# THE IMPACT OF LIQUIDITY RISK ON PROFITABILITY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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**ABSTRACT**

**Objective:** The study examined the relationship between liquidity risk and the profitability of Nigeria's listed deposit money banks in Nigeria over a 16 years period from 2008 to 2023.

**Method:** Panel data on cash reserve ratio, liquidity ratio, loan to deposit ratio, and return on equity were collected from the annual reports and financial statements of the five systemic banks listed on Nigerian Exchange Group from 2008-2023. Ordinary least square regression analysis, panel unit root test, Hausman test were used in analysing the data.

**Results:** The study found a significant positive relationship between the cash reserve ratio, loan to deposit ratio and profitability of Nigerian deposit money banks. But liquidity ratio has a negative but insignificant relationship with profitability of deposit money banks in Nigeria.

**Conclusion:** Based on the findings, the research recommends that the Central Bank of Nigeria (CBN) must act quickly to lower cash reserve ratios in order to help Nigeria's deposits banks operate more effectively. Banks should engage competent and qualified personnel in order to ensure that right decision are adopted with regard to the optimal level of liquidity and the loan-to-deposit ratio should be fully utilized by banks to support sales initiatives.

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## O IMPACTO DO RISCO DE LIQUIDEZ SOBRE A LUCRATIVIDADE DOS BANCOS DE DEPÓSITOS LISTADOS NA NIGÉRIA

**RESUMO**

**Objetivo:** O estudo examinou a relação entre o risco de liquidez e a lucratividade dos bancos de depósito de dinheiro listados na Nigéria em um período de 16 anos, de 2008 a 2023.

**Método:** Os dados do painel sobre o índice de reserva de caixa, o índice de liquidez, o índice de empréstimos sobre depósitos e o retorno sobre o patrimônio líquido foram coletados dos relatórios anuais e das demonstrações financeiras dos cinco bancos sistêmicos listados no Nigerian Exchange Group de 2008 a 2023. A análise de regressão de mínimos quadrados ordinários, o teste de raiz unitária de painel e o teste de Hausman foram usados na análise dos dados.

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**Resultados:** O estudo constatou uma relação positiva significativa entre o índice de reserva de caixa, o índice de empréstimos para depósitos e a lucratividade dos bancos nigerianos de depósito em dinheiro. Mas o índice de liquidez tem uma relação negativa, porém insignificante, com a lucratividade dos bancos de depósitos na Nigéria.
**Conclusão:** Com base nos resultados, a pesquisa recomenda que o Banco Central da Nigéria (CBN) aja rapidamente para reduzir os índices de reserva de caixa a fim de ajudar os bancos de depósitos da Nigéria a operar de forma mais eficaz. Os bancos devem contratar pessoal competente e qualificado para garantir a adoção de decisões corretas com relação ao nível ideal de liquidez, e o índice empréstimo/depósito deve ser totalmente utilizado pelos bancos para apoiar as iniciativas de vendas.

**Palavras-chave:** Risco de Liquidez, Lucratividade, Bancos Comerciais de Capital Aberto, Nigéria.

### EL IMPACTO DEL RIESGO DE LIQUIDEZ EN LA RENTABILIDAD DE LOS BANCOS DE DEPÓSITOS COTIZADOS EN NIGERIA

**RESUMEN**
**Objetivo:** El estudio examinó la relación entre el riesgo de liquidez y la rentabilidad de los bancos de dinero de depósito que cotizan en bolsa en Nigeria durante un período de 16 años, de 2008 a 2023.
**Método:** Se recopilaron datos de panel sobre el coeficiente de reservas de efectivo, el coeficiente de liquidez, el coeficiente de préstamos sobre depósitos y la rentabilidad de los recursos propios a partir de los informes anuales y los estados financieros de los cinco bancos sistémicos que cotizan en el Nigerian Exchange Group entre 2008 y 2023. Para analizar los datos se utilizaron el análisis de regresión por mínimos cuadrados ordinarios, la prueba de raíz unitaria de panel y la prueba de Hausman.
**Resultados:** El estudio halló una relación positiva significativa entre el coeficiente de caja, el coeficiente de préstamos sobre depósitos y la rentabilidad de los bancos nigerianos de dinero en depósito. Pero el coeficiente de liquidez tiene una relación negativa pero insignificante con la rentabilidad de los bancos de dinero de depósito en Nigeria.
**Conclusiones:** Basándose en los resultados, la investigación recomienda que el Banco Central de Nigeria (CBN) actúe con rapidez para reducir los coeficientes de reserva de efectivo con el fin de ayudar a los bancos de depósitos de Nigeria a operar con mayor eficacia. Los bancos deben contratar a personal competente y cualificado para garantizar que se adopten las decisiones correctas en relación con el nivel óptimo de liquidez, y los bancos deben utilizar plenamente el coeficiente préstamo-depósito para apoyar las iniciativas de venta.

**Palabras clave:** Riesgo de Liquidez, Rentabilidad, Bancos Comerciales Cotizados, Nigeria.

## 1 INTRODUCTION

Liquidity is one of the drivers of commercial banks profitability, hence must be maintained to ensure the financial soundness of banks. A bank which has a high level of liquidity provides enough funds to lend, improving the return on interest generated from operations as well as financial performance. However, bad liquidity planning, and control diminishes the financial performance of Deposit Money Banks. The overall financial performance of these banks is very important for the smooth-running operation of the financial activities of any country. Therefore, liquidity management is so significant for a bank to maintain a steady cash inflow in order to increase its financial performance for reasonable shareholders returns. According to (Nisar et al., 2021), banks are expected to maintain a level of liquidity as per requirements of central banks. In the opinion of (Wuave et al., 2020) effective

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liquidity risk management assists banks in meeting cash flow obligation. Also, Effiong and Enya, (2020) reiterate that liquidity risk arises from maturity mismatch whereby liabilities are said to have a shorter maturity period than assets.

Looking deeply at the Nigerian banking sector, Ibe (2023) opined that the sector is in a rudimentary and fragile state. The industry is relatively under developed, small, closed and the ownership structure is majorly by individual and a few state. The financial intermediation level in Nigeria is very low, partially due to the public's lack of confidence in the banking sector. Aside this, there are various issues relating to nonperforming loan which is rampant among most banks especially in the early 1990s that contributed for their insolvency. Additionally, there are problems pertaining to ineffective supervision, mismanagement and political interference with credit decisions. Up till today, despite various reforms that have been put in place by the government, the sector is not yet competitive and efficient, nor is it capable of accelerating the economic growth of the country which remains marginal.

Regulatory frameworks often have a significant impact on the management of liquidity within the financial system. For example, regulations that require banks to hold larger liquidity buffers may help to reduce the risk of liquidity shortages, but they may also increase costs and reduce the availability of credit. In the Nigerian banking sector, loans are not priced competitively by taking into consideration the risk of the borrower and the return of the loan to the lending bank. This practice inevitably denies capital to efficiency firms and contributes to the build-up of non-performing loans in the state/individual owned banks portfolio (Nwokolo et al., 2023). They further argued that this crisis produces many adverse effects towards banks. These include stagnation of the sector, decline in profitability, increased of the non-performing assets and loans, past due receivables, loan loss provision and deterioration of other key indicators of banks' performance. It is therefore pertinent that deposit money banks should manage their liquidity in such a manner that a trade off would be struck between liquidity and investment such that sudden shocks that may bring the corporate life of the organizations to an end would be avoided. Liquidity management in this study will be measured by cash reserve ratio, liquidity ratio and loan-to-deposit ratio, while financial performance will be measured by return on equity.

The study will be of benefit to the banking industry, policy makers and future researchers. It will help the banking sector to establish the appropriate level of liquidity that will ensure the smooth running of their operations. To the policy makers, the study will help them to make appropriate monetary policies to enhance the performance of the banking industry

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for sustainable economic development. To future researchers, the study will serve as a body of reserved knowledge to be consulted for further research on liquidity risk and financial performance of listed banks in Nigeria.

Several works that have been carried out previously which include Wuave et al., (2020); Effiong and Enya (2020); Nwokolo et al. (2023); Ibe (2023), have tried to examine the connection between liquidity risk management and banks' profitability, however, some of them arrived at inconclusive or mixed result. Based on this, the study is set to examine the impact of liquidity risk management on the profitability of listed deposit money banks in Nigeria. The remaining part of this study comprises of literature review for section 2, methodology for section 3, findings and discussions for section 4 and conclusion and recommendations for section 5.

## 2 LITERATURE REVIEW

The conceptual review, theoretical review, and empirical examination of liquidity risk and profitability are all included in this part. Liquidity risk is the probability that a company will be not be able to meet its short term obligations as they come. This inability can lead a company to face serious financial problems. Additionally, liquidity risk can also be defined in terms of the counterparty to a transaction which means that the counterparty may not be able to pay or settle the transaction even if they are in good financial standing, because of a lack of liquidity due (Abba et al., 2023). According to (Hacini et al., 2021), liquidity risk is the actual or future risk resulting from the failure of an entity to fulfill its liabilities/obligations when they are due without incurring unreasonable losses. This is commonly called the liquidity risk of funding. In order to further analyze this, it should be noted that business-related liquidity risk has recently become more substantial due to the industry's heavy reliance on lending institutions. Liquidity risk management is an area which seeks good policies for the management of short-term assets and liabilities, as well as realistic frameworks for improving liquid capital benefits. Liquidity management An overview of the balance sheet results (asset and liabilities side) for liquidity risk management may be identified in terms of liquidity risk management (Alqemzi et al., 2022).

Liquidity can be measured using a variety of metrics, including liquidity ratio (LR), cash reserve ratio (CRR) and loan to deposit ratio (LDR). Liquidity ratio is a class of metric that is used to determine a company's ability to pay off its short-term debt obligations. From regulatory authority point of view, liquidity ratio refers to the reserve requirement which is a

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bank regulation that sets minimum reserve each bank must hold (Abba, 2023). Cash reserve ratio (CRR) is the amount of cash banks need to hold on to without being allowed to invest or lend it for interest. This percentage lets the commercial banks find out the portion of monetary reserves they need to keep with their respective central banks. The funds are saved to ensure that banks do not become penniless to meet the demands of their customers.

According to (Binay & Sneha, 2023), cash deposit ratio measures the amount of cash that banks hold relative to their total deposits. It measures how much a financial organization lends in relation to the deposits it has raised. Loan deposit ratio (LDR) is the the ratio of total loans to total liabilities. A smaller ratio implies strong liquidity, whereas a greater ratio suggests a less liquid position that could influence bank lending. Salami (2023) defined the Loan Deposit Ratio (LDR) as a measure of how far the ability of banks to refinance the withdrawal of funds made by depositors by relying on credit given as a source of liquidity. The concept of liquidity risk has been studied extensively by several authors. Li et al. (2020), Adegbie and Adesanmi, (2020); Ajose and Solape (2020) identified liquidity ratio, cash conversion cycle, receivables collection period, capital adequacy ratio, loan to deposit ratio, cash reserve ratio and deposit rate as some of the proxies casually connected to actualize the change in the financial performance of an organization. However, this study decided to adopt liquidity ratio, loan to deposit ratio and cash reserve ratio because they are the relevant liquidity risk proxies that critically measure the liquidity position of capital intensive firms such as the banking industry.

The issue of profitability in financial institutions has been widely discussed in the scientific literature, it has also been considered in a number of theoretical and empirical research of different kinds. According to (Tauhid et al., 2020), a company's profitability has a significant impact on the way it is structured and developed. It helps a company's reputation and assesses a firm's profitability and performance. Speaking on the relationship between bank performance and liquidity status, (Oke et al., 2022), claims that return on equity is a better indicator of a bank's profitability than cash reserve ratio, liquidity ratio, or loan-to-deposit ratio. Akani and Ordu (2022), opined that improved profitability is the major target of every organization and that there are challenges on how an enterprise can determine them. Profitability is an indication of how well a company is able to fulfil or exceed its financial commitment.

Profitability is important for the external climate, as a bank with high profitability is more able to adapt to new environmental challenges and opportunities and can also take advantage of different investment opportunities (Hacini et al., 2021). Profitability refers to a company's ability and capacity to generate earnings from sales and other specific earning

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potentials in a given time period (Adesina & Adewumi, 2022). Several literatures on profitability deliberates on the market-based and accounting-based measures of performance. However, the trend is now shifting toward hybrid measures that caters for both quantitative and qualitative indicators of performance. A notable benefit of accounting-based performance measures is that they are easy to interpret. Liquidity position and bank's profitability can be measured by various financial ratios such as Return on Assets (ROA), Return on Equity (ROE), Current Ratio, Quick Ratio, and Net Interest Margin (NIM), etc. (Adeyemi et al., 2022). However, Return on Equity (ROE) which indicates the profitability of own capital or often referred to as business profitability and measure return on assets of equity owners is employed as proxy for measuring banks' profitability in this study because it represents a better proxy for financial performance.

The conceptual framework, which serves as a bridge between the concepts used in this study, is depicted in Figure 1. It shows how Nigeria's listed deposit money banks' profitability is correlated with liquidity risk. The independent variables are represented by liquidity ratio, (LR), loan to deposit ratio (LDR) and cash reserve ratio (CRR); the dependent variable is Return on Equity (ROE).

**Figure 1**

*Shows the link between Liquidity Risk and Profitability.*

Independent Variables                                    Dependent variable

| Liquidity Risk | → | Profitability |

| Liquidity Ratio (LR) | → | Return on Equity (ROE) |

Loan to Deposit Ratio (LDR)
Cash Reserve Ratio (CRR)
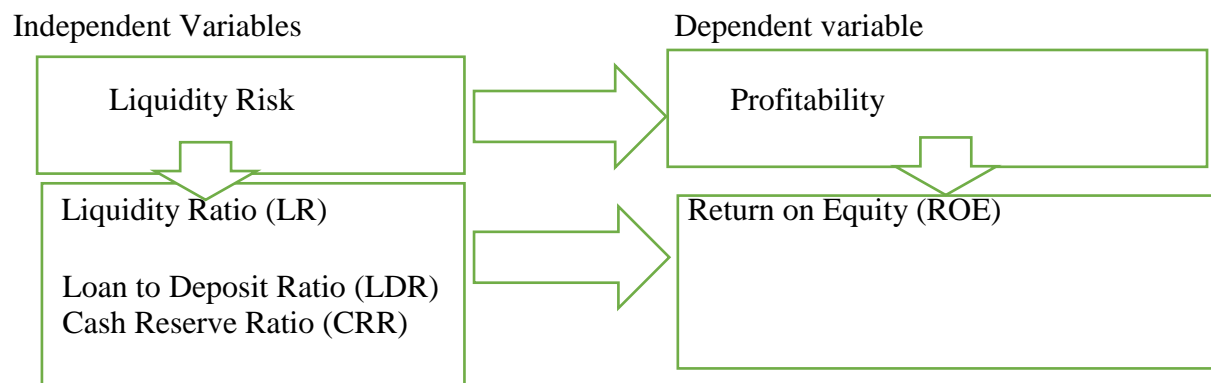
Source: Author's Framework (2024)

## 3 THEORETICAL REVIEW

The study adopts three theories and models to support the research work namely Modern Portfolio Theory, Anticipated Income Theory and Shiftability Theory. The Modern Portfolio theory was propounded by Harry Markowitz in 1952. This theory is based on the possibility

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that risks disinclined financial specialists in the business can build portfolios to expand expected stock returns based on the level of market risks in a speculation, understanding that risks is an inborn and huge piece of higher reward in venture. It encourages and recommends that, for speculators it is not sufficiently just to focus on the normal risks and stock return of one stock. According to the theory, each stock has its own deviation from the stock mean. This standard deviation from the mean is called risk cited in the work of (Arumona et al., 2020). The anticipated income theory was developed by Preshow in 1944 on the basis of the practice of extending term loans by the US commercial banks. This theory postulated that, regardless of the nature and character of a borrower's business, the bank plans the liquidation of the term-loan from the anticipated income of the borrower. According to Sadiya (2020), the theory emphasizes the earning potential and the credit worthiness of a borrower as the ultimate guarantee for ensuring adequate liquidity. He posits that the theory points to the movement towards self-liquidating commitments by banks. The Shiftability Theory was developed by Harold G, Moulton in 1915. The theory states that, an asset must be convertible directly without any loss of value in the event of a request for cash, for it to be said to be perfectly shiftable. This is applicable for for short term market instruments, such as treasury bills and bills of exchange which can be directly sold whenever banks decide to raise capital.

## 3.1 THEORETICAL FRAMEWORK

This study is being anchored by shiftability theory because the concept has been found to be empirically linked and or synonymous with liquidity risk and financial performance. It states that a bank's level of liquidity will be preserved when it has assets that can be relocated or transferred to other investors or lenders for cash during a crisis or financial troubles. The liabilities side of the balance sheet is the subject of the shiftability theory. According to the notion, a bank's liabilities could provide additional liquidity; as a result, the shiftability, marketability, or transferability of a bank's assets is a foundation for ensuring liquidity (Terseer et al., 2020).

## 3.2 EMPIRICAL REVIEW

This study has reviewed so many studies by various scholars in which some authors such as (Salami (2023), Terseer et al. (2020), Chinweoda et al. (2020), Adewusi and Adeleke

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(2020), Wuave et al. (2020), Ajose and Balogun (2021)), have all their opinion focused around positive relationship between liquidity risk management and profitability while Eze and Agu (2020) concluded there is a negative impact of liquidity on banks' profitability

The impact of liquidity management on financial performance of deposit money banks in Nigeria between 1990 to 2021 banks was carried out by Salami (2023). The study used the ex-post facto research design to collect, analyze and interpret the data. It adopted the secondary method of data collection, sourced data from the Central Bank of Nigeria (CBN) and used Autoregressive Distributed Lagged (ARDL) for the estimation. The findings revealed that liquidity ratio of deposit money banks has a positive and insignificant impact on the financial performance of deposit money banks in Nigeria. In the same vein, loan-to-deposit ratio has a positive and significant impact on financial development in Nigeria.

In their own research work, Terseer et al. (2020) investigated the impact of liquidity management on financial performance of banks in Nigeria from 2010-2018 by obtaining data from 5 different banks that were quoted on the Nigerian Stock Exchange. They used panel regression analysis to estimate model and Hausman test and decided to choose between the random and fixed effect model. The result revealed a positive and significant relationship between liquidity ratio and profitability of deposit money banks. Also, Chinweoda et al. (2020) studied the effect of liquidity management on the performance of banks in Nigeria. Their study took a population sample from eighteen (18) banks that are listed on Nigeria's stock exchange between 2011 to 2017. The study sourced data from the NSE database and CBN Statistical Bulletin. The data collected were analysed using basic statistical tools that provided descriptive analogies such as mean, median, standard deviation and ordinary least square (OLS). Multiple-linear regression was used to test the hypotheses. SPSS software was used to run the analysis. The findings from those banks disclosed that liquidity management has a positive and significant effect on their profitability.

In the study conducted by Adewusi and Adeleke (2020), they used pooled regression analytical method to establish positive and substantial relationship between banks' performance and liquidity risk management in Nigeria from 2013 to 2017. The study made use of secondary data and were sourced from the banks' financial statement of account. They adopted the pool regression of ordinary least square method of multiple regression analysis. This is based on the various desirable of the ordinary least square which many other estimation techniques do not possess. These include the properties of Best, Linearity, Unbiasedness and Efficiency (BLUE). Some of these desirable properties are summarized in the BLUE properties of OLS. In the same

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vein, the t-test statistic, co-efficient of multiple determination R2, f-test, Durbin Watson test for considered in the analysis appropriately. The findings from the study established a positive and significant association between bank performance and liquidity risk management.

Similarly, Wuave et al. (2020) established positive and significant relationship between liquidity and profitability of Deposit Money Banks in Nigeria from 2010 to 2018 when they used secondary data from five quoted commercial banks. They used some measures such as liquidity ratio, loan to deposit ratio, cash reserve ratio, deposit ratio for liquidity management and return on assets, return on equity, return on net interest margin for financial performance. The study used panel regression analysis to determine the estimation of the model and Hausman test. The study discovered a positive and significant relationship between liquidity ratio and financial performance of commercial banks. According to another study, Ajose and Balogun (2021) carried out the impact of liquidity management on the financial performance of deposit money banks in Nigeria for a period of 10 years (2011–2020). They adopted the ex-post facto research design and came with the findings that show positive and significant correlation between liquidity management financial performance of deposit money banks in Nigeria.

While in Indonesia, Safitri et al. (2021) assessed the role of liquidity and capital adequacy on Islamic bank's performance in Indonesia using financing risk as a mediator. Data were collected from 14 samples operating in Indonesia in the period 2013-2019. They were then analyzed using Partial Least Squares – Structural Equation Modelling (PLS-SEM) with Warp PLS 7.0 as a tool of analysis. The results show liquidity to be significantly influencing performance. Meanwhile, capital adequacy ratio shows insignificant influence on performance. The study focused only on Islamic banking companies operating in Indonesia without considering other conventional banks. In the same vein, Al-Ardah and Al-Okdeh (2022) examines the influence of liquidity risk on financial performance of Jordanian banks, where liquidity risk was measured by (Liquidity ratio, net working capital, cash and investment ratio to total deposits), and financial performance was also measured through the index (return on assets) and the modifying variable (bank size) measured through the natural logarithm of total assets was also added. The researchers adopted analytical quantitative approach for the study. To obtain expressive and meaningful data, the comprehensive inventory method was used by selecting the banks that have current shares during the study period, and which have all data necessary to calculate the study variables from 2010 to 2019. The study sample consisted of (13) Jordanian commercial banks listed on Amman Stock Exchange, which met the required conditions, representing 100% of the study population. The study sample is a comprehensive

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survey of the entire study population, thus enabling the results of the study to be fully generalized to society. The work revealed that a positive impact of liquidity risk on financial performance. The study concluded with a set of recommendations, the most important of which are: commercial bank administrations should increase interest in exploiting their liquidity within acceptable risk limits to reach optimal ratios for financial performance by balancing the returns to be achieved with the potential risks of such expenses in a way that ensures the positive influence of liquidity risk on the financial performance of those banks.

However, Eze and Agu (2020) investigated the impact of liquidity management on performance of deposit money banks in Nigeria with six (6) banks that are part of an international association. This research obtained secondary data from the banks' annual books from 2013 to 2019. The report indicated a very low negative effect of liquidity on equity. Hence the need for wider study on the field. On the same pattern of investigation, Dahiyat et al. (2021) employed Return on Assets and Earning Per Share as performance variables in their study of the impact of liquidity on the financial performance of Jordanian manufacturing firms from 2010 to 2019. This study relied on secondary data derived from the annual reports, during the period that are available on the ASE website, for Jordanian manufacturing companies listed on the ASE. The study results show a statistically significant impact of liquidity on financial performance.

Additionally, to establish the effect of liquidity on profitability, Adhikari (2020) studied the effect of of liquidity on profitability in Nepalese commercial banks. 27 out of 28 commercial banks in Nepal were used for the analysis. A cross-sectional secondary data of the banks was employed. For data analysis, causal comparative and descriptive approaches for research were used. In addition, to determine the relationship between the variables, multiple general linear regression and correlation analysis were used. Findings from the study showed that statically the association between the driver's liquidity and profitability of Nepal commercial banks is insignificant.

## 3.3 LITERATURE GAP

The results obtained from various empirical findings remain divergent. The researcher observed from empirical review of literatures that the findings from the subject matter still remain relatively inconclusive and conflicting findings. Further empirical studies revealed a positive significant relationship between liquidity and financial performance of Commercial Banks (Wuave et al., 2020; Ajose & Balogun, 2021; Adewusi & Adeleke, 2020), other studies

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have reported a negative significant relationship between liquidity and financial performance of deposit money banks globally (Sathyamoorthi et al., 2020; Eze & Agu, 2020), while other studies reported no significant impact of liquidity on financial performance of commercial banks (Adhikari, 2020). The inconsistent results could be a result of changes in the study's environment, time period, measurements, data analysis method, or analysis tools. This study, which spans a 16-year period (2008-2023), is carried out in Nigeria. This time frame is crucial as it encompasses the introduction of numerous financial management tools by the Nigerian government, including the Treasury Single Account (TSA), the Integrated Personnel Payroll Information System (IPPIS), and Zero-base budgeting, among others, which had an impact on the liquidity and profitability of Nigeria's Deposit Money Banks. Also, most of the studies conducted in Nigeria for examples; Alhassan and Anwarul (2021), failed to use the correct measures of liquidity such as cash reserve ratio (CRR), loan to deposit ratio (LDR). Finally, this study used regression analysis to statistically analyse the data that were collected for this work. Based on these, the current study is considered imperative.

## 4 METHODOLOGY

A research philosophy relate to belief on how phenomenon is gathered, analysed and used. It is linked to epistemology which is relationship between the researcher and what is known to be true, and ontology referring to what is believed to be true. The research philosophy that was adopted for this research is that pursued by positivists who believe reality is stable and hence can be observed from an objective viewpoint. According to Bergmann (2023), the Positivists research design has been established in social sciences and has added value to several research work. The design adopted for this study is ex post facto research design. What informed the design methodology is the fact that the data needed for this study was gathered from the yearly reports of the listed deposit money banks in Nigeria. This implies that analysis depends on historical data that was obtained from the financial reports. All deposit money banks listed on the Nigerian Stock Exchange as of December 31, 2023, made up the study's population. The sample size of this study is made up of 5 important banks on the Nigerian Exchange. The sample size of the banks was selected using the CBN rating of systemically important banks (SIB). The data for the work were obtained from a secondary sources, which were pulled from the selected deposit money banks' audited financial statement available on the Nigerian Exchange, from 2008–2023.The data gathered for this investigation was

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quantitative and data received were analysed statistically using regression analysis. This method was conducted to determine the effect of independent variables (cash reserve ratio, liquidity ratio and Loan-to-deposit ratio) on dependent variable (return on equity)

## 4.1 MODEL SPECIFICATION

This study adopted Oke et al. (2022) model on the impact of liquidity management on financial performance of deposit money banks in Nigeria. The functional model specification for the study is stated as

$$ROE = f\,(CRR,\ LDR,\ LR)\ -\qquad(1)$$

where:

ROE = Return on Equity
CRR = Cash reserve ratio
LR = Liquidity ratio
LDR = Loan-to-deposit ratio

The test employed in this study is regression analysis which involves autoregressive-distributed lag (ARDL).

Hence, the model from equation 1 becomes

$$lnRSF = \alpha_0 + \alpha_1 lnCRR_t + \alpha_2 lnLDR_t + \alpha_3 lnLR_t + U_t\ -\qquad(2)$$

where

$\alpha_1$-$\alpha_3$, are the parameter estimates or coefficients of Model 2
$\alpha_0$ is the constant/intercept terms of model 2 and $U$ is error or random term of the model, t indicates time series data.

## 4.2 SCOPE OF THE STUDY

The study investigated the impact of liquidity risk on profitability of listed commercial banks in Nigeria. The study's target population was the Nigerian Stock Exchange's listed

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commercial banks in Nigeria. The selected sample size for the study were 5 systemically important banks listed in the Nigerian Stock Exchange. The research was done from 2008 to 2023.

## 5 FINDINGS AND DISCUSSIONS

This section's emphasis is on acquiring, presenting, and interpreting data. This paper used panel multiple regression analytical technique and data obtained from the annual financial reports of the selected banks for a period of 16 years to assess the effects of liquidity risk on the profitability of deposit money banks in Nigeria (2008-2023). Pool linear regression was used in this investigation. The data were gathered and analysed using E-views (Econometric views) in order to determine the link.

### 5.1 DESCRIPTIVE STATISTICS

Table 1 shows the result of descriptive statistics. The purpose of descriptive statistics is to summarize the data in a meaningful format which will give at glance, the mean, standard deviation as well as maximum and minimum mean. From the table, there are 80 observations which is the total number of 5 deposit money banks multiply by 16 years. ROE has a mean and standard deviation of 19.02675 and 8.216947 which implies that the Nigerian deposits money banks by average records about 19.03% return on their total equity. However, the minimum mean of 2.00 indicates that the lowest ROE recorded is the return of about 2% and the highest ROE recorded was 44.8% reflected by a maximum mean of 44.8

On the other hand, Cash Reserve Ratio (CRR) has a mean and standard deviation of 3.850500 and 3.110384 respectively with minimum and maximum mean of 1.260000 and 13.62000. This implies that on average, deposit money banks have a mean of about 13.85% of cash reserved in relation to deposit. The standard deviation of 3.110384 which is close to the mean indicates that deposit money banks have similar pattern of CRR and are within the same range with the Mean. Similarly, Liquidity Ratio (LR) has a mean and standard deviation of 50.45038 and 12.08330 with minimum and maximum mean of 90.60000 and 30.20000 implies an average LR of 50.45% and minimum and maximum of 30.2% and 90.2% respectively.

The proportion of Loan to deposit (LDR) indicates the proportion of total loan relevant to total deposit with mean of 59.55425 and standard deviation of 13.08373 which

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implies that deposits money banks LDR are mostly away from the central mean indicating high dispersion from the mean.

The skewness and kurtosis values of each variable employed in the models also provided support for the analysis. While the kurtosis is a measurement of the histogram's tail shape, the skewness measures data's symmetry. Return on Equity (ROE), Cash Reserve Ratio (CRR) and Liquidity Ratio (LR) were mesokurtic as their kurtosis values are greater than three (3) while the loan-to-deposit ratio (LDR) of deposit money banks is platykurtic given that its kurtosis value is less than three (3). The benchmark for a symmetrical distribution is how close the variable is to zero; values less than that are referred to as platykurtic, and values greater are known as leptokurtic.

Skewness, kurtosis, and Jarque-Bera (JB) statistics were evaluated by the researcher in order to evaluate the dataset's normal distribution. The JB results show that LDR have a normal distribution, as shown by the JB probability ratios (Prob>0.05).

**Table 1**

*Summary Statistics of the variables used in Model*

|  | ROE | CRR | LR | LDR |
|---|---|---|---|---|
| Mean | 19.02675 | 3.850500 | 50.45038 | 59.55425 |
| Median | 18.47500 | 2.540000 | 49.20500 | 59.65000 |
| Maximum | 44.80000 | 13.62000 | 90.60000 | 88.00000 |
| Minimum | 2.000000 | 1.260000 | 30.20000 | 32.00000 |
| Std. Dev. | 8.216947 | 3.110384 | 12.08330 | 13.08373 |
| Skewness | 0.629937 | 1.691123 | 0.727040 | 0.076513 |
| Kurtosis | 3.854235 | 4.770354 | 3.401335 | 2.562911 |
| Jarque-Bera | 7.723327 | 48.57915 | 7.584734 | 0.714880 |
| Probability | 0.021033 | 0.000000 | 0.022542 | 0.699465 |
| Sum | 1522.140 | 308.0400 | 4036.030 | 4764.340 |
| Sum Sq. Dev. | 5333.939 | 764.2844 | 11534.48 | 13523.54 |
| Observations | 80 | 80 | 80 | 80 |

Source: Computed by the Researchers, (2024)

## 5.2 PRE-TEST ANALYSIS

### 5.2.1 Unit Root Test

The result of Unit root test using the panel data from a cross section of 5 selected bank is presented in Table 2. The unit root tests for non-stationarity (that is, the Levin, Lin, and Chu t and PP-Fisher Chi-square tests) reject the null hypothesis of non-stationarity at the 5% level for all variables in 1$^{st}$ difference terms, as shown in Table 2 below. At a 5% level of significance,

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the unit root tests revealed that Return on Equity (ROE) is stationary and integrated of order one I(1), while Cash Reserve Ratio (CRR), Liquidity Ratio (LR) and Loan to Deposit Ratio (LDR) are stationary and non-integrated I(0) for all periods.

**Table 2**

*Showing the Unit Root Test*

| VARIABLES | LEVEL | | FIRST DIFFERENCE | | ORDER OF INTEGRATION |
|---|---|---|---|---|---|
| | Levin, Lin & Chu t* | PP-Fisher Chi-square * | Levin, Lin & Chu t* | PP-Fisher Chi-square * | |
| ROE | 0.9800 | 0.5866 | 0.0009 | 0.0004 | I(1) |
| CRR | 0.0177 | 0.0088 | 0.0087 | 0.0000 | I(0) |
| LR | 0.0000 | 0.0000 | 0.0000 | 0.0000 | I(0) |
| LDR | 0.0147 | 0.1107 | 0.0000 | 0.0000 | I(0) |

Source: Computed by the Researchers, (2024)

### 5.2.2 Correlation Coefficients

Table 3 shows the relationship between the Liquidity risk and the profitability of the selected banks. It is clearly seen that there is a positive long run relationship between return on Equity (ROE) and Cash Reserve Ratio (CRR) whereas ROE has a negative long run associations with Liquidity Ratio (LR) and Loan to Deposit Ratio (LDR) with correlation coefficient values of 0.4827, -0.0518 and -0.1608 respectively.

**Table 3**

*Correlation Matrix*

| VARIABLES | ROE | CRR | LR | LDR |
|---|---|---|---|---|
| ROE | 1 | 0.4827 | -0.0518 | -0.1608 |
| CRR | 0.4827 | 1 | -0.1548 | 0.2155 |
| LR | -0.0518 | -0.1548 | 1 | -0.2974 |
| LDR | -0.1608 | 0.2155 | -0.2974 | 1 |

Source: Computed by the Researcher, (2024)

## 5.3 DATA ANALYSIS

### 5.3.1 Pooled Regression

To determine the nature of short run relationship between the variables using a single constant parameter across the various cross-section, the pooled effect is presented as shown in Table 4:

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**Table 4**

*Pooled Effects Regression Output for Return on equity Equation (ROE)*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 26.44541 | 5.858207 | 4.514249 | 0.0000 |
| CRR | 1.419406 | 0.259117 | 5.477862 | 0.0000 |
| LR | -0.037969 | 0.068220 | -0.556566 | 0.5795 |
| LDR | -0.184177 | 0.063742 | -2.889410 | 0.0050 |
| Root MSE | 6.785544 | R-squared | | 0.309424 |
| Mean dependent var | 19.02675 | Adjusted R-squared | | 0.282165 |
| S.D. dependent var | 8.216947 | S.E. of regression | | 6.961821 |
| Akaike info criterion | 6.767466 | Sum squared resid | | 3683.489 |
| Schwarz criterion | 6.886567 | Log likelihood | | -266.6986 |
| Hannan-Quinn criter. | 6.815217 | F-statistic | | 11.35104 |
| Durbin-Watson stat | 1.048949 | Prob(F-statistic) | | 0.000003 |

Source: Computed by the Researcher, (2024)

Table 4 above shows the pooled effect of the Return on equity (ROE). The R-Square value of 0.309424 shows that, in this effect, all the independent variables used such as cash reserve ratio (CRR), liquidity ratio (LR) and loan to deposit ratio (LDR), account for only 30.94% of variations in the dependent variable i.e. profitability as measured using the Return on equity of the sampled 5 deposit money banks. The Durbin-Watson Statistics value of 1.048949 shows positive serial correlation of the employed predictor variables. The F-statistics value of 11.35104 at a probability value of 0.000003 which is less than the 0.05 significance level shows a strong model. From the coefficients and significance level, the study observes that; Cash Reserve Ratio (CRR) shows a positive (1.419406) and significant (0.0000 < 0.05) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Cash Reserve Ratio (CRR) is likely to have a 1.419406 unit increase in ROE.

On the other hand, Liquidity Ratio (LR) shows a negative (-0.037969) but insignificant (0.5795 > 0.05) influence on the Return on equity of sampled deposit money banks, which shows that, a unit increase in Liquidity Ratio (LR) is likely to have 0.037969 decrease in ROE. Similarly, Loan to Deposit Ratio (LDR) shows a negative (-0.184177) but significant (0.0050 < 0.05) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Loan to Deposit Ratio (LDR) is likely to have a 0.184177 unit decrease in ROE.

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5.4 FIXED EFFECT MODEL

Effects are fixed if they are interesting in themselves or random if there is interest in the underlying population. Therefore, the fixed effect seeks to evaluate the model considering each case (deposit money banks effect). The result of the fixed effect model is hereby presented as shown in Table 5:

**Table 5**

*Fixed Effects Regression Output for Return on equity Equation (ROE)*

Total panel (balanced) observations: 80

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 8.406738 | 4.768083 | 1.763127 | 0.0832 |
| CRR | 0.856019 | 0.382880 | 2.235737 | 0.0293 |
| LR | -0.000251 | 0.054289 | -0.004619 | 0.9963 |
| LDR | 0.123191 | 0.053134 | 2.318483 | 0.0240 |
| | Effects Specification | | | |

Cross-section fixed (dummy variables)
Period fixed (dummy variables)

| | | | |
|---|---|---|---|
| Root MSE | 3.167570 | R-squared | 0.849515 |
| Mean dependent var | 19.02675 | Adjusted R-squared | 0.791432 |
| S.D. dependent var | 8.216947 | S.E. of regression | 3.752613 |
| Akaike info criterion | 5.718807 | Sum squared resid | 802.6800 |
| Schwarz criterion | 6.403639 | Log likelihood | -205.7523 |
| Hannan-Quinn criter. | 5.993376 | F-statistic | 14.62610 |
| Durbin-Watson stat | 1.399522 | Prob(F-statistic) | 0.000000 |

Source: Computed by the Researcher, (2024)

Table 5 above shows the fixed effect of the Return on equity (ROE). The R-Square value of 0.849515 shows that, in this effect, all the independent variables used such as cash reserve ratio (CRR), liquidity ratio (LR) and loan to deposit ratio (LDR), account for 84.95% of variations in the dependent variable i.e. profitability as measured using the Return on equity of the sampled 5 deposit money banks. The Durbin-Watson Statistics value of 1.399522 shows positive serial correlation of the employed predictor variables. The F-statistics value of 14.62610 at a probability value of 0.000000 which is less than the 0.05 significance level shows a strong model. From the coefficients and significance level, the study observes that; Cash Reserve Ratio (CRR) shows a positive (0.856019) and significant (0.0293 < 0.05) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Cash Reserve Ratio (CRR) is likely to have a 85.60% unit increase in ROE.

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On the other hand, Liquidity Ratio (LR) shows a negative (-0.000251) but insignificant (0.9963 > 0.05) influence on the Return on equity of sampled deposit money banks, which shows that, a unit increase in Liquidity Ratio (LR) is likely to have 0.03% decrease in ROE. But, Loan to Deposit Ratio (LDR) shows a positive (0.123191) and significant (0.0240< 0.05) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Loan to Deposit Ratio (LDR) is likely to have a 12.32% unit increase in ROE. The fixed effect results cannot be accepted without the diagnosis test, which will enable the determination of the optimal effect. We therefore proceed to the next effect (Random Effect).

## 5.5 RANDOM EFFECT MODEL

The result of the random effect model are presented as shown in Table 6:

**Table 6**

*Random Effects Regression Output for Return on equity Equation (ROE)*

Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 14.07294 | 5.390578 | 2.610654 | 0.0109 |
| CRR | 0.972515 | 0.356769 | 2.725898 | 0.0080 |
| LR | -0.021575 | 0.056776 | -0.379992 | 0.7050 |
| LDR | 0.038580 | 0.054795 | 0.704074 | 0.4835 |
| | Effects Specification | | | |
| | | | S.D. | Rho |
| Cross-section random | | | 3.845299 | 0.3357 |
| Period random | | | 3.896433 | 0.3447 |
| Idiosyncratic random | | | 3.752613 | 0.3197 |
| | Weighted Statistics | | | |
| Root MSE | 4.057569 | R-squared | | 0.108053 |
| Mean dependent var | 3.951004 | Adjusted R-squared | | 0.072844 |
| S.D. dependent var | 4.323423 | S.E. of regression | | 4.162978 |
| Sum squared resid | 1317.109 | F-statistic | | 3.068941 |
| Durbin-Watson stat | 1.196865 | Prob(F-statistic) | | 0.032854 |
| | Unweighted Statistics | | | |
| R-squared | 0.184112 | Mean dependent var | | 19.02675 |
| Sum squared resid | 4351.897 | Durbin-Watson stat | | 0.991577 |

Source: Computed by the Researcher, (2024)

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Table 6 above shows the random effect of the Return on equity (ROE). The R-Square value of 0.108053 shows that, in this effect, all the independent variables used such as cash reserve ratio (CRR), liquidity ratio (LR) and loan to deposit ratio (LDR), account for 10.81% of variations in the dependent variable i.e. profitability as measured using the Return on equity of the sampled 5 deposit money banks. The Durbin-Watson Statistics value of 1.196865 shows positive serial correlation of the employed predictor variables. The F-statistics value of 3.068941 at a probability value of 0.032854 which is less than the 0.05 significance level shows a strong model. From the coefficients and significance level, the study observes that; Cash Reserve Ratio (CRR) shows a positive (0.972515) and significant ($0.0080 < 0.05$) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Cash Reserve Ratio (CRR) is likely to have a 97.25% unit increase in ROE.

On the other hand, Liquidity Ratio (LR) shows a negative (-0.021575) but insignificant ($0.7050 > 0.05$) influence on the Return on equity of sampled deposit money banks, which shows that, a unit increase in Liquidity Ratio (LR) is likely to have 0.22% decrease in ROE. But, Loan to Deposit Ratio (LDR) shows a positive (0.038580) and insignificant ($0.4835 > 0.05$) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Loan to Deposit Ratio (LDR) is likely to have a 3.86% unit increase in ROE. The study cannot accept the result of this effect until we employ our diagnostic test to know if it is the optimal model. This therefore makes us proceed to the diagnostic test (Hausman Test).

## 5.6 DIAGNOSTIC TEST

It will not be appropriate to select the optimal effect manually. Some diagnostic test have been created to enable research determine the best effect between the fixed and random effect. This test is the Hausman Specification Test.

## 5.7 HAUSMAN TEST RESULT

This is a test to decide which of the test to choose between fixed and random effect test. This diagnostic test pits the random effect against the fixed effect. A test with significant probability (prob. $< 0.05$) supports fixed effect while a test that has an insignificant probability (prob $> 0.05$) pitch its tent with random effect test.

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**Table 7**

*Hausman Specification Test output for Return on equity (ROE)*

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|---|---|---|---|
| Cross-section random | 0.000000 | 3 | 1.0000 |
| Period random | 0.000000 | 3 | 1.0000 |
| Cross-section and period random | 0.000000 | 3 | 1.0000 |

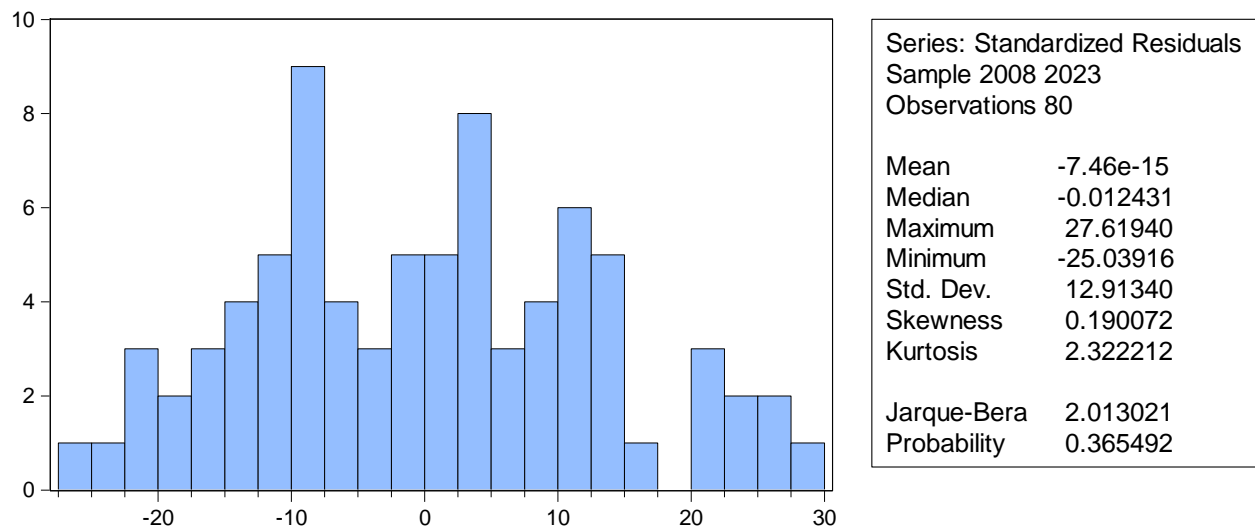Source: Computed by the Researcher, (2024)

Table 7 shows the Hausman Specification test which seeks to examine the most valuable effect between the random and fixed effect. The Cross-section random Chi-Square statistics value of 0.000000 at a probability level of 1.0000 which is greater than the 0.05 significance level supports the fixed effects test. This shows that the fixed effect remains the paramount effect in the model. The study therefore moves on to determine the long run effect using the fixed effect.

5.8 POST ESTIMATION TEST

**5.8.1 Histogram Normality Test**

**Figure 2**

*Normality Test of Model*



| Series: Standardized Residuals |  |
|---|---|
| Sample 2008 2023 | |
| Observations 80 | |
| Mean | -7.46e-15 |
| Median | -0.012431 |
| Maximum | 27.61940 |
| Minimum | -25.03916 |
| Std. Dev. | 12.91340 |
| Skewness | 0.190072 |
| Kurtosis | 2.322212 |
| Jarque-Bera | 2.013021 |
| Probability | 0.365492 |

Source: Computed by the Researcher, (2024)

Figure 2 shows the post-normality test of the model of the impact of bank liquidity risk which is the liquidity ratio, the loan-to-deposit ratio on the profitability of deposit money banks in Nigeria.

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The Figure shows that the model and the variables are normality distributed. This is evidenced by the respective insignificant Jarque-Bera statistics of the relevant variables used in the study.

## 6 DISCUSSIONS OF FINDINGS

This study examined the connection between liquidity risk and the profitability of Nigeria's listed deposit money banks. According to the unit root tests, Return on Equity (ROE) is stationary at first difference I (1) while Cash Reserve Ratio (CRR), Liquidity Ratio (LR) and Loan to Deposit Ratio (LDR) are stationary at first level I (0) for all periods.

The long term relationship from the fixed effect model shows that Cash Reserve Ratio (CRR) with coefficient of (0.856019) and probability of (0.0293) has a positive and significant relationship with Return on Equity (ROE) of the sampled deposit money banks over the study period, which means that, a unit increase in Cash Reserve Ratio (CRR) is likely to have a 85.60% unit increase in ROE. This is line with the study conducted by Terseer et al. (2020) which found a positive relationship between liquidity risk and profitability of deposit money banks in Nigeria. On the other hand, Liquidity Ratio (LR) shows a negative (-0.000251) but insignificant (0.9963 > 0.05) influence on the Return on equity of sampled deposit money banks, which shows that, a unit increase in Liquidity Ratio (LR) is likely to have 0.03% decrease in ROE. This is consistent with the findings of Eze and Agu (2020) which found negative relationship between liquidity and profitability of deposit money banks in Nigeria. But, Loan to Deposit Ratio (LDR) shows a positive (0.123191) and significant (0.0240< 0.05) influence on the Return on equity of sampled deposit money banks over the study period, which means that, a unit increase in Loan to Deposit Ratio (LDR) is likely to have a 12.32% unit increase in ROE. This result agrees with the study conducted by Balogun (2021) which concludes that there is a positive relationship between liquidity and profitability of deposit money banks in Nigeria.

## 7 CONCLUSION AND RECOMMENDATION

The importance of the banking industry to economic expansion and growth necessitates an effectively run financial regulatory authority that will serve as the bank's operating oversight. For operations and long-term sustainability, Nigerian deposit money l banks shouldn't hesitate to invest in lucrative liquidity management. In order to fulfill their

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financial commitments to clients or and to boost shareholders wealth, they must maintain acceptable liquidity levels. The optimal liquidity level could be attained if deposit money banks rigorously comply to the apex regulator's core cash level criteria. From the perspective of this study, the model's components are found to be stationary, both at the level and initial difference, and they display long-term co-development. The study's findings showed that, in Nigeria, banks' performance as assessed by return on equity generally had a hugely favorable influence. In this review, it is found that the model's factors have long-term co-development and are stationary at both the level and starting contrast. The study's findings showed that, in Nigeria, cash reserve ratio has a positive and significant relationship with profitability of Nigerian banks. On the other hand, there is a negative association between liquidity ratio and profitability of deposit money banks in Nigeria. But loan to deposit ratio has a positive and significant relationship with Nigerian banks' profitability.

The study's findings call for the following strategic recommendations to improve Nigerian banks' profitability and liquidity management: In order to help Nigeria's deposits banks operate more effectively, the Central Bank of Nigeria must act quickly to lower cash reserve ratios. Banks should engage competent and qualified personnel in order to ensure that right decision are adopted with regard to the optimal level of liquidity and the loan-to-deposit ratio should be fully utilized by banks to support sales initiatives. These are only a few options that they should think about in order to satisfy these requirements.

## REFERENCES

Abba, M. K., Hafsat, B. A., & Umar, S. A. (2023). Impact of Liquidity on Financial Management of Deposit Money Banks in Nigeria. *International Journal of Business Systems and Economics, 14*(1), 111-129.

Adegbie, F., & Adesanmi, T. (2020). Liquidity Management and Corporate Sustainability of Listed Oil and Gas Companies: Empirical Evidence from Nigeria. *European Journal of Accounting, Auditing and Finance Research, 8*(8), 30-72.

Adesina, O. D., & Adewumi, V. (2022). The Effect of Liquidity Management on the Financial Performance of Selected Deposit Money Banks in Nigeria. *Fuoye Journal of Accounting and Management, 5(2*), 52-62.

Adewusi, D. G., & Adeleke, K. O. (2020). Effect of liquidity management on Bank performance in Nigeria. *International Journal of Economics, Commerce and Management*, *8*(8), 20-29.

Intern. Journal of Profess. Bus. Review. | Miami, v. 9 | n. 6 | p. 01-24 | e04777 | 2024

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Adeyemi, O. J., Kabiru, J. R., & Halima, S. (2022). Liquidity risk management and financial performance of listed deposit money banks in Nigeria. *International Journal of Intellectual Discourse (IJID), 5*(1), 64-76.

Adhikari, K. (2020). Impact of Liquidity on Profitability in Nepalese Commercial Banks. *Journal of Management*, *3*(1), 52-62.

Ajose, K. G., & Balogun, S. (2021). Liquidity management and financial performance of deposit money banks in Nigeria. *Nigerian Defence Academy Journal of Economics and Finance, 5*(2), 267-276.

Akani, E. N., & Ordu, C. N. (2022). Effects of Financial Conditions on Return on Equity of Deposit Money Banks in Nigeria. *Nigerian Journal of Management Sciences, 23*(2), 416-429.

Al-Ardah, M., & Al-Okdeh, S. (2022). The Effect of Liquidity Risk on the Performance of Banks: Evidence from Jordan. *Accounting*, *8*(2), 217-226.

Alqemzi, A. A., Aziz, N. A. A., Yahaya, S. N., & Husseini, S. A. (2022). (The Impact of liquidity risk management on Financial Performance through Profitability in the UAE Islamic banks. *Journal of Positive School Psychology, 6*(3), 4636-4645.

Alhassan, I., & Anwarul-Islam, K.M. (2021). Liquidity management and financial performance of listed oil and gas companies in Nigeria. *International Journal of Accounting & Finance Review, 8*(1), 23-34.

Bergmann, J. (2023). Research Philosophy, Methodological Implications, and Research Design at Risk of Deprivation, *Studien zur Migrations- und, Integrationspolitik*, 57-89.

Binay, S., & Sneha, C. (2023). Impact of Liquidity Management on profitability of Joint Venture Commercial Banks in Nepal. *The Lumbini Journal of Business and Economics, 11*(1), 1-12.

Chinweoda, U.O., Onuora, U.R., Ikechukwu, E.M., Ikechukwu, A.C., & Ngozika, O.A. (2020). Effect of Liquidity Management on the Performance of Deposit Money Banks in Nigeria. *The Journal of Social Sciences Research, 6*(3), 300-308.

Dahiyat, A. A., Weshah, S. R., & Aldahiyate, M. (2021). Liquidity and solvency management and its impact on financial performance: empirical evidence from Jordan. *The Journal of Asian Finance, Economics and Business, 8*(5), 135-141.

Effiong, D. A., & Enya, E. F. (2020). Liquidity risk management and financial performance: are consumer goods companies involved?. *International Journal of Recent Technology and Engineering (IJRTE), 9*(1), 580- 589.

Eze, E., & Agu, S. (2020). Liquidity Management and Performance of Deposit Money Banks in Nigeria. *EPRA International Journal of Multidisciplinary Research (IJMR), 6*(8), 359-361.

Intern. Journal of Profess. Bus. Review. | Miami, v. 9 | n. 6 | p. 01-24 | e04777 | 2024

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Hacini, I., Boulenfad, A., & Dahou, K. (2021). The Impact of Liquidity Risk Management on the Financial Performance of Saudi Arabian Banks. *EMAJ Emerging Markets Journal,11*(1), 67-75.

Ibe, S.O. (2023). The impact of liquidity management on the profitability of banks in Nigeria. *Journal of Finance and Bank Management, 1*(1), 11-19.

Li, K., Musah, M., Kong, Y., Mensah, I., Antwi, S., Bawuah, J., Osei, A. (2020). Liquidity and Firms Financial Performance Nexus: A Panel Evidence From Non-Financial Firms Listed on the Ghana Stock Exchange. *SAGE Open Journal, 4*(8), 1-20.

Nisar, S., Asif, R., & Ali, A. (2021). Testing the Presence of the January Effect in a Developed Economy. *Journal of Finance and Accounting Research (JFAR), 3*(2), 1-16.

Nwokoro, A.I., Ironkwe, U.I., & Nwaiwut, J. N. (2023). Liquidity Management and Quoted Deposit Money Banks Financial Performing in Nigeria. *American Journal of Business Management, Economics and Banking, 16*(1), 213.

Oke, M. O., Ogunsanwo, O. F., Adebayo, A. O., & Oke, I.V. (2022). Liquidity Management on Performance of Deposit Money Banks in Nigeria. *Journal of Academic Research in Economics, 14*(1), 111-112.

Sadiya, M. M. (2020*). Liquidity Management and Profitability of Listed Financial Institutions on the Nigerian Stock Exchange*. B.Sc. Project, Baze University, Nigeria, 19-24.

Salami, K. (2023). Effect of Bank Liquidity Management on Financial Sector Development. *AFIT Journal of Marketing Research, 3*(1), 1-15.

Safitri, J., Rahmati, A., Jayadi, J., & Affandi, M. A. (2021). Do liquidity and capital adequacy ratio matter for Islamic banks performance in Indonesia? An analysis using financing risk as mediator. *Jurnal Ekonomi Dan Keuangan Islam, 10*(1), 138-154.

Sathyamoorthi, C.R., Mapharing, M., & Dzimiri, M. (2020). Liquidity Management and Financial Performance: Evidence from Commercial Banks in Botswana. *International Journal of Financial Research, 11*(5), 401-402.

Tauhid, S., Lasisi, I. O., Gambo, J. S., Okpanachi, J., & Mustapha, L. O. (2020). Board diversity as moderator on firm characteristics and financial performance of listed conglomerate companies in Nigeria. *European Journal of Accounting, Auditing and Finance Research, 8*(8), 73-86.

Terseer, W., Henry, Y., & Mkuma, P. Y. (2020). Effect of Liquidity Management on the Financial Performance of Banks in Nigeria. *European Journal of Business and Innovation Research*, 30-44.

Wuave, T., Yua, H., & Yua, P. M. (2020). Effect of liquidity management on the financial performance of banks in Nigeria. *European Journal of Business and Innovation Research, 8*(4), 30-44.

Intern. Journal of Profess. Bus. Review. | Miami, v. 9 | n. 6 | p. 01-24 | e04777 | 2024

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