# IMPACT OF CASH MANAGEMENT ON PROFITABILITY OF DEPOSIT MONEY BANKS IN NIGERIA

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**BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE, COLLEGE OF HUMANITIES, MANAGEMENT AND SOCIAL SCIENCES, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE, MOUNTAIN TOP UNIVERSITY IBAFO OGUN STATE NIGERIA**

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## Certification

I certify that this work was carried out by MEDO-UWA OBIORA CONFIDENCE with matric number 15020101029 at the Department of Accounting and Finance, Mountain Top University, Ogun State, Nigeria under my supervision.

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## Dedication

To the Lord God Almighty who bestowed to me the knowledge and wisdom used in carrying out this project research and to my parents and to whoever will decide to explore the field of Accounting and make the most of it.

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## Abstract

*Cash management is an important component of any organization and can be concluded to be a critical success factor of a commercial bank. The major or key performance of an organization is net profit and this study seeks to establish the relationship and significance of cash management on profitability of quoted deposit money banks in Nigeria. The study employed the Returns on Asset as the proxy for profitability, the dependent variables while, the gearing ratio, non-performance loan and investment were employed as the independent variables for 10 selected banks while the study period spanned from 2013 to 2017. The data used in this study were all obtained from the annual financial reports of the sampled banks. The main objectives of this study is to examine the effect of gearing ratio on return on asset in deposit money bank; the effect of non-performing loan on returns on asset and to determine the effect of investment on return on asset in deposit money bank in Nigeria. The data collected as subjected to descriptive and inferential statistics. Descriptive statistics includes mean and standard deviation while correlation and multiple regression analyses were employed for testing hypothesis. The correlation result revealed that return on asset and gearing ratio are negatively correlated and concludes a weak relationship between gearing ratio and returns on asset. The ARDL model was also used to estimate the relationship between the variables and it is revealed that in the short run, the gearing ratio and non-performance loan positively affects return on asset. The study however conclusively recommends that debt/equity ratio of the commercial banks should be efficiently managed to maintain its short run relationship with returns on asset and efficient accounts processing arrangements for receipts and payments to reduce transaction costs to ensure efficient debtor management and collection of receivables.*



Keywords: Cash management, gearing ratio, investment, non-performing loan, profitability

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background of the Study

Every business is expected to hold a given proportion of its asset in a liquid form in order to meet up with transaction needs of its day to day activities. As Ibe (2013) agrees, maintenance of optimal level of liquidity is one of the striking corporate goals of an entity that aims to guarantee safety and avoid bankruptcy. Every business has its way of financing the short term transactions it undertakes, but the level of liquidity influences the performance of these businesses and so becomes an object of concern for organizations. According to Olagunju, David, and Samuel (2012), both profitability and liquidity are considered effective measures of the corporate health and performance of all profit-oriented entities. However, the importance of the liquidity indicator is more for a banking financial institution where depositors are concerned with the ability of the bank to respond to their withdrawal needs when necessary.

A banking financial institution is faced with a more challenging situation of maintaining an optimal level of liquidity along with a competing concern of the shareholders to maximize profit level. Withdrawal demands of depositors come at a very short notice and hence a bank has to be prepared for such by maintaining a level of liquidity sufficient for catering for the need of settling its obligations as well as to carry out some other business expenses in the short term period. Although liquidity is a short term concept, it remains an objective of the organization throughout the existence of the business. Al Nimer, Warrad, and Al Omari (2015) posits that the cash generating ability of a company can be assessed by its ability to settle current obligations. Even a company that declares a positive net income at the end of every accounting period may find itself bankrupt if it fails to meet its obligations to the short-term creditors.

The essence of liquidity management is realized even at the national level, and the monetary authority is charged with the setting of policies to guide commercial banks on the level of liquidity it should maintain. As revealed by Bruno and Shin (2015), liquidity management is a core aspect of monetary policy implementation as the central bank wield the responsibility of smoothening out the swings in the demand and supply of bank currency in the country. He also opined that the commercial banks mobilize deposits and create credits while acting as financial intermediaries; collecting money from the surplus unit and lending it out to the deficit unit of the economy as they see to the ease of transfer of economic resources from one economic agent to another. An optimal level of liquidity should be held by commercial banks in order to ensure that funds are available to meet financial obligations at a low price, although the level of optimal liquidity is relative as it depends on the scale of operation and also location of the business. The level of liquidity expected of a bank located in an urban area with large population should differ from that level expected to be maintained by a bank in a remote area (Ejoh, Okpa, & Egbe, 2014).

Customers confidence is the most important factor in any banking system (Strategy, 2015) as the study also claimed that "banking is fundamentally an incident of trust". A commercial bank that intends to maximize profit would need to pose as a going concern by being able to withstand economic turbulence and operate on a normal level balancing solvency and liquidity. At any moment in time, the value of an asset depends both on the anticipated cash flow they generate and the underlying liquidity of the market on which they operate. An illiquid bank is perceived distressed by the general public and once the confidence of the public is eroded for a commercial bank, the turnover of withdrawal gets higher, the people trying to be safe which actually worsen

the case of the bank and may need to resort to borrowing from the central bank at a cost which will further deplete the profit of the bank.

The banking sector is an important component of the economy and its poor performance would be reflected in the general economy, if a bank folds up due to liquidity or solvency problem as witnessed in the Nigerian banking system recently, there is loss of job, increasing the difficulty arising from the low employment rate and the people of the country are made worse off (Rosen, 2004). This insight has therefore made this study a worthwhile attempt to evaluate the impact of liquidity on the performance of banks in the country.

## 1.2 Statement of the Problem

The financial institutions represent an indispensable component of an economy in entirety. As added by Wilson (2012), the banking institution significantly contributes to the operation of the entire financial system of an economy by facilitating the transfer of financial resources from the surplus unit or the fund lenders to the deficit unit or fund seekers at a given rate that affects the economy at a national level and relates with the other macroeconomic fundamentals. The banking institutions perform their financial intermediation role through both deposit liberalization and credit extension (Olagunju, David, & Samuel, 2012). The realization of the role of the financial institutions necessitated the establishment of central banks and banking regulators whose responsibility covers the banking institutions that are the core of the financial system (Barth, Caprio, & Levine, 2013).

A typical economy is characterized by cycle of economic movement. As an economic upswing proceeds in the phase of the cycle, banking institutions are faced with what is considered a risky atmosphere due to increase in leverage and it becomes more difficult for a banking institution to

adopt a conservative approach. Credit cost becomes low, liquidity becomes cheap and readily available calming volatility to a moderate level. However, the situation cannot be sustained, as a change in the economic cycle is signaled by a trigger which could be externally induced or due to other economic events. The dynamic reaction to this economic change could worsen the outcome and the institutions begin to experience decline in the asset prices, shrinkage of capital cushions and a rise in the level of liquidity risk.

It becomes up to the apex financial institution to devise preventive policies for that kind of economic situation and it does so by prescribing minimum ratios of capital and liquidity that are considered sufficient to maintain public confidence in banking institutions even in periods of economic stress (Chant, 2003). However, this approach is met by some limitations such that, market pressure may be accentuated by the erosion of banks' capital or liquidity position which may results in the pessimistic response of banks to sell off assets in an attempt to maintain the capital ratio, and a resulting fall in value of asset is experienced.

The evident shortcoming of the preventive approach however necessitates a supervisory approach by the apex bank over the financial market to ensure that sufficient capital and liquidity is maintained by the banks. The monetary authority manages financial stress by establishing practices that govern the response to liquidity pressures through the willingness to lend, on good collateral and at a penalty rate to the banking institutions facing funding liquidity problems. This approach is not free from limitation itself, one major one is the difficulty of distinguishing between liquidity and solvency problem as the loss in value of an institution's asset which can cause a liquidity problem may extend to a solvency problem.

The economic problem that arises from a poor performing banking system is of serious implication on the wellbeing of the people and the development of the economy since a functioning banking system is a prerequisite for an economy that aims structural development accompanied by other long term growth objectives.

## 1.3 Objective of the Study

The main objective of the study was to evaluate the effect of cash management on profitability in deposit money banks in Nigeria. The specific objectives were stated to:

i. Examine the effect of gearing ratio on return on asset in deposit money bank in Nigeria.
ii. Examine the effect of non-performing loan on return on asset in deposit money bank in Nigeria.
iii. Examine the effect of investment on return on asset in deposit money bank in Nigeria.

## 1.4 Research Question

The research objectives above lead us to answering the following question;

i. What is the effect of gearing ratio on return of asset in the deposit money bank in Nigeria?
ii. What is the effect of non-performing loan on return of asset in deposit money bank in Nigeria?
iii. What is the effect of investment on return on asset in deposit money bank in Nigeria?

## 1.5 Research Hypotheses

**Hypothesis One**

**$H_{01}$:** there is no significant relationship between gearing ratio and return on asset in deposit money bank in Nigeria

**Hypothesis Two**

**$H_{02}$:** there is no significant relationship between non-performing loan and return on asset in deposit money bank in Nigeria.

**Hypothesis Three**

**$H_{03}$:** there is no significant relationship between investment and return on asset in deposit money bank in Nigeria.

## 1.6 Significance of the Study

There has been a growing concern about the performance of commercial banks in the country arising due to complexity and dynamism of the economy. Liquidity has been noted to create a clear imapct on the performance of banking institutions and the economic activities of the country. The bulk of recent studies, however, focus on the impact of several other factors that affect the profitability of institutions. Several factors associated firms' performance were pointed out, these factors include gearing ratio (Baker and Sinkula, 2015), high-performance work systems (Shin & Konrad, 2017); perceived organizational support (Pollanen, Abdel-Maksoud, Elbanna, & Mahama, 2017) among others. More indigenous studies identified other dynamic independent variables such as technology, innovation, and supply chain management (Ringim, Dantsoho, & John, 2017; Anthony, 2018) as the determinants of organizational performance. Interestingly, the predictive power of these factor has been very limited.

As pointed out in Opoku-Mensah, (2012), in spite of the plethora of studies examining bank performance, the results have been mostly mixed and inconclusive. Thus, going further to bridge the knowledge gap in the literature by finding out how liquidity will affect banking firms' performance in the Nigerian economy using 3 commercial banks as a case study. Also, the findings of this study will be a valuable reference material for students, organizations and other interested persons who may want to undertake a similar study. Recommendations made by the study would enable the banks to have more insights on the need to shift from obsolete planning approaches to more systematic and scientific based planning of their liquidity control. It will also suggest possible measures that could be adopted in a bid to stimulate a higher banking institution performance.

## 1.7 Scope of the Study

This study covers the impact of liquidity on the profitability of deposit money banks in Nigeria. The scope of the study covers the Tier 1 banks and five commercial banks in Nigeria and the data time range employed is between 2013-2017.The Tier 1 banks are chosen for this study because of the readily availability of the data for the study. This period is relevant to the study because it covers the period of the recent recession of 2015, also addresses the issues surrounding current economic atmosphere in the country.

## 1.8 Operational Definition of Terms

Cash Management: It is the ability of the bank to manage the cash position so that neither cash nor profitability will suffer. It involves provision for the withdrawal of deposit, short-term cash cyclical and circular cash requirement of the apex financial institution.

**Asset**: These are the entire properties of a bank and other investment in other profitable organization.

**Asset Management**: It is the allocation of fund, the basic objectives being maximization of profitability, solvency and regulatory constraints.

**Bank Run**: A run occurs in a bank when there is mismanagement of cash and profitability.

**Trading on Equity**: This is a situation where a firm earns more with borrowed fund than that which is cost to borrow the fund.

**Bank Deposit**: These are funds deposited in a bank, it is divided into:

**Demand deposit:** This is also known as checking account deposit payable on demand that is without prior notice.

**Savings deposits:** this type of deposit is usually evidenced by a passbook under which the depositor/ customer of the bank is required to notify the bank before withdrawal, but it is not so in practice.

**Time deposits:** This deposit cannot be withdrawn until after a specific period of time.

**Profitability:** this is the ability of a company to use its resources to generate revenues in excess of its expenses.

**Deposit Money banks:** are resident depository corporations and quasi corporations which have any liabilities in the form of deposit payable on demand, transferable by cheque or otherwise usable for making payments.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Introduction

This chapter reviews concepts and terminologies that relate to the impact of liquidity on bank performance and also reviewed related literature under the following subheadings- theoretical review, empirical review and appraisal of literature.

## 2.1 Conceptual Review

This sub-section specifically reviews various concepts and terminologies related to impact of liquidity on bank performance.

### 2.1.1 Liquidity

Liquidity can be conceptualized as the ease or degree with which an asset or any resource owned can be used for transitionary purpose. The degree to which an asset can be bought and sold in the market without a significant effect on the price of the asset is the liquidity of that asset. A common indicator used to assess a firm's liquidity is the current ratio which is calculated by dividing current asset by current liabilities. According to Oloruntoba, Adeyemi, and Fasesin (2018), liquidity is referred to as the ability to meet short term obligations and various operation needs with available cash or cash equivalent that are sometimes termed as liquid assets. A lot of tactical decisions made by the management hover around the extent of the firm's liquidity because of its influence on the profitability and performance of the business. The intention to transact without affecting the prices of the business assets is linked to how efficiently the business manages its liquidity. Liquidity is the control of transaction speed in an attempt to keep down the cost of transaction of a business.

The value of an asset lost due to its sale is the transaction cost incurred on that asset and the more the value lost, it implies a lower the liquidity of the asset (Uslu, 2019). Cash also referred to as money currency posits as the most illiquid asset because as low as zero cost is incurred in its sale in exchange for goods and services. Money, because of the numerous functions it performs such as debt servicing, purchase of inventory, selling activities, recurrent expenses of the business etc. can be used immediately and doesn't not have to wait for a suitable buyer and has no tradeoff implication between speed and value. As opined by Bai, Krishnamurthy and Weymuller (2018). In some cases, the amount of cash in possession of a business is used to ascertain the liquidity of the business. Liquidation may be achieved by exchanging a less liquid asset through trading with a more liquid one in order to fulfil its payment obligation.

The essential features of a liquid asset are that it can be sold rapidly at a low transaction cost with minimal loss in value and can be traded with less market constraints. The availability of willing buyers and sellers of an asset at every period of time establishes the level of liquidity of such asset. As opined by Aladwan (2015), liquidity and solvency are two related concepts that establish the actions of a company's working capital management. An increasing financial cost may also result from low liquidity which may result in inability to service debt obligations. However, as revealed by Arif, Khan, and Iqbal (2013), there exist a tradeoff between liquidity and profitability. High liquidity can be thought of as an indication of financial strength, but may be undesirable in some cases because current assets are usually less profitable as compared to the fixed assets which are illiquid. The profitability of a company may also be reduced when the cost incurred to maintain the current assets generate additional costs for maintenance.

### 2.1.2 Banking Performance

A firm measures its performance in respect to various indicators that concern the specific and broad objective of its establishment. The accomplishment of some planned or budgeted outcomes are used to assess or ascertain if a company is performing well enough or not. A bank may be assessed by a lot of indicators. Two of the key indicators are related to the profitability of the bank's asset and they are return on assets and return on equities.

#### 2.1.2.1 Bank Profitability

The issue of profitability is a contentious subject that a bank has to consistently face. Profit is the disparity between expenses and revenue over a period of time, normally one year. As explained by Malik, Awais, and Khursheed (2016), a business is organic; it survives and grows. Therefore, it is important that a bank earns profit for its long term survival and growth. It is also necessary that enough profit must be earned to maintain the activities of the business to be able to obtain funds for expansion and growth of the bank.

Dahiyat (2016) argued that corporate profit planning remains one of the most difficult and time consuming aspects of bank management because of the many variables involved in the decision, which are outside the control of the bank. It is even more difficult if the bank is operating in a highly competition economic, such as that of Nigeria. According to Sheefeni and Nyambe (2016), the profitability variable is represented by two variables measures, the ratio of profits to asset, i.e the return on asset (ROA) and the return to equity ratio (ROE). In principle, return on assets reflects the ability of a bank's asset to generate profit, although it may be biased due to off-balance-sheet activities. Return on equity indicates the returns to shareholders on their equity and equals return on asset times to the total asset to equity ratio. Profit may only be called real profit after the receivables are turn into cash. Ability to make profit from all the business

activities of an organisation, company, firm or an enterprise can be referred to as profitability. It shows how efficient the management can make profit using all resources available in the market (Tamunosiki, Giami, & Obari, 2017).

According to Dahiyat (2016), profitability is the ability of an investment to earn a return from its use. A business is run for profit. However, the absolute amount of profit is not the sole metric to focus on. In a competitive marketplace, to achieve a satisfactory level of profitability, it must be learned by the business owners. Every business is concerned mostly with its profitability, therefore profitability is defined as the ability to make profit from an enterprise business activity (Upward & Jones, 2016). It shows how available resources are used in the market by the management efficiently in order to make profit.

#### 2.1.2.2 Non-performing loan

Nonperforming loans are those risk assets not generating income. As a first step, loans are often considered to be nonperforming when principal or interest on them is due and left unpaid for 90 days or more. Loan classification and provisioning entails much more than simply looking at amounts overdue. The borrowers' cash-flow and overall ability to repay amounts owing are significantly more important than whether the loan is overdue or not. For financial reporting purposes, the principal balance outstanding rather than delinquent payments is used to identify a nonperforming loan portfolio (Sanusi, 2012). The nonperforming loan portfolio is an indication of the quality of the total portfolio and ultimately that of a bank's lending decisions. There can be a number of reasons to explain deterioration in loan portfolio quality. It is unavoidable that banks make mistakes in judgment. However, for most failed banks, the real problems are systemic in nature and rooted in a bank's credit culture and management style.

According to Greuning and Bratanovic (2013), credit risk is the most common cause of nonperforming loans and bank failures, causing virtually all regulatory authorities to prescribe minimum standards for credit risk management. They opine that the basis of sound credit risk management is the identification of the existing and potential risks inherent in lending activities. Measures to counteract these risks normally comprise clearly defined policies that express the bank's credit risk management philosophy and the parameters within which credit risk is to controlled (Olagunju,2016). Specific credit risk management measures typically include three kinds of policies. One set of policies includes those aimed to limit or reduce credit risk, such as policies on concentration and large exposures, adequate diversification, lending to connected parties or over-exposures.

The second set includes policies of asset classification. These mandate periodic evaluation of the collectability of the portfolio of loans and other credit instruments, including any accrued and unpaid interest which exposes a bank to credit risk (Onoh, 2017). The third set includes policies of loss provisioning or the making of allowances at a level adequate enough to absorb anticipated loss not only on the loan portfolio, but also on all other assets that are subject to losses (Nickson, 2016). Interest income is a major source of bank profitability and is dependent on performing loans. Interest income originates from loans and all advances extended by a bank such as working capital overdrafts, among others. It also includes interest received on bank's deposits kept with other financial institutions. Interest income is often eroded when a bank accumulates a large stock of nonperforming loans that do not yield income (Ojo, 2010). There is a growing body of empirical evidence to suggest that non-performing loans have adverse effects on bank profitability that often lead to bank failures. Profitability is an indicator of a bank's capacity to carry risks and/or to increase its capital. The capital adequacy of a bank is generally gauged by

the extent to which owners' funds provide cover for depositors in the event of loans and advances becoming nonperforming (Pandey, 2012). It is often the practice to measure capital adequacy by the extent to which the prescribed ratio is realized. Also, it is common to examine the extent to which shareholders' funds cover nonperforming loans.

Deposit money banks are the most relevant financial institution in many countries which encourage and mobilize savings and also channel such savings into productive investment. The reason is because of their high network of offices; and secondly because the banks are strong and thus attract savers. Deposit money banks also accept deposits from customers and lend to borrowers for various purposes; this role paramount and outweighs every other one. They serve as intermediaries between borrower and savers. In the process of lending, new money is created by banks through the deposit lending multiplier effect. Based on this, Deposit money banks are able to influence the level of money stock, the allocation of fund, the direction and use of resources in the economy. Obviously, credit creation is the main income generating activity of banks (Kargi, 2011). However, it exposes the banks to credit risk. The Basel Committee on Banking Supervision (2015) defined credit risk as the possibility of losing the outstanding loan partially or totally, due to credit events (default risk). Credit risk is an internal determinant of bank performance. The higher the exposure of a bank to credit risk, the higher the tendency of the bank to experience financial crisis and vice-versa. According to Ahmad and Ariff (2013), most banks in Nigeria and other economies such as Thailand, Indonesia, Malaysia, Japan and Mexico experienced high Non-Performing Loans and significant increase in credit risk during financial and banking crises, which resulted in the closing down of several banks in Indonesia and Thailand. The negative effect of non-performing loans on banks performance and the economy in general has made the issue of Non-performing loan a global one and of great

importance in the last decades. According to Hou and Dickinson (2017), many researches on the causes of bank failures found that asset quality is a statistically significant predictor of insolvency, and that failing bank institutions always have high level of Non-performing loans prior to failure. Therefore, in managing the lending portfolio to attain the desired results, the bank should give adequate attention to the above factors.

#### 2.1.2.3 Return on asset

Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives an idea as to how efficient management is at using its assets to generate earnings. Calculated by dividing a company's annual earnings by its total assets, ROA is displayed as a percentage. Sometimes this is referred to as return on investment. But the Return on equity (ROE) is the amount of net income returned as a percentage of shareholder's equity. Return on equity measures a corporation's profitability by revealing how much profit a company generates with the money shareholders have invested. Lo and MacKinlay (2016) argue that large firm stock returns respond faster to new information compared with small firm stock returns and large firm stock returns lead small firm stock returns. Richardson and Peterson (2014) and Wang (2016) find support for the Lo-MacKinlay hypothesis. Wang (2012) demonstrate that large firm stock returns respond faster than small firm stock returns and large firm stock returns lead small firm stock returns in stock market crashes. Main goal of investment is practically to achieve return. Return on share depends on changes in price per share at the end of the investment period and received dividend. Dividend is the most common distribution of return through firms to shareholders; however, firms do not similarly act in distributing dividend and adopt different strategies which can cover a spectrum of unpaid dividend to payment of all revenues.

Bigdeli and Bidgolo (2016) Return on Equity (ROE) & Return on Assets ratios are the best standard to measure success or failure of the management in achieving this goal. These ratios emphasize that return on earning depends on the amount invested by shareholders. Some authors have focused on liabilities of the firm and their effect on earning or price of the share based on knowledge. Faulkender and Wang (2016) final value of an extra dollar decreases regarding its cash at the beginning of the year. That is, the more cash kept by the firm at the beginning of the year, the lower value perceived by shareholders for an extra dollar during the financial year. Financing choices refer to corporate decisions resulting in an optimal capital structure. This represents a corporate financing mix, which maximizes the value of the company and its market share price. Real economies are imperfect and unstable, offering investors limited access to external funds, due to information asymmetry and high transaction costs. While large financial markets ensure continuous trading activity by providing large liquidities for market participants, developing markets dispose of fewer securities, offering investors limited trading opportunities (Burhop & Gelman, 2013). These constraints induce a preference for debt when it comes to accessing external finance for companies operating in developing countries, and thus these companies are expected to have relatively stable equity.

### 2.1.3 Cash Management

Cash management can be conceptualized as the collection, control, and use of cash for dealings without delay. It captures a firm's level liquidity, its cash balance management, and its strategies for short-term investment, cash flow management is the most crucial job of business managers. If at any time a company fails to pay an obligation when it is due because of the lack cash, the company is insolvent (Springer, 2015). Insolvency is the core reason a deposit money bank may go bankrupt. Obviously, the prospect of such a dire consequence should compel companies to

manage their cash with greater care. Moreover, efficient cash management means more than just preventing bankruptcy. It improves the profitability and reduces the risk to which the firm is exposed (Davidson, 2014). The aim of cash management is to maintain adequate control over cash position to keep the firm sufficiently liquid and to use excess cash in some profitable ways (Johnson & Aggarwal, 2016).

Banks's liquidity simply means ability of the bank to maintain sufficient funds to pay for its maturing obligations. It is the bank's ability to immediately meet cash, cheques, and other withdrawal obligations and legitimate new loan demand while abiding by existing reserve requirements (Pandey, 2017). Generally, the adequacy of cash plays very crucial roles in the successful functioning of all business firms. The ability to meet short-term obligations may affect the bank's operation. Every investor has interest in the cash position of the company. However, the issue of cash though important to other businesses, is most paramount to banking institutions and this explains why bank show-case cash and other cash securities in their balance sheet statements (Adekany, 2016).

Thus, bank ensures that sufficient provision of cash and other near cash securities are made available to meet withdrawals obligation and new loan demand by customers in need of cash (Aghada & Osuji, 2015). Hence banks in Nigeria are statutory required to comply with cash reserve requirement (CRR) policy of the Central Bank of Nigeria as a measure of efficiently managing the cash position of banks. Therefore, a bank should ensure that it does not suffer from lack of cash and does not also have excess cash Pandey (2017). Failure to meet obligation due to lack of sufficient cash result in poor credit worthiness and loss of creditors' confidence. Thus, cash management as a concept encompasses efficient and effective planning and organization of

bank's assets which will enhance its cash and profitability at a minimum cost possible (Beity, 2018).

#### 2.1.3.1 Importance of Cash Management

Cash management assumes more importance than other current assets because cash is the most significant asset that a firm hold. Cash is unproductive unlike fixed assets or inventories; it does not produce goods for resale, notwithstanding management's considerable time is devoted to managing it. The importance of managing cash to a manufacturing concern as identified by Alfred (2017) are:

#### 2.1.3.2 Management of cash aids the achievement of liquidity and control

It brings about proper planning with regard to cash disbursement and receipts over cash positions to keep the firm sufficiently liquid and to use excess cash in some profitable venture

The management of cash is also significant since we cannot rightly predict accurately cash flow behaviour in the future.

Through cash management appropriate strategies are developed thereby providing innovation for cash receipts and payment.

It also aid maintaining adequate control over cash position to keep the firm sufficiently liquid and use excess of cash in some profitable ventures.

The primary purpose of cash management is therefore to reduce cost. However, a cost-benefit analysis of cash management is also needed. Such costs of cash management include cost of interest payments, cost of collection, cost of disbursement of funds, etc.

### 2.1.4 Definition of Cash

According to Olagunji, (2016), cash refers to the ability of a bank to ensure the availability of funds to meet financial commitments or maturing obligations at a reasonable price at all times. Bank liquidity means banks having money when they need it particularly to satisfy the withdrawal needs of their customers. (Keith, 2018). The survival of deposit money banks depends greatly on how liquid they are. Cash assets should be marketable or transferable. This means, they are expected to be converted to cash easily and promptly, and are redeemable prior to maturity, Groover (2016). Another quality of cash assets is price stability. Based on this characteristic, banks deposits and short term securities are more liquid than equity investment due to the fact that the prices of the former are fixed than the prices and value of the later (Richard, 2016).

According to Aburime, (2017) cash can be defined as the state or condition of a business organization which determines its ability to honour or discharge its maturing obligations. These maturing obligations are composed of current liabilities and long-term debts. Cash can also be defined as a measure of the relative amount of asset in cash or which can be quickly converted into cash without any loss in value available to meet short term liabilities (Bhunia, 2015). Cash assets are composed of cash and bank balances, debtors and marketable securities. Cash is the ability of a firm to meet all obligations without endangering its financial conditions. Cash will help a firm to avoid a situation where a firm will be forced to liquidate with its attendant problems of selling assets at distressed prices and the extra fees paid to lawyers, trustees in bankruptcy and liquidators on liquidation (Pandey, 2017). The definitions above imply that, as cash increases, the probability of technical insolvency is reduced. The definitions above went ahead to expand the views by recognizing two dimensions of cash namely the time necessary to

convert an asset into money and the degree of certainty associated with the conversion ratio or price realized for the assets.

## 2.2 Theoretical Review

Recent discussions on the impact of liquidity on bank performance are predicated on the following theories namely Shift ability theory developed by Moulton (1918), Liability Management Theory developed by Kenton (1960), Liquidity Preference Theory by Keynes (1936), and other theories that are reviewed in this sub section.

### 2.2.1 Shift ability Theory

Shift ability can be conceptualized as an approach employed by commercial banks to maintain liquidity in cases where they are short of ready money i.e. vault cash. This theory was developed by Moulton (1918). It is proposed by the theory that banks will be kept in a ready state to meet the demands of depositors by making short-term commercial transactions. As contributed by Bessis (2015), banks shift their earning asset to other financial institutions in order to create the amount of reserves required rather than relying on the liquidity of the asset. A common shortcoming of the shiftability theory is that it assumes the assets become ineffective when there is no market for them in the times of stress or crises. Banks incur cost to liquidate assets because of the difficulty of locating a buyer which implies a fall in value of asset. The banking system is able to become more efficient by investing in more long term assets and lower reserves. Under shiftability, the banking system tries to avoid liquidity crises by enabling banks to always sell or repost at good prices (Oloruntoba, Adeyemi, & Fasesin, 2018).

According to Agwu (2018), the shiftability theory is based on the assumption that assets are supposed to be held in other shiftable open-market assets operated by the government rather than

been tied on only self-liquidating bills. A more general view is taken by the theory concerning banking businesses by broadening the items on assets list deemed legitimate for bank ownership. It is not proposed by the theory that commercial banks loans are not appropriate bank assets, it claims that commercial loans are not the only appropriate assets that can be held by commercial banks. The focal point of the shiftability theory is that the level of liquidity maintained by a bank depends on the bank's ability to shift its assets to another holder at a predictable price at minimum transaction cost. The profound effect of the shiftability theory on banking practices cannot be denied although the theory has been criticized because not all banks can obtain the amount of liquidity required simply by shifting their assets at the same time.

### 2.2.2 Liability Management Theory

This theory was developed by Kenton (1960) as liability management theory proposes that it is of no use to observe traditional standards by firms since they can always borrow reserve money from the money market through short term debt instruments in cases whereby the bank experiences deficiency in its reserves. The theory states that there is no need for banks to lend self-liquidating loans and maintain liquid assets as they can borrow reserve money in the money market when necessary. This theory proposes that there is no need to follow old liquidity norms like maintaining cash assets, cash investments etc., banks have focused on liabilities side of the balance sheet. According to this theory, banks can satisfy liquidity needs by borrowing in the money and capital markets. The fundamental contribution of this theory was to consider both sides of a bank's balance sheet as sources of liquidity (Emmanuel, 2017). The liability management theory is a practice adopted by banks in maintaining balance between maturities of the assets they control and the liabilities they owe in order to facilitate lending and maintain liquidity while trying to maintain a healthy balance sheet.

As opined by Andreou, Philip, and Robejsek (2016), the theory takes a one dimensional approach to liquidity and posited that liabilities of the bank can be used for liquidity purposes. If a bank requires liquidity for the purpose of deposit withdrawals and also to meet the reasonable loan request of the bank customers. The banks not only make profits from the loans but they are able to keep depositors for a reasonable long time by giving out loans to them. No requirement is needed for banks to engage in self-selling loans as a bank can hold savings when extra liabilities against itself are built by means of various sources. Liability management plays an important in the health of a bank's bottom line.

### 2.2.3 Theory of Liquidity Preference

The theory was developed by Keynes (1936) where he explained how interest rate, the cost of money is determined by the supply and demand for money. It concerns itself with how firms value liquid assets relative to interest over varying lengths of time. Keynes mentioned three motives for which liquid assets may be preferred to interest earning bonds. These motives are transaction, speculative and precautionary.

#### 2.2.3.1 Transaction Motive

Cash balances are held to optimize costs and benefits of transactions. As proposed by Keynes (1936), transaction motive reflects the need of cash to perform transaction of personal and business exchanges in the current period. A clear distinction was made between the business motive and the income motive of maintaining liquidity. When a certain level of liquidity is maintained in order to bridge the lag between the period receipt and disbursement of income, it is referred to as the income motive while the business motive illustrates a firm’s liquidity preference in order to bridge the interval between the time of the receipt of sale proceeds and the time of incurring costs.

A firm requires asset in its liquid form to service all liabilities and for all expenses which includes, purchase materials and inventory, payment of wages and salaries and to pay for all administrative expenses including its compulsory levy in form of taxes, dividends among other commitment. The holding of cash necessarily to meet anticipated expenditure with timing that cannot be predetermined is referred to as transaction motive of holding liquid asset. Banks like every other corporate firms require optimal liquidity management so that they hold enough money for carrying out function without affecting their performance. For smooth transactions, an optimal level of liquidity should be maintained in by banks to sustain the cash requirements of its depositors and still carry out its many functions. Through having cash for daily use like paying workers on time. The firm can easily get the desired profit.

According to DeAngelo and Stulz (2015), an amount of liquid asset is optimal when the marginal costs of holding liquid assets equate the marginal benefit of having liquid assets. As noted by Brealey, Myers, Allen, and Mohanty (2012), the exchange of funds comes with different costs of transaction and so, the decision is based on a trade-off. On one hand, interest is earned from investing in an interest bearing asset, while on the other hand transaction costs are incurred from the sale of illiquid interest bearing asset. As agreed by Edem, (2017), firms maintain liquid asset based on its level of activity, the opportunity cost incurred and technological sophistication of the firm. The relation between liquidity and profitability is established by cash conversion cycle. As suggested by Eljelly (2014), profitability and liquidity are better compared to if the company's profitability is measured using current ratio. The comfort level is higher when the current ratio is higher. The cash flow ratios vary with industry characteristics on which the analyst's assumptions would be adjusted in respect to the firm's accessibility to liquid asset.

#### 2.2.3.2 Precautionary Motive

Another motive for liquidity preferences as suggested by Keynes is the precautionary motive for holding liquid asset. As posited by Abioro (2013), the degree or strength of a firm's precautionary motive is dependent on the risk of a sudden contingency and the probability of a profitable acquisition of an asset. Thus, if a corporate organization operates in a highly volatile series of activity, its level of holding liquid asset for precautionary motives will be higher than that of firms which operates in a less risky environment.

According to Kakuru (2005), said that the precautionary motive establishes the need to maintain liquidity in order to meet contingencies in the future. It serves as a cushion to withstand unprecedented events such as an emergency work force problem and break down in machinery. The amount of cash held for precautions is influenced by the firm's ability to borrow in a short notice and the predictability of cash flows. The precautionary balance may be kept in marketable securities or in cash. Many firms carry out liquidity control with the prime motive of taking precautions and mitigating the effect of unprecedented calamities so these firms need to maintain an optimal liquidity in case of emergency.

As explained by Brinker (2000), cash is held for taking care of future contingencies which helps the firms to overcome some unexpected issues that need immediate attention, the predictability of cash flows determines the precautionary amount of cash that should be maintained. When liquid assets are maintained to cater for emergency that so may affect the firm's performance, then that the profitability, efficiency and performance of the firm is influenced by the level of liquidity. Abioro, (2013) opined that cash is the most liquid form of short term asset and further posited that cash out flows exceeded cash inflows during some

periods because of large and numerous number of transactions. He then suggested by urging firms keep up its efforts on searching for balance of optimal liquidity

A firm that is financially constrained should maintain a liquidity level that increases when cash flows are higher. In other words, firms constrained financially should maintain positive cash flow sensitivity of cash. Firms not financially constrained are not bothered by such condition. Investment uncertainty and growth option increase the value of cash holdings, while financial distress will cause a fall in the market value of cash. A relation between capital market access and the value of cash holdings is linked to the level of precautionary motive of the firm.

#### 2.2.3.3 Speculative Motive

The third motive for liquidity preference as concluded by Keynes (1936) was for the purpose of speculation. The speculative motive assumes that a rise in interest rates will induce decreasing prices of bond securities and vice versa. Idle cash of a firm are therefore invested in securities when expectation of a fall in interest rate. These transactions are profitable to the firm since the prices of the securities as a consequence of the anticipated interest rate drop. Van Horne claims that companies do not hold cash for this kind of speculative purpose and it can be assumed that this estimation is valid especially for SMEs which usually do not have their sources to make such complex financial decisions.

Speculation has to do with predicting what profitable avenue will arise in future and therefore taking advantage of it with liquidity control. Firms can easily keep money with a speculative motive of taking advantage of situations such as fall in price level of factors of production which may occur at any time. Therefore, optimal liquidation should be attained to ensure that enough

amount of money is kept in order to purchase in large quantities when there is fall which will automatically lead to maximization of profit for corporate firms.

A firm will maintain liquidation when it expects that interest rate will rise and security prices will fall, and so, more securities can be purchased when interest rates fall. The firm will benefit by the subsequent fall in interest rates and increase in security prices. Through speculative motive a firm can realize more profit because any money that is in surplus can be maintained to take up any opportunity that can generate more profits. For proper cash management, the cycle was illustrated so that cash flows can easily be analyzed.

### 2.2.4 Agency Cost Theory

The Agency cost theory was originated by two scholars Ross (1972) and Barry (1973). Another reason for liquidity in the case of banking firms is to minimize agency cost. Cost of agency may arise due to conflicting interests between debt holders and equity holders and this may cause the costs of outside funds to rise. The agency cost of debt problem thus creates an incentive for equity holders to convince the debt holders that their goal is to maximize the total value of the firm instead of the value of equity. However, it may be difficult for firms to credibly commit to a policy of firm value maximization instead of equity value maximization.

The problems of agency associated with maintaining a large amounts of debt cause huge costs to the firms and cause a fall in profit. For a firm with high agency costs of debt it may not be easy enough to raise funds necessary for profitable projects.

Agency costs may arise due to other reasons asides from conflicts of interest between equity holders and debt holders. Another form of agency costs stems from the differing interest between the equity holders and the management of the firm. There is an incentive for the management to

maintain excess cash balances to pursue its own objectives selfishly at the expense of shareholder's value maximization.

### 2.2.5 Anticipated Income Theory

This theory was propounded by Prochnow (1945). This theory states that the bank can manage its cash through the appropriate directing of the granted loans, and the ability to collect these loans when due in a timely manner and to reduce the possibility of delays in repayment at the maturity time. This theory posits that bank's management can plan its liquidity based on the expected income of the borrower, and this enables the bank to grant a medium and long-term loans, in addition to short-term loans as long as the repayment of these loans are linked by the borrowers expected income to be paid in a periodic and regular premium, and that will enable the bank to provide high liquidity, when the cash inflows are regular and can be expected (Okoh, Nkechukwu & Ezu, 2016). Out of a comprehensive study in 1949, Prochnow (1945) formulated a new loan theory which he called "the Anticipated Income Theory". According to Afriyie and Akotey, (2011), they found in thier study that: In every instance, regardless of the nature and character of the borrower's business, the bank planned liquidation of term loans from anticipated earnings of the borrower. Liquidation is not by sales of assets of the borrower as in commercial or traditional theory of liquidity or by shifting the term loan to some other lenders as in the shiftability theory of liquidity but by anticipating income of the borrower. In effect, this theory assumes that banks should make loans on the basis of the anticipated income of the borrower and not on his present value. In the words of Kolapo, Ayeni, and Oke (2012), one striking thing with this theory is its "future-oriented approach" to bank loans and advances. It is also generally known as "cash flow approach" to lending. Properly understood, this theory was a rival only to the commercial loan theory, not the shift ability theory. It does not question the shiftability view

that a bank's most fundamental source of liquidity is its secondary reserves. Rather, it again focused attention on the types of loans appropriate for a bank to make but came to quite a different conclusion than that reached by the advocates of the commercial loan theory (Moti, Masinde, & Mugenda, 2012).

## 2.3 Empirical Review

Ozurumba (2016) examined the impact of Non-performing loans on the performance of the selected deposit money banks in Nigeria covering the period 2000-2013 with special emphasis on banks for Africa and in Nigeria. It specifically determined the effect of non-performing loans, provision for loan loss and loans and advances on the performance of banks measured by Return on Assets and Return on Equity. The study utilized secondary data obtained from annual report and accounts of the selected banks for the period under study. The data were analyzed using ordinary least square method and ratio analysis. The specific finding of the work is that return on asset and return on equity have inverse relationship with non-performing loans and loan loss provision respectively while they are positively related to loans and advances. It is therefore concluded that the effects of non-performing loans on deposit money banks' performance is negative and cannot be underestimated, and poses a fundamental danger to the very existence of the Banks as corporate business entities. Based on the above findings, the work recommends that banks should maintain high credit standards while the Apex Bank and other regulatory agencies should maintain high surveillance on banks' credit operations.

According to Ahmad and Ariff (2013), most banks in Nigeria and other economies such as Thailand, Indonesia, Malaysia, Japan and Mexico experienced high Non-Performing Loans (NPLs) and significant increase in credit risk during financial and banking crises, which resulted in the closing down of several banks in Indonesia and Thailand. The negative effect of credit risk

and non-performing loans on banks performance and the economy in general has made the issue of NPLs a global one and of great importance in the last decades. According to Hou and Dickinson (2017), many researches on the causes of bank failures found that asset quality is a statistically significant predictor of insolvency, and that failing bank institutions always have high level of Non-performing loans prior to failure. Therefore, in managing the lending portfolio to attain the desired results, the bank should give adequate attention to the above factors. On this premise therefore, some of the pertinent questions to be addressed by the study are as follows: To what extent does non-performing loans affect the performance of banks in Nigeria? To what extent does loan loss provision affect the performance of banks in Nigeria? To what extent does loans and advances impact on performance of banks in Nigeria? Consequently, the direction of this study is to empirically establish the effect of non-performing loans on the performance of commercial banks in Nigeria.

Felix and Claudine (2018) investigated the relationship between bank performance and credit risk management. It could be inferred from their findings that return on equity (ROE) and return on assets (ROA) both measuring profitability were inversely related to the ratio of non-performing loan to total loan of financial institutions thereby leading to a decline in profitability. Kithinji (2010) assessed the effect of credit risk management on the profitability of Deposit Money Banks in Kenya. Data on the amount of credit, level of non-performing loans and profits were collected for the period 2004 to 2008. The findings revealed that the bulk of the profits of Deposit Money Banks are not influenced by the amount of credit and non-performing loans, therefore suggesting that other variables other than credit and non-performing loans impact on profits. Kargi (2016) evaluated the impact of credit risk on the profitability of Nigerian banks. Financial ratios as measures of bank performance and credit risk were collected from the annual

reports and accounts of sampled banks from 2004-2008 and analyzed using descriptive, correlation and regression techniques. The findings revealed that credit risk management has a significant impact on the profitability of Nigerian banks. It concluded that banks' profitability is inversely influenced by the levels of loans and advances, non -performing loans and deposits thereby exposing them to great risk of illiquidity and distress.

Epure and Lafuente (2015) examined bank performance in the presence of risk for Costa-Rican banking industry during 1998-2007. The results showed that performance improvements follow regulatory changes and that risk explains differences in banks and non-performing loans negatively affect efficiency and return on assets while the capital adequacy ratio has a positive impact on the net interest margin. Ahmad and Ariff (2013) examined the key determinants of credit risk of Deposit Money Banks on emerging economy banking systems compared with the developed economies. The study found that regulation is important for banking systems that offer multi-products and services; management quality is critical in the cases of loan-dominant banks in emerging economies. An increase in loan loss provision is also considered to be a significant determinant of potential credit risk. The study further highlighted that credit risk in emerging economy banks is higher than that in developed economies.

Ahmed, Takeda and Shawn (2013) in their study found that loan loss provision has a significant positive influence on non-performing loans. Therefore, an increase in loan loss provision indicates an increase in credit risk and deterioration in the quality of loans consequently affecting bank performance adversely. The risks in lending stem from the various factors that can lead to non-payment of the loan obligation when it falls due. Losses sometimes result from "acts of god" such as storm, drought, fires, earthquakes and floods. Changes in consumer demand or in technology of an industry may alter drastically the fortunes of a business firm and place a once

profitable borrower to a loss position. A prolonged strike, competitive price cutting, or loss of key management personnel, can seriously impair a borrowers' ability to make loan repayments. The swings of the business cycle affect the profits of many who borrow from banks and influence the optimism and pessimism of business people as well as consumers.

Somoye (2016) empirically investigated the relationship between the Investment of banks and Return on Assets of banks in Nigeria over the period 2001 to 2014. Using secondary data obtained from the central bank of Nigeria (CBN) statistical bulletin (2014) and World bank (2015). Relevant econometric techniques were adopted in analyzing the data for this study. Firstly, the descriptive statistic test was conducted; correlation test was also conducted to ascertain the strength of their relationship and it was observed that all the variables were stationary at the first differences, using the Philip-Perron unit root test, and having determine the stationary of the variables we further employ the Johansen co integration test, the error correction model. The study revealed that there is a long-run significant positive relationship between Investment and return on assets of banks in Nigeria over the period under review. This study recommends that monetary authorities such as NDIC and CBN through their supervisory role should ensure that banks have enough capital so has to achieve increasing public confidence in the Nigeria banking sector thereby bringing increase return on asset of the banks in particular and the financial sector in Nigeria.

Ngo (2016), attempted to find out the effect of capital profitability in banking. He investigated the relationship among bank investment and profitability. According to his study and the best of his knowledge, no previous paper had analyzed the problem in a two equation structural method. Contrary to what is often reported with surprising frequency in this field of research, his result showed no statistically significant relationship between capital and profitability. Given non-

binding capital requirement in his funding was consistent with the view that, while raising capital is costly for banks associated with compensating benefits that offset these additional costs. Consequently, when the capital structure is determined in a profit maximizing equilibrium, no systematic relationship between capital and profit expected. Akintoye and Somoye (2016) argued in labour of a few banks with adequate capital suggesting further tolling up of banks capital base. This view is further radically and specifically approached the propositions of Alao (2014) that suggested minimum capital base of 300 billion naira and reduction in the number of banks to three. Noticeable movement in the direction was the merger talks among the various banks and more specifically of the first bank plc and Zenith plc believed to be two giant banks in Nigeria. The extent to which the merger task suspected to be as a result of bail out strategy by the Nigeria government will make for further reduction in the number of banks in Nigeria, has created concerns for players in the industry. According to Somoye (2016) from 1952-1978, the banking sector recorded forty-five (45) banks with varying increase in the minimum capital. The number of banks dropped to one hundred (110) with another increase in minimum paid-up from 2billion naira in January 2004 to 5billion in July 2004.

Demirguc-Kunt and Huizinga (2015) conducted a more comprehensive study which examined the determinants of banking performance for 80 countries, both developed and developing, during the period 1988-1985. They concluded that foreign banks have higher profitability than domestic banks in developing countries, while the opposite holds in developed countries. Nevertheless, their overall results showed support for positive relationship between the capital ratio and financial performance. Aburime (2017) examined the determinants of profitability of 33 Nigeria banks from 2000-2004 with particular reference on company level. The result shows capital size, credit portfolio and ownership concentration were significantly related to bank

profitability. Vong and Anna (2016) examined the impact of bank characteristics as well as macroeconomic and financial structure variables on the performance of the banking industry. The results showed that the capital strength of a bank is of paramount importance in affecting its profitability. A well-capitalized bank is perceived to be of lower risk such an advantage will be translated into higher profitability. On the other hand, asset quality, as measured by the loan-loss provisions, affects the performance of the banks adversely. In addition, banks with a large retail deposit-taking network do not achieve a level of profitability higher than those with a smaller network. Finally, with regard to macroeconomics variables, their study revealed that only the rate of inflation exhibits a significant relationship with banks' performance.

## 2.4 Gaps in Literature

During the course of researching on materials, articles and journals concerning the research topic, I found out that very few articles evaluated the relationship between cash management and profitability in the quoted deposit money bank in Nigeria. While there is a need to examine the impact effect of cash management and profitability to recent years, as most research work on the topic do not include this current period. This study is aimed at establishing the impact of cash management and profitability in the quoted deposit money bank in Nigeria. Cash management and profitability in deposit money banks are two sensitive issues in the operation of commercial banks which information on them are seriously hoarded in Nigeria. For the success of operations and survival, commercial banks should not compromise efficient and effective cash management. They are expected to maintain optimal cash level in order to satisfy their financial obligations to customers or depositors and maximize profits for shareholders. Hence, it can finally be concluded that cash is inversely related to profitability. That means as cash increases, profitability decreases and vice versa.

According to Orji (2016) the research study is concluded base on the findings that, a generalization can be made that the concept of cash and profitability can strike a balance if there is effective liquidity management. This would apply mainly to the commercial sector that deals with cash in their day-to-day transactions than any other financial institution.

# CHAPTER THREE

# METHODOLOGY

## 3.0 Introduction

This chapter has to do with the methodology that is used to carry out the study. Methodology consists of the procedures to be used for collecting data, summarizing and analysing the data gathered in order to answer research questions. In this chapter, we would look at the research design, population and sample selection technique data collection technique, data analysis and presentation of models.

## 3.1 Research Design

In this study, the *ex-post facto* research design was adopted. This research design aims to study the trade-off or causal relationship between the deposit money bank profitability and cash. Where cash management is the independent variable and is measured by gearing ratio, non-performing loan and investment. And profitability is the dependent variable measured by return on asset. The use of the research design has been used by different researchers to carry out their work, we have Ibe (2015) who used this research design to define the relationship between two variables in his work.

## 3.2 Population of the study

This research work involved the study of deposit money banks in Nigeria. The population consists of (22) deposit money banks in the Nigeria economy. However, for the purpose of the study we opted for (10) deposit money banks which could be regarded as fairly representative of the banking sector. Five of the ten banks are the Tier 1 commercial banks and the remaining five were selected randomly.

### 3.3 Sample Size and Sample Technique

For the purpose of this study we are considering the tier 1 deposit money banks and five other commercial banks which makes up a sample size of 10 commercial banks. There are ten (10) deposit money banks that were selected to represent the sample size and this done based on the available data. The sampling method adopted is the convenience sampling method. The total sample size of the study is five years which covers the period of the review (2013-2017). The deposit money banks selected for this includes:

| |
|---|
| GT bank |
| First bank |
| Diamond bank |
| Fidelity bank |
| Union bank |
| Fidelity bank |
| Eco bank |
| Sterling bank |
| Union bank |
| WEMA bank |

### 3.4 Method of Data Collection

The data for this research are basically secondary data, Secondary data refers to data which have been collected by individuals or agencies for purpose other than those our particular research

study. This source of data have been chosen due to the fact that they have been validated by auditors and professional regulatory bodies have ascertained its authenticity.

### 3.5 Method of Data Analysis

Data analysis involves converting series of recorded observations into descriptive statements and inferences about relationships. The study will be subjected to a multiple regression model. The coefficient of correlation was used to ascertain the strength of the relationship between the dependent and independent variables. The hypotheses were tested using regression analysis at 5% level of significance. Also, the simple regression technique was adopted because of its simplicity as well as minimizes the squares of the residuals.

### 3.6 Model specification

For the relationship between two or more variables (dependent and independent variables) to be known, it is analyzed in the following ways to produce results;

$Y = f(x)$

Y = Dependent variable

X = Independent variable

Y represents profitability which is the dependent variable

X represents cash management which is the independent variable

Their sub-variables are:

y= Return on asset

x1= Gearing ratio

x2= Non-performing loan

x3= Investment

a= constant term

e=Error term

$y_1$=f(X1)……..Equation 1

$y_2$=f(X2)……..Equation 2

$y_3$=f(X3)……..Equation 3

$y_4$=f(X1, X2, X3)……..Equation 4

Expressing the functional relationship in linear equation model, the resulting equations are the following models:

$ROA=\beta_0 + \beta_1 GR + e$ …….. Model 1

$ROA=\beta_0 + \beta 2\ NPL + e$ ……..  ……..Model 2

$ROA=\beta_0 + \beta_3 INV + e$ ……. Model 3

$PRF=\beta_0 + \beta_1 GR, \beta_2 NPL, \beta_3 INV + e$ ……...Model 4

### 3.7 Measurement of variables

The technique employed in this study include the panel unit root test (Levin, Lin & Chut) to examine the level of stationarity of each variables at level and at first difference. After determining the level of stationary, the panel co integration test is carried out using Pedroni Residual co-integration test followed by grander causality test to evaluate how causality run from

liquidity to bank performance, weather one-way or bidirectional. Finally, the model specified will be analyzed using the generalized method of moments to estimate the direction and magnitude of impact of cash independent variable on thee dependent variable.

### 3.8 A priori Expectation

The expectation is that a positive relationship would exist between cash management and profitability in the deposit money banks. In other words, increase in cash management will lead to an increase in probability.

Thus;

B>0 in $H_0$1 – $H_0$3= Signature

P- value < 0.05, accept alternate and reject Null

# CHAPTER FOUR

# DATA PRESENTATION AND DATA ANALYSIS

## 4.0 Introduction

This chapter reveals the descriptive summary of the variables of interest, correlation matrix, unit root test result and co integration relationship of the variables, empirical testing and integration of findings from the model put forward as well as testing of the research hypothesis.

## 4.1 Presentation of Results

This section concerns itself with the presentation of the results of data analysis carried out in the research to evaluate the impact of cash flow management on profitability of deposit money banks in Nigeria, employing returns on asset as the dependent variable while, the liquidity ratio, non-performance loan and investment were employed as the independent variables for 10 banks which are Guarantee Trust Bank, Fidelity Bank, Union Bank, Diamond Bank, United Bank of Africa, Wema Bank, Sterling Bank, Eco bank, Access Bank and Zenith Bank.

## 4.2 Descriptive Analysis

This sub-section presents a descriptive analysis of the variable used. These descriptive statistics reveals the trend and average values of the variables used in this research work.

**Table 4.1 Descriptive Summary**

| | ROA | LDR | CAR | NPL |
|---|---|---|---|---|
| **Mean** | 0.025156 | 0.669210 | 0.191116 | 0.055020 |
| **Median** | 0.020000 | 0.680000 | 0.192500 | 0.042000 |
| **Std. Dev.** | 0.020852 | 0.100253 | 0.050178 | 0.046178 |
| **Skewness** | 1.140911 | -0.135572 | -0.551250 | 2.446858 |
| **Kurtosis** | 3.900188 | 2.823772 | 4.125580 | 9.157455 |
| **Jarque-Bera** | 12.53553 | 0.217866 | 5.171744 | 128.8806 |

| | | | | |
|---|---|---|---|---|
| **Probability** | 0.001896 | 0.896791 | 0.075330 | 0.000000 |
| **Sum** | 1.257800 | 33.46050 | 9.555800 | 2.751000 |
| **Sum Sq. Dev.** | 0.021305 | 0.492483 | 0.123376 | 0.104490 |
| **Observations** | 50 | 50 | 50 | 50 |

*Source: Author's computations using E-views 10*

Table 4.1 above shows the summary of the various descriptive statistics of all the variables used for the current study.

### 4.2.1 **Mean**

The mean is used to measure the average value of a distribution or what you expect to happen the next time you conduct a similar statistical experiment. The average value of Returns on Assets, Liquidity Ratio, Capital Adequacy Non Performance Loan are 0.025; 0.6692; 0.1911 and 0.055 respectively.

### 4.2.2 Standard Deviation

Standard deviation measures the dispersion of the data set from the mean. It can be thought of as a measure of variability or risk. The larger values of standard deviation imply greater variability in the data. The standard deviation as revealed in table 4.1 above of ROA is 0.021; LDR is 0.10; CAR is 0.05; and lastly INV has a standard deviation value of 0.046.

### 4.2.3 Skewness

Skewness is the measure of asymmetry in a distribution. When the distribution is mound-shaped symmetrical, the values for the mean, median and mode are the same or almost the same. For skewed-left distributions, the mean is less than the median and the median is less than the mode. For skewed-right distributions, the mode is the smallest value, the mean is the next largest and the mean is the largest. ROA with skewness of 1.14 shows that the distribution is positively skewed and normally distributed; LDR with skewness of -0.135 shows that the distribution is

negatively skewed and not normally distributed; NPL with skewness of 2.45 indicates that the distribution is also skewed to the right and not normally distributed; CAR also has a negative distribution and normally distributed with skewness -0.55.

### 4.2.4 Kurtosis

This measures heaviness or lightness in the tails of the data distribution of the variables. The standard normal distribution has a kurtosis of 3. A positive value tells you that you have heavy-tails (a lot of data in your tails), while a negative value means that you have light-tails (i.e. little data in your tails). With the kurtosis value for ROA, CAR, and NPL with kurtosis values of 3.90, 4.13, and 9.16 respectively which indicates that the data sets distributions are all leptokurtic with excess positive kurtosis which implies that series are above the sample mean and have fat tail, while LDR which has a kurtosis values of 2.82 is a platykurtic distribution with thin tailed distribution.

### 4.2.5 Jacque Bera

The JB statistics is an indication of your distributions deviation of 0 (skewness and kurtosis if it was truly a normal distribution). With the p-value less than level of significance indicates that the null hypothesis should not be accepted. Since the p-values of the variables are not significantly greater than the level of significance of 5%. We reject the null hypothesis of normality for ROA and NPL while we accept the normality assumption for LDR and CAR.

## 4.3 Correlation Analysis

**Table 4.2 Correlation Matrix**

| | ROA | LDR | CAR | NPL |
|---|---|---|---|---|
| **ROA** | **1** | | | |
| **LDR** | **0.208562** | **1** | | |
| **CAR** | **-0.012054** | **-0.46138743** | **1** | |
| **NPL** | **-0.207450** | **0.2319092** | **-0.0289280** | **1** |

*Source: Author's computations using E-views 10*

The table 4.2 above reveals the degree or strength of linear relationship between two variables on a scatterplot. From the values of the correlation coefficients presented above it can be concluded that ROA is weakly correlated with all the independent variables as it has a less than 30% correlation coefficient with the three explanatory variables. ROA is revealed to have 0.244 correlation coefficient with GR and 0.10 correlation coefficient with NPL while the correlation coefficient with INV is revealed to be 13%. These correlation coefficients are relatively low in magnitude and this impioes that ROA is weakly correlated with the variables. From this conclusion, we can be sure that our estimation result will not be affected by multicollinearity.

### 4.3.1 Unit Root Test

Empirical work based on time series assumes that the underlying time series is stationary. This subsection reveals the nature of stationarity of the variables as concluded using the T-statistics of and P-value of Levin, Lin & Chu t unit root test.

**Table 4.3: Stationarity Test using Levin, Lin & Chu t**

| | **Unit Root Test at level** | | |
|---|---|---|---|
| **Variables** | **T- Statistics** | **P-value** | |
| **ROA** | **-40.1819** | **0.0000** | **I(0)** |
| **LDR** | **-4.54773** | **0.0000** | **I(0)** |
| **CAR** | **-2.86688** | **0.0021** | **1(0)** |
| **NPL** | **-3.80258** | **0.0001** | **I(1)** |

***Source: Author's computation using E-views 10***

The unit root test result shown above is generated using Levin, Lin & Chu t unit root test statistic and P-value respectively. A variable is said to be integrated of order d, (I(d)) if it is stationary after differencing d times (Engle and Granger, 1987). The result shows that all the variables are stationary after level except NPL that is stationary after first difference. The variables ROA; LDR; CAR with P-value as derived from Levin, Lin & Chu t test at level of 0.0000; 0.0000; and 0.0021 respectively. The NPL data on the other hand has unit root at level with P-value of 0.5078 which is greater than the level of significance (0.05) and we can accept the null hypothesis of no stationarity which necessitated first differencing and the data was found to be stationary with P-value of 0.0001 and t-statistics value of -3.80258. The decision rule when using P-value is that the null hypothesis of unit root is rejected when the P-value is less than the level of significance. The implication of this result for the further analysis is that, the variables now being stationary are now fit to be used for the policy inference and forecasting.

### 4.3.2 Co integration Test

**Table 4.4: Long Run Co integration Test**

Kao Residual Cointegration Test
Series: ROA LDR CAR NPL
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
Automatic lag length selection based on SIC with a max lag of 0
Newey-West automatic bandwidth selection and Bartlett kernel

| | t-Statistic | Prob. |
|---|---|---|
| ADF | -5.350091 | 0.0000 |
| Residual variance | 0.000360 | |
| HAC variance | 0.000171 | |

*Source: Author's computations using E-views 10*

**$H_0$: $\mu = 0$** (No co-integration equation)

**$H_1$: $\mu \neq 0$** (Presence of co-integration equation)

From table 4.4 which shows the result of the Kao Residual Co integration Test respectively indicate that majority of the statistic conclude that there is no long run co integration. The trend assumption of the test was that there is no deterministic trend and the user-specified lag time was 1. The Panel PP- statistic on the other hand, has P-value less than 0.05 and we may reject the null hypothesis of no co integration

### 4.3.3 Estimation of OLS Model for Panel Data

The OLS model is employed for estimating the dependent relationship of Returns on Assets (ROA) on the independent variables which include Liquidity Ratio (LDR), Capital Adequacy Ratio and Non Performance Loan (NPL). This model was employed because of the unit root test conclusion that the variables were stationary at different orders.

**Table 4.6: Estimation of Result**

Dependent Variable: ROA
Method: Panel EGLS (Period weights)
Total panel (balanced) observations: 50
Linear estimation after one-step weighting matrix
Period weights (PCSE) standard errors & covariance (d.f. corrected)

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.042262 | 0.026219 | -1.611857 | 0.1145 |
| LDR | 0.086383 | 0.028338 | 3.048261 | 0.0040 |
| CAR | 0.091391 | 0.056103 | 1.628997 | 0.1108 |
| NPL | -0.142798 | 0.068285 | -2.091214 | 0.0426 |
| | Effects Specification | | | |
| Period fixed (dummy variables) | | | | |
| | Weighted Statistics | | | |
| R-squared | 0.685167 | Mean dependent var | | 0.027708 |
| Adjusted R-squared | 0.666028 | S.D. dependent var | | 0.021972 |
| S.E. of regression | 0.020058 | Sum squared resid | | 0.016897 |
| F-statistic | 2.393563 | Durbin-Watson stat | | 0.722931 |
| Prob(F-statistic) | 0.037286 | | | |
| | Unweighted Statistics | | | |
| R-squared | 0.194203 | Mean dependent var | | 0.025156 |
| Sum squared resid | 0.017167 | Durbin-Watson stat | | 0.753374 |

***Source: Author's computations using E-views 10***

The Panel EGLS (Period weights) was employed in this research to estimate the relationship between the profitability which was quantified by returns on asset and other financial performance indicators which include liquidity ratio, non-performing loan and capital adequacy ratio which were employed as the explanatory variables. All necessary pre-diagnostic tests were carried out and the study resulted into employing the Panel least square model to estimate the parameters that define the relationship of the variables. The model estimated both the short run

and long run equation using one-lag and automatic dynamic repressors and the Alkaike info criterion method. The maximum dependent lag selected automatically by the model was one and results revealed were the coefficient, standard error, t-Statistic and P-value of the independent variables as they explain the dependent variable.

The estimation result reveals that in the short run, there is a positive impact of liquidity ratio and non-performing loan on profitability of deposit money banks. This implies that a rise in liquidity ratio which proxy operating activities and capital adequacy ratio which proxy investing activities will cause a rise in the return on asset which is the proxy for profitability of the banks. The result however establishes that of these two variables that have a direct relationship with returns on assets only the liquidity ratio has a significant impact on returns on assets. This conclusion of significance is made by assessing the p-value of each variables by comparing with the 5 percent level of significance commonly employed in empirical analysis. It is clear that the p-value of capital adequacy ratio is greater in value than the level of significance and we can reject the null hypothesis of significance since we do not have 95 percent confidence level that the variable is significant. The p-value of liquidity ratio on the other hand, is less than 5 percent and we can fail to reject the null hypothesis which leaves us to the accept the alternative hypothesis

Another short run analysis conclusion is the negative impact of financing activities which is represented by non-performing loan and its impact on return on assets as it has a negative coefficient which was also significant and determined by the comparison of p-value with the level of significance at 5 percent.

$ROA = \beta_0 + \beta_1 LDR + \beta_2 CAR + \beta_3 NPL + \mu$

Imputing the values of the parameters in the short run

ROA = -0.0423 + 0.0864(LDR) + 0.0914(CAR) – 0.1428(NPL) + Ɛ …. equation (4.1)

The long run model was also revealed by the model and this establishes the relation of each independent variable in the long run which will be reliable for long run organizational policies and tactical management decisions. The model revealed that the operating and financing activities variables are significant in the long run although the financing activities proxy has a negative impact on the profitability of the deposit bank. The model defines that in the long run a rise in non-performance loan by one unit will reduce the returns on asset of the deposit banks by 0.05 percent which the coefficient of -0.1428 with less than 5% p-value. The long run estimates also defined investment and operating to have positive impact since a one percent increase in investment will cause profitability to rise.

### 4.4 Discussion of Results

The returns on asset was employed as the dependent variable to proxy the profitability of the deposits bank which include Guarantee Trust Bank, Fidelity Bank, Union Bank, Diamond Bank, United Bank of Africa, Wema Bank, Sterling Bank, Eco bank, Access Bank and Zenith Bank. The independent variables that were considered exogenous in the model are the liquidity ratio of the banks was employed as the core explanatory variable of the model to proxy the operating activities of the deposit money banks. The correlation matrix computed in the sub-section 4.2 revealed that return on asset and liquidity ratio are positively correlated with the correlation coefficient of 0.2085 which also concludes a weak relationship between liquidity ratio and returns on asset. Liquidity ratio was also tested for the presence of unit root using the Levin, Lin & Chu $t^*$ test and the result shows that liquidity ratio is stationary at level at the 5 percent level of significance. The Panel Least square model was also used to estimate the relationship between the variables and it is revealed that in the short run, the liquidity ratio has a positive and

significant impact on returns on assets for all the banks studied, it revealed that if liquidity ratio increases by one unit in the short run, the returns on asset will rise by 0.08 units which is in line with a number of past related studies (Siyanbola, Olaoye, & Olurin, 2015; Kehinde, 2013; Latrtey Antwi Boadi, 2013).

The capital adequacy ratio was also studied as an explanatory variable to proxy investing activities of the deposit money banks and the correlation coefficient of -0.012 indicated that capital adequacy ratio is positive and weakly related to returns on asset while the unit root test concludes that capital adequacy ratio has no unit root at level. The relationship of the variable with the returns on asset was however estimated by the Panel least square for both short run and long run and the test revealed that capital adequacy ratio positively affects return on asset in the short run although this effect was concluded insignificant using the p-value greater than 0.05 which agrees with past studies (Epure & Lafuente 2015 and Tabrizi, 2016). The last independent variable employed in the study is the non-performing loan and it was included to proxy the financing activities of deposit money banks in Nigeria. The correlation relationship was revealed to be a positive correlation and a weak one with the value of 20.75 percent. The non-performing loan has a unit root and level but differencing it revealed that it is integrated at first order.

The short run and long run estimation of the non-performing loan reported that non-performing loan by the banks negatively impact their profitability in the long run although the variable was only significant in the long run. A one percent rise in the investment will result in a 0.14 fall in returns to asset in the long run and this result is not in line with some past related studies (Somoye 2016 and Carlson, Fisher, & Giammarino, 2004).

## 4.5 Implication of Findings

From the findings of this study, inferences and deductions a can be made in line with the result of the analysis and a number of stakeholders can be influenced by the understanding of this study. The findings have specific implications and these implications are outlined as follows:

### 4.5.1 Management of Listed Commercial Banks

Liquidity is a major concern of any listed commercial banks because it has significant impact of the profitability and performance of a commercial bank in the short and long run. There are a number of cases where the cash position of the bank may be too low as a result of a non-performance loan and this could positively affect the performance of the business with large difference between profit and cash. This requires proper cash management in order to ensure optimal liquidity whereby excess liquidity can be directed for investment purposes of loan out and interest can be earned on it.

### 4.5.2 Investors

Commercial banks, just as any company source for their funds from debt or equity and the investors are those that fund the business in expectation of positive returns from the business. An investor is particular about liquidity because he will be able to envisage the ability of getting interest returns from the business. A less liquid bank may be faced by the threat of defaulting disbursement of cash to the savers which affects trust negatively and can cause the bank to crash or fund support from the apex bank which will come at a higher finance cost.

### 4.5.3 Government and Regulators

The government is in charge of the economy and they oversee how the activities and performance of a firm affects the economy at the macro level. The performance of commercial

banks affects the financial system which is an important part of an economy. The government also earns revenue by imposing compulsory level on the profit of banks and so, the government may control the economy by manipulating tax rate that is imposed on banks. The level of bank liquidity at the national level is overseen by the central bank which is an agent of the government by adjusting the cash reserve ratio.

## 4.6 Further Research

The findings in this study will also be useful to researchers in terms of serving as a relevant material in the case of literature review and they can be able to evaluate the gap in the literature that has been filled by this study and the one yet to be filled. Other variables that are related to liquidity and may have effect on the performance of the commercial banks.

# CHAPTER FIVE

# SUMMARY, CONCLUSION AND RECOMMENDATION

## 5.0 Introduction

This chapter deals with summary of the study, descriptive and empirical findings, conclusion as well as recommendation made, and suggestions for further study with contribution to knowledge.

## 5.1 Summary of the whole study

This study was structured into five chapters. Chapter one furnished into the background of the study, problems of the study, and research objectives of the study with research questions, research hypotheses to back up is research. The major objective of this study is to examine the impact of cash flow management on profitability of deposit money banks in Nigeria. The chapter also highlighted the justification and significance with its scope and variables were operationalized. The terms in relation with the work was explained base on the context use in the work. In conclusion, the chapter gives us the summary of the study.

The chapter two comprises of the basic component of the study which are; investment, non-performing loan and gearing ratio, and establish the relationship between the components and return on asset. There is also the conceptual review, the underlying concept and the definitions of the various variables employed, the theoretical review emphasized and the theoretical framework. The empirical review for in-depth knowledge of the previous efforts. The review enlightened the researcher's knowledge and the gaps now filled by the current research work and the researcher conceptual model underlying the studies adopted by the researcher.

The object of chapter three presented the methodology for the study. Essentially, the chapter discussed the design and population of the study. A suitable sample size was determined. Source

of data was also discussed, instruments of data collection, validity and reliability test, model specification and evaluation and administration of the instrument along with the ethical consideration. The functional relationship and *a priori* expectation were described. The case study of the research was a sample of 10 deposit money banks in Nigeria and the scope of the study covers the period of 2013 to 2017. The ten selected deposit banks in this study are Guarantee Trust Bank, Fidelity Bank, Union Bank, Diamond Bank, United Bank of Africa, Wema Bank, Sterling Bank, Eco bank, Access Bank and Zenith Bank. The model incorporates returns on assets as the proxy for profitability and the independent variables employed to explain profitability are liquidity ratio, non-performance loan and capital adequacy ratio. The data used in this study were all obtained from the financial reports of the banks presented annually. The specific objectives of this study include to examine the operating activities on return on asset in deposit money bank; to examine the effect of financing activities on returns on asset and to determine the effect of investment activities on return on asset in deposit money bank in Nigeria. A major limitation of the study as revealed in section 1.9 is the difficulty to develop a meaningful set of banks for comparative purpose and the constraint of gathering timely and relevant data.

The theoretical foundation of this study are found in the anticipated income theory, shiftability theory, liability management theory and deposit money bank loan theory while empirical review was carried out on the relationship between gearing ratio and returns on asset; non-performance loan and returns on asset; and investment on returns on asset. The review of previous studies however, revealed that only few articles have evaluated the relationship between cash management and profitability in the quoted deposit money bank in Nigeria. The ex-post fact research design was adopted in the study to examine the trade-off or causal relationship between

the deposit money bank profitability and cash. This research work involved the study of deposit money banks in Nigeria. The population consists of (22) deposit money banks in the Nigeria economy. However, for the purpose of the study we opted for (5) deposit money banks which could be regarded as fairly representative of the banking sector

Chapter four, the data were analysed into two parts, descriptive and correlation analysis using time series. The descriptive was broken into mean, standard deviation, skewness, kurtosis and Jacque beta. The correlation analysis is establishing to determine the degree of linear relationship between two variables on a scatterplot. The fourth chapter of the study also focuses on the presentation and analysis of the study, as it reveals the descriptive summary of the variables on interest in the study, correlation among the variables, stationarity test and co-integration relationship among the variables.

The result that the variables are all integrated at different order guided the use of autoregressive distributed lag mode for the estimation of the relationship between each explanatory variable and returns on asset.

Chapter five is the final chapter which traditionally covers important areas such as summary, conclusion and recommendation. A number of conclusion were made, recommendations were also made and it highlighted the contribution to knowledge and areas for further studies.

## 5.2 Discussion of Findings

### 5.2.1 Theoretical Findings

The theories employed in the study to support various findings includes Anticipated income theory, Shiftability theory, Liability Management and Deposit Money bank theory. Anticipated income theory explain the fact that bank can manage its cash through appropriate directing of the

granted loans., Shiftability theory is an approach to keep bank liquid by supporting the shifting assets, Liability management theory explains the fact that there is no need for banks to lend self-liquidating loan and maintain liquid assets as they can borrow reserve money in the money market when necessary, the deposit money bank loan theory explains the fact that the cash of the deposit money bank is achieved through self-liquidation of the loan, which being granted for short periods and to finance the working capital, where borrowers refund the borrowed funds after completion of their trade cycles successfully.

### 5.2.2 Empirical Findings

The Panel OLS Model was employed in this research to estimate the relationship between the profitability which was quantified by returns on asset and other financial performance indicators which include liquidity ratio, non-performing loan and capital adequacy ratio which were employed as the explanatory variables. All necessary pre-diagnostic tests were carried out and the study resulted into employing the Panel OLS model to estimate the parameters that define the relationship of the variables. The estimation result reveals that in the short run, there is a positive impact of liquidity ratio and capital adequacy ratio on return on asset of commercial banks. This implies that a rise in liquidity ratio and capital adequacy ratio will cause a rise in the return on asset which is the proxy for profitability of the banks. The result however establishes that of these two variables that have a direct relationship with returns on assets only the gearing ratio has a significant impact on returns on assets. This conclusion of significance is made by assessing the p-value of each variables by comparing with the 10 percent level of significance commonly employed in empirical analysis.

## 5.3 Conclusion

From the findings of the study, conclusions can be made based on the result of the test and other estimation carried out in the research. The objectives of the study were carried out and all the hypotheses were tested at the 5 percent level of significance. The hypotheses were tested and decisions were made based on the estimation result and the first null hypothesis that there is no significant relationship between operating activities and returns on assets in deposit money banks in Nigeria was rejected at a 5 percent level of the significance. The test concluded that liquidity ratio has a positive and significant relationship on returns on asset. Hypothesis two which proposes that there is no significant relationship between financing activities and return on asset in deposit money bank in Nigeria and is accepted in the long run. The relationship between non-performance loan and returns on asset was concluded to be negative in the long run.

The third hypothesis assumed that there is no significant relationship between investment activities and return on asset in deposit money bank in Nigeria and the null hypothesis 2 is rejected in the long run at the 5 percent level of significance following that the p-values of CAR is significantly less than the 5 percent level of significance while we fail to reject the null hypothesis in the short run since the p-value is greater than 5%. The conclusions are made at the 95 confidence level and revealed that all the explanatory variables are significant and negatively related with returns on asset in the long run. This result is somewhat worrisome but the implication of this result is that cash is not efficiently managed in the Nigerian banking sector and it has a long run negative impact.

The long run estimation result is the main focus of the study to understand how well cash flow management impact deposit banks' profitability. The operating activities and investment activities are positively related while the financing activities proxy by non-performing loan was revealed to have a negative relationship with returns on asset. The co-integration equation as revealed by OLS model shows that there is adjustment in the long run and the findings of this study can be used for long run projection and policy purposes.

## 5.4 Recommendations

Based on the findings of the research, the following recommendations are proposed;

i. The debt/equity ratio of the commercial banks should be efficiently managed to maintain its short run relationship with returns on asset.
ii. Efficient accounts processing arrangements for receipts and payments to reduce transaction costs to ensure efficient debtor management and collection of receivables
iii. Likewise, the monetary authority should maintain their monetary stance and liquidity level from time to time. This will be to ensure that the negativity of the low cash flow.
iv. The business managers or owners need to sit down and undertake cash management analysis so that they can address shortfalls, increase revenues, and cut spending

## 5.5 Contribution of knowledge

This study has contributed its findings which is stated based on models. In the first model, the operating activities proxy by liquidity ratio has a significant effect on return on asset in the deposit money bank in Nigeria. This study contributed by attempting to form a relationship

between cash management and profitability. The research also predicted that the combination of gearing ratio, non-performing loan and investment will enhance return on asset.

## 5.6 Area for Further Research

This study is limited in scope to deposit money banks in Nigeria, and specifically 10 commercial banks were studied which include Guarantee Trust Bank, Fidelity Bank, Union Bank, Diamond Bank, United Bank of Africa, Wema Bank, Sterling Bank, Eco bank, Access Bank and Zenith Bank as it only looks at the relationship between cash management and profitability in deposit money bank. It is also limited in scope to 4 years during the period from 2013 to 2017. The study also employed the use of the OLS model in estimating the link between the variables of interest. It is suggested that further studies could be carried out employing qualitative analysis extensively. The model estimated in this study makes use of only three independent variables. Further studies could include more variables in order to establish if the result will be more comprehensive and robust.

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**Appendix**

| | YEAR | BANK | ROA | LIQ | CAR | NPL |
|---|---|---|---|---|---|---|
| 1 | 2013 | GTBANK | 0.0469 | 0.3924 | 0.2391 | 0.0358 |
| | 2014 | GTBANK | 0.0443 | 0.4007 | 0.0214 | 0.0315 |
| | 2015 | GTBANK | 0.047 | 0.4221 | 0.1817 | 0.0321 |
| | 2016 | GTBANK | 0.0469 | 0.4219 | 0.1979 | 0.0366 |
| | 2017 | GTBANK | 0.0527 | 0.4756 | 0.2568 | 0.0766 |
| 2 | 2013 | FIRSTBANK | 0.026 | 0.548 | 0.168 | 0.031 |
| | 2014 | FIRSTBANK | 0.022 | 0.579 | 0.167 | 0.031 |
| | 2015 | FIRSTBANK | 0.004 | 0.586 | 0.171 | 0.181 |
| | 2016 | FIRSTBANK | 0.004 | 0.527 | 0.178 | 0.224 |
| | 2017 | FIRSTBANK | 0.01 | 0.511 | 0.177 | 0.228 |
| 3 | 2013 | ZENITH | 0.018 | 0.64 | 0.26 | 0.0291 |
| | 2014 | ZENITH | 0.039 | 0.468 | 0.2 | 0.018 |
| | 2015 | ZENITH | 0.027 | 0.514 | 0.21 | 0.022 |
| | 2016 | ZENITH | 0.0281 | 0.596 | 0.23 | 0.03 |
| | 2017 | ZENITH | 0.034 | 0.697 | 0.27 | 0.047 |
| 4 | 2013 | ACCESS | 0.009 | 0.414 | 0.2 | 0.027 |
| | 2014 | ACCESS | 0.026 | 0.36 | 0.184 | 0.022 |
| | 2015 | ACCESS | 0.032 | 0.38 | 0.195 | 0.017 |
| | 2016 | ACCESS | 0.024 | 0.436 | 0.21 | 0.021 |
| | 2017 | ACCESS | 0.016 | 0.473 | 0.225 | 0.048 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **5** | **2013** | **UBA** | **0.019** | **0.67** | **0.2** | **0.012** |
| | **2014** | **UBA** | **0.018** | **0.45** | **0.17** | **0.016** |
| | **2015** | **UBA** | **0.022** | **0.53** | **0.23** | **0.017** |
| | **2016** | **UBA** | **0.023** | **0.39** | **0.234** | **0.039** |
| | **2017** | **UBA** | **0.021** | **0.5** | **0.255** | **0.067** |
| **6** | **2013** | **FIDELITY** | **0.008** | **0.457** | **0.259** | **0.037** |
| | **2014** | **FIDELITY** | **0.065** | **0.3** | **0.237** | **0.044** |
| | **2015** | **FIDELITY** | **0.068** | **0.36** | **0.19** | **0.044** |
| | **2016** | **FIDELITY** | **0.067** | **0.332** | **0.172** | **0.066** |
| | **2017** | **FIDELITY** | **0.07** | **0.359** | **0.16** | **0.064** |
| **7** | **2013** | **ECOBANK** | **0.018** | **0.256** | **0.163** | **0.062** |
| | **2014** | **ECOBANK** | **0.018** | **0.265** | **0.204** | **0.044** |
| | **2015** | **ECOBANK** | **0.004** | **0.332** | **0.205** | **0.082** |
| | **2016** | **ECOBANK** | **-0.009** | **0.362** | **0.253** | **0.096** |
| | **2017** | **ECOBANK** | **0.011** | **0.073295** | **0.288** | **0.107** |
| **8** | **2013** | **STERLING** | **0.014** | **0.011844** | **0.14** | **0.021** |
| | **2014** | **STERLING** | **0.014** | **0.017546** | **0.14** | **0.031** |
| | **2015** | **STERLING** | **0.013** | **0.027504** | **0.175** | **0.048** |
| | **2016** | **STERLING** | **0.0007** | **0.079299** | **0.112** | **0.099** |
| | **2017** | **STERLING** | **0.009** | | **0.122** | **0.062** |
| **9** | **2013** | **WEMA** | **0.0068** | **0.7661** | **0.27** | **0.04** |
| | **2014** | **WEMA** | **0.0087** | **0.328** | **0.188** | **0.025** |
| | **2015** | **WEMA** | **0.0078** | **0.3357** | **0.151** | **0.027** |
| | **2016** | **WEMA** | **0.0063** | **0.3451** | **0.1107** | **0.0507** |
| | **2017** | **WEMA** | **0.0056** | **0.3561** | **0.1432** | **0.0352** |
| **10** | **2013** | **STANBIC** | **0.015** | **0.387** | **0.135** | **0.0594** |
| | **2014** | **STANBIC** | **0.09** | **0.411** | **0.153** | **0.066** |
| | **2015** | **STANBIC** | **0.024** | **0.407** | **0.139** | **0.072** |
| | **2016** | **STANBIC** | **0.025** | **0.591** | **0.21** | **0.05** |
| | **2017** | **STANBIC** | **0.038** | **1.023** | **0.205** | **0.079** |

**Source: Financial Statement of each Banks on their Annual report.**

**Descriptive Statistics**

**Table 4.1 Descriptive Summary**

| | **ROA** | **LDR** | **CAR** | **NPL** |
|---|---|---|---|---|
| **Mean** | **0.025156** | **0.669210** | **0.191116** | **0.055020** |
| **Median** | **0.020000** | **0.680000** | **0.192500** | **0.042000** |

| | | | | |
|---|---|---|---|---|
| **Maximum** | **0.090000** | **0.871000** | **0.288000** | **0.228000** |
| **Minimum** | **-0.009000** | **0.434000** | **0.021400** | **0.012000** |
| **Std. Dev.** | **0.020852** | **0.100253** | **0.050178** | **0.046178** |
| **Skewness** | **1.140911** | **-0.135572** | **-0.551250** | **2.446858** |
| **Kurtosis** | **3.900188** | **2.823772** | **4.125580** | **9.157455** |
| **Jarque-Bera** | **12.53553** | **0.217866** | **5.171744** | **128.8806** |
| **Probability** | **0.001896** | **0.896791** | **0.075330** | **0.000000** |
| **Sum** | **1.257800** | **33.46050** | **9.555800** | **2.751000** |
| **Sum Sq. Dev.** | **0.021305** | **0.492483** | **0.123376** | **0.104490** |
| **Observations** | **50** | **50** | **50** | **50** |

***Source: Author's computations using E-views 10***

| | **ROA** | **LDR** | **CAR** | **NPL** |
|---|---|---|---|---|
| **ROA** | **1** | **0.2085623635812258** | **-0.0120540265442 4609** | **-0.2074502820301 239** |
| **LDR** | **0.2085623635812 258** | **1** | **-0.4613874325114 311** | **0.2319092180577 898** |
| **CAR** | **-0.0120540265442 4609** | **-0.4613874325114 311** | **1** | **-0.0289280311367 2505** |
| **NPL** | **-0.2074502820301 239** | **0.2319092180577 898** | **-0.0289280311367 2505** | **1** |

**Panel unit root test: Summary**
**Series: ROA**
**Date: 07/29/19 Time: 07:21**
**Sample: 2013 2017**
**Exogenous variables: Individual effects**
**Automatic selection of maximum lags**
**Automatic lag length selection based on SIC: 0**
**Newey-West fixed bandwidth and Bartlett kernel**
**Balanced observations for each test**

**Cross-**

| Method | Statistic | Prob.** | sections | Obs |
|---|---|---|---|---|
| **Null: Unit root (assumes common unit root process)** | | | | |
| Levin, Lin & Chu t* | -40.1819 | 0.0000 | 10 | 40 |
| **Null: Unit root (assumes individual unit root process)** | | | | |
| Im, Pesaran and Shin W-stat | -7.87023 | 0.0000 | 10 | 40 |
| ADF - Fisher Chi-square | 43.9753 | 0.0015 | 10 | 40 |
| PP - Fisher Chi-square | 42.5237 | 0.0024 | 10 | 40 |

** Probabilities for Fisher tests are computed using an asymptotic Chi

-square distribution. All other tests assume asymptotic normality.

**Panel unit root test: Summary**
**Series: LDR**
**Date: 07/29/19 Time: 07:23**
**Sample: 2013 2017**
**Exogenous variables: Individual effects**
**Automatic selection of maximum lags**
**Automatic lag length selection based on SIC: 0**
**Newey-West fixed bandwidth and Bartlett kernel**
**Balanced observations for each test**

| Method | Statistic | Prob.** | Cross-sections | Obs |
|---|---|---|---|---|
| **Null: Unit root (assumes common unit root process)** | | | | |
| Levin, Lin & Chu t* | -4.54773 | 0.0000 | 10 | 40 |
| **Null: Unit root (assumes individual unit root process)** | | | | |
| Im, Pesaran and Shin W-stat | -1.29201 | 0.0982 | 10 | 40 |
| ADF - Fisher Chi-square | 26.2169 | 0.1588 | 10 | 40 |
| PP - Fisher Chi-square | 30.1494 | 0.0675 | 10 | 40 |

**** Probabilities for Fisher tests are computed using an asymptotic Chi**

**-square distribution. All other tests assume asymptotic normality.**

**Panel unit root test: Summary**
**Series: CAR**
**Date: 07/29/19 Time: 07:24**
**Sample: 2013 2017**
**Exogenous variables: Individual effects**
**Automatic selection of maximum lags**
**Automatic lag length selection based on SIC: 0**
**Newey-West fixed bandwidth and Bartlett kernel**
**Balanced observations for each test**

| Method | Statistic | Prob.** | Cross-sections | Obs |
|---|---|---|---|---|
| **Null: Unit root (assumes common unit root process)** | | | | |
| Levin, Lin & Chu t* | -2.86688 | 0.0021 | 10 | 40 |
| **Null: Unit root (assumes individual unit root process)** | | | | |
| Im, Pesaran and Shin W-stat | 0.24888 | 0.5983 | 10 | 40 |
| ADF - Fisher Chi-square | 13.7246 | 0.8442 | 10 | 40 |
| PP - Fisher Chi-square | 15.1378 | 0.7685 | 10 | 40 |

**** Probabilities for Fisher tests are computed using an asymptotic Chi**

**-square distribution. All other tests assume asymptotic normality.**

**Panel unit root test: Summary**
**Series: NPL**
**Date: 07/29/19 Time: 07:24**
**Sample: 2013 2017**
**Exogenous variables: Individual effects**
**Automatic selection of maximum lags**

**Automatic lag length selection based on SIC: 0**
**Newey-West fixed bandwidth and Bartlett kernel**
**Balanced observations for each test**

| Method | Statistic | Prob.** | Cross-sections | Obs |
|---|---|---|---|---|
| **Null: Unit root (assumes common unit root process)** | | | | |
| **Levin, Lin & Chu t*** | **0.01965** | **0.5078** | **10** | **40** |
| **Null: Unit root (assumes individual unit root process)** | | | | |
| **Im, Pesaran and Shin W-stat** | **1.18745** | **0.8825** | **10** | **40** |
| **ADF - Fisher Chi-square** | **12.2301** | **0.9079** | **10** | **40** |
| **PP - Fisher Chi-square** | **14.1413** | **0.8233** | **10** | **40** |

**** Probabilities for Fisher tests are computed using an asymptotic Chi -square distribution. All other tests assume asymptotic normality.**

**Panel unit root test: Summary**
**Series: D(NPL)**
**Date: 07/29/19 Time: 07:28**
**Sample: 2013 2017**
**Exogenous variables: Individual effects**
**Automatic selection of maximum lags**
**Automatic lag length selection based on SIC: 0**
**Newey-West fixed bandwidth and Bartlett kernel**
**Balanced observations for each test**

| Method | Statistic | Prob.** | Cross-sections | Obs |
|---|---|---|---|---|
| **Null: Unit root (assumes common unit root process)** | | | | |
| **Levin, Lin & Chu t*** | **-3.80258** | **0.0001** | **10** | **30** |
| **Null: Unit root (assumes individual unit root process)** | | | | |
| **ADF - Fisher Chi-square** | **23.9599** | **0.2441** | **10** | **30** |
| **PP - Fisher Chi-square** | **27.5494** | **0.1205** | **10** | **30** |

**** Probabilities for Fisher tests are computed using an asymptotic Chi**
**-square distribution. All other tests assume asymptotic normality.**

**Kao Residual Cointegration Test**
**Series: ROA LDR CAR NPL**
**Date: 07/29/19 Time: 07:32**
**Sample: 2013 2017**
**Included observations: 50**
**Null Hypothesis: No cointegration**
**Trend assumption: No deterministic trend**
**Automatic lag length selection based on SIC with a max lag of 0**
**Newey-West automatic bandwidth selection and Bartlett kernel**

| | t-Statistic | Prob. |
|---|---|---|
| **ADF** | **-5.350091** | **0.0000** |
| **Residual variance** | **0.000360** | |
| **HAC variance** | **0.000171** | |

**Dependent Variable: ROA**
**Method: Panel EGLS (Period weights)**
**Date: 07/29/19 Time: 07:46**
**Sample: 2013 2017**
**Periods included: 5**
**Cross-sections included: 10**
**Total panel (balanced) observations: 50**
**Linear estimation after one-step weighting matrix**
**Period weights (PCSE) standard errors & covariance (d.f. corrected)**

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -0.042262 | 0.026219 | -1.611857 | 0.1145 |
| LDR | 0.086383 | 0.028338 | 3.048261 | 0.0040 |
| CAR | 0.091391 | 0.056103 | 1.628997 | 0.1108 |
| NPL | -0.142798 | 0.068285 | -2.091214 | 0.0426 |

| Effects Specification | | | |
|---|---|---|---|
| Period fixed (dummy variables) | | | |
| Weighted Statistics | | | |
| R-squared | 0.685167 | Mean dependent var | 0.027708 |
| Adjusted R-squared | 0.666028 | S.D. dependent var | 0.021972 |
| S.E. of regression | 0.020058 | Sum squared resid | 0.016897 |
| F-statistic | 2.393563 | Durbin-Watson stat | 0.722931 |
| Prob(F-statistic) | 0.037286 | | |
| Unweighted Statistics | | | |
| R-squared | 0.194203 | Mean dependent var | 0.025156 |
| Sum squared resid | 0.017167 | Durbin-Watson stat | 0.753374 |

**List of deposit money banks**

| s/o | Deposit money banks |
|---|---|
| 1 | First bank |
| 2 | Eco bank |
| 3 | GT bank |
| 4 | Wema bank |
| 5 | Heritage bank |
| 6 | Stanbic IBTC bank |
| 7 | Sterling bank |
| 8 | Unity bank |
| 9 | Union bank |

| | |
|---|---|
| **10** | **Zenith bank** |
| **11** | **UBA bank** |
| **12** | **Access bank** |
| **13** | **Keystone bank** |
| **14** | **Diamond bank** |
| **15** | **First city monument bank** |
| **16** | **Sky bank** |
| **17** | **Citi bank** |
| **18** | **Providus bank** |
| **19** | **Suntrust bank** |
| **20** | **Mainstreat bank** |
| **21** | **Fidelity bank** |
| **22** | **Standard chartered bank** |

**The deposit money bank can also be broken down into the National, International, Regional and non-interest banks according to the CBN classification.**

**List of National deposit money banks**

| s/o | National deposit money bank |
|---|---|
| **1** | **Citi bank** |
| **2** | **Eco bank** |
| **3** | **Wema bank** |
| **4** | **Heritage bank** |
| **5** | **Keystone bank** |
| **6** | **Sterling bank** |
| **7** | **Stanbic IBTC bank** |
| **8** | **Unity bank** |
| **9** | **Standard chartered** |
| **10** | **Polaris bank** |

**List of International banks**

| s/o | International deposit money banks |
|---|---|
| **1** | **First bank** |
| **2** | **Access bank** |

| | |
|---|---|
| **3** | **GT bank** |
| **4** | **First city Monument bank** |
| **5** | **Union bank** |
| **6** | **United bank for Africa** |
| **7** | **Fidelity bank** |
| **8** | **Zenith bank** |
| **9** | **Diamond bank** |

**List of Regional bank**

| **s/o** | **Regional deposit money banks** |
|---|---|
| **1** | **Sun Trust bank** |
| **2** | **Providus bank** |

**List of non-interest bank**

| **s/o** | **Non-deposit money bank** |
|---|---|
| **1** | **Jaiz bank** |