

Liquidity Management and Performance of Quoted Deposit Money Banks in Nigeria

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DECLARATION

I, **Faith ATITI** hereby affirm that this project represents solely my own work and original composition. The content contained within this project has not been presented by any other student for the purpose of obtaining a degree, and it is not presently under consideration for any other academic degree. All references made to the works of other persons have been duly acknowledged.

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CERTIFICATION

We, the undersigned certify that this research work, submitted by Faith ATITI has been reviewed and is hereby accepted as meeting the requirements for the partial fulfillment of the Bachelor of Science (B.Sc.) degree in Banking and Finance, as awarded by the University of Benin, Benin City.

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DEDICATION

I dedicate this report chiefly to God Almighty who preserved me all through the period of my undergraduate study. I also want to dedicate this project to my parents, Mr and Mrs Atiti whose love and immense support has been invaluable throughout the period of my undergraduate study.

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ABSTRACT

The study examines the impact of liquidity management on the monetary performance of publicly listed deposit money institutions in Nigeria from 2012 to 2021. The main goal of this inquiry was to ascertain how these deposit money banks' financial performance is impacted by their liquidity ratio, loan-to-deposit ratio, cash reserve ratio, and capital adequacy ratio. Panel data regression techniques were used in the study's analysis.

The results of the study showed a favorable correlation between the liquidity ratio and cash reserve ratio of the deposit money banks' financial performance in review, particularly their Return on Assets (ROA). These effects, however, are regarded as statistically negligible. On the other hand, although this impact is also regarded as statistically small, the loan-to-deposit ratio has a detrimental effect on the performance of deposit money institutions. Notably, the capital adequacy ratio shows that it has a statistically significant negative impact on the financial performance of deposit money institutions.

The study recommends that it is imperative for the Central Bank of Nigeria to thoroughly assess, oversee, or scrutinize the effectiveness of the instruments utilized by banks to execute liquidity policies. Additionally, the study advises the application of appropriate penalties to banks in cases of non-compliance with these policies, which would ensure that the application of these policy tools is effective in achieving the desired liquidity level.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Banks serve as organizations that float money for the general public and provide commodities and securities to customers on credit. According to Doan & Bui (2021) and Efanga, Ugwuanyi, Umoh, and Jonah (2019), commercial banks are crucial to the advancement of the economy as they play significant roles in funding economic endeavors in a variety of economic sectors. Liquidity, which plays a key role in the efficient functioning of the economy, is one of the influencing metrics used to assess the level of performance of banks.

According to Onyekwelu, Chukwani, and Onyeka (2018), the term "liquidity" refers to the ability of a bank to fulfill its statutory responsibilities and its ability to promptly satisfy obligations for cash, checks, other withdrawals, and legitimate new loan requirements while maintaining the necessary reserves. The quantity of cash and other resources a bank has available to meet immediate financial and commercial commitments, including debt payments, is another sign of its liquidity (Financial Reporting Standard, 2019).

The recent global economic crisis has exposed significant shortcomings in financial institutions' liquidity management. The fundamental position that banks play in the economy has an impact on both individual consumer spending and the sector's overall growth. Many banks experienced liquidity problems during the last crisis. In order to accommodate the overwhelming demand for urgent liquidity, several banks raised money at a significant discount. Equivalently frozen were the liquidity markets.

As a result of exposures to liquidity and market risks, several financial and non-financial firms had to change their corporate compliance practices.

Banks performances were negatively impacted by equity prices, interest rates, commodities prices, foreign currency rates, and credit spread as their returns on investment and net worth plummeted.

Many assets lost value, and some institutions barely ever fulfill their commitments on time or only do so at a hefty expense. The progressive drop in the gross domestic product was an indication that this had an impact on the bank's ability to support a productive economy. Because no part of the economy can function without enough money, liquidity difficulties have long been a concern for all parties involved in the country.

Since 1958, the Central Bank of Nigeria has developed good policies to revive the country's financial system and promote sustainable economic growth. The strategy, which included re-capitalization, mergers, acquisitions, and consolidation, placed little to no focus on the effectiveness of liquidity management in favor of strengthening the financial system.

Liquidity management gets increasingly difficult as commercial banks in Nigeria grow more focused on maximizing profits. As a result, they frequently overlook the value of liquidity management, which ultimately results in financial debt with the knock-on effects of poor patronage and deposit flight. Despite the sector's rapid development, Nigerian deposit money banks face difficulties managing their liquidity. Every sector of the Nigerian economy faced a recession in 2015–2016 as a result of ineffective liquidity management, which also decreased public trust in the banking industry and encouraged financial disintermediation (Ajao, 2018).

Due to their poor execution or abrupt termination, this innovation, along with other financial reforms, has not had the desired effect on stabilizing the banking industry in Nigeria. The 1989 government order to transfer government and other public sector entities' bank deposits to the Central Bank of Nigeria and a number of previous financial crises in the banking industry are only a few instances of the liquidity issues the Nigerian banking sector is currently experiencing.

To help banks better protect themselves against possible liquidity issues, banking authorities have taken explicit steps to ensure that banks retain more liquid assets than in the past.

According to Efanga, Ugwuanyi and Jonah (2019), Liquidity management is the process of optimizing a company's financial resources in order to maximize the supply of cash as well as interest income on any unused capital. The goal of businesses like banks is Profit maximization. It is crucial to strike a balance between bank return and liquidity.

The efficiency of banks has been evaluated using a variety of techniques over the years, including the use of financial measurements like return on investment, net interest margin, return on assets, among other indicators. The goal of this study is to examine the effects of the liquidity management strategies used by Nigerian deposit money banks on their financial performance.

1.2 Statement of Research Problem

Like any other company, banks were founded to make money for the key stakeholders and other parties. The banks' capacity to keep enough liquid assets in the right amounts, enabling them to comply with regulatory requirements and, at the same time, sustain their regular operations of promptly meeting depositor demands while also investing in line with their profit goals, plays a

significant role in assessing a banks' capacity to achieve their targeted profits.

In the same way as a shortage of liquidity raises dangers for the banks, an abundance of liquidity also puts the banks in danger.

Risks include financial setbacks or the failure to turn a profit, all of which have an adverse impact on a company's capacity to continue operating. Therefore, it is important that the liquidity of deposit money banks is effectively managed, such that there is a balance between liquidity and investment, preventing abrupt shocks that might destroy the corporate existence of the organizations.

The log of total assets was included as a control variable, and a relationship between liquidity management and the preservation of capital adequacy ratio, cash ratio as well as liquidity ratio. A banking industry's development, sustainability, survival, growth, and performance are significantly influenced by liquidity management and bank performance, and bank managers are concerned about their capacity to manage the trade-off between these two elements.

For instance, banks provide demand deposits that let depositors to withdraw money at any moment as well as loans that cannot be immediately sold at a high price. The liquidity status of banks is gravely impacted when too many depositors attempt to withdraw funds at once because there is a shortfall in liquidity when a bank's obligations are more liquid than its assets.

Many banks are encumbered by debts despite investing in safe, high-yielding illiquid assets. Even if some banks have a lot of assets, abrupt withdrawals and a shortage of liquid capital cause them to incur a significant loss as a result of making emergency loans. Liquidity crises occur when a financial firm does not have enough cash on hand or readily convertible assets to cover its short-term obligations (Chappelow, 2020).

Large-scale loan defaults and even bankruptcy can result from the liquidity crisis. When business conditions are good, it's common to overlook certain run-prevention measures and techniques, but this problem is still unresolved as the "growing concern" that banks are experiencing for these reasons is developing. Liquidity is negatively impacted by repeated attempts by bank management to boost profits, which might be problematic for the financial institutions as a result. On the one hand, this could result in a loss of clientele, goodwill, bank's credit standing deterioration, and a compelled assets sale. On the other hand, keeping an abundance of liquidity to meet client demands could have an adverse impact on returns.

Afolakemi (2020) asserts that "Risk-taking is the business of banking." Interest rate, liquidity, credit, and market risks are just a few of the many dangers that banks confront. Because banks make loans to people looking for money, their risk of credit has the most influence on how profitable they are at any one time. For example, high levels of liquidity are generated when profits are poor and low levels of liquidity when profits are high are produced as a result of the trade-off judgments, which may or may not be a suitable yet professional alternative at that time.

1.3 Research Questions

- i. How does the liquidity ratio affect the financial state of Nigeria's quoted deposit money banks, and impact their profitability?
- ii. What is the impact of the cash reserve ratio and can it be quantified in terms of improving or hindering the financial performance of Nigerian publicly listed deposit money banks?
- iii. To what extent does the loan-to-deposit ratio (LDR) impact the operational effectiveness and financial performance of quoted deposit money banks?

- iv. How does the capital adequacy ratio in Nigeria relate to the deposit money banks' financial performance, and how may this connection be improved?

1.4 Objectives of the Study

The study's main goal is to investigate how Nigerian quoted deposit money banks' financial performance is impacted by their use of liquidity management. The study's specific goals are to:

- i. Determine the consequence of the liquidity ratio on the financial performance of quoted deposit money banks in Nigeria.
- ii. Examine how Nigerian quoted deposit money banks' financial results are impacted by the cash reserve ratio.
- iii. Examine the impact of the loan-to-deposit ratio (LDR) on the financial efficiency of quoted deposit money banks in Nigeria.
- iv. Determine the relationship between the capital adequacy ratio and financial performance.

1.5 Research Hypotheses

The aforementioned hypotheses are established based on the research objectives to direct the investigation. The theories are presented in their nil versions.

H01: In Nigeria's listed deposit money banks, the impact of the liquidity ratio is insignificant on their financial performance.

H02: The Nigerian quoted deposit money banks' financial performance is unaffected by the cash reserve ratio.

H03: The loan to deposit ratio in Nigerian listed deposit money banks does not have a substantial influence on their financial performance.

H04: The capital adequacy ratio of Nigeria's listed deposit money banks does not significantly affect their financial performance.

1.6 Scope of the Study

The consideration of this study looks at how Nigerian quoted deposit money banks' financial performance is affected by liquidity management. United Bank for Africa, Zenith Bank, Access Bank, Guarantee Trust Bank, and First Bank were the study's focus. Since their shares are the most actively traded on the Nigerian stock exchange, this is the case. Additionally, the study's ten-year time frame encompassed the years 2012 through 2021. The duration was selected because it is sufficient to detect any meaningful patterns in variable movement over time.

1.7 Significance of the Study

The financial industry, monetary authorities, and upcoming scholars can all benefit from the study. It assists the banking industry in determining the optimal liquidity levels necessary for maintaining operational efficiency and meeting short-term obligations whenever they materialize.

The study will aid in the formulation of sound monetary policies by the Central Bank of Nigeria with regard to the cash reserve ratio, liquidity ratio, and monetary policy ratio with a view to enhance the success and long-term economic prosperity of the banking sector.

The study functioned as a repository for knowledge that could be referenced by other scholars conducting research on bank performance and liquidity management.

1.8 Limitations of the study

The refusal of any bank to divulge and discuss key crucial data and facts on liquidity management has been the study's principal drawback. Finance, a limited time frame for implementation, response bias, other activities planned for the research period, and lastly the scarcity of relevant literature are all additional drawbacks. However, this restriction was lessened by making every effort to stick with data from the central bank of Nigeria statistics bulletin, since it is a more reliable source both domestically and outside.

1.9 Definition of Key Terms

Liquidity: Business Dictionary defines liquidity as the amount of cash or assets that can be swiftly turned into cash that a firm has available to satisfy immediate and short-term commitments.

Liquidity Management: This is about an organization's capacity to turn its assets into cash in order to pay immediate commitments.

Financial Performance: This describes an organization's capacity to meet its required goals. The maximization of profit and shareholder wealth is a frequent goal for organizations. Typical accounting metrics used to evaluate a company's financial performance include return on money invested, shareholder equity returns, return on assets, and share earnings.

Bank: This is a term that describes a business that takes deposits from clients, lends to clients, and acts in accordance with instructions from the Central Bank of Nigeria

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The Chapter aims at looking at liquidity management ideas as well as significant theoretical and empirical research in the area. This is done to acknowledge the contributions made by researchers in the area and to highlight any informational gaps that could one day be addressed.

2.2 CONCEPTUAL REVIEW

2.2.1 Concept of Bank Performance

Bank Performance deals with a bank's ability to achieve long-term profitability is referred to as bank performance. In order to achieve crucial trade-offs between growth, risk and return which are important factors for the success of a bank's operations, managers must promote the use of risk-adjusted measures (Bassey, Tobi, Bassey, and Ekwere, 2016).

The disparity between operational costs and income for banks is explained by this performance (Bassey & Moses, 2015). In order to protect the financial interests of its stakeholders, a bank must effectively manage its assets, liabilities, and generated income. The bank's financial performance reflects these results. Agbada and Osuji (2013) contend that for long-term survival and growth, any firm requires a consistent return on investment.

Bank performance measures can be classified as traditional, economic, or market-based.

Stern and Stewart created a methodology known as Economic Value Added (EVA) which assesses if a firm produces a rate of return on its investments surpassing the cost of capital and thereby enhancing the company's market value (Raza, Farhan, and Akram, 2011). Also, the opportunity cost incurred by stakeholders to own equity in a bank is taken into consideration by this approach.

Globally, there have been several empirical studies on bank performance, but there is a dearth of research studies on this subject in Nigeria. Based on an archive of current information, researchers have employed a variety of surrogates as metrics assessments of banks' financial performance. Buba (2010) lists benchmarking, performance evaluation, and financial ratio analysis, in comparison to budget as examples of these measures. Additionally, return on equity, net interest margin, return on assets, and more, are examples of other metrics.

A full performance evaluation system, according to the European Central Bank (ECB, 2010), should, include more performance traits than only profitability as shown by solely market-oriented measures and should be less susceptible to market manipulation. As a result of this caution, Return on Assets (ROA) was used as a gauge of financial performance in the current study's analysis.

2.2.2 Return on Assets

ROA is an important proxy indicator that is frequently used in the literature on the financial performance of banks. Critically, it shows how monetary and real investment resources of banks can be leveraged on to improve profits (Hassan & Bashir, 2003). It shows the profit produced per naira of assets. The ROA is impacted by policy decisions designed by the bank, economic and governmental factors which are often not within the control of the Bank.

This viewpoint was supported by Guven and Onur (2009), who recommended that academics focus on and use ROA to evaluate bank profitability in order to avoid many of the disadvantages often associated with the use of alternative accounting financial performance proxies.

Elsayed (2013) used ROA as a proximate indicator of bank financial performance when researching the factors influencing the profitability of commercial banks in Qatar. In his investigation of how bank consolidation in Nigeria affects bank profitability, Miko (2010) similarly utilized this approach. ROA was calculated in both studies as profit before taxes divided by total assets.

The appropriate measure of profit, according to Pandey (2009), the suitable profit measure is profit before tax as it represents earnings solely generated from a business's core commercial activities, unaffected by financing. In light of this context, the ROA was calculated as profit before taxes divided by total assets and Miko (2010) and Elsayed (2013) methodologies was adopted in this study by using ROA as a stand-in for bank profitability.

2.3 CONCEPT OF LIQUIDITY

The idea of liquidity has caused the management of banks some concern due to the unpredictability of the future. The timing necessary to transform bank assets into monetary assets or cash determines liquidity. According to Koranteng (2016), a bank's liquidity is determined by its capacity to receive deposits, accumulate cash, and, lastly, reinvest funds as and when necessary. Cash and bank accounts, debtors, and marketable securities make up liquid assets. In financial terms, it refers to the capital quantity that is accessible for investment purposes.

Today's capital is majorly credit rather than actual money. This is due to the fact that the big financial organizations that handle most investments favor borrowing money. Since interest rates are low and capital is therefore readily accessible, high liquidity denotes a large amount of capital. Why are interest rates such a crucial factor in managing liquidity? Since these rates actually determine how expensive borrowing is. Because credit is affordable due to low interest rates, firms and investors are more willing to borrow. More investments seem beneficial since the return on investment merely has to be higher than the interest rate. High liquidity promotes economic growth in this way.

2.3.1 Elements of Liquidity

According to Acharya and Naqvi (2012), liquidity can be viewed as the assurance and promptness with which an asset can be readily transformed into cash, at the discretion of the asset owner. This makes it very evident that the three qualities that constitute liquidity are marketability, stability, and conservatism.

Given that various liquid assets have variable rates of liquidity, liquidity is a complicated topic. Savings or time deposits, for instance, have greater liquidity than ordinary stocks, which in turn have greater liquidity than real estate. Liquidity is often viewed as a relative, since no particular amount of any balance sheet ratio can be used to determine whether a company is liquid or not.

Marketability

The marketability of liquid assets is often indicative of their immediacy to be readily turned into cash promptly and are redeemed before maturity. Whereas, those that cannot be redeemed at maturity are termed Illiquid assets.

Price stability

The constancy of prices is another characteristic of liquid assets. This characteristic explains why equity investments like common stocks and real estate are less liquid than bank deposits and short-term securities, whose prices are fixed and subject to less variability than the latter, whose prices and value are subject to wide fluctuations. The upkeep of worth is implied. Liquid assets' prices are therefore fixed and have a minimal degree of volatility (in compared to real assets).

Conservatism

The "conservative quality of liquidity" refers to the ability of owners of such liquid assets to regain the asset's cost at the time of resale. The capacity to sell an asset with little effect on the price is established by conservatism (Efanga, et al., 2020).

Common stocks, despite their easy marketability are not considered highly liquid assets. This is because occasionally, the initial prices are often more than the current prices. These characteristics make people and companies prefer to retain cash, the only completely liquid asset. This double coincidence of desires was one of the problems that made barter trade unpleasant and contributed to its replacement with money. Due to the fact that all other liquid assets must first be converted into money before being used, and since money ensures that an asset will be converted into any other asset, money is the most commonly used liquid asset with the greatest rate of convertibility.

2.3.2 Liquidity Management in Deposit Money Banks

The main retail banking institutions and financial intermediaries in any given country are Deposit Money Banks (DMBs).

Agbada & Osuji (2013) opined that their role involves facilitating the transfer of financial resources from depositors to various financial instruments that are in higher demand among a larger group of people and organizations looking for capital, including a large diversity of industries such as agriculture, manufacturing, textiles, construction, SMEs, and others, (Musa and Rebecca, 2018).

Since illiquidity is a harbinger of impending difficulty and often brings about distrust of the public in the credibility of the banking industry's operational processes, deposit money banks are heavily dependent on their liquidity levels as this ensures their survival.

The top aim of many banks management is to adequately address liquidity issues while tactically allowing for growing profits at appropriate times that may be utilized to pay back investments to shareholders, interest on deposits, etc. (Afolakemi, 2020).

To guarantee the ongoing availability of useful resources and survival, substantial income from loan interest is also necessary. Therefore, it becomes uneconomical and illogical for banks to let excess liquidity or idle currency in the vault. Thus, efficient liquidity management is required to maximize profits while keeping bankruptcy risks at a targeted level.

Liquidity management is the planning and oversight required to make sure an organization maintains sufficient liquid assets, either as a duty to its clients to fulfill responsibilities related to corporate survival or as a means of abiding by the central bank's monetary policy. A deposit money bank must first manage its money position by adhering to the law in order to prepare for or manage its liquidity situation.

Actually, if a bank wants to prevent excesses or deficits of the necessary primary reserves, money position management is crucial. When the market price of securities declines or when more funds are required to temporarily correct the bank reserve position, selling assets will always be more expensive than borrowing money from another bank.

Additionally, it can be preferable to borrow money to meet a bank's liquidity needs rather than canceling or placing a moratorium on new loans, which would lose a bank customer both current and future. Banks that accept deposits are required to keep a certain amount of reserve funds.

These reserves are mandated by law, and the central bank has set the amount of cash reserves that each bank must retain as a percentage of its deposits, loans, and advances. The reserve requirement's initial goal was to push banks to have a manageable amount of liquidity so they could satisfy cash requests.

However, at the moment, the federal government uses these reserves as a control mechanism to affect the monetary system. Realizing full usage of all reserves is therefore necessary for effective liquidity management.

The primary reserves of the CBN comprises vault cash, cash balances or surplus reserves, and deposits in other local and international banks. They are kept up to meet statutory and administrative obligations, thus they don't generate any cash. The assets of the bank that may be swiftly turned into cash on short notice without danger of loss or significant diminution of the invested main amount are known as secondary reserves.

Short maturity, excellent credit quality, and high marketability define secondary reserves. Liquidity is the main reason for retaining secondary reserves, as they are utilized to cover both expected and unforeseen short-term and seasonal cash demands resulting from withdrawals from deposits and loan requests. Secondary reserve aids in achieving both goals.

2.3.3 Sources of Bank Liquidity

Liquidity is defined by Efanga, Onoh, Opara, Ihemeje, and Egwu (2020)), encompasses various components, including cash held in the bank's vault, balances held with the Central Bank of Nigeria (CBN), credits kept in other banks in Nigeria, balances held with offices and branches outside Nigeria, cash that may be withdrawn in Nigeria, as well as holdings with other foreign banks, placement with discount houses, interbank placement, treasury bills, treasury certificates, and investments.

According to Nzotta (2004), the sources of a bank liquidity sources are classified into two groups: stored liquidity and bought liquidity. The author drew attention to the fact that a bank does not impose a certain ideology on how it manages its liquidity. He noted two principal sources, namely:

Stored Liquidity: This comprises monies that are owing to other banks, funds in the CBN's cash account, call money funds, commercial papers, acceptances, short-term government securities, negotiable certificates of deposits, just to mention a few.

Purchased Liquidity: These sources of liquidity include advances or discounts incurred upon borrowing from the CBN, call money held for other banks, banker's unit funds, certificates of deposit, other liabilities like pension funds, investment funds, huge deposits by the government, and other liabilities like pension funds.

2.3.4 Major Risks Faced by Deposit money Banks

Credit Risk

Credit risk is the likelihood that a borrower may violate any type of contract by failing to keep his end of the bargain. In the event of a borrower default, it is the cost of replenishing cash flow. Since its origin, the basic activity of banking has been the evaluation of borrowers' financial stability. Credit risk is the possibility of financial loss due to a customer's inability to fully abide by the conditions of a contract or loan.

This definition takes into account the possibility of portfolio value loss due to the transition from one risk grade to another.

Credit risk is the possibility that payments would be late or never paid, which might result in cash flow issues and have an impact on a bank's liquidity. Utilizing committed credit lines and operational risk management are two examples of how to handle specific liquidity risk elements in credit risk management.

Credit risk management strives to enhance a bank's risk-adjusted returns by keeping credit risk exposure within acceptable boundaries.

The main factor contributing to possible losses and bank collapses is credit risk. Credit risk covers the possibility that an obligee or counterparty won't fulfill their duty to pay back debt (default risk) as well as the possibility that their credit standing may worsen. One of the key elements affecting a bank's performance is this.

Banks are very interested in the borrower's financial situation and the current market value of any underlying collateral when assessing credit risk.

Credit risk management policies should encompass rigorous credit assessment, effective design of credit risk systems, appropriate credit risk conditions and management protocols, and measures to reduce banks' exposure to credit risk while enhancing their competitiveness and performance. In terms of credit risk management policies, there are essentially three different categories.

The first set, which includes guidelines on lending to related parties, diversification, concentration and big exposures, and overexposure, aims to lower credit risk. The second set tries to categorize assets by requiring regular evaluations of the collectability of credit instruments within its portfolio. Meanwhile, the third set of guidelines seeks to establish allowances or loss provisions at a level that can adequately cover expected losses.

Market Risks

Banks are subject to market risk while managing their balance sheets and trading activities. Usually, a useful strategy for market risk management involves calculating of liquid assets value and creating market risk stress scenarios. The volatility of underlying risk variables and the portfolio's susceptibility to changes in those risk factors both affect how exposed a bank is to market risk.

Market risk is the chance that profits may increase as a result of changes in important economic variables like interest rates, currency exchange rates, bond, stock, or commodity prices.

There is also the possibility that the value of a portfolio, whether it be an investment or trading one, would decrease as a result of changes in the market risk components' values. Liquidity, interest rates, and foreign currency rates are the three main market risk concerns for banks.

Market risk management offers a comprehensive framework for assessing, overseeing, and controlling a bank's liquidity, interest rate, foreign exchange, equity, and commodity price risks. This framework should be closely aligned with the bank's business plan. Market risk, on the other hand, can only be hedged; it cannot be diversified.

Operational Risk

Operational risk is characterized by Basel II as Basel II defines operational risk as “the potential for financial loss, either directly or indirectly, due to external events, ineffective or failing internal processes, people, or systems.” Operational risks are produced when internal risk policy rules are not followed, information systems, reporting systems, internal monitoring policies, internal processes meant to take prompt remedial action, or internal monitoring regulations are not followed.

Operational risk is a type of event risk, which means that without effective risk monitoring and reporting, some significant hazards may go unnoticed, no one will want to take remedial action, and this might have devastating repercussions. The modern banking environment has undergone changes that have increased operational risk in banks. These transformations involve an increased reliance on advanced technology, the expansion of retail activities, the growth of e-commerce, the outsourcing of tasks, and a greater use of structured financing approaches aimed at minimizing credit and market risks.

The Basel Committee, through its Core Principles for Effective Banking Supervision, directed supervisors to ensure that banks establish risk management protocols for identifying, assessing, monitoring, and mitigating operational risk. In anticipation of the adoption of the Basel III Accord, which requires a standardized and common approach to measuring operational risks, the Committee provided further guidance to banks on operational risk management in 2013.

Operational risk may be addressed, nevertheless, by using a gap analysis, action plan, and strategy monitoring.

Interest Rate Risk

This is the potential loss in a bank's earnings brought on by fluctuations in interest rates. The majority of loans, accounts receivable, term deposits, and saving deposits provide income and expense that is influenced by interest rates.

Such profits are unstable, much like interest rates. The management of interest rate risk has become extremely difficult due to fluctuating interest rates, deregulation, a rising number of “on-and-off” balance sheet instruments, and other factors. The Basel Committee's recommendation to apply market risk-based capital charges has led bank regulators and supervisors to focus a lot of attention on the evaluation of bank interest rate risk management.

Banks must address four main types of interest rate risk: repricing risk, yield curve risk, basis risk, and optionality. Interest rate risk primarily stems from timing disparities in fixed and floating rate maturities among bank assets, liabilities, and off-balance-sheet positions. Duration is the fundamental metric for assessing the risk of repricing, and it presupposes a concurrent change in the yield curve.

Re-pricing mismatches also predisposes a bank to risk brought on by shifts in the yield curve's slope and shape.

When a bank's income or underlying economic value are negatively impacted by yield curve fluctuations, yield curve risk materializes. The adjustment of rates received and paid on various instruments with comparable repricing characteristics gives rise to basis risk, which is another form of interest rate risk. Cash flows spread and earnings among assets, liabilities, and off-balance-sheet instruments with comparable maturities or re-pricing frequencies might unexpectedly shift when interest rates change as a result of these variations.

Inadequate management of a bank's assets, liabilities, and off-balance sheet positions can pose substantial risks to the institution. This is because customer-held options, whether explicit or embedded, are typically exercised to the advantage of the holder, which may result in adverse outcomes for the bank. Broadly speaking, interest rate risk management encompasses a range of strategies, activities, and policies that a bank uses to mitigate the risk of adverse interest rate changes, originating from any of the sources mentioned, that could lead to a decrease in its net equity.

Foreign Exchange Risk

The counterparty default risk and settlement risk due to time zones are two additional ways that banks engaged in foreign exchange transactions are subject to foreign exchange risk. Losses from foreign exchange risk are brought on by fluctuations in exchange rates. Earnings losses may occur when there is a disparity between the values of assets compared to capital and liabilities in foreign currencies, and when foreign receivables do not align with foreign payables reported in the local currency.

Foreign exchange risk is a theoretical concept that can result in either gains or losses depending on the direction of exchange rate movements and whether a bank holds excess or insufficient foreign

currency.

There are three categories of foreign exchange risk: transaction risk, economic risk, and revaluation risk. Price-based effect of exchange rate changes on international receivables and foreign payables is known as transaction risk. Economic risk or business risk is concerned with how changes in the exchange rate would affect a country's or a firm's long-term ability to compete. Revaluation risk develops when the foreign currency holdings of a bank in local currency is revalued and when a parent institution undertakes periodic consolidation of financial statements or financial reporting.

Strategic Risk

A bank's development trajectory and shareholder value might be completely destroyed by a wide range of external events and trends known as strategic risk. Strategic risk refers to a range of unknowns that are not financial in character but rather credit or operational in nature, brought on by macroeconomic circumstances, industry trends, or errors in a firm's strategic decisions that have a negative impact on the firm's profitability and shareholder value.

Strategic risks can be a more significant cause of value destruction because they frequently represent some of a company's largest exposures.

Significant occurrences that affect strategic risk may be divided into seven broad categories. These include shrinking industry margins, the risk of a technological transition, brand loss, the appearance of rivals vying for the majority of market value, a change in consumer priorities, new project failures, and market stagnation. The central concept is to establish a framework for assessing a company's strategic risks and formulating countermeasures to address them.

Both positive and negative risks should be taken into account in a strategic risk management strategy. Understanding positive risk entails looking for possibilities and creating strategies to take advantage of them when the time is right. On the other side, minimizing the likelihood and magnitude of losses, as well as funding their recovery, are necessary to stop negative risk. However, it is asserted that no one quantitative measure proves effective in all strategic circumstances due to the intricacy of the idea of strategic risk.

2.3.5 Factors Affecting Liquidity Risk

Here are some of the factors affecting risk below:

Credit over-extension: The slowing economy, the need for additional loan extensions, an incorrect evaluation of the borrower's credit profile, and the desire to minimize litigation-related costs are the main reasons influencing credit extension. The risk increases as more credit is given.

Mismanagement: This is one element driving up liquidity risk, along with others including self-lending, fraud, unavoidable strikes that damage consumer trust, bad customer credit ratings, and flaws in credit standards.

Lack of recognition of option risk: This usually occurs when a management fails to identify and use risk mitigation strategies raises the liquidity risk.

Large undrawn loan commitments: This inflates the available liquidity reserves, creating a deceptive liquidity scenario. This is deceptive and has an impact on liquidity planning. Such promises that are abruptly withdrawn will leave them seriously short on cash.

Lack of appropriate liquidity policy and contingent plan: Ineffective liquidity management during stressful times increases the hazard of liquidity.

2.4 COMPONENTS OF LIQUIDITY MEASUREMENT

In deposit money institutions, liquidity is assessed using a variety of ratios. For this study, we will pay more attention to four of these ratios: the cash reserve ratio, the liquidity ratio, loan to deposit ratio, and the capital adequacy ratio.

2.4.1 Liquidity Ratio

Liquidity may be measured using a variety of metrics, including the acid test ratio, current ratio, debt ratio, etc. The liquidity ratio, in particular, is determined by dividing cash and cash equivalents by the total assets. This metric offers insights on a bank's general ability to absorb liquidity shock. The term "liquid asset" refers to cash on hand, institutional balances, and money available on short notice or call. The revaluation of all the assets is included in the total assets.

It is typically true that the greater the share of assets that are liquid in all assets, a higher ratio indicates a stronger ability to withstand a liquidity shock, assuming that market liquidity is equal for all financial institutions in the sample.

However, a significantly high ratio might also be perceived as inefficient. Liquidity has significant potential costs for the bank since it produces lesser revenue than other assets. The relationship between liquidity and bank profitability performance must thus be optimized.

It has been suggested that short-term liquidity, particularly when utilized by small banks, may have had some impact on the quality of bank assets. The use of short-term liquidity by major banks during recessions is also said to have a generally favorable impact on bank profitability. Yet further research contends that the association between short-term liquidity and bank earnings or returns is unfavorable.

2.4.2 Loan-to-Deposit Ratio

This is a ratio of total loans to total liabilities. A smaller ratio denotes a healthy liquidity situation that allows banks to lend and invest, while a greater ratio denotes a less favorable liquidity condition that may impair bank lending. The loan to deposit ratio (LDR) has come under fire for failing to take into account the maturity and quality of bank assets and for considering all bank assets as equally liquid and mature.

Financial experts recently stated that the unpopularity of the loan to deposit ratio as a liquidity indicator was due to off balance sheet funding, which delivers higher benefits. Loan to Liabilities, Loan Losses to Net Loans, and Reserve for Loan Losses to Net Loans are also used to assess liquidity.

2.4.3 Cash Reserve Ratio (Cash to Total Deposit Ratio)

Another indicator of bank liquidity is the cash to total deposits ratio. Unlike loans and advances, which are among the least liquid assets a bank holds, deposits immediately link to the liquid assets, giving it an edge over rival banks.

The issue with this ratio, though, is that a sizeable portion of the cash assets aren't actually accessible for funding liquidity assets.

2.4.4 Capital adequacy ratio

Liquidity management is another tool that banks use to assess the capital availability in banks, in addition to the capital ratio, which illustrates how effective and solid the system is. Devinaga and Tan (2010) and Vong (2005) have proposed that the profitability of banks is affected by their capital ratios. Banks can obtain money through capital, deposits, and borrowings to effectively manage their business operations and maintain profitability.

2.5 IMPORTANCE OF BANK LIQUIDITY

The following are some of the liquidity-related tasks performed by the banking system, according to Nzotta (2004), who was quoted in the research by Efanga, et al. (2020): Successful operations are essential, particularly to preserve depositor confidence.

Additionally, liquidity aids in keeping the bank's doors open, paying short-term commitments, and preventing bank runs.

Liquidity also aids risk management. Having ample liquidity enables more effective management of the various risks associated with banking operations.

Liquidity has an impact on the public's perception of the viability of the banks operating within the financial system. Ensuring enough liquidity can aid in preventing the rushed sales of financial securities undertaken in an effort to generate cash during difficult or urgent situations.

2.6 THEORETICAL REVIEW

This study utilizes both the Self-Liquidating Paper Theory and the Liquidity-Profitability Trade-off Theory to explain the effects of liquidity management on the financial performance of deposit money banks in Nigeria.

2.6.1 Liquidity-Profitability trade-off theory

The synchronization of liquidity and maturity, which prevents a mismatch that may result in a financial shock and bank runs, is the theory's main focus. According to the hypothesis, a bank may be exposed if there is an unfavorable link between them.

Because safety and soundness in the system are crucial, regulatory authorities set necessary sustainable ratios that enable banks to quickly pay off their debts without jeopardizing investable capital that would generate profits.

Researchers concur that for the banks to maintain stability, liquidity is just as crucial as capital. According to the findings of their analysis, it was observed that banks with strong liquidity and higher capital had a decreased likelihood of failure during a financial crisis. (Bagyenda, Brownbridge, and Kasekende, 2011). This theory was taken directly from Akinwumi et al.'s (2017) work, and it is largely used in this research to explain how banks' short-term liquidity situations are measured by the liquidity cash ratio variable.

2.6.2 Self-Liquidating Paper Theory

The Commercial Loan theory, which prohibits banks from making long-term loans, is one such theory. In other words, they are the most liquid loans that banks may offer, and they are frequently used as a strategy to maintain bank liquidity.

Drawing on Leonard's (2011) perspective, the idea is based on the short-term loan or lending that a bank provides to support the transfer of saleable products from a producer to a consumer.

In view of the fact that many items are produced and developed through transportation, manufacturing, storage, and distribution channels, their loans are often self-liquidating (Ibe, 2013). As highlighted by Ibe (2013), the essence of self-liquidating loans lies in making depositors' funds accessible when required, ensuring that short-term profit objectives align with short-term obligations.

According to Onoh (2002), in this approach to liquidity management, it is crucial for the maturity or tenor of funds sourced from depositors and other avenues to align with the maturity or tenor of the bank's assets, such as loans and advances. Self-liquidating loans are obtained through trade transactions backed by tangible commodities and are repaid from the proceeds of their sales (Shekhar & Shekhar, 2005; Gomez, 2008). They are a source of short-term operating capital for businesses.

However, Gomez (2008) noted that this hypothesis has the unintended consequence of decreasing borrowers' buying power, which is seen during the Great Depression when traders or lenders encounter market snags that lead to losses and delays in paying payments when they are due.

2.7 EMPIRICAL REVIEW

Numerous academics, particularly in the economically developed nations, have researched the effect of liquidity management on the functioning of deposit money institutions. However, only a small number of these research are accessible in underdeveloped nations.

The results of numerous noteworthy researches showed that macroeconomic factors as well as bank-specific factors have the potential to influence liquidity management, albeit there is still no agreement on the elements that seem to affect it. A statistically significant correlation was found between two chosen liquidity management indicators; current ratio and liquidity ratio, and profitability (return on asset) (Omoseyinwa, et al., 2019) study which looked at 10 banks spanning 2008 to 2017. The researchers used estimation techniques of ordinary least square method (regression).

The profitability of the chosen banks was not, however, supported by empirical data for other liquidity factors stated in ratios. Furthermore, Ozogbuda (2019) research emphasized the ongoing dynamics of how loans impacted the performance of some sampled banks.

According to the analysis's findings, bank loan policy has a statistically negative link with inflation rate but a positive relationship with performance proxies. According to the report, banks in Nigeria should base lending decisions on changes in inflation rates over different time periods and should only offer loans with interest rates that encourage convenient payback, as indicated in the banks' credit policies.

Amahalu, Abiahu, and Chinyere (2017) identified a statistically significant relationship between the management of loans, specifically non-performing loans and deposits, and the financial performance indicators such as return on assets, earnings per share, and dividend per share of banks listed on the Nigerian Stock Exchange (NSE). The report proposed tightening restrictions on banks and enforcing compliance with prudential principles, pertinent provisions of the Banks and Other Financial Institutions Act (BOFIA) (1999), and other applicable laws by the Nigerian top bank and its regulatory agencies.

Tran et al. (2019) examined data from 35 banks spanning the years 2010–2015 in a bid to assess liquidity risk variables. The study found that the overall loan to capital ratio, debt to capital ratio, loss provision to loan ratio, and long-term lending rate had an indirect and substantial association was heavily correlated with liquidity risk.

Research carried out by El-Charaani (2019) considered bank liquidity variables for 183 banks during a three-year period between 2014 and 2016 in 8 countries around the Middle East. Two variables; loans to assets and loans to deposits, measure liquidity level, whereas these four internal factors namely; asset quality, capital ratio, profitability, and bank size, as well as three macroeconomic factors—economic growth, inflation, and unemployment—were utilized as stand-ins for liquidity drivers. Economic expansion, asset quality, capitalization level, and bank size all had a substantial influence on the banks' liquidity.

For the financial years 2012–2018, Mennawi and Ahmed (2020) looked at the variables affecting the liquidity risk of 11 Islamic banks in Sudan. The determining criteria included cash on hand, short-term investments, consumer deposits, credit risk, and GDP. The findings from the multiple regression analysis revealed a substantial inverse correlation between the liquidity risk and cash and short-term investments. The outcome also showed that, while GDP had no discernible impact, deposit and credit risk from consumers had a positive and substantial link with liquidity risk.

In their 2018 study, Charlmer et al. looked at Ghana's commercial banks' profitability as well as the amount and trajectory of bank liquidity. Twenty-one banks participated in the study from 2007 to 2016 across a ten-year span. Using descriptive statistics, correlation analysis, and regression analysis, secondary data from a panel were examined. The findings revealed a strong positive correlation between returns on assets and liquidity, but only a moderately strong correlation between returns on equity and liquidity. Return on equity and liquid assets, in contrast, were shown to have a negative connection with total interest-bearing obligations, while other factors, such as bank size and capital adequacy, showed a positive correlation.

Using all 43 commercial banks in Kenya for the research period (2012–2016), Sile, Olweny, and Sakwa (2019) conducted a study on assessing if liquidity was a factor influencing bank financial performance. Secondary information obtained from the banks' audited financial accounts was used in the study. A negative correlation between financial success and liquidity management was found using descriptive statistics and regression analysis.

Dzapasi (2020) used a mixed-method approach, encompassing both qualitative and quantitative methods, to investigate the relationship between liquidity management and the performance of five commercial banks in Zimbabwe. Liquidity and financial success were found to be very directly correlated.

Seven Nigerian banks' liquidity between 2001 and 2015 was evaluated by Agbo and Nwude (2018) based on internal criteria. The results demonstrated that profitability (measured by ROA) and interest expenses relative to deposits had a direct impact on liquidity, but this impact was statistically insignificant. On the other hand, variables like total capital ratio, impaired loans as a proportion of total loans, profitability (measured by Return on Equity), and bank size did not have a statistically significant direct influence on liquidity.

2.8 Literature Gap

Researchers have offered a variety of empirical data to demonstrate how liquidity management affects deposit money institutions in Nigeria. Prior research has taken into account factors like returns on equity, liquidity ratio, cash reserve ratio, loan to total deposit ratio, current ratio, liquidity ratio, cash ratio, loan to deposit ratio, loan to asset ratio, and returns on equity (Basseyy and Moses 2015), as well as cash and short-term fund, bank balances, treasury notes and certificates, profit after tax (Ibe, 2013), among others (Edem, 2017). As far as the researcher is aware, there has been no research carried out using data from the empirical literature that expires in 2021, however this study aims to fill the gap by extending the research until 2021.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this chapter, the methods employed in carry out this research are described. It includes the research design, study population, data sources, model formulation, operationalization of variables, and data analysis technique.

3.2 Research Design

This study utilized the Ex-post facto research design because the research's data came from secondary sources, making it impossible for the researcher to modify it.

3.3 Study Population and Sampling

The participants in this study are all quoted deposit money banks in Nigeria. Data was gathered over an eleven-year period, from 2012 to 2021, and five deposit money banks (Zenith Bank, United Bank for Africa, Access Bank, Guarantee Trust Bank, and First Bank of Nigeria) were selected as the sample for the study using the purposive sampling technique. The banks were selected based on the criteria for the accessibility of recent yearly reports for the study's intended duration as published by Central Bank of Nigeria reports and the banks' websites as of the study's inception.

3.4 Sources of Data

For the period under consideration (2012–2021), the major source of secondary data was the annually audited reports of the specified deposit money banks in Nigeria.

3.5 Model Specification

Indicators for the liquidity ratio, capital adequacy ratio, cash reserve ratio, and loan-to-deposit ratio comprise the four independent variables in this study.

The dependent variable in this study is the financial performance of banks as represented by ROA.

The multiple linear regression models that would be used is functionally expressed as follows:

$$ROA = f(CAR, LQR, CRR, LDR) \dots \dots \dots (1)$$

The economic form of the model is specified as;

$$ROA = \alpha_0 + \beta_1 CAR + \beta_2 LQR + \beta_3 CRR + \beta_4 LDR + \mu \dots \dots \dots (2)$$

Where;

ROA = Return on assets of banks CAR = Capital adequacy of banks LQR = Liquidity ratio

CRR = Cash reserve ratio

LDR = Loan to deposit ratio

α_0 = is the intercept $\beta_1 - \beta_4$ = are the coefficients of the independent variables

μ = is the Stochastic variable

Based on Apriori expectation, the signs of the coefficient are given as; $\alpha_0 > 0$ $\beta_1 - \beta_4 > 0$

Consequently, we expect a positive correlation between the dependent variable (financial performance) and the independent variables (liquidity indicators).

3.6 Operationalization of Variables

S/N	Variable	Type of Variable	Measurement	Source
1	Return on asset (ROA)	Dependent	It is calculated by dividing a bank's net income by its total	Elsayed (2013) and

			assets.	Miko (2010)
2	Liquidity ratio	Independent	Total loans and advances to total deposits	Vieira (2010)
3	Cash reserve ratio	Independent	Reserves requirement with the Central Bank to Total Deposits of Customers	Reematuladhar (2017)
4	Capital adequacy ratio	Independent	Shareholder's fund / Total risk of weighted asset	Poudel (2012)
5	Loan to deposit ratio	Independent	Total Loan / Total Deposits	Choudhry et al. (2015)

Source: Author's Compilation, 2023.

3.7 Method of Data Analysis

Because the variables in the aforementioned model encompassed all five deposit money banks for a time span of eleven years (2012–2021), the study's data are panel (cross sectional) in nature. As a result, panel data approach was employed for this study's econometric analysis.

The Hausman test for random effects, however, provides the scientific basis for choosing the precise Panel Least Square Regression procedures to be used. The Fixed Effect Model (FEM) and Random Effect Model (REM) estimators do not significantly vary, according to Gujarati and Porter (2009), which is the null hypothesis supporting the Hausman test.

The conclusion that the REM is inappropriate is reached when the null hypothesis is rejected (when the cross-sectional random test's chi-square statistics are significant); the FEM is therefore favored over the REM in this situation.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS OF RESULTS

4.0 Introduction

This chapter focuses on analyzing and interpreting the data using the empirical approach employed. The analysis relies on the panel data regression technique. In order to present a robust investigation and analysis of the study, two general methods are used in the empirical analysis, namely statistical and econometric methodologies. The statistical method involves the use of descriptive statistics as well as correlation analysis to examine the initial characterization and relationship among the variables of interest; while the panel data methodology is used to estimate the empirical model drawn from the time series-cross sectional data in order to succinctly determine the impact of independent variables on financial performance (ROA) of deposit money banks.

4.1 Descriptive Statistics

Table 4.1: Descriptive Statistics

	ROA	CAR	LQR	CRR	LD
Mean	1.605930	19.52140	0.374200	17.33800	0.660
Median	1.236450	19.62000	0.375000	18.05000	0.657
Maximum	5.031800	31.79000	0.680000	27.50000	1.204
Minimum	-7.728600	11.07000	0.080000	8.000000	0.032
Std. Dev.	2.065326	5.299255	0.126218	6.516663	0.226
Skewness	-1.687121	0.300231	0.153761	-0.009124	-0.201
Kurtosis	9.720631	2.157418	2.634453	1.616827	3.650
Jarque-Bera	117.8175	2.230209	0.475406	3.986459	1.217
Probability	0.000000	0.327881	0.788437	0.136255	0.544

Source: Researcher's Computation 2023 from E-view 9.0 Software

The summary statistics of performance and the independent variables for the five (5) sampled deposit money banks is presented in Table 4.1. The descriptive statistics reveals that the average return on asset (mean value) for the banks is 1.60 which is relatively low. The median value of 1.23 is lower than the mean value and suggests that ROA values are not similar across the deposit money banks in our sample. This is further buttressed by the low (negative) minimum value of 7.728 while the maximum value of 5.031 is moderately high.

The standard deviation of 2.06 is higher than the mean value and therefore indicates high variability in performance (ROA) values for the selected banks. The skewness value of -1.68 is low, its negative value indicates negative skewness. The Kurtosis value of 9.72 is low while the J-B value of 117.81 pass the significance test and clearly indicates that ROA values across the banks are not normally distributed. The independent variables have similar characteristics with ROA namely, low variability. However, J-B values for all the independent variables were not significant and are normally distributed. Also, the skewness for the independent variables was positive except for cash reserve ratio and loan to deposit ratio.

4.2 Correlation Analysis

It is essential to examine, in a preliminary manner, the relationships among the variables in the study. The correlation analysis is used to conduct these investigations. The result of the correlation tests is reported in table 4.2.

Table 4.2: Correlation Results

	ROA	CAR	LQR	CRR	LDR
ROA	1.000000				
CAR	0.032786	1.000000			
LQR	-0.323346	-0.176376	1.000000		
CRR	-0.142409	-0.327135	0.109172	1.000000	
LDR	0.011740	0.000553	0.047052	0.129033	1.000000

Source: Researcher’s Computation 2023 from E-view 9.0 Software

Table 4.2 displays Pearson's correlation coefficients among all the independent variables utilized in the study. It is crucial to ensure that the correlation coefficient between any pair of independent variables does not surpass 0.80. Otherwise, when the coefficient exceeds 0.80, it may indicate the presence of multicollinearity. The correlation matrix illustrates that the correlation among the independent variables is either of a low degree or moderate degree. In other words, all the independent variables exhibit correlation coefficients of less than 0.80, suggesting the absence of multicollinearity.

4.3 Empirical Results on the Panel Analysis

The standard procedure for selecting the appropriate panel analysis method is to conduct the Hausman test for random effects. The outcomes of these tests for the ROA equation are reported in table 4.3.

Table 4.3: Summary of Hausman Test for Cross-Section Random Effects

Test for cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	55.1158	4	0.0000

Source: Researcher’s Computation 2023 from E-view 9.0 Software

From Table 4.3, the p-value $0.0000 < 0.05$ hence the null hypothesis that the random effect model is more suitable is rejected. Conversely, the alternative hypothesis indicating that the fixed effect model is more appropriate is accepted. Therefore, the estimation of the ROA equation employs the fixed-effect method.

Fixed Effects Model

From the results in table 4.4, the statistic does not offer strong evidence against the alternate hypothesis that there is mis-specification when the fixed effect model is employed. Thus, we cannot reject the alternate hypothesis that unobserved firm specific heterogeneity is uncorrelated with regressors, and so we would be concentrating our analysis on estimates provided by the fixed effect model.

Hence, the best method to apply is the fixed-effect strategy. In this study, we report the fixed effects estimates and use the results for conclusions drawn. The findings from the fixed-effects model are outlined in Table 4.4.

Table 4.4: Dependent Variable: ROA

<i>Variable</i>	<i>Coefficient</i>	<i>t-Statistics</i>	<i>Prob.</i>
C	4.577115	1.990140	0.0533
CAR	-0.166121	-2.738452	0.0091**
LQR	0.145360	0.066741	0.9471
CRR	0.017684	0.275621	0.7842
LDR	-0.135087	-0.147272	0.8836
	$R^2 = 0.625$; Adjusted $R^2 = 0.552$; $F = 8.557$; Prob(F-statistics) = 0.00001 ; D.W = 1.790		

Source: Researcher's Computation 2023 from E-view 9.0 Software

***. Correlation is significant at the 0.01 level (1-tailed), ** Correlation is significant at the 0.05 level (1-tailed), and*. Correlation is significant at the 0.10 level (1-tailed).

From the result in Table 4.4, the goodness of fit statistics was moderate. The R^2 squared value of 0.625 shows that the four explanatory variables namely; capital adequacy ratio, liquidity ratio, cash reserve ratio and loan to deposit ratio explained about 63 percent of the systematic variation of ROA for the sampled deposit money banks. After adjusting for degree of freedom the explanatory variables were able to explain about 55 percent of the systematic variation of ROA for the sampled deposit money banks. This indicates that the explanatory variables are good predictive factor in the ROA of the deposit money banks in Nigeria. The F-value is significant and shows that a significant linear relationship exists between ROA and the independent variables. Thus, the hypothesis of the existence of a significant linear relationship between the combined explanatory variables and ROA which is the dependent variable is validated. The D.W. statistic value of 1.79 suggests the estimates are therefore reliable for policy directions.

The specific contribution of each of the explanatory variables to the behavior of ROA is determined by observing the individual coefficients of the variables in terms of size, signs and significance. The results in Table 4.4 show liquidity ratio and cash reserve ratio exhibit positive sign, indicating that liquidity ratio and cash reserve ratio have positive impact on ROA in line with a priori expectation. Capital adequacy ratio and loan to deposit ratio exhibits a negative sign, indicating that capital adequacy ratio and loan to deposit ratio have a negative relationship with ROA of the deposit money banks contrary to a priori expectation.

More importantly, we focus on the significance of the coefficients in the model. The coefficient of capital adequacy ratio has a significant impact on ROA at the 0.05 percent level. However, liquidity ratio, cash reserve ratio and loan to deposit ratio exerts an insignificant impact on ROA.

4.4 Hypotheses Testing

Based on the outcomes of outcomes from the calculated models of the study, the study's hypotheses are examined in this part. The empirical analysis's random effect estimation coefficients are used to test the hypotheses.

Hypothesis One

H01: Liquidity in Nigeria's listed deposit money banks, the impact of the liquidity ratio is insignificant on their financial performance.

Decision Rule: with t value of 0.066 and probability value of 0.971 which is greater than 0.05, as shown in table 4.5. Therefore, we accept the null hypothesis which states that liquidity ratio has no significant impact on the financial performance of quoted deposit money banks in Nigeria. However, the alternative hypothesis which states that liquidity ratio has a significant impact on the financial performance of quoted deposit money banks in Nigeria is rejected.

Hypothesis Two

H02: The Nigerian quoted deposit money banks' financial performance is unaffected by the cash reserve ratio.

Decision Rule: with t value of 0.276 and probability value of 0.78 which is greater than 0.05, as shown in table 4.5. Therefore, we accept the null hypothesis which states that cash reserve ratio has no significant impact on the financial performance of quoted deposit money banks in Nigeria.

However, the alternative hypothesis which states that cash reserve ratio has a significant impact on the financial performance of quoted deposit money banks in Nigeria is rejected.

Hypothesis Three

H03: The loan to deposit ratio in Nigerian listed deposit money banks does not have a substantial influence on their financial performance.

Decision Rule: with t value of -0.147 and probability value of 0.88 which is greater than 0.05, as shown in table 4.5. Therefore, we accept the null hypothesis which states that loan to deposit ratio has no significant impact on the financial performance of quoted deposit money banks in Nigeria. However, the alternative hypothesis which states that loan to deposit ratio has a significant impact on the financial performance of quoted deposit money banks in Nigeria is rejected.

Hypothesis Four

H04: The capital adequacy ratio of Nigeria's listed deposit money banks does not significantly affect their financial performance.

Also, the result reveals that loan to deposit ratio exerts a negative and insignificant effect on deposit money banks performance. This suggests that an increase in loan to deposit ratio will lead to decrease in deposit money banks performance. The implication of this finding is that with increased loan to deposit ratio, deposit money banks will not be able to improve their performance.

This finding is in tandem with the study of Wuave, Yua and Yua (2020) who reported a negative result.

Decision Rule: with t value of -2.738 and probability value of 0.0091 which is less than 0.05, as shown in table 4.5. Therefore, we reject the null hypothesis which states that capital adequacy ratio has no significant impact on the financial performance of quoted deposit money banks in Nigeria.

However, the alternative hypothesis which states that capital adequacy ratio has a significant impact on the financial performance of quoted deposit money banks in Nigeria is accepted.

4.5 Discussion of Results and Policy Implications

The empirical results show that liquidity ratio has a positive and insignificant impact on financial performance (ROA) of quoted deposit money banks. As an insignificant variable, it implies that liquidity ratio is not an important factor that influences the performance of deposit money banks. This finding is in line with the study of Olagunju, David and Samuel (2012) who reported that liquidity ratio has a positive and insignificant effect on financial performance of deposit money banks.

Also, another important finding from the empirical analysis is the impact of cash reserve ratio on deposit money banks financial performance which seems to be positive but not statistically significant. This implies that cash reserve ratio is not a key factor that influences the financial performance of deposit money in Nigeria. This finding is in tandem with that of Bassey (2017) who a positive and insignificant effect of cash reserve ratio on deposit money banks financial performance, and insignificant effect of loan to deposit ratio on deposit money banks financial performance. Finally, the result reveals that capital adequacy ratio exert a negative and significant effect on financial performance.

This suggests that an increase in capital adequacy ratio will lead to decrease in deposit money banks financial performance. The implication of this finding is that with increased capital adequacy ratio, deposit money banks will not be able to improve their performance. This contradicts the study of Nabeel and Hussain (2017) who reported a significant positive relationship between capital adequacy ratio and financial performance.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on the summary of findings from the empirical analysis as well as the conclusion. The policy recommendations necessitated by these findings are subsequently presented.

5.2 Summary of Findings

The objective of this study is to evaluate the influence of liquidity management on the financial performance of the quoted Nigerian deposit money institutions. These variables—liquidity ratio, loan to deposit ratio, cash reserve ratio, and capital adequacy ratio—were all taken into account in this study. Using descriptive statistics, correlation analysis, and the panel random effect approach, five (5) deposit money banks were selected from the period between 2012 and 2021. The following findings were made from the empirical analysis:

- i. Liquidity ratio affects quoted deposit money banks' financial performance (ROA) in a favorable and negligible way;
- ii. Cash reserve ratio has a positive and negligible effect on financial performance (ROA) of quoted deposit money banks;
- iii. Loan to deposit ratio exerts a negative and insignificant effect on deposit money banks performance;
- iv. The Capital adequacy ratio exert a negative and significant effect on financial performance of deposit money banks financial performance.

5.3 Conclusion

Using descriptive statistics, correlation analysis, and panel data regression approaches, this study aims to explore the impact of liquidity management on the financial performance of listed deposit money banks in Nigeria between 2012 and 2021, using empirical study research. According to the study's findings, most Nigerian bank management either undervalues or is insufficient in strategic liquidity management, as seen by recent events at several banks. Even if they could be useful, the majority of firms in the Nigerian economy only accept cash, making it difficult to manage liquidity adequately. excellent public trust in a nation's financial system is a result of effective liquidity management, and excellent public confidence stops a "run" on the banking system, which has a adverse impact on banks' liquidity levels.

5.4 Recommendations

Based on the empirical findings of this study, the following policy recommendations are suggested for policy action:

Nigerian deposit money banks should establish robust administrative and risk management systems, including Asset Liability Management Committees (ALCO), to effectively manage liquidity. They should enhance their liquidity management strategies and policies, integrating them fully into their overall risk management practices.

Additionally, these banks should develop contingency funding plans that clearly outline the actions to be taken in case of liquidity shortfalls during stressful or emergency periods. Active risk management should be a continuous practice, and performance monitoring should be a regular part of their operations.

Nigerian deposit money banks should keep up their liquidity standards by utilizing the proper ratios to assess how cash deposits and balances are handled inside the banks. Since loan to deposit ratios can significantly impact banking operations and lead to liquidation, they should be utilized more frequently in banks than liquidity ratios and cash to deposit ratios.

Additionally, Deposit Money Banks in Nigeria should keep up with and promptly monitor their liquidity, paying more attention to their cash-to-deposit ratio and liquidity ratio than their loan-to-deposit ratio since the latter has a negative impact on the banking operations of these institutions.

The Central Bank of Nigeria should rigorously assess, oversee, and monitor the effectiveness of the tools employed by banks to enforce liquidity policies. When deemed necessary, appropriate sanctions should be applied to banks that violate regulations. This can be the case to ensure that these policy tools are applied effectively in an effort to reach the desired liquidity level.

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APPENDICES

Appendix A

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	55.115814	4	0.0000

Cross-section random effects test comparisons

Variable	Fixed	Random	Var (Diff.)	Prob.
CAR	-0.166121	-0.026666	0.002086	0.0023
LQR	0.145360	-5.280945	2.206947	0.0003
CRR	0.017684	-0.042877	0.003067	0.2741
LDR	-0.135087	0.404605	0.067672	0.0380

Correlated Random Effects - Hausman Test

Appendix B

Cross-section random effects test equation:

Dependent Variable: ROA Method: Panel Least Squares Date: 08/22/23 Time: 06:35 Sample:
2012 2021

Periods included: 10

Cross-sections included: 5

Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.577115	2.299896	1.990140	0.0533
CAR	-0.166121	0.060662	-2.738452	0.0091
LQR	0.145360	2.177984	0.066741	0.9471
CRR	0.017684	0.064162	0.275621	0.7842
LDR	-0.135087	0.917262	-0.147272	0.8836

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.625430	Mean dependent var	1.605930
Adjusted R-squared	0.552343	S.D. dependent var	2.065326

S.E. of regression	1.381851	Akaike info criterion	3.646274
Sum squared resid	78.29003	Schwarz criterion	3.990438
Log likelihood	-82.15686	Hannan-Quinn criter.	3.777334
F-statistic	8.557347	Durbin-Watson stat	1.790547
Prob(F-statistic)	0.000001		

Appendix C

Dependent Variable: ROA

Method: Panel EGLS (Cross-section random effects) Date: 08/22/23 Time: 06:42

Sample: 2012 2021

Periods included: 10

Cross-sections included: 5

Total panel (balanced) observations: 50

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.578611	1.370479	3.340883	0.0017
CAR	-0.026666	0.039923	-0.667927	0.5076
LQR	-5.280945	1.592692	-3.315735	0.0018
CRR	-0.042877	0.032400	-1.323378	0.1924
LDR	0.404605	0.879601	0.459987	0.6477

Effects Specification

	S.D.	Rho
Cross-section random	1.55 E-06	0.0000
Idiosyncratic random	1.381851	1.0000

Weighted Statistics

R-squared	0.121899	Mean dependent v ar	1.605930
Adjusted R-squared	0.043846	S.D. dependent var	2.065326
S.E. of regression	2.019540	Sum squared resid	183.5344
F-statistic	1.561744	Durbin-Watson stat	1.060073
Prob(F-statistic)	0.200879		

Unweighted Statistics

R-squared	0.121899	Mean dependent var	1.605930
Sum squared resid	183.5344	Durbin-Watson stat	1.060073
