profit divided by total assets multiplied by 100 is the measurement for return on assets.

The explanatory variables comprise the independent and control variables. The independent variable is the risk parameters proxied by credit risk and liquidity risk which was measured as follows:

i. Credit risk is measured as non-performing loans divided by total loans multiply by 100

ii. Liquidity risk is measured by loan and advances divided by deposit multiply by 100

iii. Firm size is an important predictor of profitability as bigger companies seem to have better profitability than the smaller ones. Natural log of total assets was used to measure firm size.

iv. Firm age for the purpose of this study is the number of years a company is in business since listed was used as a measure for firm age.

In analyzing the relationship between risk parameters and profitability of listed Deposit Money Banks in Nigeria, Descriptive statistics, Correlation as well as panel Regression was employed. The analysis was also complemented by post regression analysis such as multicollinearity, residual normality test and heteroscedasticity. This is to enable the researcher have more information on the type of data to be analyzed.

Model Specification

In order to determine the relationship between risk parameters and profitability, the following econometric model was employed in the study which is based on the formulated hypotheses of this study.

$ROA = \beta_0 + \beta_1 CRR_{it} + \beta_2 LQRit + \beta_3 FSZ_{it} + \beta_4 FAG_{it} + \varepsilon it$

Where:

ROA = Return on Asset
CRR = Credit Risk
LQR = Liquidity Risk
FSZ = Firm Size
FAG = Firm Age

ε_i = Error term assumed to satisfy the standard OLS assumption

Data Analysis and Discussion of Results

As previously stated, the study employs regression model to test the formulated hypothesis. Table 2 below provides summary of the descriptive statistics of variables in the study.

Table 2 Descriptive Statistics of Variables

Var	Obs	Mean	Std dev.	Min.	Max.
Roa	132	0.02	0.06	-0.16	0.24
Crr	132	0.51	0.8	0	2.99
Lqr	132	0.98	1.24	0	4.88
Fsz	132	11.98	0.48	11.03	13.02
Fage	132	20.95	12.72	3	50

Source: Generated by the researcher from the annual reports of the sampled banks using Stata 14

From Table 2, it can be seen that ROA the dependent variable has an average of 0.02 and a Standard deviation of 0.06 indicating lack of substantial variation. On the other hand, Credit risk (CRR) has a mean of 0.51 and a standard deviation of 0.8 which also indicates lack of substantial variation. Similarly, Liquidity risk (LQR) has an average of 0.98 with a standard deviation of 1.24. Overall, LQR has the highest standard deviation and ROA has the lowest. The higher the standard deviation of the independent variables (CRR and LQR) in relation to the dependent variable ROA the higher the risk exposure of the profitability of the listed deposit money banks.

To establish the nature of correlation between the dependent and independent variables and also to ascertain whether there is multi- collinearity or not among the variables, Table 4.2 is computed for this purpose.

Table 3 Correlation Matrix of Variables

	Roa	Crr	lqr	fsz	fage	VIF
Roa	1.00					
Crr	-0.08	1.00				1.06
Lqr	0.43	-0.06	1.00			1.76

Fsz	-0.05	-0.07	-0.33	1.00		1.13
Fage	0.30	-0.20	0.62	-0.20	1.00	1.70

Source: generated by the researcher from the annual report of the sampled banks using Stata 14

From Table 3 above, it can be seen that the values on the diagonal are all 1.000 indicating that each variable is perfectly correlated with itself. CRR is negatively correlated with ROA meaning that increase in the value of CRR decreases the profitability of listed deposit money banks measured by ROA. On the other hand, LQR is positively correlated with ROA indicating that an increase in the value of LQR, profitability of listed deposit money banks as measured by ROA will increase. On the part of the control variables, Firm Size (FSZ) and Firm Age (FAGE) are negatively and positively correlated with ROA respectively.

Furthermore, Table 3 presents the Variance Inflation Factor (VIF) as a check for the presence of multi-collinearity. The VIF indicates absence of multi-collinearity VIF show multi-collinearity if the value exceeds 10.

Table 4 Panel Corrected Standard Error Regression Result

Variable	Coef.	z-stat	P-value
Crr	-0.002	-0.5	0.62
Lqr	0.019	2.5	0.013
Fsz	0.011	1.02	0.309
Fage	0.00	0.41	0.68
Cons	-0.137	-0.97	0.33
R-square 0.19			
P-value 0.0009			
F-statistics 18.82			
Hausman 0.0043			
Modified wald test 0.0000			

Source: generated by the researcher from the annual report of the sampled banks using stata 14

The coefficient of determination R^2 show a value of 0.19 indicating that the variables considered in the model account for about 19% change in the dependent variables that is profitability, while about 81% change may be as a result of other variables not addressed by this model. In general, the overall probability is positively significant at 1%. Furthermore, CRR is having a negative and insignificant relationship with ROA indicating that an increase in CRR decreases profitability measured by ROA. This is consistent with the findings of Uwuigbe et al. (2015), who revealed that while ratio of non-performing loans and bad debt do have a significant negative effect on the performance of banks in Nigeria, on the other hand, the relationship between secured and

unsecured loan ratio and bank's performance was not significant. Altarawneh (2017), founds that credit risk has a negative and significant relationship with financial performance measured by

ROA in Jordanian banks. Also, Olalekan et al. (2018), found a negative and significant relationship between credit risk and bank profitability in Nigerian Banks. However, the finding contradicts Kurawa and Garba (2014) who found a positive and significant relationship between credit risk and bank profitability measured by ROA in Nigerian banks. Additionally, Marshal and Oyekachi (2014), found that there is a positive relationship between Ratio of non- performing loans to loan and advances (Log NPL) and banks performance (Log ROA). There also exists a positive relationship between Ratio of loan and advances to total deposit (Log LA) and banks performance (Log ROA), and this is significant at 1%.

On the other hand, LQR is having a positive and significant relationship with ROA meaning that an increase in LQR increase profitability measured by ROA. The finding is consistent with the study of Oteino (2016) who concluded that liquidity risk has a positive and significant impact on financial performance of Micro finance banks in Kenya measured by return on assets (ROA). It is also in line with the study of Ebenezer et al. (2019) who found a positive significant relationship between loans to deposit ratio on ROA in ASEAN banks. The finding contradicts Altarawneh (2017) and Muriithi and Waweru (2017) who found a negative relationship between liquidity risk and ROA. The control variables, FSZ and FAGE all have a positive and insignificant relationship with profitability measured by ROA

Conclusions and Recommendations

From the discussion of results above, it can be seen that Credit risk (CRR) does not have a positive and significant relationship with Profitability (ROA) of listed deposit money banks in Nigeria. Therefore, the first hypothesis is accepted. However, Liquidity risk (LQR) has a positive and significant relationship with Profitability (ROA) of listed deposit money banks in Nigeria. The assumption that stated that liquidity risk does not have a positive and significant relationship with profitability of listed deposit money banks in Nigeria is discarded. The study therefore recommends that Management of listed deposit money banks in Nigeria needs to control its credit risk by reducing its non-performing loans to the barest minimum because this ratio is severely affecting the profitability of banks. Also, management of listed deposit money banks in Nigeria should increase and moderates its concentration on loan and advances and also find strategies to increase customer deposits.

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