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Impact of Liquidity Management on the Performance of Selected Deposit Money Banks in Nigeria (2015 – 2022)

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Abstract: *This work investigated the impact of liquidity management on the performance of banks in Nigeria. The undertaking is prompted by the necessity to address the liquidity management challenge within the Nigerian banking sector. Three banks were randomly selected to represent the entire banking industry in Nigeria. The proxies for liquidity management include loans and advances, bank balances held with the CBN, and treasury bills and certificates, while profit after tax was the proxy for performance. The Statistical Package for Social Science (SPSS) was the software used to test the association of the variables under study, while regression analysis was used to test the hypothesis. The result of this study has shown that liquidity management is indeed a critical problem in the Nigerian banking industry. The researchers, therefore, recommends that banks should engage competent and qualified personnel to ensure that the right decisions are adopted, especially with the optimal level of liquidity, while still maximizing profit. There is no firm that does not require a certain amount of liquidity, depending on the nature and extent of its business. Liquidity in the financial system sustains the life of an economy. This underscores the need for effective liquidity management to ensure the achievement of optimum economic and business objectives. The more effectively and efficiently a bank manages its liquidity level, the more the bank stays in business, and the more investors invest in its shares. Liquidity can be likened to the blood that circulates in the body of animals. Efficient blood flow keeps the animal alive, and vice versa. In a similar manner, efficient liquidity flow, keeps the bank surviving.*

Keywords: *liquidity, Cash flows, profitability, bank performance, cash ratio*

1.1 INTRODUCTION

In any given moment, a business firm can be seen as a collection of funds. These funds originate from different sources, such as investors who hold the firm's stock, creditors who lend it money, and past earnings that are retained within the business. These funds serve various purposes, including transactions and ensuring liquidity, as noted by Van Home (1977:33).

A company's liquidity is a crucial factor for its survival. The more cash and overall liquidity a company possesses, the better its ability to fulfill its short-term debts and pay dividends. Naturally, a firm's liquidity is influenced by its investment and financing decisions. The investment decision determines how the company expands its assets and utilizes its funds, while the financing decision determines the means through which this expansion is financed.

Liquidity can be defined as a company's capability to meet its obligations promptly. In the banking industry, liquidity refers to a bank's ability to fulfill withdrawals from demand, savings, and time deposits when these withdrawals are requested or become due.

As stated by Ebhodaghe (1997:128), for an individual bank, liquidity encompasses its ability to meet loan requests that are deemed profitable and safe. Furthermore, in the context of the banking system, liquidity includes the situation defined for individual banks, along with availability of facilities for discounting of financial claims to enhance liquidity plus avenues for raising additional funds.

Liquidity management pertains to the programs or strategies implemented by banks to meet deposit and loan demands. These strategies may include holding highly marketable short-term financial assets, maintaining avenues for short-term accommodation from the central bank or other banks, and actively seeking a larger volume of deposits. The liquidity requirements of the banking system are typically determined by the cumulative reserve requirements set by a monetary authority (CBN 2012).

1.2 STATEMENT OF THE PROBLEM

The liquidity of an economy can be likened to the blood flowing through the veins of an animal. The financial system's liquidity sustains the life of the economy, and it should be maintained at a level that facilitates the desired level of growth.

When liquidity exceeds the optimal level, it is bound to cause distortions that could compromise the objective of macroeconomic stability and hinder growth. This emphasizes the crucial need for effective liquidity management, especially by one of the key players in the financial system, namely the banking industry.

Successful liquidity management requires adequate planning, which, unfortunately, is lacking in many Nigerian banks. Only a few deposit money banks can effectively plan for their short-term, medium-term, and long-term liquidity needs. The liquidity requirements of a firm are primarily influenced by the nature of its business. In recent years, the management of liquidity levels in firms, particularly banking institutions, has encountered numerous challenges, leading to significant difficulties in the economy.

Against this backdrop, the present study aims to empirically investigate the instrumental role of liquidity management in the growth and sustainability of the banking industry, with specific reference to selected banks. Consequently, this research work will endeavor to explore the approach adopted by the banking sector in managing liquidity.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study is to investigate the impact of liquidity management on the performance of deposit money banks, particularly in relation to the simultaneous achievement of maintaining a high level of liquidity and profitability as corporate objectives. Additionally, the study aims to examine the influence of treasury bills and certificates of deposit on bank performance, and to determine whether there is a correlation between bank profitability and

liquidity management. Furthermore, the study will assess the influence of cash balances on bank performance. Lastly, based on the findings, the study will provide policy recommendations to address the profitability challenges faced by banks.

1.4 RESEARCH QUESTIONS

The basic questions this research attempt to answer includes:

(a). What is the impact of liquidity and profitability positions on bank performance?

(b). What is the impact of loans and advances on bank performance?

(c). Does cash and balances held with CBN exert any reasonable pressure on bank performance?

(d). Does Treasury bill and certificate have any influence on its performance?

1.5 RESEARCH HYPOTHESES

The following hypotheses are considered relevant for the study.

$H0_1$: There is no significant relationship between the bank liquidity and performance.

$H0_2$: Bank loans and advances has no influence on its performance.

$H0_3$: Bank Cash balance held with CBN exert no reasonable pressure on performance.

$H0_4$: Bank treasury bills and certificates do not have any significant impact on bank performance.

1.6 SIGNIFICANCE OF THE STUDY

The importance of liquidity management cannot be overstated when it comes to ensuring effective financial control within organizations. It serves as a crucial foundation for the success or failure of any organization. Liquidity management is instrumental in enabling an organization to fully utilize its resources to achieve its mission and objectives.

The primary significance of this study lies in emphasizing to bank managers and managers of similar organizations that regardless of the financial strength of an organization, it cannot fulfill its mission and objectives without proper liquidity management. Moreover, this research work is expected to have the following specific significances:

i. Assisting managers of financial institutions in recognizing the importance of formulating efficient policies to enhance liquidity and profitability.

ii. Providing valuable insights to the government and its financial regulatory agencies in evaluating the performance of banks and other financial institutions in liquidity management, thereby contributing to the revitalization, and strengthening of the economy.

iii. Serving as a valuable addition to the existing body of knowledge in this field and serving as a reference for future research endeavors.

1.7 SCOPE AND LIMITATIONS OF THE STUDY

The scope of this study is focused on liquidity and working capital management within the banking industry, specifically within selected banks. However, several limitations have affected this study. Time constraints restricted the depth and breadth of the research, while financial limitations hindered the researcher's ability to gather primary data from the corporate headquarters of the banks. Additionally, the scarcity of current and relevant literature on the topic limited the availability of comprehensive information. The operations of banks, governed by regulations and secrecy, may have resulted in a lack of cooperation and limited disclosure of information from respondents. These limitations should be considered when interpreting the findings of the study.

1.8 ORGANIZATION OF THE WORK

This study focuses on "liquidity management in the banking industry," with a specific reference to Access Bank of Nigeria Plc, First Bank Plc, and United Bank for Africa Plc. The study is structured into five chapters as follows:

Chapter One: General Introduction

This chapter introduces the concept of the case study. It includes the statement of the problem, objectives of the study, scope, limitations, and significance of the research.

Chapter Two: Literature Review

This chapter presents a comprehensive discussion of related literature on the topic. It explores the historical development of banking in Nigeria and provides an overview of working capital management and liquidity management.

Chapter Three: Methodology

In this chapter, the research design, sampling technique, and methods of data collection and analysis are described.

Chapter Four: Data Presentation and Analysis

This chapter focuses on the presentation and analysis of the collected data. It discusses the nature of financial ratio analysis and its limitations. Furthermore, it delves into the management of current assets and current liabilities components in the selected banks, providing a detailed analysis of the obtained data.

Chapter Five: Summary, Conclusion, and Recommendations

The final chapter provides a summary of the entire study, along with the conclusions drawn from the research findings. It also offers recommendations for further research in the field.

LITERATURE REVIEW

2.1 CONCEPTUAL FRAMEWORK

The literature review chapter of this research is crucial for providing a clear perception of how the topic under consideration has been treated in the past. It establishes a link between previous studies and the current research objectives.

In this chapter, the focus will be on reviewing existing literature related to the study. The review will cover the definition and historical development of banking in Nigeria, including the operations and functions of commercial banks. Additionally, the chapter will discuss the concept and nature of liquidity management, as well as liquidity preference and the measurement of liquidity.

By examining these aspects in the literature, the researcher will gain valuable insights into the topic, its historical context, and the theoretical foundations of liquidity management in the banking industry. This review will contribute to the overall understanding and significance of the research, forming a basis for the subsequent chapters and providing a comprehensive framework for the study.

2.1.1 Concept of Liquidity Management

In the management of liquidity two characteristics of current assets must be borne in mind: -

1. Short life span and,

2. Swift transformation into other assets forms.

1. Short life Span

Current assets, such as cash, accounts receivable, and inventories, have a relatively short life span. Cash balances can remain idle for a short period, typically not exceeding a week. Accounts receivable, representing amounts owed by customers, typically have a life span of 30 to 60 days, reflecting the average time it takes for customers to make payments. Inventories, comprising goods held for sale, are generally held for a duration of 30 to 100 days.

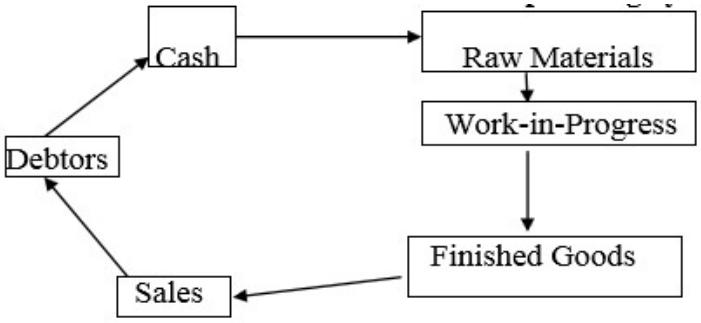
The specific life span of current assets is dependent on the needs and activities of the firm, including procurement, production, sales, and collection processes. The duration of these assets is influenced by the synchronization between these activities and the overall operational requirements of the organization.

1. Swift transformation into Other Assets Forms

Each current asset undergoes a series of transformations within the asset cycle. Cash, as a current asset, is utilized to acquire raw materials (R.M). These raw materials are then transformed through various stages of work in progress into finished goods. The finished goods, often sold on credit, result in the creation of accounts receivable (book debts). Finally, when these accounts receivable are realized, they generate cash.

This cyclical transformation of current assets reflects the flow of resources within the business operations. Cash is converted into raw materials, which are processed into finished goods. These finished goods are then sold, leading to the creation of accounts receivable. Ultimately, when these receivables are collected, they are transformed back into cash, completing the cycle.

Figure 2.1 Conversion of Operating Cycle



(Source: Adapted from Arnolds, 2008:510)

2.1.2 Meaning of Liquidity Management

Finance in a banking system is liken to the blood in the human system, adequate circulation of this blood in the body means the human system will function well resulting into good health. And the inadequacy will also mean that human system will be weak. Similarly, business can only operate under the state of adequate liquidity. A company is said to be liquid if it can convert its asset to cash with minimum amount of delay and inconvenience. The optimum capital structure is determined by keeping in mind the long-term and short-term requirements of finance. This is

in line with (Biety, 1998), who define liquidity as "the speed and ease with which an asset is sold and still realizes fair price". Therefore, liquidity is seen as the inflows and outflows of cash through the firm as product acquisition, sales payment and collection processes taking place over time, with which asset can be converted into cash without a significant loss of principal liquid asset. It is a relationship between the fine dimension (how long it will take to sell) and the price dimension (The discount from fair market price) of an investment asset. Hence, a firm should ensure it does not suffer from lack of liquidity and does not also have excess liquidity. Failure to meet obligation due to lack of sufficient liquidity results in poor credit worthiness and loss of creditors' confidence. However, a high degree of liquidity results in idle cash.

Liquidity management according to Ebhodaghe (1997:128) refers to a bank's programmes and strategies to be able to meet deposit and loan demands. Examples of such strategies include holding of short-term financial assets like treasury bills and certificates which are highly marketable, maintaining avenues for short term accommodation from the Central Bank or other banks and by bidding for a greater volume of deposits.
Liquidity management involves liquidity planning. To plan well, the bank must be able to forecast future fund's demand and deposit supplies. A portfolio of short-term financial securities held by a bank can be easily sold or rediscounted for cash.
Bank liquidity for Nigerian banks primarily relies on two major sources: the approach of rediscounting assets for cash and interbank borrowings. Rediscounting assets involves selling existing assets, such as government securities or loans, to the Central Bank of Nigeria at a discounted rate in exchange for immediate cash. Interbank borrowings involve banks borrowing funds from other banks.

However, interbank funds have been scarce and expensive in recent months, making it challenging for banks to rely heavily on this source of liquidity. To address liquidity crises, short-term accommodation provided by the Central Bank of Nigeria has played a crucial role, serving as an important liquidity source for banks during times of financial stress.

To overcome liquidity challenges, Nigerian banks have focused on improved liquidity planning, intensifying efforts to attract deposits, and injecting fresh capital. These avenues enable banks to enhance their liquidity position and better manage liquidity crises.

It is important to note that bank liquidity refers to the bank's ability to possess sufficient liquid assets and access additional liquidity from the market promptly when needed. This ensures that banks can meet their short-term obligations and effectively manage liquidity risks.
Note: Bank liquidity refers to the ability of the bank to possess sufficient liquid assets plus getting liquidity from the market at short notice.
Mathematically,

Bank Liquidity = Stored Liquidity + Purchase Liquidity

2.1.3 Banks Liquidity: Sources and Management

Banks derive their liquidity from the following sources:

- Vault cash,
- Balances held with CBN,

- Balances held with offices & branches outside Nigeria,
- Money at call in Nigeria,
- Inter-bank placement,
- Placement with discount houses,
- Treasuring bills,
- Treasuring certificates,
- Investment in stabilizations securities,
- Bills discounted payable in Nigeria,
- Negotiable certificates of deposits,
- Bankers' acceptances and commercial papers.

The viability of banks is closely tied to their effective liquidity management, ensuring the availability of funds to meet financial commitments and maturing obligations at a reasonable cost. Deposit mobilization is recognized as one of the most crucial functions of banks, as it allows for the utilization of idle funds that would otherwise remain unproductive. Additionally, generating adequate income through interest on loans is essential for banks to continue providing productive resources.

Having excess idle cash or liquidity in the vault is economically and financially unreasonable for banks. Instead, banks should manage their liquidity to maximize revenues while maintaining insolvency risks at an acceptable level. Liquidity management encompasses the planning and control of liquid assets, both to meet customer financial needs and to adhere to the monetary policies set by the Central Bank.

Compliance with legal requirements regarding cash positions is the first step for a commercial bank to plan and manage its liquidity. It is crucial for banks to maintain adequate funds for operations to avoid excesses or deficiencies in the required primary reserves. In situations where there is a decline in the market price of securities or additional funds are needed temporarily to address the bank's reserve position, it may be more expensive to acquire securities than to borrow from another bank.

Furthermore, borrowing for liquidity needs may be more favorable than recalling outstanding loans, canceling them outright, or imposing restrictions on new loans. Such actions can undermine customer confidence in the bank. Therefore, effective liquidity management aims to strike a balance between maintaining adequate liquidity, minimizing costs, and preserving customer trust in the bank.

Effective liquidity management involves ensuring the full utilization of all reserves available to the bank. Primary reserves consist of vault cash, cash balances, and excess reserves held with the Central Bank of Nigeria (CBN), as well as deposits with other banks, both domestically and internationally. These reserves are maintained to meet legal and operational requirements.

On the other hand, secondary reserves are liquid assets that can be easily converted into cash without significant loss of the principal sum invested. They are characterized by short maturity,

high credit quality, and high marketability. The purpose of holding secondary reserves is to meet both anticipated and unanticipated short-term and seasonal cash needs from depositors. These reserves contribute to achieving both the profitability and liquidity objectives of the bank.

By maintaining an appropriate mix of primary and secondary reserves, banks can effectively manage their liquidity positions. Primary reserves ensure compliance with regulations and operational needs, while secondary reserves provide the necessary liquidity to meet short-term cash demands. Balancing these reserves enables the bank to achieve its profitability targets while ensuring sufficient liquidity to meet obligations to depositors and other stakeholders.

2.1.4 Elements or Characteristics of Liquidity

Indeed, liquidity is a multifaceted concept, and the level of liquidity can vary among different types of liquid assets. Some assets, such as savings or time deposits, are generally more liquid than others, like common stocks, and common stocks, in turn, are typically more liquid than real estate. Liquidity is relative, meaning there is no specific threshold of a balance sheet ratio that definitively determines whether a firm is considered illiquid.

Liquidity encompasses three key elements or characteristics: marketability, stability, and conservatism. Liquid assets should possess a higher degree of marketability or transferability. This implies that they can be easily and promptly converted into cash and redeemed before their maturity dates. Conversely, assets that cannot be redeemed at their maturity dates are considered illiquid.

Marketability refers to the ease at which an asset can be sold or converted into cash in the market. The more marketable an asset is, the more liquid it is considered. Stability refers to the ability of an asset to retain its value or maintain a stable price in the market, irrespective of changing market conditions. Conservatism relates to the cautious approach taken in assessing the liquidity of assets. It involves considering worst-case scenarios and assuming that assets may not be sold at their highest possible value.

While there are no strict criteria to determine a firm's liquidity, the liquidity of an asset or a firm's overall liquidity position can be evaluated based on these elements, considering the marketability, stability, and conservatism of its assets.

Price stability is indeed an important characteristic of liquid assets. Assets such as bank deposits and short-term securities tend to be more liquid than equity investments like common stocks and real estate. This is because the prices of bank deposits and short-term securities are fixed and exhibit less variability compared to the prices and values of equity investments, which can experience significant fluctuations.

The conservatism aspect of liquidity refers to the ability of holders of liquid assets to recover the cost of the asset upon resale. Common stocks are not considered highly liquid assets despite their marketability because their current prices can be lower than their initial or original prices. This price risk associated with common stocks reduces their liquidity. Considering these

characteristics, individuals and firms often prefer to hold cash, which is the only perfectly liquid asset.

The concept of double coincidence of wants played a significant role in the replacement of barter trade with the use of money. Barter trade required both parties to have goods or services that the other desired, creating a challenge in finding a mutual exchange. Money, on the other hand, serves as a universally accepted medium of exchange. All other assets are converted into money before being used, and money allows for the conversion of any asset into another asset. This universal convertibility and acceptance make money the most popular and highly liquid asset.

2.1.5 The Need for and Importance of Liquidity

Anyanwu's definition of liquidity as the ability to convert an asset into cash with minimum delay and minimum loss/cost aligns with the understanding of liquidity in the banking context. Liquidity assets hold significant importance in the portfolio of commercial banks, as these institutions largely operate using funds borrowed from depositors in the form of demand and time deposits. Maintaining adequate liquidity assets is crucial for banks as they help preserve the confidence of depositors, which is considered a valuable intangible asset in the commercial banking business.

Nwankwo highlights the importance of adequate liquidity for banks in managing various risks. Firstly, funding risk refers to the ability to replace net outflows by either withdrawing retail deposits or not renewing wholesale funds. Secondly, liquidity is needed to compensate for the non-receipt of expected funds if borrowers fail to meet their commitments. The third risk arises from obligations to fulfill maturity dates or requests for funds from important customers. Adequate liquidity allows the bank to secure new funds to honor these obligations, such as sudden increases in borrowing under lines of credit or when desirable lending opportunities arise, such as a request from a valued customer.

Having sufficient liquidity is also essential to avoid forced sales of assets at unfavorable market conditions, which could result in significant losses. Adequate liquidity serves as a means for profitable operations and helps maintain depositor confidence in meeting short-term obligations. Furthermore, it acts as a safeguard against involuntary borrowing from regulatory authorities during a severe liquidity crisis, as a bank's destiny may be relinquished to the control of the Central Bank.

In summary, maintaining adequate liquidity is vital for commercial banks to effectively manage risks, preserve depositor confidence, support profitable operations, and avoid unfavorable outcomes during times of financial stress.

Other needs and importance include.

(a) Inter-Firm Comparison

Liquidity can be compared by comparing how different firms handle short-term obligations. In this way, interfirm comparisons can also be made based on liquidity.

(b) Early Payment to Suppliers

Sufficient liquidity will enable the business to attend to its suppliers immediately. In the same way, the concern may not have trouble acquiring raw materials regularly, and therefore production may continue without interruption.

(c) Benefits of Cash Discount

With sufficient liquidity, we can benefit from cash discounts on goods purchases, which will lower production costs, allowing businesses to lower prices and be more competitive.

(d) Increase in Efficiency

Directors and managers will be more inspired to work with zeal if they have sufficient liquid resources. Employees will work more effectively if they receive their salaries and allowances on time. Thus, sufficient liquid resources physiologically, motivate managers as well as employees and by this the efficiency of the concern will increase.

(e) Increase in Productivity of Fixed Assets

Having sufficient liquid resources allows companies to maximize the productivity of their fixed assets by ensuring the availability of raw materials and labor, thus enabling machines to work at full capacity without the need for liquidation. Adequate liquidity also helps prevent premature aging of fixed assets and allows for necessary maintenance and upgrades, ensuring their optimal performance and productivity.

(f) Easy Bank Loan

if a company has sufficient liquid assets, it indicates good short-term solvency. Banks may view this as a positive factor when considering loan applications, as the presence of liquid assets provides security. The operating cycle, which involves the flow of cash from suppliers to inventory to accounts receivable and back into cash, is crucial for determining the need for liquidity in a business. Managing the operating cycle effectively helps ensure a steady flow of cash and supports the liquidity of the company.

In other words, the terms cash cycle refers to the length of time necessary cycle events:

1. Conversion of cash into inventory.
2. Conversion of inventory into receivable.
3. Conversion of receivable into cash.

The operating cycle is indeed a continuous process, and if it were possible to complete all the sequences instantaneously, there would be no need for liquid funds. However, since the inflows and outflows of cash do not perfectly align, businesses are compelled to maintain current assets. These assets include cash or investments in short-term liquid securities. By holding these assets, firms can meet their financial obligations as they arise.

Additionally, businesses need to maintain an adequate level of inventory to ensure they can fulfill customer demand promptly. Sufficient inventory acts as a buffer against potential stockouts, enabling companies to meet customer needs without delay. This helps maintain customer satisfaction and supports the smooth functioning of sales activities.

To remain competitive, many firms extend credit to their customers, resulting in the creation of accounts receivable. Selling goods on credit allows businesses to attract customers and facilitate sales. However, it also introduces the need to manage accounts receivable effectively to ensure timely collection of payments.

By maintaining an appropriate level of working capital, which includes adequate cash, inventory, and accounts receivable, businesses can support their sales activities and enhance their overall liquidity position. These components of working capital help address the timing mismatch between cash inflows and outflows, ensure inventory availability, and facilitate the collection of receivables. Consequently, a sufficient level of working capital is essential for the smooth operation of sales activities and contributes to a company's liquidity.

The operating cycle consists of three phases:

1. Cash Gets Converted into Inventory

The operating cycle involves the sequential phases of purchasing raw materials, converting them into work-in-progress, transforming them into finished goods, and stocking the goods at the end of the manufacturing process. In the case of trading organizations, the cycle is shorter as there is no manufacturing involved, and cash is directly converted into stock. Service organizations have a different operating cycle that focuses on delivering services, client acquisition, project completion, and invoicing. Each organization type has its own unique operating cycle tailored to its industry and operations.

2. Conversion of Inventory into Receivable

In the second phase, the inventory is converted into receivables as credit sales are made to customers. Firms, which do not sell on credit, will obliviously do not consist of second phase of the operating cycle.

3. Conversion of Receivable into Cash

The last phase thirds represent the stage when receivables are collected, this phase complete the operating cycle. Thus, the firm has involved from cash to inventory, to receivables and to cash again**.**

2.1.6 Risk and Consequences of Excess Liquidity

Liquidity is often considered essential for the functioning of an economy and particularly for the banking industry. It can be likened to blood flowing in the veins of a human being, as stated by Chizea (2001:31). However, it is important to maintain liquidity at an optimal level that aligns with policy targets and the absorptive capacity of the economy.

There are two main sources of liquidity in an economy. The first is the government, which manages liquidity through its fiscal policy measures outlined in the budget. The second major source is the banking system, which creates liquidity through credit creation, utilizing the multiplier effect (Chizea, 2001:34).

Excessive liquidity can have destabilizing effects. It can lead to a depreciation of the exchange rate, and when authorities attempt to address the excess liquidity, it can result in interest rate fluctuations. Banks that suddenly find themselves short of liquidity may resort to borrowing at

distress rates. Additionally, if a bank is known to be short of liquidity, it may face a run on its deposits, which can be disastrous for the bank.

Excess liquidity in an economy can also contribute to inflationary pressures. Banks, in response to excess liquidity, often make provisions for doubtful assets, questioning the value of assets that were previously considered active. These provisions are made using profits generated from the perspective of excess liquidity in the banking system. The significant growth in commercial bank deposits liabilities, driven by oil revenue, resulted in excess liquidity in the banking system, as the banks had limited investment outlets for their idle funds.

In summary, while liquidity is crucial for the functioning of an economy and the banking industry, it is important to maintain it at an optimal level. Excessive liquidity can have negative consequences such as destabilizing the exchange rate, creating interest rate fluctuations, and potentially leading to inflationary pressures. Banks may face challenges when suddenly short of liquidity, including resorting to distress borrowing and experiencing deposit runs.

2.1.7 Risk and Consequences of Inadequate Liquidity

Inadequate liquidity in a bank can lead to various risks and consequences. One significant risk is the bank's inability to meet deposit withdrawals and loan demands. This can be particularly problematic during periods of economic hardship when depositors may engage in disintermediation, which refers to the withdrawal of deposits from banks. Such disintermediation creates serious liquidity challenges for many commercial banks.

During periods of tight monetary policy, where the availability of excess reserves to the banking system is limited and interest rates are pushed higher, the risk of inadequate liquidity becomes more pronounced. This tight money policy aims to slow economic expansion. However, it can exacerbate liquidity problems for banks, as they may struggle to meet the funding demands of their customers.

The risk of inadequate liquidity is particularly serious because it can undermine the bank's credibility and erode depositor confidence. If depositors lose confidence in the bank's ability to meet their withdrawal requests, it can trigger a run on the bank. A bank run occurs when many depositors simultaneously withdraw their funds due to concerns about the bank's solvency or liquidity. Once a run on the bank begins, it becomes challenging for the bank to sustain its operations, as it can quickly deplete its available liquid assets. This situation can lead to insolvency, as no bank can withstand a sustained run on its deposits.

2.1.8 Government Policy Measures for Liquidity Management

The main objectives of government monetary and financial policies are:

- Reduce excess liquidity in the banking system.
- Promote non-inflationary growth.
- Establish market-based interest and exchange rate regimes.
- Achieve a favorable balance of payments.
- Maintain stability in the financial sector.

The Nigerian government, like governments worldwide, introduces measures that affect banks' liquidity to pursue these objectives. It is therefore not surprising that the government annually introduces policies which influence the liquidity position of our banks. The preoccupation of government in this matter has always been to ensure and promote safe and sound banking practices in the country.
Consistent with the above objectives, the policy instruments adopted for liquidity management include:
i. Open market operations conducted wholly in Nigerian.
Treasury Bills.
ii. Discount window operations
iii. Cash reserve requirements
iv. Liquidity ratios
v. Bank credit policies
vi. Taxation and government borrowing, etc.

2.1.9 Liquidity Preference
In Keynesian economics, the demand schedule for money, motivated by transaction motive (active circulation) and precautionary motive (reserves for future needs, risks, and uncertainty) both considered interest inelastic, and speculative motive (shifts to and from liquidity vis a vis the market), which is regarded as interest inelastic. In its simplest formulation, the Keynesian concept of the rate of interest is the intersection of the curve representing supply of money (assumed interest inelastic because it is fixed by the monetary authorities) and the curve of the demand for money (liquidity preference).

2.2 THEORITICAL FRAMEWORK
i. The Liquid Asset Theory: Certain theories of liquidity management have been developed to assist the banking sector in effectively managing liquidity. One such theory suggests that banks should hold a significant pool of short-term assets. These theories assume the presence of efficient primary and secondary money markets (Anyanwu, 1993). They also emphasize the importance of maintaining short-term, liquid assets that enable banks to fulfill their short-term obligations as they come due.
ii Commercial Loan Theory or Real Bill Doctrine
According to Nzotta (2004) and Nwankwo (1991), the theory you mentioned is also referred to as the real bills' doctrine. This doctrine suggests that lending should primarily be on a short-term basis, as most deposits are also short-term in nature. It is considered the oldest theory of liquidity management. The goal is to align the profit motive associated with short-term lending with the short-term obligations of making depositors' funds readily available when needed.

Supporting the doctrine, Onoh (2002) argues that for effective management and utilization of funds (liquidity), the maturity of funds sourced from deposits and other sources should match the maturity of assets, such as loans and advances given to customers. This principle emphasizes the importance of matching the tenor or maturity of funds with the tenor of assets to optimize liquidity management.

iii Anticipated Loan Theory

According to Nzotta (2004), this theory highlights the significance of the borrower's earnings power and creditworthiness as the primary factors ensuring sufficient liquidity. It was formulated in the 1940s and emphasizes that the main source of bank liquidity stems from the earning capacity and creditworthiness of borrowers. The doctrine advises banks to carefully assess the reputation of borrowers and their ability and willingness to repay. It suggests that banks may consider granting long-term and non-business loans to borrowers, as these loans can be repaid using the borrower's future earnings.

iv Shiftability Theory

The shiftability theory of liquidity management is based on the idea that a bank can maintain its liquidity by holding assets that can be easily shifted or sold to other lenders or investors in exchange for cash. This theory suggests that if there is no immediate need for loans, the bank can sell collateral, such as marketable securities, to generate cash. On the other hand, if funds are required, the bank can shift its loans to the central bank. This can be achieved by depositing securities with the central bank to fulfill the demand for funds.

According to Ngwu (2006), individual banks can meet their liquidity needs if they have assets that can be sold or shifted. The shiftability theory highlights the importance of having liquid assets that can be readily converted into cash to address liquidity concerns.

v *Liability management theory*

According to Nzotta (2004), the supplemental liquidity theory focuses on the liability side of the balance sheet as a means of addressing liquidity needs. This theory argues that large banks can acquire the funds they require, eliminating the necessity of holding substantial liquidity on the asset side of the balance sheet. This approach gained significant support in large money market centers, particularly among banks. As a result, negotiable certificates of deposit (CDs) emerged as a prominent money market instrument associated with this theory. These CDs provided a means for banks to obtain additional liquidity by issuing short-term debt instruments.

2.2.1 Liquidity versus Profitability

Every banking institution typically has a corporate goal, which may involve maximizing investments or total wealth within the bank. However, there is an inherent conflict between this objective and the need to maintain adequate liquidity. This conflict can be briefly discussed as follows:

According to finance theory, there is a positive linear relationship between risk and return. This means that higher risk is associated with higher potential rewards, and vice versa. In the context of liquidity, a bank with a higher liquidity position is considered less risky but may also experience lower profitability.

If we examine a simplified balance sheet of a bank, we can identify the main assets and liabilities and understand how liquidity and profitability must be related to satisfy shareholders and depositors. Shareholders expect the bank to generate maximum profits, while depositors expect the bank to maintain sufficient liquid assets to meet their withdrawal needs. These two requirements can be conflicting because highly liquid assets tend to earn lower interest, while assets with higher profitability may be less liquid. Therefore, banks must strike a careful balance between these two demands.

In some cases, the task of balancing profitability and liquidity is partially addressed by imposing a minimum reserve ratio that mandates the holding of approved liquid assets. This helps ensure a certain level of liquidity within the bank.

To effectively manage the conflicting goals of profitability and liquidity, banks need to consider each liquid asset individually and evaluate their potential impact on both aspects.

Liquidity component:

The table below shows the components of banks liquid assets and the returns on them.

Table 2.2: Liquidity component

Liquid Assets	Assessment of Nature Return
Vault Cash	No return
Bal. With central Bank	No return
Net Inter-Bank Balance	Negative/Low return
Net Money a call	Negative/low return
Treasury Bills	Low return
Treasury certificates	Low return
Bills Discounted	Medium return
Development Stocks	Medium return
Bankers Unit Funds	Medium return
Certificates of Deposit	Medium return

Source: Ebhodaghe (1997:131)

2.2.2 Measurement of Bank Liquidity

In the banking system, monitoring liquidity is crucial because inadequate liquidity can harm a bank's reputation, while excessive liquidity can hinder earnings. Therefore, when measuring liquidity, it is important to consider the characteristics of an asset that allow for quick conversion into cash.

In line with this, the 1969 Banking Act, as amended, mandates that the Central Bank of Nigeria (CBN) should periodically specify the minimum requirements for licensed banks in terms of cash reserves, liquid assets, special deposits, and stabilization securities (Ebhodaghe, 1997:131).

It is the responsibility of each bank to ensure that its holdings of these items meet or exceed the prescribed amounts set by the CBN. This requirement helps to ensure that banks maintain a sufficient level of liquidity as determined by the regulatory authorities. The major liquidity measures maintained by Nigerian banks are as follows:

(i) Cash Reserve Ratio:

The minimum cash deposit requirement, expressed as a ratio of a bank's demand deposit liability, refers to the level of cash reserves that a bank is expected to maintain at the Central Bank of Nigeria (CBN). This ratio is calculated by the cash balances of the bank (which include vault cash and allowable cash balances with the CBN) by the bank's demand deposits.

Cash Balances of the Bank

Demand Deposit

These required reserves serve two primary purposes. First, they are intended to ensure that banks maintain adequate liquidity to meet their obligations. Second, they serve as a monetary policy tool for the CBN. The CBN can adjust the ratio to control the ability of banks to create money. When the monetary authority aims to restrict banks' money creation ability, it raises the ratio. Conversely, when the CBN seeks to stimulate credit expansion, it lowers the ratio.
By adjusting the minimum cash deposit requirement, the CBN can influence the liquidity and lending activities of banks as part of its broader monetary policy objectives.

(ii) Liquidity Ratio:

This is a ratio of a bank's total liquid assets to total liabilities.
measured as follows:

$$\frac{\text{Total Liquid Asset}}{\text{Total Deposit Liabilities}}$$

The liquid assets include vault cash, balances with the CBN, net inter-bank balances, net money at call, treasury bill holdings, treasury certificates, bills discounted, eligible development treasury certificates, eligible development loan stocks, bankers' unit funds and certificates of deposit liabilities are made up of demand savings and time deposit liabilities of a bank.
The liquidity ratio is used as a measure of a bank's liquidity and is prescribed for banks every year by the CBN. The ratio for 2002/2003 stands at 40% percent for commercial banks and merchant banks.

(iii) Loan to Deposit Ratio:

This is another measure of bank liquidity. The measure is because loans and advances are the most liquid of a bank's earnings assets, such that a high loans to deposit ratio implies low liquidity position and conversely. The ratio is computed as follows:

$$\frac{\text{Total loans and Advances}}{\text{Total Deposits}}$$

The ratio of loans and advances to deposits can be seen as an indicator of the bank's ability to meet the day-to-day cash requirements of depositors. In Nigeria, a prudent ratio is considered to be 70 percent. If a bank's ratio exceeds this threshold, it suggests that the bank has sufficient liquidity to cover the cash needs of depositors.

2.2.3 Liquidity Management in Practice

In practice, banks in Nigeria determine their adequate liquidity levels by estimating potential variations in deposits and loan demands. This process is often based on rules of thumb and the bank's past experiences rather than being conducted scientifically. Banks aim to maintain a sufficient cash stock to meet daily demands for deposits and loans.

Additionally, practical liquidity management in Nigeria emphasizes the willingness and ability of banks to borrow funds on a short-term basis. Despite the high cost of funds in the market, the inter-bank market thrives due to the banks' reliance on borrowing to address liquidity needs. This borrowing can help banks bridge temporary liquidity gaps.

Furthermore, banks can generate liquidity by rediscounting eligible short-term self-liquidating negotiable instruments. For instance, treasury bills and treasury certificates can be rediscounted

with the CBN if a bank faces a temporary liquidity squeeze. This allows the bank to convert these instruments into cash and address its immediate liquidity requirements.

2.2.4 Principle of Liquidity Management

The important principles of liquid capital are as follows:

(1) Nature of Business:
The amount of liquidity required by a firm largely depends on the nature of its business. For example, rail components transport companies, electronic companies, and many welfare institutions require a relatively low amount of liquidity because their liquidity needs are based on cash receipts and sales of services in cash. On the other hand, businesses involved in the production of luxury items require a larger amount of liquid capital due to fluctuating demand and the need to maintain higher stock levels.

(2) Seasonality of Business:
Seasonal fluctuations in business can also affect liquidity requirements. Some industries have products that are in demand during specific seasons. As a result, the amount of liquidity needed also fluctuates according to seasonal requirements. For instance, industries such as the sugar industry, woolen industry, and cola industries in India experience high demand during specific seasons. In these types of industries, a significant amount of liquidity is required during the productive season to meet the demand.
(3) Production Policies:
Businesses often make sales on credit, requiring efficient credit management and collection departments. If the credit period is shorter or the collection process is efficient, the need for liquid resources is reduced. On the other hand, if the credit period is longer or the collection process is less efficient, a higher amount of liquid capital is required. Therefore, the ordering policy of a company plays a role in determining the amount of liquid capital needed.

(4) Size of Business:
The size of a business is a significant factor in determining its liquid capital requirements. Large-scale production industries generally require a larger amount of liquid capital compared to smaller businesses or institutions.

(5) Period of Operating Cycle:
The length of the operating cycle is another factor influencing the amount of liquid capital needed. Businesses with longer gestation periods or operating cycles require a larger amount of liquid capital. This is because they need to maintain sufficient liquidity to meet their current liabilities over a longer period. Conversely, industries with shorter operating cycles have lower liquidity needs.
(6) Proportion of Raw Material in Cost:
Businesses that have a large proportion of raw materials in their production process require higher liquidity. This is because they need to make payments for a higher number of raw material purchases, especially in seasonal businesses. These businesses also need to maintain a higher stock of raw materials, which increases their liquidity needs.

(7) Credit Availability and Purchasing Time:
The availability of credit and the timing of purchases also impact the required working capital. If easy credit is available or liberal credit facilities are provided by banks, the business can operate with a smaller working capital. Additionally, the timing of raw material purchases affects the amount of working capital needed. Purchasing all the raw materials at once, such as at the beginning of a season or when new crops enter the market, may require a higher amount of liquid capital during that period.

(8) Fluctuation of Business Activities:
Businesses that experience fluctuations in their activities require a higher amount of liquid capital. During boom periods, when demand and prices increase, businesses need to maintain sufficient inventory of raw materials. This leads to increased liquidity requirements. Conversely, during periods of economic downturn or sluggish business activities, a lesser amount of liquid capital may be sufficient.
(9) Growth Rate of Business:
The growth rate and expansion plans of a business directly impact the required amount of liquid capital. A lower growth rate or limited expansion may require a lower amount of working capital. Conversely, if a company is expanding at a higher rate, it will need a larger amount of funds for both fixed assets and current assets.

(10) Amount of Profit and Dividend Policy:
The amount of profit generated by a business and its dividend policy also affect the working capital requirements. If a company earns profits in cash and retains a portion of those profits (ploughed back), it becomes an important source of working capital. Therefore, businesses with good production, effective management of marketable securities, and a strong market position may require a lesser amount of liquid capital. On the other hand, if a company's profit-earning capacity is low, a higher amount of working capital is needed to meet operational requirements.
(11) Other Resources
Beside the above factor various other points are responsible for the amount of liquid capital: -
(a) Role of industrial development.
(b) Means of transport and communication.
(c) Political stability.
(d) Market condition; and,
(e) Condition of supplies, etc.

2.2.5 Techniques of Liquidity Management
There are some specific techniques of liquidity management and process for speedy collection of receivables from customers and slowing disbursement. We discuss in the present section.
(1) Speedy Cash Collection:
Efficient cash inflow management can be achieved through systematic planning and refined techniques. There are two main approaches to accelerate cash inflow. Firstly, customers should be encouraged to make payments as quickly as possible. Secondly, the payment received from customers should be converted into cash without any unnecessary delays.

(2) Rapid Payment by Customers:
Prompt billing is an effective way to ensure rapid payment by customers. Clear and timely communication regarding the amount to be paid and the payment deadline is crucial. Utilizing mechanical billing devices and including self-addressed return envelopes can expedite customer payments. Another technique to encourage prompt payment is offering trade discounts. Customers are motivated to make early payments to take advantage of these discounts.

(3) Early Conversion of Payments into Cash:
Once customers make payments by check, prompt encashment of the check helps expedite the collection process. There is often a delay between the time a customer writes and mails a check and when the funds are available to the business. Early conversion of payments into cash reduces the time lag between check posting and money realization. This technique aims to minimize deposit float, which includes postal float, lethargy, and bank float. *"The term deposit float is defined as the sum of cheques written by customers that are not yet usable by the firm"*. The collection of accounts receivable can be considerably accelerated, by reducing transit, processing, and collection time. An important the cash management technique is reduction in deposit float. By reducing transit, processing, and collection time, the collection of accounts receivable can be significantly accelerated.

(4) Concentration Banking

Indeed, the system of decentralized collection of accounts receivables, particularly through concentration banking, can be an effective technique to expedite the collection process and improve liquidity management.

In this system, large companies with multiple branches strategically select certain branches as collection centers. Customers are directed to send their payments to the collection center that covers their specific geographical area. The collection center then deposits these payments into its local account after deducting any local expenses.

Concentration banking involves using a designated bank, known as the concentration bank, where the company maintains a major account, typically a disbursement account. This concentration bank serves as a central hub for collecting funds from various collection centers or branches.

By implementing this system, the time required for the collection process is reduced. Instead of customers mailing payments to a central location, they send them directly to the collection center in their area. This eliminates the need for payments to be routed through a central location, thereby reducing mailing time and enhancing the speed of funds' availability.

(5) Lock-Box System

The lock-box system and concentration banking share similarities as they both involve decentralized collection methods to expedite the collection of receivables. However, they differ significantly in one crucial aspect. Under concentration banking, customers send their checks to designated collection centers, whereas, under the lock-box system, customers send their checks to a designated post office box.

The lock-box system is a vital component of efficient collection management since it eliminates internal processing time within the company before depositing checks in the bank. Instead, a third-party service provider manages the collection process, receiving and processing payments on behalf of the company. This streamlines the collection process and reduces the time it takes for funds to be deposited into the company's account.

It is important to note that both concentration banking and the lock-box system come with associated costs. Concentration banking incurs costs related to maintaining multiple collection centers and compensating the bank for their services. In contrast, the lock-box system involves costs associated with engaging a third-party service provider to handle the collection process.

While both systems offer benefits in terms of accelerating receivables collection, companies must carefully assess the costs and benefits of each approach to determine the most suitable option for their specific circumstances. *Thus, the lock-box system, as a method of collection of receivables, has a two-fold advantage: (i) the bank performs the clerical task of handling the remittances prior to deposits, services which the bank may be able to perform at a lower cost; (ii) the process of collection through the banking system begins immediately upon the receipt of the cheque/ remittance and does not have to wait until the firm completes its processing for internal accounting purposes. "*

(6) Slowing Disbursement:

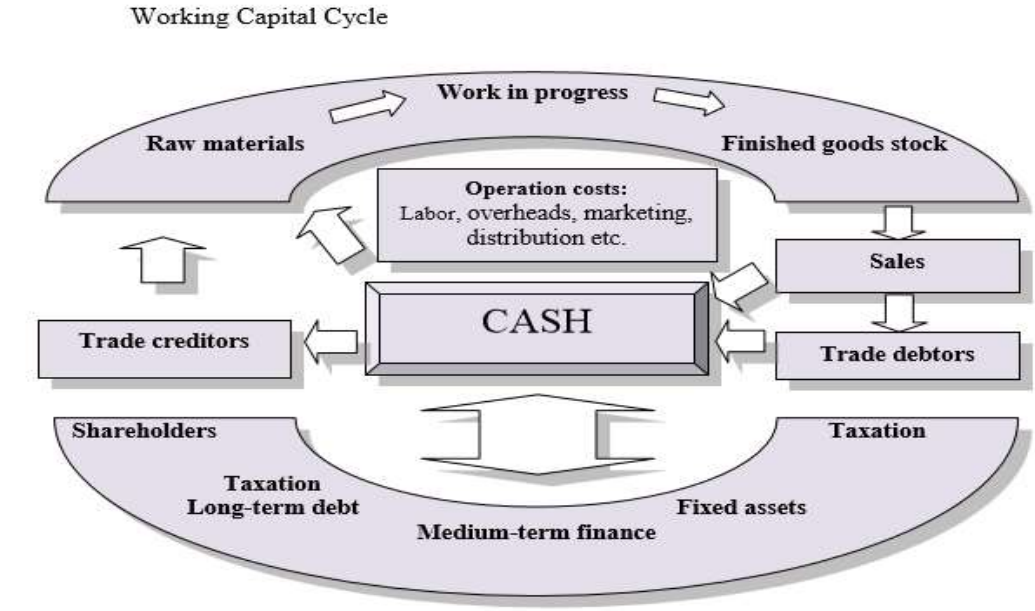
In addition to expediting the collection of accounts receivable, another technique to manage operating cash requirements is to slow down the disbursement of accounts payable. The underlying principle of this cash management strategy is to delay payments for as long as possible without negatively impacting the firm's credit rating or reputation. Slow disbursements can effectively serve as a source of funds for the company, as it avoids the need for interest payments.

(7) Working Capital Management:

Working capital management refers to the managerial accounting strategy employed by companies to effectively monitor and utilize the two components of working capital: current assets and current liabilities. The objective of working capital management is to ensure the most financially efficient operation of the business. It involves optimizing the levels of current assets, such as cash, inventory, and accounts receivable, while managing current liabilities, such as accounts payable and short-term debt. By effectively managing working capital, companies can improve liquidity, minimize financing costs, and enhance overall financial performance.

Figure 2.2: Working Capital Cycle

2.2.6 Definition and uses of Financial Ratio Analysis



(Source: Adapted from Arnolds, 2008:529)

In this phase of the project, significant attention is placed on financial analysis as a means of effective financial management. The management of a company should have a keen interest in understanding the financial strengths and weaknesses to take appropriate corrective actions. The future plan of the company should be formulated based on an assessment of its financial position. Therefore, financial analysis serves as the initial step in the planning process.

The purpose of this topic is to discuss ratio analysis as a technique for comparing and analyzing the data presented in the balance sheet and profit and loss account. This analysis provides a deeper understanding of the liquidity position, management efficiency, and overall financial performance of the company.

Financial analysis involves examining the relationship between various items in the balance sheet and profit and loss account to identify the financial strengths and weaknesses of the company. This analysis can be conducted by the management of the company or by external parties such as owners, creditors, and investors.

The nature of the analysis may vary depending on the objectives of the analyst. For instance, trade creditors are primarily interested in the company's ability to meet its short-term obligations, while long-term creditors focus on the company's long-term solvency and viability. Similarly, investors who have invested in the company's shares are primarily concerned with the company's earnings and profitability. However, the management of the company is interested in every aspect of the financial analysis.

Management, through financial analysis tried to see answers to the following questions:

i. Are the firms able to meet its current obligations?
ii. What sources of long-term finance is employed by the firm?
iii. What is the level of efficiency of the firm's assets?
iv. Are the earnings of the firm adequate?
v. Do investors consider the firm profitable and safe for the purpose of investing their money in the share of the firm?
vi. Ratio analysis is a powerful tool of financial analysis. A ratio is defined as the indicated quotient of two mathematical expressions. It can also say to be the relationship between two or more things. In financial analysis, a ratio is used as an index or yardstick for evaluating the liquidity and financial position and performance of a firm.
vii.
viii. Among the various classes of ratios are:
ix. i. Liquidity ratios
x. ii. Leverage ratios
xi. iii. Activity ratios
xii. iv. Profitability ratios
xiii. But the most important ones chosen for the purpose of this research are liquidity and profitability ratios.

2.2.7 Limitation of Liquidity Ratio Analysis

While ratios are commonly used as a tool for assessing liquidity, it is important to recognize their limitations when evaluating the true liquidity position of a bank. One key limitation is that ratios are computed at a specific point in time, typically at the end of a month or a reporting period. This makes the computation based on a stock concept, rather than a flow concept that considers the movement of liquid resources over a period.

Assessing liquidity based on the flow concept would provide a more meaningful understanding. However, ratios are computed using the stock concept, which poses a limitation.

Furthermore, there are other limitations associated with ratio analysis:

i. Difficulty in establishing proper bases for comparison: Industry averages for ratios are rarely available and can be challenging to determine.

ii. Challenges in comparing ratios: Differences in the circumstances of two companies or changes within a single company over multiple years can make it difficult to compare ratios effectively.

iii. Impact of price level changes: Changes in the price levels can affect the interpretation of ratios and render them invalid.

iv. Varied definitions of balance sheet and income statement items: Differences in how items are defined in financial statements can complicate the interpretation of ratios.

v. Influence of lease financing: The increasing use of lease financing by companies can impact the validity of ratios, as it introduces complexities in assessing financial performance and liquidity.

vi. Difficulty in evaluating conglomerates: Companies with diverse operations, where financial statements are not presented on a divisionalized basis, pose challenges in applying financial ratios effectively.

It is important to note the shortcomings in the use of ratios to UBA a bank's liquidity. Ratios are only meaningful when proper accounting policies and practices are followed. However, if properly used, ratios can give signals of liquidity which would require further investigation to secure improved performance.

2.3 EMPIRICAL REVIEW

According to Eljelly (2004), effective liquidity management entails the planning and control of current assets and liabilities to meet short-term obligations and prevent excessive investments in these assets. Eljelly's study focused on the relationship between profitability and liquidity, specifically examining the current ratio and cash gap (cash conversion cycle) as measures of liquidity in a sample of joint-stock companies in Saudi Arabia. The study utilized correlation and regression analysis.

The findings indicated that the cash conversion cycle was a more influential measure of liquidity compared to the current ratio, and it had an impact on profitability. Moreover, the study identified that the size of the companies had a significant effect on profitability at the industry level. These results were consistent and carried important implications for liquidity management within various Saudi Arabian industries.

Firstly, the study highlighted a negative relationship between profitability and liquidity indicators such as the current ratio and cash gap in the Saudi Arabian sample analyzed. This suggests that companies with higher liquidity, as measured by these indicators, may experience lower profitability.

Secondly, the study revealed considerable variation among industries regarding the significant liquidity measure. This implies that different industries may have distinct liquidity management requirements and that a "one-size-fits-all" approach may not be appropriate.

In Raheman and Nasir's study (2007) conducted in Pakistan, the effect of working capital management on both liquidity and profitability of firms was examined. The findings indicated a negative relationship between the variables of working capital management and firm profitability. Additionally, the study revealed a negative relationship between liquidity and profitability, along with a positive relationship between firm size and profitability. Furthermore, there was a negative relationship between the level of debt used by the firm and its profitability.

Sharma (2011) conducted a study on liquidity, risk, and profitability analysis, focusing on Maruti Suzuki India Ltd. The study found that the company was generating satisfactory profits and maintaining a liquidity position, although at an increased risk factor. The liquidity position of the

company was observed to fluctuate, but it was deemed acceptable. The conclusion drawn from the study was that the company was earning good profits with moderate liquidity.

Bhunia et al. (2011) investigated the efficiency of liquidity management and the liquidity-profitability relationship in Indian firms. The study utilized data from income statements, balance sheets, and cash flow statements of sampled firms from the India Stock Exchange and CME database. The analysis employed a purposive sample design method, focusing on private sector steel companies from 1997 to 2006. The results of the study demonstrated a significantly positive correlation and regression relationship between liquidity management efficiency and firm profitability.

The findings of the empirical study by Routniantsev and Netessine (2007) suggest that firm managers should pay attention to inventory and receivables management to enhance shareholders' wealth. The study examined the relationship between inventory and profitability across a large sample of publicly held companies from nine countries in the Organization for Economic Co-operation and Development (OECD).

Using a system of equations and a semi-parametric model, the study analyzed three types of inventories (raw materials, work-in-progress, and finished goods) and their behavior across different countries. The results revealed that higher sales, accounts payable, product margins, sales uncertainty, and sales growth were associated with higher total inventories across the pooled sample and most countries. The study also found that economies of scale in inventory management existed in only four out of the nine countries, while the other countries exhibited diseconomies of scale. Similar results were observed for work-in-progress and finished goods inventories.

Among the three inventory components, only raw material inventories consistently showed a negative association with Return on Sales (ROS), indicating that higher raw material inventories were associated with lower profitability.

In another study conducted by Sudipta Ghosh (2008) on the liquidity management of TISCO Ltd, data from 1996 to 2000 was analyzed. The study indicated that although there was a positive association between liquidity and profitability, the degree of influence of liquidity on TISCO Ltd's profitability was low and insignificant.

Agarwal (1988) developed a goal programming model for working capital decisions, with a primary focus on liquidity. The model aimed to achieve target current ratio and quick ratio, incorporating three liquidity goals, two profitability goals, and four sub-goals for current assets and current liabilities. The profitability constraints in the model accounted for the opportunity cost of excess liquidity, considering the potential impact on reduced profitability.

Singh and Pandey (2008) emphasized the importance of fixed and current assets in the successful functioning of business organizations. They highlighted that effective working capital management directly influences both profitability and liquidity. Their study specifically examined the working capital components and found a significant impact of working capital management on the profitability of Hindalco Industries Limited.

Mehar's study (2001) analyzed the impact of equity financing on the liquidity of 225 firms listed in the Karachi Stock Exchange from 1980 to 1994, using pooled data. The findings indicated that equity financing played a crucial role in determining the liquidity position of firms. The study concluded that equity and fixed assets had a positive relationship with working capital in the long term. However, an increase in paid-up capital was associated with a deterioration in liquidity.

Kim, Mauer, and Sherman (1998) investigated the determinants of corporate liquidity for 915 US industrial firms from 1975 to 1994 using panel data and different models. Their findings revealed that firms with larger positions in liquid assets tended to have better liquidity. Additionally, firm size was found to have a negative relationship with liquidity. The study also indicated that the market-to-book ratio and firm size were reasonable proxies for the cost of external financing. Furthermore, firms with more volatile earnings and lower returns on physical assets relative to liquid assets tended to hold significantly larger positions in liquid assets.
Olagunju, Adeyanju, and Olabode (2011) conducted a study on liquidity management and commercial banks' profitability in Nigeria. They used quantitative research methods, including structured and unstructured questionnaires, as well as financial reports of sampled banks. The data obtained from primary and secondary sources were analyzed through collection, sorting, and grouping, and statistical analyses such as Pearson correlation were conducted to test their hypothesis.

The findings of the study indicated a significant relationship between liquidity and profitability. The researchers concluded that efficient and effective liquidity management is crucial for the success and survival of commercial banks. They highlighted that both illiquidity and excess liquidity can negatively impact a bank's profitability, acting as "financial diseases" that erode the profit base of the bank and hinder its ability to achieve high profitability levels.

Several other studies have also examined the relationship between liquidity management and banks' profitability. Adebayo et al. (2011) conducted a study in Nigeria and found a significant relationship between liquidity and profitability in commercial banks. Saleem and Rehman (2011) investigated the relationship between liquidity and profitability and found that both liquidity ratios and profitability ratios have a significant impact on the financial positions of enterprises. Arif (2012) focused on liquidity risk factors and their impact on Pakistani banks, finding that liquidity management plays a crucial role in determining banks' profitability.

Overall, these studies highlight the importance of effective liquidity management for commercial banks and emphasize the significant relationship between liquidity and profitability. Maintaining an optimal liquidity position is essential for banks to ensure their financial stability and profitability.
Findings of the study indicate that there is a significant impact of liquidity risk factors on the bank’s performance, where an increase in deposits lead to increasing in the bank’s profitability in terms of reducing dependence on the central bank in meeting the customers’ obligations, and profitability is negatively affected by the allocation of non-performing loans and liquidity gap. Charity (2012) examined the impact of liquidity performance in commercial using First Bank of

Nigeria Plc as case study. Findings indicate that there was a positive relationship between liquidity management and the existence of any banks. Agbada and Osuji (2013) examined empirically the effect of efficient liquidity management on banking performance in Nigeria.
Findings from the empirical analysis were quite robust and clearly indicate that there is significant relationship between efficient liquidity management and banking performance and that efficient liquidity management enhance the soundness of bank. Al-Tamimi and Obeidat (2013) identified the most important variables which affect the Capital Adequacy of Commercial Banks of Jordan in Amman Stock Exchange for the period from 2000–2008. The study shows that there is a statistically significant positive correlation between the degree of capital adequacy in commercial banks and the factors of liquidity risk, and the return on assets, and there is an inverse relationship not statistically significant between the degree of capital adequacy in commercial banks and factors of the capital risk, credit risk, and the rate of force- revenue. Ibe (2013) examined the effect of liquidity management on the profitability of banks in Nigeria. He found that liquidity management is indeed a critical issue in the banking sector of Nigeria. Lartey et al. (2013) sought to find out the relationship between the liquidity and the profitability of banks listed on the Ghana Stock Exchange. It was found that for the period 2005-2010, both the liquidity and the profitability of the listed banks were declining.

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter outlined the methodology which was used in carrying out the study. Aspects covered include research design, population & sampling design, data collection methods, data analysis methods and testing of data validity & reliability. Finally, it presented the model adopted in the study to be able to analyze and discuss the solution to the research question and arrive at conclusions.

3.2 RESEARCH DESIGN

In the study on liquidity management and performance of commercial banks in Nigeria, a time series research design was adopted. Time series research focuses on analyzing data that are collected at regular intervals over a specific period. It involves studying the sequence of numerical data points in successive order to understand patterns, trends, and relationships over time.

Cooper and Schindler (2011) define a time series as a sequence of data points taken at equally spaced points in time. The data points in a time series are discrete and represent measurements or observations made at specific time intervals.

The choice of a time series research design in this study was appropriate because it aimed to examine the effect of liquidity management on the performance of commercial banks in Nigeria over a period of time. By analyzing data collected at regular intervals, the researchers could observe changes and trends in liquidity management practices and their impact on bank performance.

The decision to use a time series research method aligns with the nature of the investigation and allows for the exploration of patterns and relationships over time. This approach provides

valuable insights into the dynamics of liquidity management and its influence on bank performance in the Nigerian context. Times series research is utilized because it enables exploring relationships between two or more variables. Also, it is appropriate for testing the hypothesis of the study and helps to answer the research questions about the bank's liquidity and banks performances in Nigeria which are crucial concerns of this study.

3.3 POPULATION

The population of interest in the study composed of three selected banks (First bank Plc, United Bank for Africa Plc, and Access bank Plc) to represent all commercial banks in Nigeria between the year 2000 to 2014. Total of (24) commercial banks operate in Nigeria, and these constitute the population of the study.

For an individual bank to qualify it needed to have operated throughout the set period of study. A population is that body of individuals which the researcher is interested and to which he/she will generate his/her findings.

3.4 SOURCES OF DATA

This study made use of secondary data from the Nigerian Stock exchange, bulletin of the Central Bank of Nigeria (CBN), audited financial statements of the Commercial banks (i.e. United Bank for Africa Plc, First Bank Plc, Access Bank Plc.), Publications of the Nigerian Deposit Insurance Corporation, Quarterly reports of the CBN and CBN's Economic and Financial Review.

Data was collected for the commercial banks in operation during the period (2000 to 2014) and this ensured completeness and consistency of the study elements.

3.5 METHOD OF ANALYSIS

The method of analysis used is the multiple linear regression analysis using Statistical Package for Social Sciences (SPSS) to establish the relationship between liquidity and profitability (performance) exists between the study variables. To achieve the objectives of this study, a model was developed using bank performance as the dependent variable and liquidity as the independent variable. The data analysis was followed by data interpretation of the results of the analysis.

3.6 DESCRIPTION OF THE VARIABLES

Y = Profit After Tax (PAT)

The proxy for bank performance used here is Profit after Tax. PAT is the net profit earned by the company like interest, depreciation, and tax. PAT can be fully retained by a company to be used in the business. Dividends, if declared, are paid to the shareholders from this residue.

$$\text{PAT margin} = \frac{\text{Total Revenue} - \text{Total Expense}}{\text{Total Revenue}} = \frac{\text{Net profit}}{\text{Total Revenue}}$$

X_1 = Loans and Advances (LA) to customers.

Bank liquidity is a measure of a bank's ability to meet loan requests that are deemed profitable and safe. It is crucial for banks to maintain sufficient liquidity to honor their obligations and fulfill customer loan demands. When a bank grants loans and advances, they are initially recognized on the balance sheet when cash is disbursed to borrowers at a fair value, including transaction costs.

These loans and advances are derecognized from the balance sheet when the rights to receive cash flows from them have expired or when the bank has transferred substantially all risks and rewards of ownership associated with the loans. This means that if the loan term has ended or the bank has sold the loans to another party, they will be removed from the bank's books.

The loan and advances department is often considered a critical unit within a bank because its success directly impacts the bank's survival. If this department does not function effectively, it can lead to financial difficulties and potentially bankruptcy for the bank. Therefore, efficient management of loans and advances is vital for the overall stability and sustainability of a bank.

Loans to key management personnel, such as mortgage loans, are given under terms that are no more favorable than those offered to other staff members. This ensures fairness and prevents preferential treatment of key individuals within the bank.

The loan-to-deposit ratio is a commonly used metric to assess bank liquidity. It measures the proportion of a bank's total loans and advances compared to its total deposits. A high loan-to-deposit ratio can indicate a higher risk of liquidity shortages, as a significant portion of the bank's funds has been lent out. Banks closely monitor and manage their loan-to-deposit ratios to maintain a healthy balance between lending activities and available funds.

X_2 = Cash and Balances held with CBN (CB).

In Nigeria, banks are mandated by the Central Bank of Nigeria (CBN) to maintain an obligatory reserve with them. This reserve is a portion of the banks' deposits held at the CBN and is not available for use in the banks' day-to-day operations. The purpose of this reserve requirement is to ensure the stability and soundness of the banking system.

The CBN sets a minimum reserve requirement that specifies the percentage of a bank's liabilities, such as customers' deposits, that must be held as reserves with the central bank. This requirement acts as a safeguard to protect depositors and maintain the liquidity of the banking system.

As of the latest information available, the cash reserve ratio (CRR) for commercial banks in Nigeria was held steady at 22.5 percent. This means that banks are required to maintain reserves with the CBN equivalent to at least 22.5 percent of their eligible liabilities. The CRR can be adjusted by the CBN based on monetary policy considerations and the prevailing economic conditions.

By keeping reserves with the CBN, banks have a higher level of intervention and support available to them during distressing periods. These reserves can be utilized by the central bank to provide liquidity assistance to banks when needed, ensuring the stability of the financial system, and protecting depositors' funds.

X_3 = Treasury bill and certificate (TBC).

Treasury bills are indeed short-term money market instruments issued by the government. They typically have a maturity period of one year or less. When investors purchase Treasury bills, they pay a price that is lower than the face value. At maturity, the government repays the full-face value to the billholder. Treasury bills are highly secure investments because they are backed by

the full faith and credit of the government. As a result, they are generally considered to be risk-free.

While Treasury bills are considered safe investments, they offer relatively low returns. The low returns are a trade-off for the security they provide. Investors are willing to accept lower yields in exchange for the assurance that the government will honor its payment obligations.
Certificates of deposit (CDs), on the other hand, are time deposits issued by commercial banks. They have specific maturity periods that can range from a few months to several years. The return on CDs tends to be higher than that of Treasury bills because they assume a higher level of risk. The risk associated with CDs stems from the creditworthiness of the issuing bank. If the bank defaults, there is a possibility that the investor may not receive the full principal and interest payments.

The return on CDs is typically higher than that of Treasury bills because investors are compensated for taking on the additional risk associated with the issuing bank. The longer the maturity period of the CD, the higher the potential return may be.

3.7 MODEL SPECIFICATION

The economic model used in the study as adopted by Raheman and Nasir is:

$Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + \varepsilon$ ..... (1)

Where: Y = Performance representing the dependent variable and refers to Profit after Tax (PAT) of a financial institution.
X_1, = Loans and Advances, X2 = Cash and Balances with CBN, X3 = Treasury bill and Certificate.
The functionality model becomes.

PAT = F(LA, CB, TBC) .....(2)

Where,
PAT : Profit After Tax
LA : Loans and Advances
CB : Cash and Balance held with CBN
TBC : Treasury Bill and Certificate
Econometrically, the model is specified thus.

$PAT = \beta_0 + \beta_1LA + \beta_2CB + \beta_3TBC + \varepsilon$ ..... (3)

The β_0 is the intercept.
β is co- efficient, and
ε represent the error term
β_0, β_1, β_2, β_3; are regression coefficients or parameters.

3.8 TEST OF SIGNIFICANCE

Table 3.1: ANOVA Table

Sources of variance	Sum of square (SS)	Degree of freedom (df)	Mean Square (MS)	F-ratio
Regression	SSR = $(\sum Y^2)R^2$	K	MSR = $\frac{SSR}{K}$	F = $\frac{MSR}{MSE}$
Error	SSE = SST – SSR SSE = $\sum Y^2(1-R^2)$	n – k - 1	MSE = $\frac{SSE}{n-k-1}$	
Total	SST = $\sum Y^2$	n – 1		

Source: ***(Nworuh, 2004)***

Analysis of Variance (ANOVA) was used to test the significance of the model, The significance of the regression model was determined at 95% confidence interval and 5% level of significance. Adjusted R squared was used to determine the variation in the dependent variable due to changes in the independent variables.

From the above table,

R^2 = Coefficient of determination given as:

$$R^2 = \frac{\beta_1 \sum x_1 Y + \beta_2 \sum x_2 Y + \beta_3 \sum x_3 Y}{\sum Y^2}$$

SSR = Sum of Square of Regression given by $R^2 \sum Y^2$ with K degree of freedom.

SSE = Sum of Square of Error given by SST – SSR with n-k-1 degree of freedom.

SST = Sum of Square of Total given by $\sum Y^2$ with n-1 degree of freedom.

K = Number of Independent Variables.

N = Number of observations (years), i.e: 2000 – 2014 (15 years).

3.8.1 Coefficient of Determination (R^2)

The R^2 is used to determine the explanatory power of the model i.e, the goodness of fit of the regression. Put differently, it measures the proportion of variations in the dependent variables that is explained by the independent variables. Due to the number of the explanatory variables used, the tendency for the value of R^2 to rise is inherent. Therefore, to correct this defect, R^2 is adjusted by considering the degree of freedom which decreases as new variables are introduced in the function. The adjusted coefficient of determination is computed thus:

$\hat{R}^2 = 1 - [\frac{n-1}{n-k}](1 - R^2)$

As already stated, this measures the total variations in the regression explained by (Osuagwu, 1999).

3.8.2 Student T-test

This test is used to test the individual significant value of the variables used in the model. If the F-ratio rejects H_0 thereby accepting H_1 (meaning that there is a significant linear relationship existing between the dependent and the independent variables) then the student t-test is carried out to determine which of the independent variables contribute(s) to the significance of the linear relationship established by the F-ratio.

3.8.3 Decision Rule

To test the significance of the relationship between the dependent and independent variables, the critical value of T and the test statistic are compared taking cognizance of the degree of freedom k and n-k-1. Thus, if the absolute value of the T-statistic is less than the absolute value of the critical value of T, the null hypothesis H_0 is accepted otherwise H_0 is rejected.

That is, if **Tcal** > **Ttab** reject H_0 and accept H_A

Tcal < **Ttab** accept H_O and reject H_A

3.9 JUSTIFICATION OF METHOD AND TECHNIQUES USED

In the study, the researchers employ time series data analysis techniques. The purpose of using time series analysis is to summarize and organize the data to facilitate analysis. A time series allows for the identification of changes within a population over time. Additionally, it can reveal the impact of cyclical, seasonal, and irregular events on the measured data.

DATA PRENTATION AND ANALYSIS

4.1 PRESENTATION AND ANALYSIS

This section places emphasis on the need to estimate, analyze and interpret models already formulated. In addition, the hypothesis will be tested. Only secondary sources of data are employed. Three banks were selected namely, United Bank for Africa Plc, First Bank Plc, and Access Bank Plc. The proxies for liquidity management are Loans and Advances (LA), Cash and Balances with CBN(CB), Treasury bills and Certificates (TBC). These are the independent variables. Bank performances were being represented by profit after tax (PAT) which is the dependent variable.

Table 4.1.1 Assets and Profit of First Bank Plc for the period 2015 – 2022

YEAR	PAT(₦m)	TBC(₦'m)	LA(₦'m)	CB(₦'m)
2015	10,465,744	14,698,874	4,983,552	1,486,568
2016	11,625,365	15,848,122	5,881,529	2,136,476
2017	12,568,245	16,514,732	7,712,412	3,309,422
2018	13,715,985	17,805,278	11,826,544	4,235,968
2019	14,819,362	18,365,078	13,629,754	5,275,214
2020	15,235,754	20,623,675	19,410,126	5,924,235
2021	15,989,225	21,124,074	25,231,432	6,100,421
2022	16,534,667	22,340,978	29,093,463	7,795,549
Total	111,720,337	126,089,829	117,768,463	36,459,853

Source: United Bank for Africa Plc Annual reports (2014 - 2022)

Where: PAT = Level of profitability in year t;
LA = Loans and Advances in year t;
CB = Cash and balance in year t;
TBC = Treasury bills and certificate in year t.

Table 4.1.2 Assets and Profit of UBA Plc for the Period 2015 – 2022

YEAR	PAT(₦'m)	TBC(₦'m)	LA(₦'m)	CB(₦'m)
2015	12,545,220	16,639,854	52,140,425	1,964,454
2016	13,362,778	17,295,620	55,194,546	2,109,856
2017	14,480,902	20,429,238	59,297,967	2,422734
2018	15,399,275	21,581,485	62,564,356	2,724,245
2019	16,208,398	23,687,796	66,087,123	2,936,963
2020	16,982,089	24,745,785	76,196,061	3,106,784
2021	17,421,965	26,844,482	86,391,108	3,373,548
2022	20,364,352	28,954,775	99,393,182	3,598,666
TOTAL	126,785,979	179,378,035	677,265,768	22,036,240

Source: UBA Plc. Annual Reports (2000 - 2014)

Where: PAT = Level of profitability in year t;
LA = Loans and Advances in year t;
CB = Cash and balance in year t;
TBC = Treasury bills and certificate in year t.

Table 4.1.3 Assets and Profit of Access Bank Plc for the period 2015 – 2022

YEAR	PAT(₦'m)	TBC(₦'m)	LA(₦'m)	CB(₦'m)
2015	8,346,896	13,142,665	17,807,574	2,754,086
2016	10,545,056	14,546,208	18,440,201	2,904,227
2017	12,405,254	16,246,025	21,352,987	3,62,84501
2018	13,599,024	17,968,547	27,284,411	3,229,521
2019	15,755,478	18,532,276	34,321,743	3,758,014
2020	12,697,508	20,201,890	38,987,257	4,616,041
2021	19,092,058	23,546,255	41,679,542	5,650,584
2022	22,556,485	25,663,006	44,542,540	5,791,453
TOTAL	115,198,869	150,046,872	244,916,855	28,523,337

Source: Access Bank Plc. Annual Reports (2015 - 2022)

Where: PAT = Level of profitability in year t.
LA = Loans and Advances in year t.

CB = Cash and balance in year t.
TBC = Treasury bills and certificate in year t.

4.2 SUMMARY OF COMPUTER REGRESSION RESULTS

TABLE 4.2.1 First Bank of Nigeria Statistical Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.934[a]	.871	.836	1677620.82245	.871	24.853	3	11	.000

Source: SPSS 20

From the findings in the above table the value of adjusted R squared was positive (0.836). The result of SPSS data analysis revealed that the independent variables can be held responsible for 87.1% increase in variation on the Profit after Tax with reference to the period under study. R is the coefficient of correlation which shows which shows the relationship between the study variables. Correlation ranges in value from zero to one. The value can be positive or negative signifying positive or negative correlation. From the finding shown in the table above there was a strong positive relationship between the study variables as shown by 0.934

TABLE 4.2.2 First Bank Analysis of Variance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	209839689858604.530	3	69946563286201.516	24.853	.000[b]
	Residual	30958527863186.426	11	2814411623926.039		
	Total	240798217721790.970	14			

Source: SPSS 20

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level 0.000 which shows that the data is ideal for making a conclusion on the population's parameters the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value (24.853 > 1.59) an indication that the bank liquidity indicators significantly influence performance of the First Bank as measured by PAT.

TABLE 4. 2.3 First Bank Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	8208905.796	1023800.321		8.018	.000	5955536.483	10462275.110
	LA	.514	.270	.766	1.903	.084	-.081	1.108
	CB	.011	.019	.241	0.241	.575	-.031	.054
	TBC	2.482	1.954	.163	1.630	.230	-1.818	6.782

a. Dependent Variable: PAT

b. Predictors: (Constant), TBC, CB, LA

Source: SPSS 20

The established regression equation was.

PAT = 8208905.796 + 0.514LA + 0.011CB + 2.482TBC

From the above regression model, holding VC, CB, and TBC to a constant, zero, financial performance as measured by PAT of First Bank would be 8208905.796. its established that a unit increase(decrease) in LA would cause an increase(decrease) in performance (PAT) of First Bank by a factor of 0.514; a unit increase(decrease) in CB would cause an increase(decrease) in financial performance (PAT) of First Bank by factor of 0.011; a unit increase in TBC would lead to an increase(decrease) in bank performance (PAT) of the First Bank by a factor of 2.482. This clearly shows that there is positive relationship between bank performance of bank First Bank and LA, CB, and TBC. The study further revealed that the P-value were greater than 5% in some of the variables and less than 5% in some variables.

TABLE 4.2.4 UBA Statistical Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.995[a]	.991	.988	535594.07999	.991	398.288	3	11	.000

Source: SPSS 20

From the findings in the above table the value of adjusted R squared was positive (0.988). The result of SPSS data analysis revealed that the independent variables can be held responsible for 98.8% increase in variation on the Profit After Tax with reference to the period under study. R is the coefficient of correlation which shows which shows the relationship between the study variables. Correlation ranges in value from zero to one. The value can be positive or negative signifying positive or negative correlation. From the finding shown in the table above there was a strong positive relationship between the study variables as shown by 0.995

TABLE 4.2.5 UBA Analysis of Variance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	342759891121756.700	3	114253297040585.560	398.288	.000[b]
	Residual	3155471203691.643	11	286861018517.422		
	Total	345915362325448.300	14			

Source: SPSS 20

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level 0.000 which shows that the data is ideal for making a conclusion on the population's parameters the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value (398.288 > 3.59) an indication that the bank liquidity indicators significantly influence performance of the UBA as measured by PAT.

TABLE 4.2.6 UBA Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	8950640.593	337627.928		26.510	.000	8207526.533	9693754.654
	LA	.030	.029	.065	1.630	.314	-.033	.093
	CB	.007	.003	.122	1.201	.050	.000	.014
	TBC	1.030	.074	.836	14.004	.000	.868	1.191

a. Dependent Variable: PAT

b. Predictors: (Constant), TBC, CB, LA

Source: SPSS 20

The established regression equation was.

PAT = 8950640.593 + 0.030LA + 0.007CB + 1.030TBC

From the above regression model, holding LA, CB and TBC to a constant, zero, financial performance as measured by PAT of UBA would be 8950640.593. Its established that a unit increase(decrease) in LA would cause an increase(decrease) in performance (PAT) of UBA by a factor of 0.030; a unit increase(decrease) in CB would cause an increase(decrease) in financial performance (PAT) of UBA by factor of 0.007; a unit increase(decrease) in TBC would lead to an increase(decrease) in bank performance (PAT) of UBA by a factor of 1.030 This clearly shows that there is positive relationship between bank performance of UBA bank and LA, CB and TBC. The study further revealed that the P-value were greater than 5% in some of the variables and less than 5% in some variables.

TABLE 4.2.7 Access Bank Statistical Model Summary

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.968[a]	.938	.921	1675166.49289	.938	55.135	3	11	.000

Source: SPSS 20

From the findings in the above table the value of adjusted R squared was positive (0.921). The result of SPSS data analysis revealed that the independent variables can be held responsible for 92.1% increase in variation on the Profit After Tax with reference to the period under study. R is the coefficient of correlation which shows which shows the relationship between the study variables. Correlation ranges in value from zero to one. The value can be positive or negative signifying positive or negative correlation. From the finding shown in the table above there was a strong positive relationship between the study variables as shown by 0.968

TABLE 4.2.8 Access Bank Analysis of Variance

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	464158642286239.250	3	154719547428746.440	55.135	.000[b]
	Residual	30868010567752.350	11	2806182778886.578		
	Total	495026652853991.600	14			

Source: SPSS 20

From the ANOVA statistics in table above, the processed data, which is the population parameters, had a significance level 0.000 which shows that the data is ideal for making a conclusion on the population's parameters the value of significance (p-value) is less than 5%. The calculated value was greater than the critical value (55.135 > 1.59) an indication that the bank liquidity indicators significantly influence performance of the Access bank as measured by PAT.

TABLE 4.2.9 Access Bank Coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-3918147.179	3515759.241		-1.114	.289	-11656281.094	3819986.737
	LA	.206	.291	.246	1.709	.493	-.434	.846
	CB	.006	.024	.049	1.393	.807	-.047	.059
	TBC	262.045	109.484	.684	2.393	.036	21.073	503.017

a. Dependent Variable: PAT

b. Predictors: (Constant), TBC, CB, LA

Source: SPSS 20

The established regression equation was.

PAT = -3918147.179 + 0.206LA + 0.006CB + 262.045TBC

From the above regression model, holding LA, CB and TBC to a constant, zero, financial performance as measured by PAT of Access bank would be -3918147.179. Its established that a unit increase (decrease) in LA would cause an increase (decrease) in performance (PAT) of Access bank by a factor of 0.206; a unit increase (decrease) in CB would cause an increase (decrease) in financial performance (PAT) of Access bank by factor of 0.006; a unit increase (decrease) in TBC would lead to an increase (decrease) in bank performance (PAT) of Access bank by a factor of 262.045. This clearly shows that there is positive relationship between bank performance of Access bank and LA, CB, and TBC. The study further revealed that the P-value were greater than 5% in some of the variables and less than 5% in some variables.

4.2.10 Students T - Test

Hypothesis to be tested are:

H_0: the parameters estimated are statistically insignificant.

H_1: the parameters estimated are statistically insignificant.

From the researcher's observation, it is observed that Frist Bank has T-calculated values of 1.903, 0.241, and 1.630 for LA, BC, and TBC respectively for PAT. This shows that the individual independent variables are statistically significant at 5% in the model.

Also, from the researcher's observation, it is observed that UBA has T-calculated values of 1.630, 1.201, and 14.004 for LA, BC, and TBC respectively for PAT. This shows that the individual independent variables are statistically significant at 5% in the model.

Lastly, from the researcher's observation, it is observed that Access Bank has T-calculated values of 1.709, 1.393, and 2.393 for LA, BC, and TBC respectively for PAT. This shows that the individual independent variables are statistically significant at 5% in the model.

4.2.11 F- Statistics

The F-test is used for the overall performance of the regression model in terms of adequacy for forecasting and policy analysis. The decision rule is to reject H_o and accept H_A if Fcal > Ftab. If Fcal is greater than Ftab the model is significant and if otherwise the model is not significant.

Table 4.2.10

BANKS	F_{cal}	F_{tab}	DECISION
First Bank	24.853	2.201	SIGNIFICANT
UBA	398.288	2.201	SIGNIFICANT
Access	55.135	2.201	SIGNIFICANT

Source: Researchers computation
From that table above we can see that the model is significant for the three banks.

4.3 TEST OF HYPOTHESES
Hypothesis 1 Loans and Advances
Ho: Loans and advances have no significant relationship with bank performance.
H_A : Loans and Advances has significant relationship with bank performance.

From Table 4.1 the researcher sees that T calculated value of First Bank analysis is greater than the critical value T tabulated value i.e (1.903 >1.59), at the 5% level of significance. Again, in table Table 4.2 it was seen that the T_{cal} of UBA is greater than the T_{tab} i.e (1.63 >1.59). In like manner, from table 4.3, it shows that T_{cal} of Access bank is greater than the T_{tab} i.e (1.709 >1.59)
The researcher sees that the values of the T-calculated is greater than the tabulated values of loans and advances for the three banks. Therefore, the researcher accepts the alternative hypothesis and rejects the null. Thus, we conclude that there is significant relationship between loans and advances, and bank performance.

Hypothesis 2 Cash and Balance with CBN
Ho: Cash and Balance has no significant relationship with bank performance.
H_A : Cash and balance has significant relationship with bank performance.

From Table 4.1 the researcher sees that T_{cal} of First Bank analysis is less than the critical value of T i.e (0.241 <1.59), at the 5% level of significance. Again, in table Table 4.2 it was seen that the of UBA is less than the i.e (1.201 <1.59). In like manner, from table 4.3, it shows that T_{cal} of Access bank is less than the T_{tab} i.e (1.393 <1.59)
The researcher seeing that the values of the T-calculated is less than the tabulated values of loans and advances for the three banks. Therefore, the researcher rejects the alternative hypothesis and accepts the null. Thus, we conclude that there is no significant relationship between loans and advances, and bank performance.

Hypothesis 3 Treasury bill and Certificate

Ho: Treasury Bill and Certificate has no significant relationship with bank performance.

H_A: Treasury Bill and Certificate has significant relationship with bank performance.

From Table 4.1 the researcher sees that T_{cal} of First Bank analysis is greater than the critical value T i.e (1.63 >1.59), at the 5% level of significance. Again, in table Table 4.2 it was seen that the T_{cal} of UBA is greater than the i.e (14.004 >1.59). In like manner, from table 4.3, it shows that T_{cal} of Access bank is less than the T_{tab} i.e (2.393 >1.59)

The researcher sees that the values of the T-calculated is greater than the tabulated values of treasury bill and certificate for the three banks. Therefore, the researcher accepts the alternative hypothesis and rejects the null

4.4 DISCUSSION OF FINDINGS

The above results indicate that there is a similarity between the dependent variables and that of the independent variables – LA, CA, TBC. We can see that the independent variables show positive relationship to the dependent variable (PAT). The adjusted R squared results indicates that 83.6%, 98.8%, and 92.1% of the total systematic variation of the dependent variable (PAT) have been explained by the explanatory variables put together. This means that 16.4%, 1.2%, and 7.9% of the total systematic variable in the independent variable (PAT) was not captured by the model.

From the view of the individual independent variables, there was recorded a statistical significance at 5% level for LA and TBC, indicating that there exists a significant impact on bank performance during the period under consideration. However, the opposite was the case with CB, as it recorded a non-significant relationship between the dependent variable, which led further to the conclusion that CB has no significant impact on bank performance during the period under consideration.

Finally, relationship between the variables is explained by the coefficient of each of the explanatory variables. As shown from the analysis, a unit increase in LA and TBC will decrease bank performance. Also, CB showed an insignificant relationship with bank performance.

SUMMARY OF FINDING, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF FINDINGS

The results of the analysis indicate that there is a similarity between the dependent variables and that of the independent variables – LA, CA, TBC. We can see that the independent variables show positive relationship to the dependent variable (PAT). The adjusted R squared results indicates that 83.6%, 98.8%, and 92.1% of the total systematic variation of the dependent variable (PAT) have been explained by the explanatory variables put together. This means that 16.4%, 1.2%, and 7.9% of the total systematic variable in the independent variable (PAT) was not captured by the model.

The study identified two types of inherent liquidity management problems: excess liquidity and shortage of liquidity (also known as illiquidity or liquidity crunch). These problems are influenced by the goals of monetary authorities, who aim to maintain equilibrium in the economy. Excess liquidity is seen as a potential indicator of economic growth, but it also raises concerns about inflationary pressures. On the other hand, liquidity crunch can be a sign of recession or deflation, which negatively affects business conditions.

For Nigerian banks, the impact of excess liquidity may vary depending on their management practices. It can signify opportunities for credit expansion, increased profits, and guaranteed growth. However, if excess liquidity remains as idle cash, it becomes a significant setback. The major challenge for banks lies in the shortage of liquidity, which reduces profitability, particularly when it hampers business expansion due to a low liquid base.

The study formulated four hypotheses, which were statistically tested using SPSS (Statistical Package for the Social Sciences). The first hypothesis examined the impact of loans and advances on the performance of Nigerian banks. The alternative hypothesis, stating that loans and advances do have a significant impact on performance, was accepted.

The second hypothesis investigated whether bank cash and balances held with the Central Bank of Nigeria (CBN) have a significant impact on the performance of Nigerian banks. The alternative hypothesis, suggesting that cash balances held with the CBN do have a significant impact, was accepted.

The third hypothesis explored the impact of treasury bills and certificates on the performance of Nigerian banks. The alternative hypothesis, indicating a significant impact, was accepted.

The study also emphasized that profitability can be optimized when liquidity is effectively and efficiently managed. This involves meeting financial obligations while maximizing profit generation.

5.2 CONCLUSION

Considering the findings of this study, the following conclusions can be drawn as evidence by the result of our analyzed data.

1. The banking system plays a crucial role in economic stability and development. Therefore, well-administered banking laws and regulations are necessary to provide operating restraints on banks.

2. Efficient and effective liquidity management is essential for the success and survival of Nigerian banks. Maintaining an optimal level of liquidity allows banks to meet their financial obligations to customers or depositors while maximizing profits for shareholders.

3. Banks should adhere to the minimum liquidity requirements set by the Central Bank of Nigeria to achieve optimal liquidity levels. This helps to reduce the occurrence of bank distress.

4. Both illiquidity and excess liquidity are detrimental to a bank's profitability. They can erode the profit base of a bank and hinder its ability to achieve high profitability levels. Therefore, effective liquidity management is crucial for banks aiming to maximize their profits.

5. Effective liquidity management involves estimating the proportion of depositor funds that will be demanded at any given period and planning to meet those demands. Adequate levels of liquidity are necessary to handle customer withdrawals and maintain financial stability.

5.3 RECOMMENDATIONS

Based on the conclusions drawn from the study, the following recommendations are proposed to address the issues related to liquidity management in the Nigerian banking sector:

1. Nigerian banks should prioritize effective liquidity management alongside profit maximization. This requires implementing measures to minimize or prevent excessive and deficient liquidity situations. By striking a balance, banks can ensure their survival and stability.

2. Instead of holding excessive liquidity as a provision for unexpected customer withdrawals, banks should explore alternative methods of meeting such demands. This can include borrowing from other financial institutions or discounting bills, which can help optimize the use of available funds.

3. The Central Bank of Nigeria (CBN) should consider the interests of banks when formulating and implementing monetary policies, particularly those related to liquidity management. By considering the impact of these policies on banks, the CBN can foster a more conducive environment for effective liquidity management.

4. The monetary authority should actively promote and legitimize the use of credit cards and encourage the use of checks for significant transactions in daily business activities. This can help reduce the need for banks to hold large amounts of idle cash in anticipation of unforeseen withdrawals. Emphasizing electronic payment methods can significantly decrease the movement of physical cash.

5. The Central Bank of Nigeria should maintain a flexible minimum Monetary Policy Rate (MPR) or discount rate. This flexibility would allow banks to take advantage of alternative measures to meet unexpected withdrawal demands and reduce the tendency to hold excess idle cash, which can negatively impact profitability.

6. Banks should strategically schedule the maturity periods of their secondary reserve assets to align with the anticipated periods when the funds will be needed. This proactive approach can help ensure that liquidity is available when required and minimize the risk of holding excessive or insufficient liquidity.

7. Nigerian banks should establish a customer forum or educational program to educate customers about the various types of deposits available and the operational requirements associated with each type. This will promote transparency and help customers make informed decisions about their deposits, contributing to a more efficient liquidity management system.

8. Further research is recommended to explore methods for achieving optimal liquidity levels in Nigerian banks. This research can focus on addressing the issue of excess liquidity and its impact on profitability, as well as exploring strategies to balance high profitability with an adequate liquidity position. Such research would contribute to refining liquidity management practices in the banking sector.
Moreover, it is recommended to conduct research that identifies better quantitative measures of profitability, liquidity, risk, and managerial efficiency. Developing more accurate measures in these areas can lead to a more comprehensive understanding of the cause-and-effect relationships between liquidity management and performance outcomes.

9. Finally, it is suggested that future researchers delve extensively into the same research area, employing a wider range of data and expanding the geographical coverage. This broader scope of research can provide a more comprehensive understanding of liquidity management challenges and potential solutions in the Nigerian banking sector.

REFERENCES

- Central Bank of Nigeria. (n.d.). Annual reports. https://www.cbn.gov.ng/documents/annualreports.asp
- Dodds, J. C. (1982). The term structure of interest rates: A survey of the theories and empirical evidence. Managerial Finance, 8(2), 22-31. https://doi.org/10.1108/eb013551
- Aburime, T. U. (2008). Determinants of bank profitability: Macroeconomic evidence from Nigeria. Social Science Research Network. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1231064
- Agarwal, J. D. (1998). A goal programming model for working capital management. Finance India, 2(2), 143-154.
- Allen, F., & Gale, D. (2000). Comparing financial systems. MIT Press.
- Anyanwu, J. C. (1993). Monetary economics: Theory, policy, and institutions. Hybrid Professional Publishers.
- Ariyo, A. (2005). Liquidity management in Nigeria. West African Book Publishers.
- Bhunia, A., & Brahuna, S. B. (2011). Importance of liquidity management on profitability. Asian Journal of Business Management, 3(2), 108-117.
- Bhunia, A. (2010). A trend analysis of liquidity management efficiency in selected private sector Indian steel industry. International Journal of Research in Commerce and Management, 1(5), 37-44.
- Bickjkman, A., & Ronald, S. (1989). Credit and collection principles and practice. McGraw Hill Publishers.
- Brown, C. U. (1925). The Nigerian banking system London. Cambridge University Press.
- Carletti, E., Hartmann, P., & Spagnolo, G. (2006). Bank mergers, competition, and liquidity (Working Paper No. 06/02). Center for Financial Studies. https://www.ifk-cfs.de/fileadmin/downloads/publications/wp/06_02.pdf
- Central Bank of Nigeria. (1976). Annual report and statement of account for the year ended. https://www.cbn.gov.ng/Out/2017/RSD/Annual%20Report%20and%20Statement%20of%20Accounts%20for%20the%20Year%20Ended%2031st%20December,%202016.pdf

- D'Souza, C., & Lai, A. (2000). The effects of bank consolidation on risk capital allocation and market liquidity (Working Paper No. 2000-7). Bank of Canada. https://www.bankofcanada.ca/wp-content/uploads/2010/02/wp00-7.pdf
- David, B. (1991). Economics. McGraw Hill Book Publishers.
- Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. Journal of Political Economy, 91(3), 401-419. https://doi.org/10.1086/261155
- Eljelli, M. A. (2004). Liquidity-profitability tradeoff: An empirical investigation in emerging market. International Journal of Management, 14(2), 48-61.
- Eljelly, A. (2004). Liquidity – profitability tradeoff: An empirical investigation in an emerging market. International Journal of Commerce and Management, 14(2), 48-61. https://doi.org/10.1108/10569210480000179
- Ethinger, R., & Golied, O. (1979). Credit and collection. Prentice Hall Publishers.
- Fisher, D. (1976). Monetary economics. Macmillan Publishers.
- Nahum, N., & Gill, A. S. (2013). The impact of corporate governance on working capital management efficiency of American manufacturing firms. Managerial Finance, 39(2), 116-132. https://doi.org/10.1108/03074351311294020
- Ngwu, T. C. (2006). Bank management. Bob Publishers.
- Nwaezeaku, N. C. (2006). Theories and practice of financial management. Ever Standard Publishing.
- Nwankwo, G. O. (1991). Bank management principles and practices. Malthouse Press.
- Nwankwo, U. (1992). Economic agenda for Nigeria. Centralist Production Ltd.
- Nwankwo, G. O. (1991). Prudential regulations of Nigerian banking. University of Lagos.
- Nwankwo, G. O. (2004). Bank management principles and practice. Malt House Press Limited.
- Nzzotta, S. M. (2004). Money, banking, and finance: Theory and practice. Osphrey Publication Centre.
- Onado, M. (1986). Objectives of banking regulation, the trade-offs between efficiency and stability. Oni Publishers.

- Ronald, D. (1986). A practical approach financial management. Dennis Publishers.
- Saha, M., & Bhunia, A. (2012). How far India has gone down the road towards financial integration with US since subprime crisis? An econometric analysis (MPRA Paper No. 38731). Munich Personal RePEc Archive. https://mpra.ub.uni-muenchen.de/38731/
- Shapiro, S. O. (1986). Multinational financial management. Practice Hall Publishers.
- Spindt, P. A., & Tarhan, V. (1980). Liquidity structure adjustment behavior of large money center banks. Journal of Money, Credit and Banking, 12(3), 347-362. https://doi.org/10.2307/1991792
- Tsomocos, D. P. (2003). Equilibrium analysis, banking, contagion, and financial fragility (Working Paper No. 175). Bank of England. https://www.bankofengland.co.uk/-/media/boe/files/working-paper/2003/equilibrium-analysis-banking-contagion-and-financial-fragility.pdf

APPENDIX I

YEAR	Liquidity Ratio	Loan/Deposit Ratio	Cash Reserve Ratio
2015	48.8	70.8	2.8
2016	44.3	80.9	2.3
2017	30.5	80.1	4.8
2018	28.8	78.6	5.1
2019	26.7	79.6	5.8
2020	25.8	75.8	4.9
2021	25.7	76.5	4.6
2022	21.6	59.8	2.5

Source: CBN Statistical Bulletin Vol. 211, Dec 2014: , NDIC Annual Report and Statement of Account 2015 – 2022. (www.ndic.org)

APPENDIX II

More figures from SPSS 20

FIRST BANK

Correlations

		PAT	VC	BB	TBC
Pearson Correlation	PAT	1.000	.923	.893	-.312
	VC	.923	1.000	.962	-.458
	BB	.893	.962	1.000	-.518
	TBC	-.312	-.458	-.518	1.000
Sig. (1-tailed)	PAT	.	.000	.000	.129
	VC	.000	.	.000	.043
	BB	.000	.000	.	.024
	TBC	.129	.043	.024	.
N	PAT	15	15	15	15
	VC	15	15	15	15
	BB	15	15	15	15
	TBC	15	15	15	15

UBA BANK

Correlations

		PAT	VC	BB	TBC
Pearson Correlation	PAT	1.000	.880	.859	.991
	VC	.880	1.000	.830	.854
	BB	.859	.830	1.000	.817
	TBC	.991	.854	.817	1.000
Sig. (1-tailed)	PAT	.	.000	.000	.000
	VC	.000	.	.000	.000
	BB	.000	.000	.	.000
	TBC	.000	.000	.000	.
N	PAT	15	15	15	15
	VC	15	15	15	15
	BB	15	15	15	15
	TBC	15	15	15	15

ACCESS BANK

Correlations

		PAT	VC	BB	TBC
Pearson Correlation	PAT	1.000	.951	.882	.965
	VC	.951	1.000	.923	.965
	BB	.882	.923	1.000	.885
	TBC	.965	.965	.885	1.000
Sig. (1-tailed)	PAT	.	.000	.000	.000
	VC	.000	.	.000	.000
	BB	.000	.000	.	.000
	TBC	.000	.000	.000	.
N	PAT	15	15	15	15

	VC	15	15	15	15
	BB	15	15	15	15
	TBC	15	15	15	15