Impact of Liquidity Management on Capital Adequacy Ratio of Listed Deposit Money Banks in Nigeria.

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ABSTRACT

The study examines the impact of liquidity management on Capital Adequacy Ratio of listed deposit money banks in Nigeria during the period 2012-2022. Proxy used to measure liquidity management are loan to deposit ratio and liquidity ratio, while capital adequacy ratio was the dependent variable. Panel data was used to analyse the data sourced from the individual financial reports of the listed deposit money banks in Nigeria. The sample adopted twelve (12) listed deposit money banks out of the fifteen (15) deposit money banks traded in the Nigerian exchange group (NGX). The study employed panel regression model to estimate the key relationship between liquidity management and Capital Adequacy Ratio. The result showed that loan to deposit ratio has insignificant effect on capital adequacy of listed deposit money banks in Nigeria, while liquidity has significant effect on capital adequacy of listed deposit money banks in Nigeria. The study recommended that managers of deposit money banks should ensure not to exceed the LDR regulatory limit so as to avoid sanction by the regulatory authority. The study also recommended that managers of deposit money banks should manage their liquid asset efficiently, in order to meet up their day to day financial obligations which will increase capital adequacy ratio.

Keywords: Liquidity management, Loan to Deposit ratio, Liquidity Ratio, Capital Adequacy Ratio, Listed Deposit Money Banks.

INTRODUCTION

A bank is a financial intermediary institution, generally established to accept deposits, borrow money, and channel it back to the public in the form of credit or to offer other banking services to the public, in order to provide added value and improve the standard of living of the entire community (Ayuni & Anggraeni 2022). The Nigerian banking sector plays a crucial role in the country's economy by facilitating financial intermediation, mobilizing savings, and providing credit to various sectors. This can only be achieved if the sector is sound and stable. Capital is fundamental in ensuring stability, sound ness and success of banks as it acts as buffer against exposed risks (Abiodun et al., 2020). It suffices to say that, banks when adequately capitalized are stable and sound, and by extension events that threaten the capital adequacy has potential of eroding public confidence and engineering financial distress (Nwankwo, 2019). It is therefore imperative for banks to ensure they have optimum level of liquid asset so as to honour their customers request in a good time.

Fundamentally, almost all financial transactions which include credit, financing, investment and dividend decision undertaken by DMBs are predicated on availability of adequate liquidity (Joseph & Adelegan 2022). Effective liquidity management is a key factor that helps sustain bank profits and concurrently keeps the banking institution and the financial system generally from illiquidity and perhaps, insolvency. Strategic bank management aims prominently at keeping the bank solvent and liquid in order to earn good profits which can be retained to increase the capital base of the bank. In order to maintain public confidence on the financial system of the country, Banks are required to maintain adequate amount of cash and near cash assets such as securities to meet withdrawal obligations. It is paramount for the survival of the totality of the financial system of a country and the banks in particular whose core function of financial intermediation depend on the availability of adequate liquidity (Abbas et al, 2019).

In Nigeria, the challenges of inefficient liquidity management in banks led to the 2005 re-capitalization where banks were mandated to increase their capital base from N2 billion to N25 billion. This move by the apex bank was expected to stabilize and rectify liquidity problems that were prevalent in the economy. Barely five years of what was applauded and considered as a fortified repositioning of banks against liquidity shortage, Central Bank of Nigeria (CBN) in 2009 came on a rescue mission to save three illiquid banks (the defunct Afri bank, Bank PHB, and Spring bank). The global financial crisis of 2008 also had its claws on the already ailing banks and to contain the crisis of confidence and ease financial conditions, CBN used both conventional and unconventional measures to inject liquidity into the system. In its rescue mission in 2009, CBN injected N620 billion to save the affected three banks that were operating on negative shareholder's funds.

Increasing bank liquidity can have a positive effect on capital ratios. The high liquidity possessed by the bank will enable the bank to immediately meet the withdrawal and loan requirements of depositors. Conversely, when the liquidity of the bank is low, the bank is unable to fulfil the depositors' request for credit withdrawals and disbursements (Eyigege, 2018). Deposits, on the other hand, are liabilities because banks must pay an interest rate on those deposits, albeit at a low rate. For the fact that banks pay lower interest rate on deposit, giving out such deposit as loan to customers at a higher rate means higher earnings which may increase the capital adequacy of the bank if a percentage of such earnings are retained. The Central bank of Nigeria set the Loan to Deposit Ratio of Nigerian banks to 65% since 2019.

Loan-to-deposit ratio (LDR) also a variable in this study is used to assess a bank's liquidity by comparing a bank's total loans to its total deposits for the same period. The loan-to-deposit ratio (LDR) is a measure of a bank's liquidity and the degree to which it relies on deposits to fund its lending activities. It is calculated by dividing the bank's total loans by its total deposits. The resulting ratio indicates the proportion of the bank's loans that are funded by its deposits. The LDR is an important metric for banks because it reflects the bank's ability to manage its liquidity risk. Banks that rely heavily on deposits to fund their lending activities may face liquidity risks if they experience a sudden increase in deposit withdrawals (Saadallah & Serwan 2021).

On the other hand, banks that have a low LDR may have excess deposits that are not being utilized efficiently, which can impact their profitability. A high LDR can indicate that a bank is taking on more risk, as it is relying heavily on its deposit base to fund its lending activities. This can also put pressure on the bank's net interest margin (NIM), which is the difference between the interest income earned on its assets and the interest expense paid on its liabilities. When a bank has a high LDR, it may face higher funding costs, which can reduce its NIM. Conversely, a low LDR may indicate that a bank has excess deposits that it is not utilizing efficiently. This can also put pressure on the bank's NIM, as it may be investing these excess deposits in lower-yielding assets. Also, the LDR helps to show how well a bank is attracting and retaining customers.

If a bank's deposits are increasing, new money and new clients are being on-boarded. As a result, the bank

will likely have more money to lend, which should increase earnings. Although it's counterintuitive, loans are an asset for a bank since banks earn interest income from lending. Deposits, on the other hand, are liabilities because banks must pay an interest rate on those deposits, albeit at a low rate. For the fact that banks pay lower interest rate on deposit, giving out such deposit as loan to customers at a higher rate means higher earnings which may increase the capital adequacy of the bank if a percentage of such earnings are retained by the bank.

Capital adequacy ratios, such as the well-known Basel III requirement of maintaining a minimum common equity Tier 1 (CET1) capital ratio of 4.5%, have been formulated to assess a bank's ability to absorb losses and maintain solvency. The capital adequacy framework considers the composition and quality of a bank's capital, as well as its exposure to various types of risks, such as credit risk, market risk, and operational risk (Muhmad & Hashim, 2015). By mandating capital adequacy requirements, central banks and regulatory authorities remain focused on establishing a resilient banking sector that can withstand adverse economic conditions and financial shocks. Adequate capitalization ensures that banks have the necessary financial resources to honour their obligations, safeguard depositors' funds, and continue their intermediation role of channelling funds from surplus units to deficit units in the economy. Furthermore, capital adequacy promotes stability in the banking system by reducing the probability of bank failures and contagion effects that can undermine overall financial stability. It serves as a crucial tool in preventing excessive risk-taking and promoting prudent banking practices. Additionally, capital adequacy requirements contribute to the overall efficiency of the banking system by aligning risk and reward, incentivizing banks to allocate capital efficiently and manage risks effectively (Kalifa & Bektaş, 2018).

Nigeria's banking sector went through a range of challenges and opportunities that impact the financial health and stability of its constituent banks. These challenges may arise from internal and external factors, such as macroeconomic conditions, regulatory frameworks, management practices, and the competitive landscape (Olarenwaju & Akande, 2016). Despite the implementation of capital adequacy requirements and regulatory interventions in the Nigerian banking sector, there exists significant variation in the capital adequacy ratios among listed deposit money banks. This disparity suggests the presence of some variables that may influence a bank's capital adequacy position. Therefore, it becomes imperative to examine those variables that contribute to disparities in capital adequacy across banks. The study is to identify and analyse how liquidity management significantly impact capital adequacy, providing a deeper understanding of the determinants of capitalization in the Nigerian banking sector. Therefore, the aim of this study is to comprehensively examine the impact of liquidity and loan to deposit ratio affect capital adequacy ratio among listed deposit money banks in Nigeria.

In this research, the hypotheses below are posed to validate data for analysis of findings;

H_{O1}: Liquidity Ratio has no significant effect on the capital adequacy ratio of listed deposit money banks in Nigeria

H_{O2}: Loan to Deposit Ratio has no significant effect on the capital adequacy ratio of listed deposit money banks in Nigeria

LITERATURE REVIEW

Conceptual Review

Liquidity and CAR

Bank liquidity is simply referred to as the availability of funds held by a bank to meet its customer's obligations. It is the bank's ability to honour its customers request for withdrawal either in cash or through

transfers and also the request for loan advances. Where customer's demands are timely honoured, more patronage will be recorded which translate to increased business activities hence increased earnings which can be retained to augment the capital base of the bank.

Duqi and Al-Tamimi (2017) stated that as the proportion of funds invested in cash or cash equivalents increases, a bank's liquidity risk declines, leading to lower liquidity premium in the net interest margins. Therefore, an increase in bank liquidity (high LACSF) may have a positive impact to capital ratio. Total loans with respect to CBs and total financing with respect to IBs to total deposits ratio is a measurement of bank's liquidity that assesses the bank's ability to meet short-term obligations and additional financial requirements. As a result, if liquidity risk increased the CAR should be increased too due to the increase in the banks' expected default risk.

Liquidity management therefore involves the strategic supply or withdrawal from the market or circulation the amount of liquidity consistent with a desired level of short-term reserve money without distorting the earning streams and operations of the bank. It relies on the daily assessment of the liquidity conditions in the banking system, so as to determine its liquidity needs and thus the volume of liquidity to allot or withdraw from the market. Management of liquidity involves a daily analysis and detailed estimation of the size and timing of cash inflows and outflows over the period to minimize the risk that depositors will be unable to access their deposits at the moment they demand for them.

Loan to Deposit Ratio and CAR

The loan-to-deposit ratio (LDR) remains a popular metric for assessing bank performance, but recent research has shed light on its limitations and challenges. One of the strength of the LDR is that it provides a simple and straightforward way to assess a bank's liquidity and funding adequacy. As noted by TCH and Oliver Wyman (2020), a high LDR can indicate that a bank is aggressively pursuing lending growth and may be taking on more risk to achieve it. In contrast, a low LDR may suggest that the bank is too conservative and not fully utilizing its deposit base to support lending. However, the LDR has some limitations that can limit its usefulness as a standalone metric for assessing bank liquidity level. For example, recent research has highlighted the importance of considering the quality of loans in addition to the volume of lending. According to Andrieș and Clichici (2020), the LDR may not be a reliable indicator of bank risk if the bank is making low quality loans that are likely to default. Moreover, the LDR may not fully capture the complexity of banks' funding models and liquidity risk management. As noted by Sealey, Anagnostopoulos, and Clarke (2021), the LDR can be influenced by factors such as the types of deposits held by the bank, the maturity of its loan portfolio, and the availability of alternative funding sources. Therefore, the LDR should be used in conjunction with other metrics and indicators to provide a more comprehensive view of a bank's liquidity profile and capital adequacy.

While the LDR can be a useful metric for assessing bank liquidity and capital adequacy, it should be used in conjunction with other metrics and indicators to provide a more complete picture on it impact on capital adequacy ratio of listed deposit money banks in Nigeria. Factors such as loan quality, funding diversity, and regulatory changes should also be considered when evaluating the effect of LDR on CAR (Saidu, 2023).

Capital Adequacy Ratio

The capital adequacy ratio is an obligation and requirement set by regulatory authorities over banks that forces them to hold a given level of capital at any given time to cover for system wide financial crunches (Karugu, et al 2018). Capital adequacy requirements are among the policies and rules issued by the Central Bank and directed at deposit money banks for adoption and use to ensure banking sector stability. According to Nwankwo (2019), Capital Adequacy refers to the level of capital stock that banks are expected to hold at any given time to enable them survive wide spread risks such as market, operational and credit

risks. Thus, Capital adequacy is the sum of financial resources contributed by owners of banks to eliminate chances of the bank crossing over to financial distress (Nguyen, 2020).

Capital adequacy ensures that stock holders and bank depositors are hedged from potential risk such as bankruptcy, credit risk, interest rate risk among others (Runtu, Saerang & Pangemanan, 2017). Bank capital adequacy thus provide for protection of resources invested in the commercial banks by shareholders, depositors, other lenders and the entire economy. Furthermore, capital adequacy ensures that banks are managed efficiently and effectively to ensure the banking environment are safe to investors (Fliginskih et al, 2019). The capital stock held by the commercial bank thus act as a buffer against inadequate cash to undertake normal banking activities.

According to Abdul-Karim (2016), regulatory authorities use capital adequacy ratio to evaluate the soundness of banks and other depository institutions because, to them, capital serves as a cushion to absorb losses. The Basel III accord was primarily created to take care of the issues of the financial crisis of 2008 which resulted from Basel II shortcomings. However, despite the fact that the Basel III framework came up with capital and liquidity standards aimed at strengthening the resilience of the banking sector, am of the view that it is still inadequate. Though there is imposition of additional capital requirements, it did not address risk assessment methods. Another thing is that, the framework is meant only for deposit money banks whereas other financial institutions like insurance funds are not subjected to Basel III capital requirements (Chockalingam et al, 2018).

Empirical Review

Amelia and Aggraeni (2022) performed a study on the effect of liquidity, Asset Quality, Sensitivity, Efficiency and Profitability on Capital in State Banks. the study investigated the effect simultaneously and partially of Loan to Deposit Ratio (LDR), Investing Policy Ratio (IPR), Adversely Classified Asset (APB), Non-Performing Loan (NPL), Interest Rate Risk (IRR), Net Open Position (PDN), Operational Efficiency Ratio (BOPO), Fee Based Income Ratio (FBIR), Return On Asset (ROA) on CAR and which variable has the dominant effect on CAR. The study used secondary data taken from first quarter of 2014 until the fourth quarter of 2019 of government banks. The data were processed by using SPSS 21. The result of the study revealed that Loan to Deposit Ratio, IPR, APB, NPL, IRR, PDN, BOPO, FBIR, and ROA simultaneously have significant effect on CAR. PDN and FBIR partially have significant effects on CAR. PDN was the dominant variable that influences CAR. The study did not exhaustively consider essential predictors of capital adequacy like liquidity management and bank size.

Sikanda et al. (2021) did a research on liquidity creation and testing in the Zambian banking sector, using capital adequacy, customer deposit base and return on assets as proxies. The study was conducted using the financial reports of all commercial banks in Zambia from 2008 to 2018 obtained from the Bank of Zambia. Multiple regression model was used to analyse the data collected. The findings showed that liquidity ratio has significant effect on the capital adequacy of banks in Zambia. This study was based on commercial banks data collected for a period of 2008 – 2018 from the Bank of Zambia. The study did not capture more recent data from 2019 – 2022 which makes it obsolete.

Nguyen et al. (2021) conducted a research on the impact of liquidity transformation on capital adequacy ratio (CAR) of Vietnamese commercial banks. By using Generalized Least Square regression model for 16 Vietnamese banks in the period 2012-2020 with dependent variable 'capital adequacy ratio CAR', independent variable 'lag liquidity transformation LTG t-1' and some additional control variables (namely: the lag capital adequacy ratio CARt-1, return on equity ROE, credit risk CRSK, gross domestic product

GDP, inflation rate INFL), this study finds that liquidity transformation (LTGt-1) has negative effect on capital adequacy ratio (CAR), while the variables lag capital adequacy ratio (CARt-1) and credit risk (CRSK) are positively related to CAR, while, ROE, GDP and INFL have insignificant effect on CAR. The researcher conducted the study in Vietnam which has different economic peculiarities with Nigeria. The findings may not be applicable to the Nigerian context.

Faisal et al. (2019) carried out a study on the influence of bank liquidity and bank risk on bank capital among emerging economies of Asia in post crisis conditions. The data was collected for 379 banks from Bank scope database. The data used includes post crisis period ranging from 2011 to 2016. Linear regression panel-corrected standard errors approach was used to find consistent estimators. The results confirm that liquidity ratio is negatively influencing bank capital in medium size banks while small banks are positively impacted by liquidity. The overall risk has positive effect on bank capital in all banks which is consistent with regulatory hypothesis. The findings also prove that market funding, banks size and real gross domestic product have negative effect on bank capital. The population of the study was too large and the result could therefore be misleading.

Adamgbo et al. (2019) examined the effects of Capital adequacy on liquidity risk management practices in Nigeria. The secondary time series data were obtained from the annual reports of the fifteen (15) quoted commercial banks in Nigeria as compiled from the Nigeria Stock Exchange Fact book for the period 1989 to 2015. The multivariate regression equation was specified and results obtained based on E-views version 9.0. The OLS and co-integration result shows existence of a short run and long run equilibrium relationship between liquidity ratio and capital adequacy (CAR). The Unit root test shows that the variables were stationary at level and first difference i.e. 1(0) and 1(1). The VAR test indicates that fluctuations in liquidity risk are significantly influenced by capital adequacy measures. The granger-causality test shows a unidirectional link between liquidity risk and capital adequacy. The study used only one proxy out of the numerous variables that could have been used to measure liquidity risk management practices in Nigeria.

Moghaddam & Abbaspour (2017) in a research aimed to determine the effect of leverage and liquidity ratios on earnings management and capital of banks listed on the Tehran Stock Exchange. In the research, financial information of 14 banks listed on the Tehran Stock Exchange during the period 2010-2015 have been studied and multivariate linear regression analysis using panel data was used. The results showed that financial and liquidity leverage has significant positive effect on earnings management of banks. Therefore, by increasing the degree of financial leverage and bank liquidity, the possibility of using discretionary accruals and earnings management at banks increase. The results also showed that financial leverage has a significant negative effect on the bank's capital adequacy ratio. The study was conducted using the Iranian economic environment which is not the same with the Nigerian economic atmosphere.

Shingjergji and Hyseni (2015) examined explanatory factors that influence capital adequacy ratio (CAR) in the Egyptian commercial banks. The study covers 36 banks during the period from 2004-2013. It examined the relationship between CAR as dependent variable and the following independent variables: earning assets ratio, profitability, and liquidity, Loan loss provision as measure of credit risk, net interest margin growth, size, loans assets ratio and deposits assets ratio. Furthermore, it investigates determinants of CAR before and after the 2007- 2008 international financial crises. Results vary according to the period under study. For the whole period 2003 to 2013 results show that liquidity, size and management quality are the most significant variables. Before the period 2008 results show that asset quality, size and profitability are the most significant variables. After the period 2009 results show that asset quality, size, liquidity, management quality and credit risk are the most significant variable that explain the variance of Egyptian banks' CAR. The study was carried out in a different clime with dissimilar local banking regulations. The findings may therefore not be used by the Nigerian bank executives for decision making.

Theoretical Framework

The Shiftability Theory of Liquidity

The theory was formally originated by Moulton (1918) to explain how banks exchange position between cash and cash equivalent financial assets depending on liquidity situation. Banks often hold cash reserve and a host of credit instruments that can easily be traded at the secondary market to get liquid cash when need arises, (Kenneth, 2016)). In line with the theory, the liquidity of a bank is a function of the ease at which the bank can shift it liquid assets to other parties in exchange of liquid cash when need arises without material loss of value (Devin et al, 2020). Moulton (1918) argue that archiving minimum reserve does not need to rely on holding maturing bills, however, it needs the bank to hold a host of financial assets that can be shifted to the Central Bank for effective liquidity management.

The theory explains that shiftability is dependent on ready marketability or transferability of bank's assets when there is illiquidity. The Central Bank has a critical role as lender of last resort enabling shiftability to operate. When a financial institution is in need of liquidity, it can shift its financial assets like bills and bonds to the Central Bank who in turn gives immediate cash needed to arrest the liquidity situation (Sealey et al, 2021). Some defects have been identified in the assumptions and working of shiftability theory. In a situation of system wide crisis, the ease of transfer of these assets for liquidity purposes reduces as no party needs them (Summers, 1975). When all banks are seeking to liquidate their assets at the same time, it becomes almost impossible to get ready buyers. In such a situation, the market value of the assets will drastically fall leading to loss of banks capital (Chockalingam, 2018).

This theory is critical in this study as it informs the rational for liquidity management by deposit money banks. Banks with adequate financial assets can move them to the Central Bank in exchange for cash so as to augment their liquidity position and honour their customer's obligation timely. This will further boost confidence, increase earnings that can be retained to raise the capital adequacy level of the bank.

METHODOLOGY

Ex-post fac to research design was employed in the study using panel data from annual reports and accounts for a period of ten years (2012-2022). The population of this study includes fifteen (15) listed Deposit Money Banks on the Nigeria Exchange that carried out banking business between 2012 and 2022 and published their annual reports during the period (Access Bank Plc, EcoBank Plc, Fidelity Bank Plc, First Bank of Nigeria Plc, First City Monument bank Plc, Guaranty Trust Bank Plc, Heritage Bank Plc, Jaiz Bank Plc, Stanbic IBTC Bank Plc, Sterling Bank Plc, United Bank for Africa Plc, Union Bank Plc, Unity Bank Plc, Wema Bank Plc and Zenith Bank Plc). The rationale behind the choice of banking industry is due to the fact that banks are more involved in high risk commercial activities and the concept of capital adequacy is more pronounced in the banking industry. The purposive sampling method was used in this study and 12 listed deposit money banks were adopted.

This study employed panel regression model to identify, explain and estimate the key relationship between liquidity management and capital adequacy of listed deposit money banks in Nigeria. Correlation analysis as a method of statistical evaluation was also used to study the strength of a relationship between the dependent and independent variables. Hausman test was used to determine which model is the best suited for this study whether fixed or random effect. The specific model given below for the Hausman test describes a convenient version for regression applications that involves testing whether certain transformations of the original regressors have zero coefficients.

The following multiple regression model will be used:

$$CAR_{it} = \beta_0 + \beta_1 LDR_{it} + \beta_2 LIQ_{it} + U_{it}$$

Where;

CAR = Capital Adequacy Ratio (Equity to Risk Weighted Capital),

LDR= Loan Deposit Ratio (Total Loan/Total Deposit)

LIQ = Liquidity Ratio (Liquid Asset /Total Assets),

β_0 = Constant term

$\beta_1 - \beta_2$ = Coefficient of the Independent Variables.

U = Error Term

Variables are in their natural ratio form.

The decision rule to test the hypothesis of the study is as follows:

If the p-value of the t-coefficient is less than 5% (0.05), the null hypothesis is rejected, otherwise accept.

Table 3.1:Variables Measurement

Variable	Nature	Measurement	Supporting studies
Capital Adequacy Ratio	Dependent	Total Capital/Risk-Weighted asset	Ehiedu (2022),
Loan Deposit Ratio	Independent	Total Loan/Total Deposit	Zulfikar (2023),
Liquidity Ratio	Independent	Liquid Asset/Total Debt & Borrowings	Ghareibeh (2023),

Source: Compiled by the Researcher, 2023

RESULTS AND DISCUSSIONS

Table 1: Descriptive Statistics

	CAR	LDR	LIQ
Mean	9.672627	15.33344	58.34287
Median	13.33970	14.85370	55.85025
Maximum	23.75350	34.32490	144.1581
Minimum	-15.74964	0.579000	21.19330
Std. Dev.	22.08430	6.674006	17.85725
Skewness	-5.679787	0.137692	1.351861
Kurtosis	36.67138	2.750554	7.360083
Jarque-Bera	6314.008	0.690299	131.6022
Probability	0.000000	0.708114	0.000000
Sum	1160.715	1840.012	7001.144
Sum Sq. Dev.	58038.23	5300.540	37946.88
Observations	120	120	120

Source: E-Views 10, 2023. Authors Compilation

The table 1 revealed the data used in the study with capital adequacy ratio (CAR), loan deposit ratio and liquidity ratio having a mean value of 9.672627, 15.33344 and 58.34287 which means that CAR, LDR and LIQ on an average for listed deposit money banks in Nigeria. The deviation from the mean (standard deviation) was 22.08430, 6.674006 and 17.85725; this means that CAR, LDR and LIQ was normally distributed because the standard deviation value was higher than the mean value. In like manner, it has a median of 13.33970, 14.85370 and 55.85025 with skewness and kurtosis of (-5.679787, 0.137692, 1.351861 and 36.67138, 2.750554, 7.360083 respectively). The maximum CAR, LDR and LIQ of listed deposit money banks in Nigeria as at the period of study was 23.75350, 34.32490 and 144.1581 which means that the highest CAR, LDR and LIQ of listed deposit money banks in Nigeria. The Jacque-Bera confirms the normality of the data.

Table 2: Correlation Matrix

	CAR	LDR	LIQ
CAR	1	0.220725	0.1196003
DAR	0.2207255	1	0.04839
LIQ	0.1196003	0.048392	1

Source: E-Views 10, 2023. Authors Compilation

Table 2 explained the correlation of impact of liquidity management on capital adequacy ratio of listed deposit money banks in Nigeria where the CAR was correlated with LDR to the value of 0.22 which signifies there is a correlation since the value is positive, While the CAR was correlated with LIQ to the value of 0.119 which signifies there is correlation since the value is positive.

Table 3: Hausman Test

Correlated Random Effects – Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	1.525602	2	0.28492
Source: E-Views 10, 2023.			

The test enabled this research to choose the most appropriate between the fixed and random effect models. The result of the Hausman test in the table 3 indicates that the fixed effect regression model is the most appropriate model to analyse the data of the study. With the probability of 0.28492, the random effect was rejected. Therefore, the fixed effect estimator was used to run the regression

Table 4: Panel Result

Dependent Variable: CAPITAL_ADEQUACY			
Method: Panel Least Squares			
Sample: 2012 2022			
Periods included: 10			
Cross-sections included: 12			
Total panel (balanced) observations: 120			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-49.15183	82.16460	-0.598212	0.5510
LOAN DEPOSIT RATIO	0.312920	0.316282	0.989371	0.3248

LIQUIDITY	0.423504	0.112638	3.759863	0.0003
	Effects Specification			
Cross-section fixed (dummy variables)				
Root MSE	15.40109	R-squared		0.509578
Mean dependent var	9.672628	Adjusted R-squared		0.433396
S.D. dependent var	22.08430	S.E. of regression		16.62354
Akaike info criterion	8.590087	Sum squared resid		28463.24
Schwarz criterion	8.984982	Log likelihood		-498.4052
Hannan-Quinn criter.	8.750456	F-statistic		6.688943
Durbin-Watson stat	1.779207	Prob(F-statistic)		0.000000

Source: E-Views 10, 2023. Authors Compilation

Loan deposit ratio had insignificant effect on capital adequacy ratio of listed deposit money banks in Nigeria because the p-value was 0.3248 which was greater than the 5% significant level, indicating that a 1% increase in loan deposit ratio will not have any increase in the capital adequacy ratio of listed deposit money banks in Nigeria by 0.3129. Similarly, liquid assets had a significant effect on capital adequacy ratio of listed deposit money banks in Nigeria because the p-value was 0.000 which was less than the 5% significant level, indicating that a 1% increase in liquid assets will automatically increase capital adequacy ratio of listed deposit money banks in Nigeria by 0.4235.

The coefficient of determination (R2) is 50.9%. It shows that 50% of change in the dependent variables is explained by the independent variables which means that, capital adequacy ratio variable used in the study explained variation on liquidity to the extent of 50%, while the remaining variation of 50% was explained by other variables not captured in the model. The probability of the F-Statistics which is less than 0.0000 indicates that the independent variables jointly explain the dependent variable. Therefore, the model is fit and appropriate.

DISCUSSION OF FINDINGS

1. Finding from the study revealed that liquidity ratio has no significant effect on the capital adequacy ratio of listed deposit money banks in Nigeria. This signifies that an increase in loan deposit ratio will not have any effect on capital adequacy ratio of listed deposit money banks in Nigeria. However, the implication of this finding indicates that banks may pose a greater risk to the financial system due to their inter connectedness and potential for contagion effects. Additionally, banks with higher loan to deposit ratio tend to be more vulnerable to financial shocks. This study agrees to the findings of Davin et al (2020). Therefore, the null hypothesis was accepted.
2. Meanwhile, findings from the second hypotheses revealed that liquidity asset had a significant effect on capital adequacy ratio of listed deposit money banks in Nigeria. This implies that an increase in liquidity assets will have an increase effect on capital adequacy ratio of listed deposit money banks in Nigeria. Finding from this study opined with the work of Samwel Muchukwu (2022), which study also revealed that liquid asset has a significant effect on capital adequacy ratio of deposit money banks in Nigeria. Therefore, the null hypothesis was rejected. The relationship between liquidity and capital adequacy ratio is significant, which requires that banks need to maintain sufficient liquidity to

meet their obligations and avoid default. Liquidity requirements can help ensure that banks have enough liquid assets to cover their short-term liabilities. However, liquidity requirements can also reduce the ability of banks to create net liquidity in equilibrium and impact investment and economic activity.

CONCLUSION AND RECOMMENDATIONS

This study examines impact of liquidity management on capital adequacy ratio of listed deposit money banks in Nigeria. In agreement with prior evidence from developed countries that show significant linkage between liquidity management and capital adequacy ratio. The findings showed that loan deposit ratio has insignificant effect on capital adequacy of listed deposit money banks in Nigeria, while liquidity has significant effect on capital adequacy of listed deposit money banks in Nigeria.

Based on the findings and conclusions from this study, the following recommendations are provided;

1. The study recommended that, considering the fact that loan to deposit ratio has no significant effect on capital adequacy of listed deposit money banks in Nigeria, managers of deposit money banks should only ensure that the regulatory limit is not exceeded so as to avoid sanction.
2. The study also recommended that managers of deposit money banks should manage its liquid asset efficiently, in order to meet up their day to day financial obligations which will increase capital adequacy ratio.

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