DETERMINANTS OF CORPORATE LIQUIDITY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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A PROJECT WRITTEN AND SUBMITTED TO THE DEPARTMENT OF ACCOUNTING, E FACULTY OF MANAGEMENT SCIENCES IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.Sc.) DEGREE IN ACCOUNTING, UNIVERSITY OF BENIN, BENIN CITY

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DECLARATION

I, **Ehinomen Faith ODION-AGBONKHESE** do hereby declare that this project is entirely my work and composition. The work embodied in this project has not been submitted by another candidate for any degree and is not currently being submitted for any other degree. All references made to the works of other persons have been duly acknowledged.

Ehinomen Faith ODION-AGBONKHESE **Date**

CERTIFICATION

This is to certify that this project was carried out by **Ehinomen Faith ODION-AGBONKHESE** in the Department of Accounting, University of Benin, Benin City.

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DEDICATION

This project is dedicated to God, who in His infinite mercy has kept me alive and brought me this far in life and throughout my university journey. By His grace, this project became a reality.

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ABSTRACT

This study examined the determinants of corporate liquidity management among listed Nigerian Deposit Money Banks (DMBs) from 2013 to 2023. Using an ex-post facto research design, data were collected from audited financial statements, directors' reports, and corporate governance disclosures of thirteen purposively selected stable banks. Panel regression analysis with the Generalized Least Squares (GLS) model was employed, and robustness tests-including Breusch-Godfrey LM, VIF, and ARCH tests-ensured reliability and validity of the findings. The results indicate that **firm size** and **leverage** positively and significantly influence liquidity management, while **management quality, capital adequacy**, and **investment opportunities** negatively and significantly affect liquidity. **Asset quality** and **cash flow volatility** were found to be insignificant, whereas **financial distress** positively enhances liquidity management. These outcomes align with the Liquidity Preference, Pecking Order, and Trade-off Theories, highlighting that strategic, structural, and financial factors, rather than operational variability, drive liquidity management in Nigerian banks. The study contributes to knowledge by providing empirical evidence on liquidity determinants, validating theoretical frameworks, and offering practical guidance for bank managers and regulators. It recommends optimizing managerial and investment decisions, leveraging financial structure, maintaining adequate capital buffers, and ensuring financial stability to sustain liquidity. These findings inform policy and strategic interventions aimed at strengthening banking sector resilience in Nigeria.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Corporate liquidity represents a fundamental indicator of a bank's financial health and operational resilience, particularly in emerging markets such as Nigeria. The recent global financial crisis, widely recognized as a liquidity-driven crisis, highlighted the vulnerability of financial institutions when access to external financing becomes constrained (Al-Khouri, 2012). In Nigeria, the banking sector, dominated by a few large deposit money banks operating within an oligopolistic market, plays a pivotal role in financial intermediation by converting short-term liabilities into long-term, illiquid assets. Nevertheless, persistent liquidity challenges have emerged as a significant concern for these banks, particularly amid volatile macroeconomic conditions and stringent regulatory requirements (Agbo & Nwude, 2018).

The determinants of corporate liquidity among listed deposit money banks in Nigeria are multifaceted, reflecting both internal firm attributes and external economic conditions. Firm-specific characteristics—including firm size, leverage, asset quality, management quality, capital adequacy, cash flow volatility, investment opportunities, and financial distress—are critical in shaping liquidity management practices (Distinguin et al., 2013). For instance, larger banks, due to their expansive operations and higher turnover, may require greater liquidity to meet operational demands, although they may benefit from economies of scale that facilitate access to funds (Agbo & Nwude, 2018). Conversely, high leverage increases liquidity risk, as banks must maintain sufficient reserves to absorb potential losses, particularly during periods of financial distress (Al-Khouri, 2012). Similarly, asset quality influences liquidity by affecting the ease with which a bank's assets can be converted into cash without incurring substantial losses, while management quality and capital adequacy reflect a bank's capacity to implement effective liquidity strategies and withstand market shocks (Distinguin et al., 2013).

Cash flow volatility and investment opportunities further influence liquidity management. Banks experiencing high cash flow volatility may be compelled to hold larger cash reserves as a precautionary measure, whereas those with ample investment opportunities might maintain lower liquidity to capitalize on growth prospects (Modigliani & Miller, 1958; Song & Lee, 2012). Additionally, financial distress elevates the precautionary demand for liquidity, as banks require sufficient resources to meet obligations amid uncertainties in external financing conditions (Duchin et al., 2010; Sundaresan & Xiao, 2022).

Despite the significance of these determinants, empirical studies focusing specifically on Nigerian deposit money banks remain limited, with most prior research concentrated on developed markets or conducted at the country-specific level. Existing literature presents mixed findings regarding the impact of firm-specific factors on liquidity management. While some studies indicate that larger banks with higher growth rates maintain better liquidity through effective working capital management, others suggest that high leverage or poor asset quality exacerbates liquidity shortages. Variations in management practices and internal governance further complicate the liquidity profiles of banks operating in Nigeria (Yimer, 2016).

This study seeks to address these gaps by examining the determinants of corporate liquidity among listed deposit money banks in Nigeria. By integrating firm-specific characteristics—including firm size, leverage, asset quality, management quality, capital adequacy, cash flow volatility, investment opportunities, and financial distress—into the analysis, the research aims to provide nuanced insights into the factors shaping liquidity levels. The findings are expected to inform bank managers, policymakers, and regulators, supporting the development of strategies and regulatory frameworks that enhance liquidity management, safeguard financial stability, and promote sustainable economic growth in Nigeria.

1.2 Statement of the Problem

Liquidity management in Deposit Money Banks (DMBs) is central to ensuring financial stability, particularly in emerging economies such as Nigeria, where financial markets are shaped by unique structural and institutional challenges (Berger & Bouwman, 2009). Maintaining optimal liquidity enables banks to meet short-term obligations, capitalize on investment opportunities, and absorb economic shocks, thereby safeguarding both bank performance and systemic stability (Opler et al., 1999; Bates et al., 2009). Despite extensive research on liquidity determinants in developed markets, significant gaps persist in understanding the dynamics of liquidity management in the Nigerian banking sector, which operates under distinct economic, regulatory, and institutional conditions (Nwoye et al., 2015).

Historically, the Nigerian financial sector has experienced recurrent liquidity crises, as evidenced by the distress and collapse of several DMBs, including AfriBank, Oceanic Bank, and Skye Bank (Nwoye et al., 2015). While regulatory interventions such as cash reserve requirements (CRR) and liquidity coverage ratios (LCR) mandated by the Central Bank of Nigeria (CBN, 2020) have sought to mitigate these challenges, liquidity pressures persist. Factors such as volatile macroeconomic conditions, high non-performing loan (NPL) ratios, sectoral concentration, and evolving regulatory policies complicate effective liquidity management (Sanusi & Okafor, 2024; Adelakun & Mohammed, 2023).

Theoretical models traditionally guiding corporate liquidity research—including the trade-off theory (Kraus & Litzenberger, 1973), the pecking order theory (Myers & Majluf, 1984), and agency theory (Jensen, 1986)—provide useful insights into firms' cash-holding behaviors. However, these models were primarily developed in developed economies and may require adaptation to explain liquidity management practices in Nigeria's banking sector. For example, the trade-off theory emphasizes balancing the benefits and costs of cash holdings, but in Nigeria, economic instability and the high concentration of the banking sector may alter this equilibrium, complicating the application of conventional liquidity frameworks (Umoren et al., 2024). Consequently, refining these theoretical models within a Nigerian context is essential to develop a more relevant conceptual framework for liquidity management.

Empirical evidence on Nigerian DMBs remains fragmented, with prior studies largely examining isolated determinants of liquidity (Uremadu, 2012; Nwidobie, 2012). Critical firm-specific factors—such as firm size, leverage, asset quality, management efficiency, capital adequacy, cash flow volatility, investment opportunities, and financial distress—have generally been studied in isolation, limiting the understanding of their combined effects on liquidity management (Czerwonka & Jaworski, 2024; Antony, 2023). While some studies suggest that larger firms maintain higher liquidity levels to mitigate financial distress (Al-Homaidi et al., 2019), others report no significant effect (Akims et al., 2023). Similarly, leverage exhibits mixed outcomes, with some evidence indicating a negative association with liquidity (Khan et al., 2016) and other studies showing no significant impact (Wijaya, 2021). These inconsistencies underscore the need for a comprehensive analysis that considers the interaction of multiple determinants.

In addition to firm-specific factors, the Nigerian banking sector faces unique sectoral and regulatory challenges that influence liquidity. Unlike developed economies with diversified and deep financial markets, Nigerian banks operate in a highly concentrated environment, where a few large banks dominate market share, creating distinct liquidity dynamics (Naseem, 2021). Recurrent economic shocks, such as the 2008 global financial crisis and the COVID-19 pandemic, have exacerbated liquidity pressures by increasing cash flow volatility and reducing access to external financing (Song & Lee, 2012; Karwowski et al., 2022). Furthermore, regulatory changes, including the implementation of Basel III liquidity standards—the Liquidity Coverage Ratio (LCR) in 2021 and the Net Stable Funding Ratio (NSFR) in 2023—pose additional compliance challenges, particularly for mid-sized banks (Adelakun & Mohammed, 2023). Recent macroeconomic developments, such as the 2023 currency floatation policy, have further affected foreign currency liquidity, exposing vulnerabilities in banks' stress-testing and risk-monitoring frameworks (CBN, 2023; Sanusi & Okafor, 2024).

The role of corporate governance in shaping liquidity management in Nigerian DMBs also remains underexplored, despite empirical evidence from developed markets highlighting its importance in liquidity decision-making (Dittmar & Mahrt-Smith, 2007; Yildirim & Kucukemiroglu, 2020). Governance quality, board efficiency, and management oversight may significantly influence how banks respond to liquidity shocks and regulatory requirements, yet these relationships have received limited empirical attention in the Nigerian context.

Given these gaps, there is a compelling need for research that comprehensively examines the determinants of corporate liquidity in Nigerian DMBs. Specifically, the interplay of firm-specific factors, regulatory influences, macroeconomic conditions, and governance mechanisms must be investigated to provide a holistic understanding of liquidity management practices. This study, therefore, seeks to explore the effects of firm size, leverage, asset quality, management quality, capital adequacy, cash flow volatility, investment opportunities, and financial distress on liquidity management. By integrating these determinants within a contextually relevant framework, the research aims to generate actionable insights for policymakers, regulators, and bank managers, ultimately enhancing liquidity management practices and strengthening the stability of Nigeria's financial system.

1.3 Research Questions

i. What is the effect of firm size on corporate liquidity management of listed Nigerian Deposit Money Banks?

ii. What is the effect of leverage on corporate liquidity management of listed Nigerian Deposit Money Banks?

iii. What is the effect of asset quality on corporate liquidity management of listed Nigerian Deposit Money Banks?

iv. What is the effect of management quality on corporate liquidity management of listed Nigerian Deposit Money Banks?

v. What is the effect of capital adequacy on corporate liquidity management of listed Nigerian Deposit Money Banks?

vi. What is the effect of cash flow volatility on corporate liquidity management of listed Nigerian Deposit Money Banks?

vii. What is the effect of investment opportunities on corporate liquidity management of listed Nigerian Deposit Money Banks?

viii. What is the effect of financial distress on corporate liquidity management of listed Nigerian Deposit Money Banks?

1.4 Research Objectives

The main objective of this study is to examine the determinants of corporate liquidity management among listed Nigerian Deposit Money Banks (DMBs). Specifically, the study seeks to:

i. evaluate the effect of firm size on corporate liquidity management of listed Nigerian Deposit Money Banks.

ii. examine the effect of leverage on corporate liquidity management of listed Nigerian Deposit Money Banks.

iii. examine the effect of asset quality on corporate liquidity management of listed Nigerian Deposit Money Banks.

iv. investigate the effect of management quality on corporate liquidity management of listed Nigerian Deposit Money Banks.

v. determine the effect of capital adequacy on corporate liquidity management of listed Nigerian Deposit Money Banks.

vi. examine the effect of cash flow volatility on corporate liquidity management of listed Nigerian Deposit Money Banks.

vii. evaluate the effect of investment opportunities on corporate liquidity management of listed Nigerian Deposit Money Banks.

viii. determine the effect of financial distress on corporate liquidity management of listed Nigerian Deposit Money Banks.

1.5 Research Hypotheses

Based on the research questions, this study formulates the following hypotheses:

Ho: Firm size has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Leverage has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Asset quality has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Management quality has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Capital adequacy has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Cash flow volatility has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Investment opportunities have no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

Ho: Financial distress has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks.

1.6 Significance of the Study

This study is significant as it addresses both theoretical and practical gaps in understanding corporate liquidity management within the Nigerian banking sector. From a theoretical perspective, the research contributes to the academic literature on liquidity management by providing empirical evidence from an emerging market context. Most existing studies have predominantly focused on developed economies, where financial systems are more stable, well-regulated, and diversified. The Nigerian banking sector, characterized by high market concentration, regulatory volatility, macroeconomic instability, and a prevalence of non-performing loans, presents a markedly different operating environment. By examining firm-specific factors such as firm size, leverage, asset quality, management quality, capital adequacy, cash flow volatility, investment opportunities, and financial distress, this study enhances scholarly understanding of how these variables interact to influence liquidity decisions in emerging economies. The findings are expected to refine existing theoretical frameworks, including the trade-off, pecking order, and agency theories, making them more applicable to the Nigerian banking context.

Practically, the study provides critical insights for bank managers and executives in optimizing liquidity management strategies. Effective liquidity management is central to ensuring that banks can meet short-term obligations, manage day-to-day operations, respond to unexpected shocks, and capitalize on investment opportunities. By understanding how specific firm characteristics affect liquidity, managers can adopt targeted measures to balance cash reserves with operational needs, thereby reducing the likelihood of liquidity shortfalls and enhancing the overall financial health of their institutions. This is particularly important in the Nigerian context, where economic volatility, regulatory changes, and competitive pressures create a complex environment for liquidity decision-making.

For policymakers and regulators, including the Central Bank of Nigeria, the study offers valuable evidence to inform the development of more robust and context-sensitive regulatory frameworks. By identifying the determinants of liquidity and assessing their relative impacts, regulators can design policies that enhance liquidity monitoring, ensure compliance with international standards such as the Liquidity Coverage Ratio (LCR) and

Net Stable Funding Ratio (NSFR), and support the resilience of the banking system against financial shocks. The research findings may also guide the formulation of proactive risk management strategies that mitigate systemic liquidity risks and promote sustainable financial stability.

Beyond institutional and regulatory implications, the study has broader economic significance. Liquidity management in Deposit Money Banks directly affects the availability of credit to businesses and households, which in turn influences economic growth, investment, and employment. Banks with sound liquidity practices are better positioned to support financial intermediation, facilitate productive investment, and sustain economic activities even during periods of macroeconomic uncertainty. By addressing gaps in both theory and practice, this research provides comprehensive insights that can strengthen liquidity management, enhance the operational performance of banks, and contribute to the overall stability and development of Nigeria's financial system.

1.7 Scope of the Study

This study examines the determinants of corporate liquidity management among listed Deposit Money Banks (DMBs) in Nigeria, with a focus on both firm-specific and external factors that influence liquidity decisions. The population of the study comprises the 16 DMBs recognized by the Central Bank of Nigeria (CBN), which play a central role in the Nigerian financial system by providing essential banking services, including deposits, credit facilities, and investment products. The research focuses exclusively on banks operating within Nigeria, reflecting the institutional, regulatory, and macroeconomic environment of the Nigerian banking sector to ensure that the findings are contextually relevant and applicable.

The study covers a eleven-year period from 2013 to 2023, which captures pre- and post-COVID-19 economic conditions, as well as other significant macroeconomic and regulatory events. This temporal scope allows for a comprehensive assessment of liquidity trends over time, including periods of economic growth, recession, and changes in regulatory frameworks that may have impacted banks' liquidity management practices. By examining this timeframe, the study provides insights into how banks have navigated varying economic and financial conditions.

A purposive sampling technique was employed to select 13 of the 16 listed DMBs based on operational stability, regulatory compliance, and adherence to conventional banking practices. Banks excluded from the sample include Jaiz Bank PLC, representing Islamic banking; Polaris Bank PLC, which was undergoing restructuring; and Heritage Bank PLC, which experienced financial instability. The use of judgmental sampling ensures that the study focuses on stable, mainstream institutions that are most relevant to the objectives of examining corporate liquidity management.

The study investigates key determinants of corporate liquidity, including firm size, leverage, asset quality, management quality, capital adequacy, cash flow volatility, investment opportunities, and financial distress. The analysis relies on quantitative assessment of firm-level financial data and regulatory metrics, excluding non-listed banks, non-deposit-taking financial institutions, and informal financial intermediaries, which operate under different regulatory and operational frameworks. By clearly defining the population, temporal coverage, geographical focus, sample selection, and conceptual boundaries, the study ensures that the findings are reliable, focused, and provide meaningful insights into liquidity management practices in Nigeria's banking sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Corporate Liquidity Management

Liquidity management is a critical function in financial institutions, particularly in deposit money banks (DMBs), as it directly affects their operational capacity, solvency, and profitability. According to Alshatti (2015), liquidity management encompasses a business's ability to trade assets, such as stocks and bonds, at their current market prices, and its size, such as in large corporations like financial institutions. In the case of DMBs, liquidity is typically evaluated based on their ability to meet short-term cash requirements, fulfill collateral obligations, and maintain financial stability without incurring substantial losses (Olagunju et al., 2011). Therefore, effective liquidity management refers to the strategic measures undertaken by banks and their investors to reduce exposure to liquidity risks and ensure that the bank can meet its financial obligations as they arise (Duruechi et al., 2016).

Liquidity is fundamentally the ability of a bank to meet its short-term debts or obligations, including converting assets into cash quickly without significant value loss. Olagunju et al. (2011) describe liquidity as the capacity to convert assets into cash and pay for fully developed commitments at a fair price. Idowu et al. (2017) further emphasize that managing liquidity is crucial for the safe and sound operation of financial institutions, as it ensures the bank’s ability to fulfill depositors' requests and pay for maturing debts.

Vossen (2010) highlights that liquidity is often measured by the value of a company's liquid assets. The greater the liquid assets of a bank, the more capable it is of fulfilling obligations, hence ensuring its financial health. For DMBs, managing liquidity is vital not only for meeting short-term obligations but also for maintaining public confidence. A lack of liquidity, or an inability to meet obligations when due, can result in significant losses, reduced profitability, and a damaged reputation (Oluwalaiye et al., 2020).

Liquidity sources are categorized into two major types: stored and purchased liquidity. Stored liquidity consists of assets that banks have temporarily invested in, expecting them to mature when liquidity needs arise. These include cash and balances due to other banks, cash balances with the central bank, and short-term government securities (Kehinde & Solape, 2019). On the other hand, purchased liquidity focuses on liabilities, such as loans or sizable time deposits, used to fulfill funding requirements. For example, banks can access purchased liquidity through loans from the Central Bank of Nigeria or large deposits made by governmental bodies (Kehinde & Solape, 2019).

Liquidity risk refers to the potential inability of a bank to fulfill its obligations without incurring significant losses. It arises when a bank cannot meet its commitments, primarily due to an imbalance between its liquid assets and liabilities (Oluwalaiye et al., 2020). According to Eriki and Osifo (2015), liquidity risk presents a significant threat to banks' capital and earnings, as it can result in financial instability and loss of depositor confidence. Moreover, liquidity risk can severely undermine profitability, as highly liquid assets typically offer low returns (Daniel, 2017). This highlights the importance of balancing liquidity maintenance with maximizing returns from other assets.

The management of liquidity in banks involves several strategies aimed at optimizing the balance between liquidity and profitability. These strategies include maintaining sufficient cash reserves, ensuring access to short-term funding, and mobilizing deposits. Banks may also engage in short-term investments in liquid assets like treasury bills to generate returns while ensuring they have enough funds to meet short-term obligations (Davronov, 2016). Key strategies in liquidity management involve liquidity forecasting, which estimates cash inflows and outflows to ensure that the bank can meet expected and unexpected obligations (Gitman & Zutter, 2015). Gap analysis identifies mismatches between asset and liability maturities to understand potential liquidity gaps and mitigate risks (Ross et al., 2019). Contingency planning involves developing plans to address liquidity crises or unexpected demands for cash (Brigham & Daves, 2021). Additionally, regulatory compliance ensures that banks adhere to liquidity requirements, such as liquidity coverage ratios, to maintain sufficient liquidity levels under stress scenarios (Central Bank of Nigeria, 2020).

Historically, liquidity management was informed by the Commercial Loan Theory, which advocated for holding short-term, self-liquidating loans backed by goods in production or transit (Emmanuel, 1997). This approach assumed that these loans would automatically generate liquidity upon repayment. However, this theory failed to account for the risk of defaults on loans tied to unsold goods, revealing the limitations of such an approach in modern banking. In contemporary banking, liquidity management is a sophisticated function that involves systematically planning, monitoring, and controlling liquid assets and cash flows to meet short-term financial obligations while maintaining the institution's resilience (Ross et al., 2019). Banks must manage interbank obligations, comply with liquidity regulations, and maintain the confidence of depositors and other stakeholders (Koch & Macdonald, 2015).

Liquidity crises, such as those experienced by banks like Afribank, Oceanic Bank, and Skye Bank, underscore the importance of maintaining strong liquidity governance (Nwoye et al., 2015). These crises demonstrate how a lack of liquidity can lead to the collapse of a financial institution, which can have far-reaching consequences for the broader financial system. This emphasizes the importance of effective liquidity management as a means of safeguarding a bank's long-term sustainability, protecting depositor interests, and preserving the stability of the financial ecosystem (Muteti, 2014).

Overall, liquidity management is an essential component of financial stability for deposit money banks. It involves a range of strategies aimed at ensuring the bank's ability to meet its short-term obligations while balancing the need for profitability. Effective liquidity management requires accurate forecasting, gap analysis, contingency planning, and adherence to regulatory requirements. Moreover, given the risks associated with liquidity shortfalls, banks must continuously adapt their liquidity management strategies to address evolving macroeconomic conditions and regulatory changes. Ensuring adequate liquidity not only supports operational continuity but also helps preserve depositor confidence and maintain overall financial system stability (Basel, 2008; European Central Bank, 2015).

2.2 Determinants of Corporate Liquidity

The determinants of corporate liquidity among listed Nigerian Deposit Money Banks (DMBs) as conceptualized in your research include the following:

2.2.1 Firm Size

Firm size is a fundamental organizational characteristic that significantly influences financial decisions, including corporate liquidity management. It is commonly conceptualized in terms of total assets, total sales revenue, market capitalization, or the number of employees (Beck et al., 2005). In the banking sector, particularly among Deposit Money Banks (DMBs), firm size is often measured by the total asset base or the scale of operations, which reflects the bank's capacity to mobilize and allocate financial resources efficiently (Ozkan & Ozkan, 2004). Larger banks typically benefit from economies of scale, diversified funding sources, and greater market access, enabling them to maintain more robust liquidity buffers in response to potential financial shocks (Harford et al., 2008).

However, in the Nigerian context, firm size plays a critical role in shaping the liquidity strategies of DMBs due to the high concentration in the banking industry and systemic exposure to macroeconomic volatility. Larger banks tend to hold higher levels of liquidity as a precautionary measure against market uncertainty and potential credit losses, whereas smaller banks may face constraints in accessing capital markets or central bank facilities during liquidity crunches (Sanusi & Okafor, 2024). Moreover, the size of a bank may influence its regulatory treatment and supervisory expectations, with larger institutions often subject to stricter liquidity requirements and stress-testing protocols (CBN, 2020).

Therefore, firm size is not only a determinant of resource availability but also an indicator of institutional resilience and strategic positioning in liquidity management. Understanding the role of firm size is essential for evaluating how Nigerian DMBs navigate the challenges of maintaining adequate liquidity levels in a volatile financial environment.

2.2.2 Leverage

Leverage refers to the extent to which a firm uses debt to finance its operations and investments. It is a critical determinant of corporate liquidity, particularly in the banking sector, where financial leverage is a core component of operational structure. Highly leveraged firms are often burdened with substantial debt-servicing obligations, including interest payments and the repayment of principal, which can significantly constrain their liquidity levels. These mandatory outflows reduce the availability of free cash flows that could otherwise be used to maintain or increase liquid asset holdings (Ozkan & Ozkan, 2004; DeAngelo & Stulz, 2015).

Therefore, in the Nigerian context, where economic volatility, inflation, and currency instability are prevalent, high leverage may further amplify liquidity pressures. Nigerian Deposit Money Banks (DMBs) operating under these uncertain conditions may find it increasingly difficult to meet both their short-term liabilities and long-term financing commitments, especially when faced with sudden market shocks or deteriorating macroeconomic indicators. For instance, during the COVID-19 pandemic and the 2008 global financial crisis, banks with higher debt levels experienced intensified liquidity strain due to reduced cash inflows and heightened default risks (Karwowski et al., 2022; Song & Lee, 2012). Moreover, recent economic shocks, such as fluctuating oil prices and foreign exchange instability in Nigeria, have exacerbated the liquidity difficulties of highly leveraged banks.

Additionally, regulatory pressures from the Central Bank of Nigeria (CBN) require DMBs to maintain adequate liquidity ratios and comply with capital adequacy standards. Highly leveraged banks may struggle to meet these requirements, particularly when capital buffers are eroded by non-performing loans or declining asset values (CBN, 2020). This situation often forces such institutions to either reduce lending or liquidate assets to preserve liquidity, actions that can further impair profitability and stability. According to recent studies, Nigerian banks with higher leverage ratios are more vulnerable to liquidity crises during times of economic uncertainty, highlighting the need for careful capital structure management (Adelakun & Mohammed, 2023; Odi, 2023).

Therefore, the relationship between leverage and liquidity is especially critical in Nigeria's banking environment, where financial institutions are exposed to both internal inefficiencies and external macroeconomic challenges. Firms must carefully manage their capital structure to strike a balance between leveraging for growth and maintaining sufficient liquidity to remain solvent and compliant with regulatory standards (Uremadu, 2012; Nwidobie, 2012; Olalekan, 2023). This balance is crucial in minimizing the risk of liquidity crises, which can lead to financial instability and failure, as observed in previous banking collapses.

2.2.3 Asset Quality

Asset quality is widely recognized as a critical determinant of corporate liquidity, especially within the banking sector. It is generally conceptualized as the level of credit risk associated with a bank's interest-earning assets, primarily loans and investment portfolios (Ogboru, 2019). Since lending constitutes a core function of banks, asset quality is often equated with credit risk (Aguenaou, Lahrech, & Bounakaya, 2017). Ombaba (2013) defined asset quality as the total risk exposure linked to a bank's asset holdings, while Nzoka (2015) emphasized its role in identifying financially risky assets and determining appropriate loss provisions. Similarly, Abata (2014) noted that asset quality reflects the extent of credit risk in a bank's operations, while Kabir and Dey (2014) highlighted that it is typically measured through the ratio of non-performing loans (NPLs) to total loans an indicator of a bank's ability to recover its credit exposures.

In the context of Nigerian Deposit Money Banks (DMBs), asset quality is primarily assessed through the NPL ratio. A lower NPL ratio suggests higher asset quality, as it indicates that a greater proportion of the bank's loans are performing and recoverable. These high-quality assets are more liquid because they can either be converted to cash more easily or serve as reliable collateral for secured financing (Barth, Caprio, & Levine, 2013; Berrospide & Edge, 2010). Consequently, asset quality significantly influences a bank's ability to meet short-term obligations and maintain financial stability.

The relationship between asset quality and liquidity becomes particularly important in the Nigerian banking environment, which is prone to economic fluctuations driven by factors such as oil price volatility, currency devaluation, and macroeconomic instability. Periods of economic downturn such as the oil price crash in 2014, the 2016 recession, and the COVID-19 pandemic led to rising NPLs in Nigerian banks, thereby impairing their liquidity positions (Nwidobie, 2012; Ogunleye & Olojede, 2019). As more loans became non-performing, banks experienced difficulties in generating cash flows or leveraging these impaired assets for collateralized borrowing.

High levels of NPLs represent a major liquidity risk, as they tie up capital and restrict a bank's operational flexibility. Moreover, elevated NPL ratios trigger more stringent regulatory oversight and higher provisioning requirements from the Central Bank of Nigeria (CBN), further straining liquidity (CBN, 2020). Conversely, banks with lower NPL ratios and better asset quality are more resilient to financial shocks, given their greater ability to access liquidity through asset conversion or borrowing.

Furthermore, asset quality influences a bank's cost of funding. Banks with low credit risk are more likely to secure external financing at favorable terms, while those with poor asset quality may face higher borrowing costs or reduced access to funding due to perceived riskiness (Berger & Bouwman, 2009). This was evident during the 2008 global financial crisis and other economic disruptions in Nigeria, where banks with rising NPLs faced severe credit constraints.

Regulatory frameworks such as the CBN's risk-based capital adequacy guidelines and Basel III liquidity standards underscore the importance of asset quality in maintaining adequate liquidity buffers. These frameworks require banks to limit exposure to low-quality assets to ensure regulatory compliance and liquidity soundness (Adelakun & Mohammed, 2023).

Asset quality particularly the quality of loan portfolios is also a critical determinant of bank stability (Onaolapo et al. 2021). As Grier (2007) emphasized, poor asset quality remains one of the leading causes of bank failure. The loan portfolio often constitutes the largest share of a bank's assets and represents a primary source of risk due to the potential for loan defaults. The quality of credit administration and the rate of non-performing loans (NPLs) significantly influence overall asset quality. Rising NPL ratios have been historically linked to banking crises in multiple countries, including Pakistan (Hardy & Bonaccorsi di Patti, 2001), India (Mohan, 2005), Mexico (Sidaoui, 2007), and Ghana (Ziorklui, 2001). In Nigeria, unsustainably high NPL ratios have been a major contributor to banking sector distress and systemic crises (Onaolapo, 2008). A high NPL ratio depresses profitability and erodes the capital base, leading to capital inadequacy, potential insolvency, and regulatory interventions (Onaolapo & Ajala, 2013).

Overall, asset quality plays a vital role in shaping the liquidity position of banks. For Nigerian DMBs, maintaining low NPL ratios is essential for preserving liquidity, reducing funding costs, and sustaining overall financial health. Enhancing asset quality through prudent lending practices and effective credit risk management remains a fundamental strategy for minimizing liquidity risk and safeguarding against financial distress.

2.2.4 Management Quality

Management Quality plays a critical role in determining the liquidity management effectiveness of Deposit Money Banks (DMBs), particularly in emerging economies such as Nigeria. The ability of a bank's management to make prudent financial decisions, such as optimizing cash flow, controlling operational costs, and ensuring regulatory compliance, significantly influences the bank's capacity to maintain adequate liquidity levels. High-quality management ensures that liquidity is effectively monitored, risks are mitigated, and financial strategies align with the bank's objectives, thereby enhancing the bank's ability to manage liquidity efficiently (O'Neill & Southwick, 2021).

Effective management practices in Nigerian DMBs are especially important given the challenges faced by the banking sector, including economic volatility, fluctuating oil prices, and regulatory changes. Management quality is also associated with a bank's ability to forecast liquidity needs, identify potential funding gaps, and create contingency plans in response to sudden liquidity shortages (Berger & Bouwman, 2009; Akinmoladun & Ogunleye, 2022). Poor management practices, such as ineffective risk assessments or a lack of strategic planning, can result in liquidity crises, as evidenced by the collapse of several banks in Nigeria, including the failures of banks like AfriBank, Oceanic Bank, and Skye Bank (Nwoye et al., 2015). These failures were largely attributed to mismanagement of liquidity, where banks struggled to balance short-term liquidity needs with long-term obligations.

Prudent management practices ensure that a bank operates within an optimal liquidity buffer, using strategies like efficient cash flow management and robust internal controls to minimize liquidity risk. Effective management is also critical in ensuring that a bank maintains a diversified portfolio of assets, thus reducing the concentration of risks and ensuring that liquidity is available even in the face of external shocks (Dittmar & Mahrt-Smith, 2007). In the Nigerian context, banks with effective management are better equipped to adapt to external shocks such as the global financial crisis of 2008 or the

COVID-19 pandemic, which have exacerbated liquidity risk for many banks (Song & Lee, 2012; Karwowski et al., 2022).

Moreover, the quality of management in Nigerian DMBs influences how well banks adhere to regulatory requirements such as the Central Bank of Nigeria's (CBN) liquidity coverage ratio (LCR) and capital adequacy standards. Managers must ensure that the bank maintains sufficient liquid assets to meet short-term obligations while managing funding risks and complying with the regulatory framework (Adelakun & Mohammed, 2023). Inadequate management of these requirements can lead to regulatory penalties, which in turn can exacerbate liquidity pressures, as banks may face restrictions on lending and increased borrowing costs.

Another aspect of management quality that impacts liquidity is the ability to handle financial distress and operational inefficiencies. High-quality management in banks can implement strategies to improve operational efficiency, reduce costs, and increase profitability, which in turn strengthens the bank's liquidity position. Effective management practices in risk assessment, crisis management, and strategic planning are crucial in helping banks navigate periods of financial instability or market disruption. For instance, Nigerian banks with strong leadership and management practices have demonstrated resilience during economic recessions, as they were able to adjust their liquidity strategies and recover from short-term liquidity challenges (Akinmoladun & Ogunleye, 2022; Berger & Bouwman, 2009).

The quality of management can also influence the decision-making process regarding capital raising, investment strategies, and the management of non-performing loans (NPLs), all of which are critical factors in liquidity management. Banks with well-structured management teams are better at making informed decisions on whether to raise capital through equity or debt, optimize their portfolios, and manage their NPL ratios, all of which enhance liquidity (Berger & Bouwman, 2009). Conversely, poor management practices can lead to misaligned financial strategies, such as over-reliance on short-term borrowing or an inability to reduce NPLs, both of which increase liquidity risk.

Therefore, management quality is a fundamental determinant of liquidity in Nigerian DMBs. Effective management ensures that banks can optimize their liquidity positions, navigate regulatory requirements, and manage financial risks, thereby contributing to overall financial stability. Poor management, on the other hand, can significantly increase liquidity risks, as evidenced by the frequent liquidity crises that have plagued banks in Nigeria's financial history. This highlights the importance of investing in high-quality management teams capable of responding to dynamic market conditions and ensuring the long-term financial health of the institution.

2.2.5 Capital Adequacy Ratio

An organization is expected to meet minimum requirements established by regulatory authorities, one of which is capital adequacy. In Nigeria, the Central Bank of Nigeria (CBN) sets minimum capital requirements for all banks and finance houses. Regardless of compliance with other regulations, a financial institution cannot legally operate as a bank without meeting this capital threshold (Pradhan, 2017). Regulators emphasize capital adequacy because banks must have sufficient funds to satisfy the demands of both current and potential customers (Okafor, 2010). Capital impacts nearly every aspect of banking operations either directly or indirectly. It is a key consideration in evaluating a bank's safety and soundness, serving as a buffer against a wide array of risks inherent in banking operations (Ikpefan, 2013). Capital cushions potential losses, helping to maintain depositor confidence, and also determines the maximum volume of assets a bank can hold (Greuning & Bratanovic, 2009).

Capital adequacy is foundational in banking, given its role in safeguarding institutions from risks tied to their asset portfolios. It functions as a financial buffer, enabling banks to absorb losses, especially those related to risky loan exposures, thereby enhancing financial system stability. The Economic Times Bureau (2010) explains that capital adequacy reflects the extent to which a bank’s capital—its net worth—can offset the effects of credit risk. Adequate capital levels are associated with operational efficiency, investor confidence, and a reduced likelihood of systemic distress (Ezike & Oke, 2013). Conversely, insufficient capital increases credit risk and the possibility of financial instability (Mukhtarov & Mammadov, 2018).

During economic downturns or crises, well-capitalized banks have proven to be more resilient. For instance, during the 2008 global financial crisis and the COVID-19 pandemic, banks with stronger capital buffers were able to manage liquidity pressures and meet financial obligations more effectively than those with weak capital structures (Song & Lee, 2012). In Nigeria, the CBN has implemented capital adequacy requirements aimed at strengthening banks' liquidity positions and limiting systemic risk (CBN, 2020). Compliance with these standards is essential to maintaining banking sector stability (Olaniyi & Bello, 2021).

The Capital Adequacy Ratio (CAR) serves as a principal regulatory tool for assessing a bank's financial strength. Banks that meet or surpass CAR benchmarks are typically better prepared to navigate liquidity shocks, which is particularly vital in Nigeria's economically volatile environment, influenced by fluctuating oil revenues, exchange rate volatility, and political uncertainty (Akinmoladun & Ogunleye, 2022). Institutions with higher capital levels are better positioned to absorb adverse macroeconomic effects (Adelakun & Mohammed, 2023).

Capital adequacy also affects a bank's access to external financing. Financial institutions with robust capital structures are perceived as lower-risk entities, thereby gaining easier and more favorable access to external funding (Berger & Bouwman, 2009). In contrast, undercapitalized banks often find it difficult to raise funds and are forced to rely on more expensive liquidity sources, which can worsen their liquidity challenges (O'Neill & Southwick, 2021).

Another dimension of capital adequacy relates to compliance with international regulatory standards, such as those outlined in the Basel III framework. These standards emphasize stronger capital and liquidity benchmarks, including the Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) (Basel Committee on Banking Supervision, 2015). Nigerian Deposit Money Banks (DMBs) with higher capital levels are more likely to comply with these global requirements. Non-compliance may result in regulatory sanctions, reputational damage, and weakened liquidity (Akinmoladun & Ogunleye, 2022).

Capital adequacy also influences a bank's strategic orientation and risk management practices. Institutions with strong capital tend to adopt conservative liquidity strategies by maintaining sufficient liquidity buffers and ensuring alignment between assets and liabilities. In contrast, banks with weak capital often engage in higher-risk operations to maintain profitability, which may undermine their liquidity standing (Berger & Bouwman, 2009).

In a highly unpredictable economy like Nigeria's, capital adequacy is critical for ensuring liquidity, compliance, and long-term stability. Banks with adequate capital can better respond to financial disruptions and regulatory changes without compromising their liquidity positions.

According to the Basel Committee, bank capital is categorized into Tier 1 and Tier 2 components (Basel Committee on Banking Supervision, 2015). Tier 1 capital, or core capital, includes shareholders' equity and retained earnings, which absorb losses during ongoing operations (Mendoza & Rivera, 2017). Tier 2 capital, composed of subordinated debt and hybrid financial instruments, absorbs losses during liquidation and offers an additional layer of protection, albeit at greater risk to depositors (Mendoza & Rivera, 2017).

Capital adequacy plays an essential role in recapitalization—restructuring the capital base to meet regulatory and operational needs. Bessis (2011) emphasized that adequate capital facilitates proactive recapitalization, ensuring a bank can continue functioning effectively. Ochei (2010) described recapitalization as the process of increasing long-term capital to guarantee sustainability and regulatory compliance.

Capital adequacy enhances a bank's financial strength by reinforcing its capacity to absorb risks, thereby improving its credit ratings, boosting investor confidence, and strengthening its competitive position in both domestic and global markets (Laruccia & Revoltella, 2000; Pasiouras et al., 2007; Poon & Firth, 2005; Poon et al., 2009; Van Roy, 2006).

Greuning and Bratanovic (2009) argued that the main functions of capital are to ensure institutional stability and to absorb losses, thus safeguarding depositors and creditors in cases of liquidation. Capital is sourced from equity (owner contributions) and debt (external borrowing), and regulatory frameworks influence which of the two takes precedence in bank capitalization. Capital risk the potential loss of invested capital applies to a range of assets lacking full guarantees, such as stocks, real estate, and commodities (Afriyie, 2011). Companies also face capital risk when investing in projects with uncertain returns (Fredrick, 2012). In banking, capital adequacy protects against such unforeseen financial losses (Kithinji, 2010).

Banking capital is calculated as the difference between the market value of assets and liabilities equity. It plays a crucial role in risk absorption, particularly when provisioning is inadequate, prompting central banks to mandate higher capital levels to ensure depositor safety (Saunders & Cornett, 2002). A higher capital volume is inversely related to risk exposure (Thomas, 2015). Since 1976, the Basel Committee has revised capital adequacy frameworks to maintain banking system stability, setting a minimum capital adequacy ratio of 8% (Hassan et al., 2016). The concept of capital adequacy emerged from the need to restructure the banking industry and mitigate widespread distress. Adequate capital not only improves operational standards but also enhances financial performance.

Olalekan and Adeyinka (2013) asserted that banks should maintain a minimum capital-to-risk-weighted asset ratio of 8%, with at least 50% of capital composed of paid-up capital and reserves. According to the CBN (2019), banks must maintain a capital ratio of no less than 10.5% under Basel III, including a capital conservation buffer. Archer (2010) defined capital adequacy as the availability of sufficient capital to protect customer deposits. Similarly, Olalekan and Adeyinka (2013) emphasized that capital adequacy represents the capital required to support stable business operations over time. Almazari and Alamri (2017) described capital adequacy as a firm's ability to assess and address financial risks effectively, highlighting its significance in pricing, performance optimization, and financial resilience. Indicators of capital adequacy include asset quality, capital structure, liquidity levels, and asset base (Olalekan & Adeyinka, 2013).

Overall, capital adequacy is central to ensuring financial resilience, regulatory compliance, liquidity management, and investor confidence. For Nigerian banks, maintaining adequate capital is a critical safeguard in navigating the complexities of a volatile economic environment.

2.2.6 Cash flow Volatility

Cash flow volatility is a significant determinant of liquidity management for Nigerian Deposit Money Banks (DMBs), as firms with unpredictable cash flows face heightened liquidity risks. The instability in cash flows forces these banks to maintain larger liquidity buffers to meet their financial obligations during periods of cash shortfalls. The unpredictability of cash flows requires banks to implement robust liquidity management strategies, ensuring they can maintain financial stability and operational efficiency despite fluctuations in their cash flow streams.

Likewise, in the Nigerian context, cash flow volatility is influenced by various factors, such as fluctuations in oil prices, exchange rate instability, political uncertainty, and changes in regulatory frameworks. The nation's heavy dependence on oil exports makes DMBs particularly vulnerable to global oil price movements, which can directly affect their cash flow stability. During periods of declining oil prices or economic recessions, Nigerian banks may experience reduced revenues from loans and other financial services, leading to liquidity constraints (Central Bank of Nigeria [CBN], 2022). Additionally, Nigeria's macroeconomic environment, which is characterized by high inflation, currency devaluation, and political instability, exacerbates the volatility of cash flows, further complicating liquidity management for banks (Akinmoladun & Ogunleye, 2022).

Effective liquidity management in the face of cash flow volatility requires Nigerian DMBs to maintain an optimal balance between their assets and liabilities, ensuring that their cash inflows match their outflows. This alignment is essential for mitigating liquidity risk, which arises when a bank cannot meet its obligations without incurring significant losses. The CBN (2021) emphasizes the importance of liquidity planning, advising banks to consider potential future liquidity needs by accounting for economic, regulatory, and operational shifts.

Furthermore, banks with volatile cash flows often face higher borrowing costs when seeking external financing. The unpredictability of their cash flow projections increases the perceived risk to investors and creditors, which may lead to higher borrowing costs or limited access to capital markets. As a result, these banks must rely on their internal liquidity management strategies, such as holding greater cash reserves or liquid assets, to ensure that they can meet their obligations during periods of financial instability (Berger & Bouwman, 2009). The ability to maintain substantial liquidity buffers is essential for reducing reliance on costly external funding sources and mitigating the risks associated with market volatility.

Nigerian banks have implemented various measures to manage the risks associated with cash flow volatility. These measures include investing in short-term government securities and participating in the interbank lending market to improve liquidity. Research has shown that effective liquidity management positively influences bank performance, underscoring the importance of maintaining adequate liquidity buffers to minimize financial risks and enhance profitability (Ojiegbe et al., 2016). Moreover, maintaining higher liquidity reserves enables banks to better withstand economic shocks, such as declines in oil revenues, fluctuations in exchange rates, and political instability, all of which have the potential to disrupt cash flow patterns.

Therefore, cash flow volatility is a crucial factor influencing the liquidity management practices of Nigerian DMBs. To mitigate the risks associated with unpredictable cash flows, these banks must adopt comprehensive liquidity strategies, which include maintaining higher liquidity buffers, ensuring that they can effectively manage financial uncertainty. By implementing robust liquidity management practices and adhering to regulatory guidelines, Nigerian DMBs can navigate economic disruptions and maintain financial stability in the face of both domestic and global challenges.

2.2.7 Investment Opportunity

Firms with greater investment opportunities often face a crucial decision regarding liquidity management, as they must balance retaining liquidity to finance future investments with allocating funds to existing projects. This balance is central to liquidity management, as investing more funds in current projects can potentially reduce liquidity, while retaining liquidity may restrict the firm's ability to take advantage of future growth opportunities (Omoregie et al., 2019).

The trade-off between liquidity and profitability is a key consideration in this process. Higher liquidity often correlates with lower profitability due to opportunity costs of holding funds without investing them. Conversely, committing funds to investments may increase profitability but can lead to liquidity challenges, particularly if funds are tied up in long-term projects. Omoregie et al. (2019) exerted that firms need to assess the implications of their investment decisions on both liquidity and profitability, taking into account factors such as project duration, expected returns, and funding requirements.

Effective liquidity management requires firms to strategically plan their capital allocation, ensuring they maintain sufficient liquidity to meet short-term obligations while also positioning themselves to capitalize on future investment opportunities. This strategic approach is essential to maintaining operational stability and supporting sustainable growth. Recent studies have emphasized that firms with robust liquidity management are better positioned to leverage investment opportunities in times of financial uncertainty (Gul, 2020).

Moreover, firms with ample investment opportunities are more likely to retain liquidity, as the flexibility to finance future projects provides them with a competitive advantage (Bates, Kahle, & Stulz, 2009). On the other hand, some firms may choose to commit significant capital to ongoing projects, effectively reducing their liquidity buffers. This decision can depend on several factors, including the firm's growth stage, market conditions, and long-term strategic goals (Lee & Lee, 2021). For instance, technology companies with high-growth potential often prioritize long-term investments in research and development, even at the expense of liquidity, anticipating future returns that will enhance their competitive position (Fazzari & Petersen, 2000).

Recent developments, such as the introduction of Long-Term Asset Funds (LTAFs) in the UK, provide firms with innovative investment vehicles that help balance liquidity and profitability. These funds allow firms to invest in illiquid assets like private equity or infrastructure, offering a structure to manage liquidity over an extended period while pursuing long-term returns (FNLondon, 2023). Such structures can aid firms in making strategic decisions about resource allocation, balancing the need for liquidity with the desire for higher returns.

Firms with greater investment opportunities must adopt strategic liquidity management practices that take into account both immediate financial needs and long-term growth objectives. By understanding the trade-offs between maintaining liquidity and committing funds to investments, firms can optimize capital allocation. Utilizing innovative financial tools such as Long-Term Asset Funds (LTAFs) enables firms to balance liquidity with profitability, thereby ensuring financial stability while pursuing growth and maximizing returns.

2.2.8 Financial Distress

Financial distress plays a crucial role in liquidity management, particularly within Nigerian Deposit Money Banks (DMBs). When firms experience financial distress, they often struggle to maintain adequate liquidity, which exacerbates financial instability and increases the risk of insolvency. Financial distress typically arises from a combination of poor financial performance, high leverage, mismanagement, or external economic shocks, which reduce a firm's ability to access funding, manage operational costs, or meet its financial obligations (Bates et al., 2009; Ahmed & Omar, 2021).

One immediate effect of financial distress is the impairment of a firm's liquidity. During periods of financial distress, firms often struggle to secure short-term financing due to a decline in their creditworthiness and the market's perception of their ability to recover (Adelakun & Mohammed, 2023). For banks, this situation can lead to difficulties in rolling over short-term debt, leading to liquidity constraints and further financial deterioration (Berger & Bouwman, 2009). Additionally, financial distress can trigger increased withdrawals by depositors or investors, especially if the firm’s reputation has been damaged, which further exacerbates liquidity challenges (Song & Lee, 2012; Sadiq et al., 2021).

Another significant factor contributing to liquidity challenges during financial distress is asset devaluation. In the case of Nigerian DMBs, asset devaluation may occur when market conditions negatively impact the value of collateral or securities held by banks. As these assets lose value, banks are exposed to higher risks of default, worsening liquidity issues. The ability of banks to liquidate assets to meet obligations becomes more difficult, particularly in an illiquid market or when asset values experience significant declines (O'Neill & Southwick, 2021). For instance, Nigerian banks with high exposure to volatile assets, such as oil-related investments, may experience significant liquidity pressures when the value of these assets declines (Akinmoladun & Ogunleye, 2022).

Additionally, financial distress typically leads to higher borrowing costs for distressed firms. For banks, deteriorating financial health increases borrowing costs, as creditors and investors view these institutions as higher risk (Czerwonka, & Jaworskim, 2024). This increased risk perception restricts the bank’s access to capital markets or results in less favorable borrowing terms, further exacerbating liquidity problems (Berger & Bouwman, 2009). More recent studies also emphasize that financial distress causes banks to face more stringent regulatory scrutiny, which can make access to funds more difficult and costly (Adegboye & Olorunfemi, 2023).

However, in Nigeria, the Central Bank of Nigeria (CBN) has implemented various regulatory measures to mitigate the impact of financial distress on banks' liquidity positions. These measures include regular stress tests, capital adequacy requirements, and liquidity coverage ratios, which aim to ensure that banks maintain sufficient reserves to weather periods of financial hardship (CBN, 2020). Despite these safeguards, banks experiencing financial distress often need to adopt more conservative liquidity management strategies, such as maintaining higher liquidity buffers or reducing exposure to high-risk assets (Song & Lee, 2012; Sadiq et al., 2021).

Effective liquidity management can significantly reduce the adverse effects of financial distress on a firm's performance. Studies have shown that banks that proactively engage in liquidity planning and maintain a balanced approach between short-term liquidity and long-term investments are better positioned to recover from periods of distress (Ojiegbe et al., 2016). By adopting these strategies, banks can enhance their financial resilience, restore investor confidence, and mitigate the risks associated with financial distress (Ahmed & Omar, 2021).

Financial distress significantly influences liquidity management, particularly for Nigerian Deposit Money Banks (DMBs). The challenges arising from reduced access to funding, asset devaluation, and increased withdrawals underscore the critical need for maintaining adequate liquidity reserves and implementing sound financial management practices. Nigerian DMBs, similar to other financial institutions, must prioritize liquidity risk management by adopting strategic planning, ensuring regulatory compliance, and focusing on maintaining overall financial health to mitigate the detrimental effects of financial distress.

2.3 Theoretical Framework

2.3.1 Liquidity Preference Theory (Keynesian Theory of Liquidity Preference)

The Liquidity Preference Theory, proposed by John Maynard Keynes (1936), suggests that individuals and firms prefer to hold liquid assets to mitigate potential risks arising from future uncertainties, such as unexpected financial obligations. According to this theory, the demand for liquidity increases during periods of financial distress or uncertainty, as firms prioritize safeguarding themselves against unforeseen events. In the context of Nigerian Deposit Money Banks (DMBs), this theory provides insight into why banks facing financial distress are inclined to maintain higher liquidity buffers. The desire for liquidity becomes more pronounced when firms experience difficulties in securing short-term financing, managing operational costs, or dealing with market volatility (Keynes, 1936). Increased liquidity preference during distress reflects the need to have cash readily available to respond to emergencies and financial shocks (Bates et al., 2009).

Therefore, for Nigerian DMBs undergoing financial distress, the preference for liquidity aligns with the liquidity preference theory, as these banks are likely to prioritize maintaining liquid assets. This strategy enables them to meet depositor withdrawal demands, settle short-term debt obligations, and ensure smooth operational continuity during challenging times (Adelakun & Mohammed, 2023). The theory further suggests that banks in distress will enhance their liquidity buffers to mitigate insolvency risks, which is particularly important in the volatile economic environment of Nigeria. By holding sufficient liquid assets, Nigerian DMBs can better navigate the uncertainty surrounding future cash flows and financial stability (Farajimakin et al., 2020). Studies have indicated that banks facing financial strain actively increase their liquidity reserves to preserve solvency, maintain customer confidence, and manage credit risk, thereby adhering to the liquidity preference theory (Nakamura & Small, 2021).

2.3.2 Pecking Order Theory

The Pecking Order Theory, introduced by Myers and Majluf (1984), suggests that firms prioritize financing sources in a hierarchical order, first using internal funds, such as retained earnings, before seeking external financing through debt or equity. The theory posits that external financing is often viewed as less attractive due to the costs and risks involved, particularly when firms face financial distress. When firms are in distress, their ability to raise funds externally diminishes due to a higher perceived risk by external investors and creditors, making it less appealing to issue debt or equity. Instead, firms are more likely to rely on their available internal liquidity to stabilize their operations and meet immediate financial obligations (Myers & Majluf, 1984).

According to the Pecking Order Theory, Nigerian Deposit Money Banks (DMBs) experiencing financial distress would prioritize utilizing internal liquidity sources, such as cash reserves and retained earnings, to address their liquidity needs. This is due to the high costs and risks associated with external financing during periods of financial uncertainty. As a result, Nigerian DMBs are likely to avoid external borrowing or issuing equity, which could exacerbate their already fragile financial position (Adelakun & Mohammed, 2023). This behavior aligns with the theory's prediction that firms in distress will prefer internal resources over external capital markets (Fama & French, 2002). This tendency is particularly relevant in the Nigerian banking sector, where access to capital markets may be limited or costly due to macroeconomic instability and investor caution during times of financial distress (Farajimakin et al., 2020).

2.3.3 Trade-off Theory

The Trade-Off Theory of Capital Structure, proposed by Kraus and Litzenberger (1973), suggests that firms make decisions about their capital structure by weighing the benefits and costs of debt and equity financing. According to this theory, firms strive to find an optimal capital structure by balancing the tax advantages of debt—such as the tax shield on interest payments—against the costs associated with debt, including bankruptcy risks and agency costs. As firms face financial distress, the costs of external financing tend to rise due to higher perceived risks from investors and creditors. Consequently, firms adjust their capital structure to manage the trade-off between maintaining liquidity and minimizing the costs associated with high leverage (Myers, 2001).

In the case of Nigerian Deposit Money Banks (DMBs) dealing with financial distress, the Trade-Off Theory implies that banks will focus on balancing the need for liquidity with the costs of holding cash and reducing debt levels. During periods of financial distress, these banks may face higher borrowing costs and increased risk of insolvency, making it essential for them to reduce leverage to mitigate risk. However, they must also maintain sufficient liquidity buffers to withstand potential shocks, meet withdrawal demands, and honor financial obligations (Adebayo & Akinyemi, 2021). This balance between liquidity and leverage is critical for Nigerian DMBs, as it ensures they can weather financial turbulence while minimizing the adverse impact of high debt levels on their financial stability (Ogunleye & Olaniyi, 2023).

These three theories collectively offer a comprehensive framework for understanding the liquidity management strategies employed by Nigerian Deposit Money Banks (DMBs) during periods of financial distress, as well as the trade-offs these institutions face in balancing risk and financial stability. The Liquidity Preference Theory elucidates the heightened demand for liquidity that banks exhibit in the face of uncertainty, emphasizing the precautionary measures taken to mitigate risks associated with potential cash flow disruptions. The Pecking Order Theory provides a rationale for the banks' preference for internal financing over external sources, particularly when faced with financial difficulties, as external funding options may be perceived as costly and risky. Finally, the Trade-Off Theory offers valuable insight into how banks strategically manage the balance between maintaining adequate liquidity and minimizing leverage, especially in times of financial instability. Collectively, these theories underscore the strategic importance of liquidity management for Nigerian DMBs, emphasizing the necessity of maintaining sufficient liquidity buffers to mitigate the risks of insolvency and ensure the long-term stability of these institutions.

2.4 Empirical Review

2.4.1 Firm Size and Liquidity Management

Umoren et al. (2024) empirically examined the influence of financial structure on cash holding levels among listed consumer goods companies in Nigeria. Using an ex-post facto design, the study analyzed secondary data from 10 firms listed on the Nigerian Exchange Group over an 11-year period (2012–2022). Results showed that firm size had a positive and significant effect on cash holdings. The study concluded that firm size plays the most substantial role in influencing corporate cash holdings in the sector.

Czerwonka and Jaworski (2024) examined the determinants and speed of adjustment of financial liquidity using data from 13,513 firms across seven Central and Eastern

European countries between 2012 and 2020.The study found that firm size significantly affect liquidity. Industry and country-level factors, particularly access to credit and unemployment, also influence liquidity, with country factors having stronger effects. Firms adjust toward target liquidity with an 88% speed. The authors recommend integrating firm-level and macroeconomic factors in liquidity management.

Akims et al. (2023) empirically investigated the impact of firm characteristics on liquidity transformation among 15 Nigerian commercial banks from 2010 to 2017 using panel regression analysis. Guided by theories of financial intermediation, the study found that bank size had insignificant effects on liquidity transformation. The study recommended enhancing operational efficiency and prudent income management to support effective financial intermediation.

Antony (2023) empirically examined the determinants of liquidity risk in Indian commercial banks from 2013 to 2022 using panel data regression with pooled OLS, fixed effects, and random effects models. The study considered both bank-specific and macroeconomic variables. The results showed that bank size had a positive effect on liquidity risk. The findings offer valuable insights for stakeholders in managing liquidity risk and making informed policy decisions.

Sambo et al. (2023) empirically examined the impact of firm characteristics on working capital management in listed consumer goods companies in Nigeria, focusing on a sample of 16 companies over an 11-year period (2011-2021). The findings revealed a significant positive relationship between these firm size and the cash conversion cycle. The study recommends that companies improve profitability by increasing revenues and controlling expenses, and leverage their size to effectively manage working capital.

2.4.2 Leverage and Liquidity Management

Czerwonka and Jaworski (2024) examined the determinants and speed of adjustment of financial liquidity using data from 13,513 firms across seven Central and Eastern European countries between 2012 and 2020. The study found that leverage significantly affect liquidity. Industry and country-level factors, particularly access to credit and unemployment, also influence liquidity, with country factors having stronger effects. Firms adjust toward target liquidity with an 88% speed. The authors recommend integrating firm-level and macroeconomic factors in liquidity management.

Umoren et al. (2024) empirically examined the influence of financial structure on cash holding levels among listed consumer goods companies in Nigeria. Using an ex-post facto design, the study analyzed secondary data from 10 firms listed on the Nigerian Exchange Group over an 11-year period (2012–2022). Results showed that leverage and debt-equity ratio had no effects on liquidity. The study concluded that firm size plays the most substantial role in influencing corporate cash holdings in the sector.

Lawani et al. (2023) examined financial leverage and cash value added of listed consumer goods firms in Nigeria, used panel data from 2013 to 2022 and analyzed it using fixed-effects regression models. Their findings indicated that the debt-equity and long-term debt ratios negatively affected cash value added, while short-term debt had an insignificant effect. The authors recommended careful monitoring of leverage to avoid negative impacts on firm performance. They concluded that firms should maintain a balanced capital structure to enhance value creation.

Dang (2020) empirically analyzed the determinants of liquidity among Vietnamese listed firms using 6,700 observations from 2008–2019. Using fixed effects regression, the study found that leverage, and economic activity positively influenced liquidity, while. The study recommended maintaining a balanced ratio of current assets to liabilities for effective liquidity management.

Farajimakin et al. (2020) examined the impact of firm characteristics on liquidity management using data from 40 Nigerian listed firms (2009–2018). Employing panel least squares regression, they found that firm characteristics explain 36% of liquidity variation but Leverage had an insignificant effect. They recommended firms prioritize size for effective liquidity management.

Ogilo and Mugenyah (2015) empirically examined the determinants of liquidity risk in 43 Kenyan commercial banks using multiple regression. Leverage significantly influenced liquidity risk. This highlight the need for a comprehensive management approach.

Denčič-Mihajlov and Malenović (2015) examined the internal determinants of corporate liquidity among non-financial firms listed on the BELEX15, CROBEX10, and MONEX20 indices in Serbia, Croatia, and Montenegro. The study employed firm-level data to analyze the impact of performance indicators on liquidity. Findings revealed that leverage significantly influenced liquidity positions, with a strong emphasis on the precautionary motive for holding liquid assets. The study recommended that firms in the region maintain adequate liquidity buffers to mitigate crisis-related uncertainties.

2.4.3 Asset Quality and Liquidity Management

Antony (2023) empirically examined the determinants of liquidity risk in Indian commercial banks from 2013 to 2022 using panel data regression with pooled OLS, fixed effects, and random effects models. The study considered both bank-specific and macroeconomic variables. The results showed that liquid asset-to-total assets ratio and loan-to-deposit ratio, were found to have no significant impact on liquidity risk. The findings offer valuable insights for stakeholders in managing liquidity risk and making informed policy decisions.

Adeoti and Akinroluyo (2022) assessed asset quality and bank liquidity in Nigeria, employed panel data and used correlation and regression techniques to analyze asset quality's effect on liquidity. They found that poor asset quality constrained cash generation and exerted pressure on liquidity. The study recommended maintaining high-quality assets to improve liquidity. It concluded that asset quality is a critical determinant of effective liquidity management.

Naseem (2021) empirically examined the determinants of liquidity risk in commercial banks in Pakistan using panel data regression analysis. The study analyzed data from 20 commercial banks over eight years (2012-2020), with liquidity ratio as the dependent variable. The study found that Non-performing loans had a negative but statistically insignificant relationship with liquidity risk. The study's findings are useful for policymakers and managers in controlling liquidity risk factors.

Elouali and Oubdi (2020) conducted an empirical investigation into the determinants of liquidity risk in Islamic banks across 12 countries from the first quarter of 2014 to the third quarter of 2019. The results revealed that asset quality had significant positive effects on liquidity risk. These findings underscore the importance of internal financial structure in managing liquidity risk within Islamic banks.

2.4.4 Management Quality and Liquidity Management

Akims et al. (2023) empirically investigated the impact of firm characteristics on liquidity transformation among 15 Nigerian commercial banks from 2010 to 2017 using panel regression analysis. Guided by theories of financial intermediation, the study found that management efficiency significantly influenced liquidity transformation. The study recommended enhancing operational efficiency and prudent income management to support effective financial intermediation.

Antony (2023) empirically examined the determinants of liquidity risk in Indian commercial banks from 2013 to 2022 using panel data regression with pooled OLS, fixed effects, and random effects models. The study considered both bank-specific and macroeconomic variables. The results showed that operational efficiency, measured by the liquid asset-to-total assets ratio and loan-to-deposit ratio had no significant impact on liquidity risk. The findings offer valuable insights for stakeholders in managing liquidity risk and making informed policy decisions.

2.4.5 Capital Adequacy Ratio and Liquidity Management

Akims et al. (2023) empirically investigated the impact of firm characteristics on liquidity transformation among 15 Nigerian commercial banks from 2010 to 2017 using panel regression analysis. Guided by theories of financial intermediation, the study found that bank size and capital adequacy had insignificant effects on liquidity transformation.

The study recommended enhancing operational efficiency and prudent income management to support effective financial intermediation.

Olayemi and Olowookere (2022) assessed financial distress and banking sector stability in Nigeria, utilizing descriptive and inferential statistics on secondary data from listed Nigerian banks. The study found that higher capital adequacy ratios contributed to improved liquidity and a reduction in financial distress. They recommended strict adherence to regulatory capital requirements, concluding that capital adequacy is essential for maintaining the stability of the banking sector.

Adeoti and Akinroluyo (2022) also examined capital adequacy and its role in liquidity management within Nigerian banks, applying panel data analysis and regression techniques using data sourced from the Central Bank of Nigeria. The study found a positive association between higher capital adequacy ratios and improved liquidity performance. They recommended that banks maintain robust capital buffers, asserting that capital adequacy is critical for sustaining liquidity, particularly during financial distress.

akers and managers in controlling liquidity risk factors.

Similarly, Toby and Danjuma (2021) evaluated liquidity management, Basel capital adequacy, and financial distress resolution in the Nigerian banking industry using secondary data and applying descriptive statistics and regression analysis. Their findings indicated that larger firms were better positioned to manage liquidity due to their access to more resources, and that higher capital reserves helped firms withstand financial shocks. They recommended that regulatory bodies enforce policies on liquidity buffers and capital reserves, emphasizing the strategic role of firm size and capital adequacy in managing liquidity and financial distress.

2.4.6 Cash flow Volatility and Liquidity Management

Czerwonka and Jaworski (2024) examined the determinants and speed of adjustment of financial liquidity using data from 13,513 firms across seven Central and Eastern European countries between 2012 and 2020. The study found that cash flow significantly affect liquidity. Industry and country-level factors, particularly access to credit and unemployment, also influence liquidity, with country factors having stronger effects. Firms adjust toward target liquidity with an 88% speed. The authors recommend integrating firm-level and macroeconomic factors in liquidity management.

Karwowski et al. (2021) examined the determinants of corporate liquidity in South Africa using a tax dataset covering 2010–2017. Using fixed-effects and system GMM panel regressions, the study found that cash holdings are significantly influenced by industry-level and idiosyncratic uncertainty, while systemic uncertainty, including domestic political and labor market volatility, also affects liquidity. The authors conclude that uncertainty, rather than profit retention, primarily drives corporate liquidity in South Africa.

Onyeka et al. (2020) examined financial determinants of cash holdings in 41 listed Nigerian manufacturing firms (2006–2018) using Prais-Winsten regression. They found that cash flow volatility positively influenced cash holdings. The study recommended effective cash budgeting and a balanced liquidity–profitability strategy.

2.4.7 Investment Opportunity and Liquidity Management

Czerwonka and Jaworski (2024) examined the determinants and speed of adjustment of financial liquidity using data from 13,513 firms across seven Central and Eastern European countries between 2012 and 2020. They found that growth significantly affect liquidity. Industry and country-level factors, particularly access to credit and unemployment, also influence liquidity, with country factors having stronger effects. Firms adjust toward target liquidity with an 88% speed. The authors recommend integrating firm-level and macroeconomic factors in liquidity management.

Khan et al. (2016) examined the factors influencing corporate liquidity among 59 non-financial firms in Pakistan from 2006 to 2013. Using firm-level data, the study revealed that investment significantly affect liquidity levels. The study concluded that internal financial policies and firm characteristics play a critical role in shaping liquidity management decisions.

2.4.8 Financial Distress and Liquidity Management

Bukalska and Maziarczyk (2023) investigated the impact of financial constraints and distress on cash holdings using data from 4,406 firm-year observations on the Warsaw Stock Exchange. The study found that companies held more cash during crises, but those facing financial difficulties had lower cash reserves in both normal and crisis periods. They recommended enhancing liquidity management strategies to better handle economic stress. The study concluded that financial distress and constraints hinder cash accumulation, increasing vulnerability during uncertain times.

Song and Lee (2012) evaluated the impact of financial distress on liquidity management in commercial banks, used fixed-effects regression models on Asian commercial banks' data. Their findings showed that investment opportunities helped enhance liquidity by diversifying income streams and reducing dependence on short-term debt. The study recommended investing in long-term opportunities to improve liquidity. It concluded that investment opportunities are strategic tools for effective liquidity management.

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CHAPTER THREE

METHODOLOGY

3.1 Research Design

The study adopted an ex-post facto research design as it is appropriate for analyzing cause-and-effect relationships using historical data. This approach enables the use of existing financial records to examine the determinants of corporate liquidity without manipulating variables, thereby enhancing the reliability of the findings.

3.2 Population of the Study

The population of this study comprises the 16 deposit money banks (DMBs) listed in Nigeria, as recognized by the Central Bank of Nigeria (CBN). These banks play a central role in the Nigerian financial system by providing essential banking services, including deposits, credit facilities, and investment products. The study covers a eleven-year period from 2013 to 2023, allowing for a comprehensive assessment of liquidity trends across varying economic conditions, including pre- and post-COVID-19 financial dynamics.

3.3 Sampling and Sampling Technique

A sample of 13 banks was purposively selected based on operational stability, regulatory compliance, and adherence to conventional banking practices. Three banks—Jaiz Bank PLC (Islamic banking), Polaris Bank PLC (undergoing restructuring), and Heritage Bank PLC (experiencing financial instability)—were excluded to maintain focus on stable, mainstream institutions. The use of judgmental (purposive) sampling ensures that only banks relevant to the study's objectives are included, thereby enhancing the reliability and validity of findings related to corporate liquidity performance.

3.4 Source of Data

The annual audited financial reports utilized as secondary sources were provided by thirteen (13) listed deposit money banks of the Nigerian Exchange group. Information was gathered from the annual reports of the sampled listed firms' directors' reports, corporate governance reports, statements of financial position and comprehensive income, and notes to financial statements.

3.6 Model Specification

The model specification for this study is supplied in econometric form as follows:

The Antony (2023) model is described below.

$$LTAit = \beta 0 + \beta 1ROAit + \beta 2BGEit + \beta 3BSZEit + \beta 4OEIit + \beta 5CAPit + \beta 6BDFit + \beta 7OWNit + \beta 8MAQit + \beta 9GDPit + \beta 10INFit + \mu it \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots. (1)$$

Where:

LTA = Liquid assets divided by total assets;

ROA = Net Profit / Total Asset;

BGE = Age of the bank;

BSZE = Bank Size measured as Natural logarithm of total assets;

OEI = Operating Efficiency Index measured as Operating expenses/Operating Income;

CAP = Capitalization measured as Equity/Total Assets;

BDF = Bank Diversification measured as Noninterest income/ Total income

OWN = Public /Private Sector Banks;

MAQ= Merger/Acquisition in a given year;

GDP= Annual GDP growth rate;

INF= Annual inflation rate.

The a priori expectation is β1- β10> 0.= coefficient of the predictor

μ= Error term= unexplained variable.t= time

β0= constant term or intercept.

However, in order to increase internal consistency and enable more precise comparisons, the model of Jebran et al. (2019) was modified for this research and adapted as follows:

$$LIQit = \beta 0 + \beta 1FSIZit + \beta 2LEVit + \beta 3AQit + \beta 6MQit + \beta 5CARit + \beta 6CFVit + \beta 7CAPEXit + \beta 8ZSCOREit + \mu it \ldots\ldots\ldots\ldots\ldots\ldots(2)$$

Liquidity (LIQ) which is the dependent variable is measured as Liquid Assets divided by Total Assets where liquid assets comprises of cash, short term investment and other current assets.

The independent variables is defined as follows:

FSIZ= Firm Size measured as log of Total Assets

LEV= Leverage measured as debt capital divided by total assets

AQ= Assets Quality measured as non-performing loans /total loans

MQ= Management Quality measured as returns on assets that is net income/total assets

CAR= Capital Adequacy Ratio measured as Total Equity Capital/Total Asset

CFV=Cash flow volatility measured as standard deviation of the company's Cash Flow from Operating Activities (CFO) per year= $\sigma(CFO)t/TotalAssets$

CAPEX= Investment Opportunity measured as Capital Expenditure/Total Assets

Z.SCORE= Financial Distress measured as Altman Z-Score for:

$Z = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$

Where:

- X_1 =Total Assets/Working Capital
- X_2=Retained Earnings/Total Assets
- X_3=EBIT/Total Assets
- X_4=Book Value of Equity/Total Liabilities

Ut= Error Terms

t= time (2013 -2023)

β0= constant term or intercept. β1- β8= Regressors

3.7 Operationalization of Variables

Table3.3: Variable Measurement and Source

Variables	Definition	Type	Measurement	Apriori	Source
LIQ	Liquidity	Dependent	Liquid Assets divided by Total Assets	+	Ben-Mousa (2015)
FSIZ	Firm Size	Independent	Natural log of total assets	-	Akims et al. (2023)
LEV	Leverage	Independent	Total debt capital divided by Total Assets	-	Hasan and Adegbie (2021)
AQ	Asset Quality	Independent	Non-Performing loans/Total Loans	-	Antony (2023)
MQ	Management Quality	Independent	Net income divided by Total Assets	-	Al-Homaidi et al. (2019)
CAR	Capital Adequacy Ratio	Independent	Total Equity Capital divided by Total Assets	-	Olayemi and Olowookere (2022)
CFV	Cash flow Volatility	Dependent	Standard deviation of cashflow from operations divided by total assets	Dependent	Karwowski et al. (2021)
CAPEX	Investment Opportunity	Independent	Capital Expenditure/Total Assets	+	Khan et al. (2016)
Z-SCORE	Financial Distress	Independent	Altman Z-Score	+	Ji (2017)

Source: Researcher's compilation (2025)

3.8 Method of Data Analysis

Panel regression analysis is used to examine the determinants of corporate liquidity among Nigerian Deposit Money Banks. The panel Generalized Least Squares (GLS) model is employed to account for individual-specific heterogeneity and improve estimation efficiency. Robustness is ensured through the Breusch-Godfrey LM test for serial correlation, VIF for multicollinearity, and the ARCH test for heteroskedasticity. All analyses are conducted using EViews 10.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSES

This chapter presents and analyzes the data on the determinants of corporate liquidity among Nigerian Deposit Money Banks. Descriptive statistics are used to examine the distribution and variability of the variables, followed by panel regression analysis to assess the relationships between firm-specific determinants and corporate liquidity. Diagnostic tests are conducted to ensure the robustness and reliability of the results, which are presented to address the study's objectives.

4.1 Descriptive Statistics

Descriptive statistics are used to summarize and examine the distribution, central tendency, and variability of the variables, providing an overview of the data before conducting further analysis.

Table 4.1: Descriptive Statistics

	LIQ	FSIZE	LEV	AQ	MQ	CAR	CFV	CAPEX	Z_SCORE
Mean	1.486	9.355	0.917	0.080	0.017	0.086	0.008	0.776	7.275
Median	1.455	9.341	0.879	0.080	0.014	0.120	0.000	0.843	7.231
Maximum	3.755	10.431	2.548	0.170	0.056	0.508	3.823	2.168	19.552
Minimum	0.083	8.195	0.447	0.023	-0.091	-1.548	-2.466	0.001	-5.886
Std. Dev.	0.759	0.449	0.229	0.030	0.020	0.231	0.430	0.286	5.148
Skewness	0.436	0.025	4.599	0.456	-2.408	-4.535	3.608	0.372	-0.010
Kurtosis	3.231	2.761	27.231	3.585	15.391	26.759	52.671	10.781	2.627
Jarque-Bera	4.839	0.357	4002.414	7.002	1052.939	3853.500	15010.490	364.085	0.833
Probability	0.089	0.837	0.000	0.030	0.000	0.000	0.000	0.000	0.660
Sum	212.478	1337.755	131.138	11.488	2.453	12.327	1.086	111.005	1040.316
Sum Sq. Dev.	81.900	28.566	7.470	0.127	0.054	7.571	26.203	11.582	3763.378
Observations	143	143	143	143	143	143	143	143	143

Source: Researchers' computation (2025)

Liquidity (LIQ): The dependent variable, liquidity, measured as liquid assets relative to total assets, has a mean of 1.486 and a standard deviation of 0.759, indicating moderate variability across the sampled banks. The distribution exhibits slight positive skewness (0.436) and a kurtosis of 3.231, suggesting an approximately normal distribution. The Jarque-Bera test (4.839; p = 0.089) further confirms normality, supporting the appropriateness of parametric analytical methods for subsequent regression analysis.

Firm Size (FSIZE): Firm size, measured as the natural logarithm of total assets, has a mean value of 9.355 with a standard deviation of 0.449, reflecting moderate variation among the sampled banks. The distribution is approximately symmetric with skewness close to zero (0.025) and kurtosis of 2.761. These indicators demonstrate that the variable approximates a normal distribution, which is suitable for econometric modeling.

Leverage (LEV): Leverage, defined as total debt divided by total assets, exhibits a mean of 0.917 and a standard deviation of 0.229, highlighting differences in banks' reliance on debt financing. The variable is highly positively skewed (4.598) and leptokurtic (27.231), suggesting that a few banks carry disproportionately high debt relative to their peers. This skewness may indicate potential outliers and financial risk concentration.

Asset Quality (AQ): Asset quality, proxied by non-performing loans over total loans, records a mean of 0.080 and a standard deviation of 0.030. The distribution shows slight positive skewness (0.456) and kurtosis of 3.585, reflecting moderate variability in credit risk among the banks. These characteristics suggest that most banks maintain similar levels of asset quality, with a few institutions experiencing higher non-performing loan ratios.

Management Quality (MQ): Management quality, measured as net income divided by total assets, has a mean of 0.017 and a standard deviation of 0.020, indicating variation in operational efficiency across banks. The distribution is negatively skewed (-2.408) with high kurtosis (15.391), implying the presence of some banks with unusually low or negative management efficiency, which may influence liquidity outcomes.

Capital Adequacy Ratio (CAR): The capital adequacy ratio, representing total equity relative to total assets, has a mean of 0.086 and a standard deviation of 0.231, highlighting substantial differences in banks' ability to absorb losses. The distribution is negatively skewed (-4.536) and leptokurtic (26.758), suggesting that a few banks hold disproportionately low capital relative to total assets, which may affect their liquidity management.

Cash Flow Volatility (CFV): Cash flow volatility, captured as the standard deviation of operating cash flows divided by total assets, has a mean of 0.008 and standard deviation of 0.430, indicating significant variation in operational cash flow stability among banks. The variable is positively skewed (3.608) and exhibits extremely high kurtosis (52.671), implying that some banks experience extreme fluctuations in cash flows, which may impact liquidity buffers.

Investment Opportunities (CAPEX): Investment opportunities, measured as capital expenditure over total assets, have a mean of 0.0076 and low variability across banks. The skewness and kurtosis values (notably high) suggest that while most banks maintain modest investment levels, a few pursue substantial capital expansion, potentially influencing liquidity management.

Financial Distress (Z-SCORE): Financial distress, proxied by the Altman Z-Score, records a mean of 7.275 with a standard deviation of 5.148, indicating moderate heterogeneity in solvency levels. The distribution is approximately symmetric (skewness = -0.010) with a kurtosis of 2.627, suggesting that most banks are financially stable, with few institutions at higher risk of distress, which may affect liquidity strategies.

4.2 Correlation Matrix

The correlation matrix presents the degree and direction of linear relationships among the variables included in the study. It provides preliminary insights into the strength of associations between firm-specific determinants and corporate liquidity, and serves as a diagnostic tool to detect potential multicollinearity issues prior to regression analysis.

Table 4.2: Correlation Matrix

	LIQ	FSIZE	LEV	AQ	MQ	CAR	CFV	CAPEX	Z_SCORE
LIQ	1.000								
FSIZE	-0.063	1.000							
LEV	0.166	-0.377	1.000						
AQ	0.209	-0.109	0.261	1.000					
MQ	0.027	0.461	-0.511	-0.258	1.000				
CAR	-0.177	0.368	-0.960	-0.257	0.480	1.000			
CFV	0.055	0.037	-0.042	0.104	0.018	0.043	1.000		
CAPEX	0.181	-0.326	-0.003	0.223	-0.095	0.008	-0.001	1.000	
Z_SCORE	0.566	0.148	-0.189	0.186	0.291	0.164	0.020	0.262	1.000

Source: Researchers' computation (2025)

The correlation matrix provides a comprehensive overview of the linear relationships between corporate liquidity (LIQ) and its potential determinants, as well as the associations among the independent variables themselves. By definition, each variable has a perfect correlation of 1 with itself, indicating complete association. Examining LIQ, the matrix reveals a weak negative correlation with firm size (FSIZE, r = -0.063) and capital adequacy ratio (CAR, r = -0.177), suggesting that larger banks and those with higher capital buffers may tend to maintain slightly lower proportions of liquid assets relative to total assets. Conversely, liquidity is positively correlated with leverage (LEV, r = 0.166), asset quality (AQ, r = 0.209), cash flow volatility (CFV, r = 0.055), tangible assets (TANG, r = 0.181), and financial distress (Z_SCORE, r = 0.566). Notably, the strongest positive relationship exists between liquidity and financial stability, as proxied by Z-Score, implying that banks with stronger solvency positions tend to hold higher liquidity levels.

The matrix also provides insights into the interrelationships among the independent variables. The generally low to moderate correlation coefficients indicate that the independent variables are largely distinct from one another, thereby minimizing the risk of multicollinearity. This absence of multicollinearity is crucial as it ensures that each variable's effect on liquidity can be independently assessed in the regression model without distortion or inflated standard errors.

4.2.1 Multicollinearity Test

The Variance Inflation Factor (VIF) is employed to assess multicollinearity among the independent variables. VIF values indicate the extent to which the variance of a regression coefficient is inflated due to correlation with other predictors. Low VIF values suggest minimal multicollinearity, ensuring the reliability and stability of the estimated regression coefficients. Table 4.3 presents the VIF estimates.

Table 4.3: Variance Inflator Factor estimates

Variance Inflation Factors	
Variable	Centered VIF
C	NA
FSIZE	1.5266
LEV	3.4323
AQ	1.2580
MQ	1.6875
CAR	12.9149
CFV	1.0178
CAPEX	1.3183
Z_SCORE	1.2986

Source: Researcher's Computation (2025)

The Variance Inflation Factor (VIF) estimates provide insights into the degree of multicollinearity among the independent variables included in the regression model. As expected, the constant term (C) is not applicable for VIF analysis. Most variables exhibit low to moderate VIF values, with firm size (FSIZE, VIF = 1.527), asset quality (AQ, VIF = 1.258), management quality (MQ, VIF = 1.688), cash flow volatility (CFV, VIF =

1.018), investment opportunities (CAPEX, VIF = 1.318), and financial distress (Z_SCORE, VIF = 1.299) all falling well below the commonly accepted threshold of 10. This indicates minimal multicollinearity among these predictors, suggesting that their estimated effects on corporate liquidity can be reliably interpreted.

Leverage (LEV) shows a moderate VIF of 3.432, which is still within acceptable limits, implying that while some correlation with other independent variables exists, it is unlikely to significantly distort the regression estimates. However, capital adequacy ratio (CAR) exhibits a relatively high VIF of 12.915, exceeding the typical threshold of 10, suggesting potential multicollinearity concerns. This may indicate that CAR is highly correlated with one or more other predictors, potentially inflating its standard error and affecting the precision of its coefficient estimate.

Overall, the VIF results suggest that multicollinearity is generally not a serious concern for most independent variables in the model, supporting the robustness and reliability of the panel regression analysis. Nevertheless, the high VIF for CAR warrants cautious interpretation of its effect on corporate liquidity, and supplementary diagnostic checks or model adjustments may be considered to mitigate any multicollinearity impact.

4.2.2 Diagnostic Test

Table 4.4: Diagnostic Test Estimates

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	145.9832	Prob. F(2,132)	0.0000
Obs*R-squared	98.4776	Prob. Chi-Square(2)	0.0000
Heteroskedasticity Test: ARCH			
F-statistic	1016.9890	Prob. F(1,140)	0.0000
Obs*R-squared	124.8175	Prob. Chi-Square(1)	0.0000
Ramsey RESET Test			
Omitted Variables: Squares of fitted values			
	Value	df	Probability
t-statistic	1.1324	133.0000	0.2595
F-statistic	1.2824	(1, 133)	0.2595
Likelihood ratio	1.3722	1.0000	0.2414

Source: Researcher's Computation (2025)

Diagnostic tests are essential in panel data analysis to ensure the validity and reliability of regression results. In this study, the Breusch-Godfrey LM test, ARCH test, and Ramsey RESET test were conducted to assess the presence of serial correlation, heteroskedasticity, and model specification errors, respectively. These tests help validate the assumptions underlying the panel Generalized Least Squares (GLS) regression model and confirm the robustness of the estimated coefficients.

The Breusch-Godfrey Lagrange Multiplier (LM) test was used to detect serial correlation in the residuals. The F-statistic of 145.9832 and Obs*R-squared of 98.4776 both have p-values of 0.0000, indicating the presence of significant serial correlation in the initial model residuals. This suggests that past errors may influence current values of the dependent variable, necessitating corrective measures in the regression estimation.

The Heteroskedasticity test using the Autoregressive Conditional Heteroskedasticity (ARCH) approach produced an F-statistic of 1016.9890 and Obs*R-squared of 124.8175, both significant at p = 0.0000. This confirms the presence of heteroskedasticity, implying that the variance of residuals is not constant across observations. Consequently, robust estimation techniques are warranted to obtain efficient and unbiased coefficient estimates.

The Ramsey RESET test was conducted to assess potential model misspecification. The t-statistic (1.1324; p = 0.2595), F-statistic (1.2824; p = 0.2595), and likelihood ratio (1.3722; p = 0.2414) are all statistically insignificant, suggesting that the model is correctly specified and that no omitted variables bias is detected. This finding confirms that the selected independent variables adequately capture the determinants of corporate liquidity in the model.

Overall, the diagnostic tests indicate that while the model is correctly specified according to the Ramsey RESET test, serial correlation and heteroskedasticity are present. These issues justify the use of the panel GLS regression model, which accounts for individual-specific heterogeneity and corrects for inefficiencies in the estimates, ensuring robust and reliable inference.

4.2.3 Panel Generalized Least Square Regression Result

This estimates is represented in Table 4.5.

Table 4.5: Panel Generalized Least Squares Regression Estimates

Dependent Variable: LIQ				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-1.5485	0.6020	-2.5720	0.0113
FSIZE	0.1859	0.0605	3.0736	0.0026
LEV	0.5527	0.1680	3.2889	0.0013
AQ	0.2104	0.5284	0.3982	0.6912
MQ	-2.9206	1.2015	-2.4307	0.0165
CAR	-0.6336	0.2131	-2.9729	0.0036
CFV	0.0499	0.0336	1.4868	0.1397
CAPEX	-0.1356	0.0674	-2.0108	0.0465
Z_SCORE	0.1349	0.0034	39.2857	0.0000
R-squared	0.9636	**Mean dependent var**	2.8606	
Adjusted R-squared	0.9576	**S.D. dependent var**	1.8514	
S.E. of regression	0.2494	**Sum squared resid**	7.5909	
F-statistic	161.3572	**Durbin-Watson stat**	1.5199	
Prob(F-statistic)	0.0000			

Source: **Researcher's computation (2025)**

4.2.5 Discussion of Result

The regression model's explanatory power was assessed using R-squared, Adjusted R-squared, F-statistic, standard error of regression, and the Durbin-Watson statistic. The **R-squared value of 0.9636** indicates that approximately **96.36% of the variation** in corporate liquidity management of listed Nigerian Deposit Money Banks is explained by the independent variables. This high value suggests that the selected predictors—firm size, leverage, asset quality, management quality, capital adequacy, cash flow volatility, investment opportunities, and financial distress—are highly relevant in explaining variations in liquidity management.

The **Adjusted R-squared of 0.9576** accounts for the number of predictors, confirming that the model remains robust and that overfitting is minimal. This indicates that the independent variables collectively have a substantial explanatory power even after adjusting for model complexity. The **F-statistic of 161.3572** with a **p-value of 0.0000** shows that the overall regression model is statistically significant at the 1% level, implying that the likelihood of the observed relationships occurring by chance is extremely low. The **standard error of the regression (0.2494)** reflects relatively small residuals, indicating precise estimates of liquidity management. The **Durbin-Watson statistic of 1.5199** suggests mild positive autocorrelation in the residuals, which should be considered when interpreting the results. The study further tested the individual effects of the independent variables on corporate liquidity management using the t-statistics and associated p-values. Hypotheses were evaluated at the 5% significance level.

4.3 Test of Hypothesis

H_{01}: Firm size has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for firm size is 0.1859, with a t-statistic of 3.0736 and a p-value of 0.0026. Since the p-value is less than 0.05, H_{01} is rejected. This indicates that firm size has a positive and statistically significant effect on liquidity management, suggesting that larger banks are better positioned to manage liquidity due to greater resources, diversified operations, and more robust financial structures.

H_{02}: Leverage has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for leverage (LEV) is 0.5527, with a t-statistic of 3.2889 and a p-value of 0.0013. Since the p-value is less than 0.05, H_{02} is rejected. This shows that leverage has a positive and statistically significant effect on corporate liquidity management, indicating that banks with higher debt levels maintain higher liquidity to meet financial obligations and ensure operational stability.

H_{03}: Asset quality has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for asset quality (AQ) is 0.2104, with a t-statistic of 0.3982 and a p-value of 0.6912. Since the p-value is greater than 0.05, H_{03} is not rejected. This indicates that asset quality does not have a statistically significant effect on corporate liquidity management, suggesting that variations in non-performing loans or other measures of asset quality do not meaningfully influence liquidity practices among the sampled banks.

H_{04}: Management quality has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for management quality (MQ) is -2.9206, with a t-statistic of -2.4307 and a p-value of 0.0165. Since the p-value is less than 0.05, Ho is rejected. This indicates that management quality has a significant negative effect on corporate liquidity management, suggesting that certain managerial practices, such as aggressive investment or lending strategies, may constrain available liquidity.

H_{05}: Capital adequacy has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for capital adequacy (CAR) is -0.6336, with a t-statistic of -2.9729 and a p-value of 0.0036. Since the p-value is less than 0.05, Ho is rejected. This indicates that capital adequacy negatively and significantly affects corporate liquidity management, implying that banks with higher capital buffers may allocate more funds to regulatory requirements, thereby reducing operational liquidity.

H_{06}: Cash flow volatility has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for cash flow volatility (CFV) is 0.0499, with a t-statistic of 1.4868 and a p-value of 0.1397. Since the p-value is greater than 0.05, Ho is not rejected. This suggests that cash flow volatility does not significantly affect corporate liquidity management, indicating that fluctuations in cash inflows and outflows do not meaningfully constrain liquidity practices.

H_{07}: Investment opportunities have no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for investment opportunities (CAPEX) is -0.1356, with a t-statistic of -2.0108 and a p-value of 0.0465. Since the p-value is less than 0.05, Ho is rejected. This indicates that investment opportunities negatively and significantly affect corporate liquidity management, suggesting that funds allocated to capital expenditure reduce the liquidity available for operational needs.

H_{08}: Financial distress has no significant effect on corporate liquidity management of listed Nigerian Deposit Money Banks

The regression coefficient for financial distress (Z_SCORE) is 0.1349, with a t-statistic of 39.2857 and a p-value of 0.0000. Since the p-value is less than 0.05, Ho is rejected. This shows that financial distress significantly affects corporate liquidity management, with higher Z-scores (lower distress) associated with better liquidity management practices among banks.

4.4 Discussion of Findings

The study investigated the effect of firm characteristics, financial indicators, and managerial practices on corporate liquidity management among listed Nigerian Deposit

Money Banks. The findings are discussed in light of **Liquidity Preference Theory**, **Pecking Order Theory**, and **Trade-off Theory**, and aligned with relevant empirical studies to provide a robust interpretation of the results.

The study found that firm size has a positive and statistically significant effect on corporate liquidity management, leading to the rejection of Ho. This indicates that larger banks possess superior capabilities to manage liquidity effectively, likely due to access to diversified funding sources, economies of scale, and more sophisticated financial management systems. From a theoretical perspective, this finding supports **Liquidity Preference Theory**, which posits that firms maintain liquidity to meet both transactional and precautionary needs, with larger organizations better positioned to do so. Empirically, this result is consistent with **Umoren et al. (2024)**, who reported that firm size positively affects cash holdings in Nigerian consumer goods firms, and **Czerwonka and Jaworski (2024)**, who demonstrated that firm size significantly influences liquidity adjustment in Central and Eastern European firms. However, it contrasts with **Akims et al. (2023)**, who found bank size to be insignificant in liquidity transformation, suggesting sectoral and contextual factors may mediate this relationship.

Leverage was found to have a positive and significant effect on liquidity, leading to the rejection of Ho. This result indicates that banks with higher debt levels maintain higher liquidity, possibly as a buffer to meet debt obligations and mitigate financial risks. The finding is aligned with **Trade-off Theory**, which emphasizes the need for firms to balance the benefits of debt financing against liquidity requirements to minimize bankruptcy risk. Supporting evidence is found in **Czerwonka and Jaworski (2024)**, who reported that leverage significantly affects liquidity, and **Lawani et al. (2023)**, who highlighted the negative impact of high debt ratios on cash value-added. Conversely, **Umoren et al. (2024)** found no effect of leverage on cash holdings among Nigerian non-financial firms, suggesting that the impact of leverage may differ between the banking and non-financial sectors.

The effect of asset quality on liquidity was positive but statistically insignificant, and H_{o3} was not rejected. This indicates that variations in asset quality, such as non-performing loans or credit risk exposures, do not exert a meaningful influence on liquidity management in the sampled banks. While this finding diverges from **Adeoti and Akinroluyo (2022)**, who reported that poor asset quality constrains cash generation and pressures liquidity, the discrepancy may reflect differences in measurement approaches, the regulatory environment, or sector-specific characteristics within Nigerian banks.

Management quality was found to have a significant negative effect on liquidity, leading to the rejection of Ho. This result suggests that managerial decisions, particularly those involving aggressive lending, investment, or operational strategies, may constrain liquidity levels. Theoretically, this aligns with **Pecking Order Theory**, which posits that management's financing preferences and internal resource allocation decisions directly affect liquidity availability. Empirically, **Akims et al. (2023)** similarly found that management efficiency significantly influences liquidity transformation in Nigerian banks, emphasizing the critical role of prudent managerial practices in sustaining adequate liquidity.

Capital adequacy exhibited a negative and significant relationship with liquidity management, resulting in the rejection of Ho. This finding indicates that banks with higher regulatory capital allocations may reduce operational liquidity, consistent with **Trade-off Theory**, which emphasizes the balancing of capital buffers with the availability of liquid resources to support daily operations. The result supports **Olayemi and Olowookere (2022)**, who observed that strict adherence to capital adequacy requirements enhances stability but may limit immediate liquidity, highlighting the trade-off between regulatory compliance and operational flexibility.

Cash flow volatility was positive but statistically insignificant and Ho was not rejected. This suggests that variations in cash inflows and outflows do not meaningfully constrain liquidity management among Nigerian banks. Although **Czerwonka and Jaworski (2024)** and **Karwowski et al. (2021)** found that cash flow volatility affects liquidity adjustment, the insignificant effect in this study may indicate that Nigerian banks have developed mechanisms to buffer liquidity against short-term operational fluctuations.

Investment opportunities, proxied by capital expenditure, negatively and significantly affected liquidity, leading to the rejection of Ho. This finding indicates that funds directed toward long-term investments reduce the liquidity available for operational purposes. The result is supported by **Pecking Order Theory**, which prioritizes internal liquidity for financing investments before seeking external funds. Empirical support is found in **Wijaya (2021)**, who reported that firm growth can constrain cash holdings, highlighting the need for careful planning to balance investment commitments with liquidity requirements.

Financial distress was found to have a positive and highly significant effect on liquidity leading to the rejection of Ho. This result indicates that banks with higher Z-scores, reflecting lower financial distress, maintain better liquidity management practices. Theoretically, this aligns with **Liquidity Preference Theory**, as financially stable banks can maintain sufficient cash to meet precautionary and operational demands. Empirical studies, including **Bukalska and Maziarczyk (2023)** and **Bureau et al. (2023)**, support the finding that financial constraints or distress limit cash accumulation, thereby increasing vulnerability during periods of uncertainty.

Overall, the study demonstrates that firm size, leverage, management quality, capital adequacy, investment opportunities, and financial distress are significant determinants of liquidity management in Nigerian Deposit Money Banks. Asset quality and cash flow volatility were found to be insignificant, suggesting that liquidity management in the banking sector is more responsive to strategic decisions, structural characteristics, and financial stability than to operational fluctuations or asset performance alone. These results are consistent with the theoretical frameworks of **Liquidity Preference, Pecking**

Order, and Trade-off Theories, and largely corroborate prior empirical studies in both Nigerian and international contexts. The findings underscore the need for banks to balance growth, leverage, regulatory compliance, and managerial efficiency to optimize liquidity and sustain financial stability.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Findings

i. Firm size has a positive and statistically significant effect on corporate liquidity management, indicating that larger banks manage liquidity more effectively due to greater resources and diversified operations.

ii. Leverage positively and significantly influences liquidity management, suggesting that banks with higher debt levels maintain higher liquidity to meet financial obligations.

iii. Asset quality has an insignificant effect on liquidity management, indicating that variations in non-performing loans or other asset metrics do not meaningfully influence liquidity practices.

iv. Management quality negatively and significantly affects liquidity, implying that aggressive managerial strategies may reduce available liquidity.

v. Capital adequacy has a negative and significant effect on liquidity management, indicating that higher regulatory capital buffers reduce funds available for operational liquidity.

vi. Cash flow volatility has an insignificant effect on liquidity management, suggesting that fluctuations in cash inflows and outflows do not meaningfully constrain liquidity.

vii. Investment opportunities negatively and significantly influence liquidity, indicating that funds allocated to capital expenditures reduce available operational liquidity.

viii. Financial distress positively and significantly affects liquidity management, showing that banks with lower distress (higher Z-scores) maintain better liquidity practices.

5.2 Conclusion

This study critically examined the determinants of corporate liquidity management among listed Nigerian Deposit Money Banks over the period 2013 to 2023. The research adopted an **ex-post facto design**, which is particularly suitable for analyzing cause-and-effect relationships using historical financial data without manipulating variables. This approach enabled the use of audited financial statements, directors' reports, and corporate governance disclosures to explore how firm characteristics, financial structure, and managerial practices influence liquidity management. A purposive sampling technique was employed to select thirteen stable and conventional banks, excluding institutions with operational instability, restructuring, or Islamic banking models to ensure the reliability and relevance of the findings. Panel regression analysis using the **Generalized**

Least Squares (GLS) model was applied to account for individual-specific heterogeneity, while robustness tests—including the Breusch-Godfrey LM test, variance inflation factor (VIF), and ARCH test—ensured that issues of serial correlation, multicollinearity, and heteroskedasticity were properly addressed.

The empirical findings provide several key insights. **Firm size** was found to have a positive and statistically significant effect on corporate liquidity management, indicating that larger banks are better positioned to manage liquidity efficiently due to greater resources, diversified operations, and advanced financial management systems. This supports the **Liquidity Preference Theory**, which emphasizes that firms maintain adequate liquidity for both transactional and precautionary purposes, with larger organizations being more capable of sustaining these reserves.

Leverage was also positively and significantly associated with liquidity, suggesting that banks with higher debt levels maintain greater liquidity to meet financial obligations and ensure operational stability. This is consistent with the **Trade-off Theory**, which posits that firms balance the benefits of debt financing against the need for sufficient liquidity to mitigate default risk. Conversely, **asset quality** and **cash flow volatility** were found to have insignificant effects on liquidity management, implying that variations in non-performing loans and short-term cash fluctuations do not substantially influence the liquidity practices of Nigerian banks. This finding suggests that liquidity management in the banking sector is more responsive to strategic, structural, and managerial factors than to operational volatility or asset performance alone.

The study further revealed that **management quality** and **capital adequacy** negatively and significantly affect liquidity management. Aggressive managerial practices, such as ambitious lending or investment strategies, may constrain the availability of liquid assets, while higher capital buffers required for regulatory compliance can limit funds available for daily operations. These findings align with the **Pecking Order Theory**, which emphasizes the prioritization of internal financing decisions and strategic allocation of resources, and the **Trade-off Theory**, highlighting the balancing act between regulatory capital and operational liquidity.

Investment opportunities, proxied by capital expenditures, were found to negatively and significantly influence liquidity, indicating that banks allocating funds toward long-term growth initiatives reduce resources available for operational liquidity. This underscores the importance of carefully balancing investment planning with immediate liquidity needs to sustain operational efficiency. Finally, **financial distress**, as measured by Z-scores, positively and significantly affects liquidity, demonstrating that banks with lower levels of distress maintain higher liquidity reserves. This finding is consistent with the **Liquidity Preference Theory**, as financially stable banks are able to maintain precautionary cash holdings, reducing vulnerability during economic shocks.

In summary, the study concludes that liquidity management in Nigerian Deposit Money Banks is significantly influenced by both structural characteristics—such as firm size and leverage—and financial factors, including management practices, capital adequacy, investment decisions, and financial stability. Asset quality and cash flow volatility were not significant determinants, highlighting that liquidity in banks is more strategically managed than operationally constrained. The findings provide strong empirical support for the theoretical frameworks of **Liquidity Preference, Pecking Order, and Trade-off Theories**, and align with prior empirical studies from both Nigerian and international contexts.

5.3 Recommendations

Overall, effective corporate liquidity management requires a careful integration of strategic, operational, and regulatory considerations. Banks should leverage their size and financial structure, optimize managerial and investment decisions, maintain sufficient capital buffers, and monitor financial stability to ensure sustainable liquidity practices. These insights are crucial for bank managers, regulators, and policymakers aiming to strengthen financial resilience and promote stability within the Nigerian banking sector.

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