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Liquidity Management and Financial performance of Deposit Money Banks in Nigeria: A case study of Union Bank PLC

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Abstract

This research work investigates the effect of liquidity management on financial performance of deposit money banks in Nigeria. Utilizing secondary data and an ex post facto approach, the study investigates the relationship between liquidity indicators and key profitability metrics. Findings indicate that while liquidity management does not significantly influence profitability and return on assets, it does exhibit a notable impact on Union Bank Plc's return on equity. The study concludes that maintaining adequate liquidity is crucial for banking stability, but its effect on shareholder returns is a more nuanced consideration. To optimize return on equity while ensuring sufficient liquidity, the study recommends several strategies for commercial banks in Nigeria. These include: enhancing operational efficiency, driving innovation, adopting customer-centric approaches, implementing dynamic risk management frameworks, and tailoring lending practices to better serve customer needs.

Keywords: Liquidity management, financial performance, deposit money banks, Union bank PLC.

1.1 Background to the Study

Liquidity is very vital to the existence of any organization especially the deposit money banks. Also, illiquidity of firms especially the banks can lead to loss of businesses which reduces the potentials of earnings and profitability. High liquidity position of firm helps it to meet up with certain obligations, of which some lead to funding of loans and advances that could aid the bank to earn income inform of interests and loans.If a bank maintain high liquidity, it will be difficult for bank to carry out some of its important obligations such as giving out loans and advance because this is the way banks makes huge profit. While maintaining liquidity, banks needs to consider its profitability because banks have an objective of satisfying the shareholders. Maintaining high liquidity will satisfy customers and hurt the shareholders in terms of receiving their dividend and also hurt banks in terms of making profit. Banks maintaining low liquidity will satisfy shareholders and banks but it will hurt the depositors in the long run. Extensively, scholars have argued for and against liquidity as being critical in firms' life and profitability. Some scholars such as Duru and Ekwe (2013), argue found out that firms that maintain high liquidity earn high profitability. However, other authors argue that liquidity does not positively affect profitability. In other words, for sustainable intermediation function, banks need to be profitable. Beyond the intermediation function, the financial performance of banks has critical implications for economic growth of countries.

Good financial performance rewards the shareholders for their investment. This, in turn, encourages additional investment and brings about economic growth. On the other hand, poor banking performance can lead to banking failure and crisis which have negative repercussions on the economic growth, Ongore and Kusa (2013).

The issues of Liquidity adversely affect the financial performance of a bank as well as its solvency. Some studies have shown a significant positive relationship between bank profits and liquidity while others have shown a weak positive relationship. Deposits money bank in Nigeria registered strong performance in 2013, exceeding the overall country economic growth. The banking sector in Nigeria was rated strong in 2013 using the capital adequacy, asset quality, management quality, earnings and liquidity rating system (Banking Supervision Report, 2013). Although, studies have it that lack of adequate liquidity in a bank is often characterized by the inability to meet daily financial obligations. At time it may have the risk of losing deposits which erodes its supply of cash and thus forces the institution into disposal of its more liquid assets. As opined by Pandy (2015), managing monies of a firm in order to maximized cash availability and interest income on any idle cash is a function of liquidity management. However, the problems of weak corporate governance, poor capital base, illiquidity and insolvency, poor asset quality and low earnings are some of the constraints faced by the banking sector in Nigeria. Some works by Johnson(2008) examined the differences in financial ratio averages between the industries.The results showed that liquidity management has no effect on the firm's profitability. Moreover, Kweri (2011) examined the same problem among manufacturing firms. There is no study done so far on the effects of liquidity

management on the performance of deposit money banks in Nigeria. It is in this vain that this study has evaluated the effect of liquidity management on the financial performance of Union Bank PLC in Nigeria such as on their profitability, equity and return on assets.

2.1 Conceptualizations of Liquidity

2.1.1 Meaning of Liquidity

Liquidity is a financial term that means the amount of capital that is available for investment. Maturing obligations. It is the bank ability to immediately meet cash, cheese, other withdrawals obligations and legitimate new loan demand while abiding by existing reserve requirements. Liquidity has no generally accepted definition. Adler (2012) argued that the lack of a commonly agreed definition is as a result of the concept of Liquidity emerging from various economic perspectives. Liquidity is a very demanding factor for the smooth running of banking businesses; expansion and survival of all banks is dependent on Liquidity. The term has divergent definitions to various people and institutions. Liquidity is of greatest relevance, being a fundamental matter of banking (Uhagiro, 2008). It is the ability to meet maturing obligations in a timely manner.

Liquidity is used to give the description of a business by the value of liquid assets the company has; the more the liquid assets, the higher the liquidity of the company (Vossen, 2010).According to Olagunju, Adeyanju and Olabode (2011), liquidity was defined as the capability of an entity to settle its short-termed obligations or the ability of an entity to change its assets to cash. Therefore, the liquidity of a bank is the capability of a bank to keep adequate funds in order to pay for its fully-developed commitments at a suitable price. Liquidity has a vital part in the successful operation of a business. Nwaezeaku (2008) defined liquidity as the degree of convertibility to cash or the ease with which any asset can be converted to cash. The liquidity needs of the banking system are usually defined by the sum of reserve requirements imposed on banks by a monetary authority (CBN, 2012).

According to Olagunji, Adenanju and Olabode (2011), liquidity 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. Put differently, bank liquidity means banks having money when they need it particularly to satisfy the withdrawal needs of their customers. The survival of deposit money banks depends greatly on how liquid they are. Since illiquidity, being a sign of imminent distress, can easily erode the confidence of the public in the banking system and results to run on deposit. Liquidity refers to the ability of the bank to fulfill its obligations, mainly of depositors. According to Dang (2011), adequate level of liquidity is positively related with bank profitability. Thus, banks that maintain adequate levels of liquidity tend to be more profitable. The most common financial ratios that reflect the liquidity position of a bank are customer deposit to total asset and total loan to customer deposits. Others are cash to deposit ratio (Ongore & Kusa, 2013). Liquidity is the term used to describe how easy it is to convert assets to cash. The most liquid asset, and what everything else is compared to, is cash. This is because it can always be used easily and immediately. Liquid assets are important

to have in times of crisis or emergency because they are easily converted into cash. Without liquidity, money can become tied up in systems that are difficult to cash out of and even more difficult to assess for actual cash value. During times of emergency, large financial institutions shut down, making it difficult for people to access the cash they need to buy essentials like food, gasoline and other emergency supplies (Chaplin, Emblow&Michael 2000). Moore (2009) opined that a bank needs to hold liquid assets to meet the cash requirements of its customers, if the institution does not have the resources to satisfy its customers; demand, then it either has to borrow on the inter-bank market or the central bank. It follows therefore that a bank unable to meet its customers' demands leaves itself exposed to a run.

The term liquidity is often used in multiple contexts. An assets liquidity can be used to describe how quickly, easily and cost it is to convert that asset into cash (Berger & Bouwman, 2008). Liquidity can also be used to describe a company by the amount of cash or near cash assets a company has; the more liquid assets, the higher a company's liquidity. Financial ratios that measure liquidity are referred to as a company& liquidity ratio. One such ratio is the current ratio which determines a company's ability to pay short term debts as they come due (Van Ness, 2009). Liquidity risk has many definitions but the one that can be derived from the ratio is the probability that a company will not be able to pay its short-term obligations as they come due. This inability can lead a company to face serious financial problems. In addition to this, liquidity risk can also be defined in terms of the counterparty to a transaction. In this sense the term means the risk inherent in the fact that the counterparty may not be able to pay or seitle the transaction even if they are in good financial standing, because of a lack of liquidity (Petria & Petria, 2009).

Liquidity risk for a bank is especially prevalent as it is easy for a bank to lose its liquidity because depositors can withdraw funds when they choose. In addition to depositors, banks face another way in which their cash reserves can be strained by fulfilling obligations to companies. These companies have previously established loan commitments, called credit lines that can be borrowed from the bank when needed (Gatev,Schuermann & Strahan, 2007). Historically, runs on banks have shown certain banks predisposition to liquidity risk and the severity of impact this risk can have on the economy. This risk is intricately tied to the nature of banking. This is why banks, governmental entities, and private industry have tried to understand liquidity risk and implement public policy, regulations, and risk assessment policies to mitigate this risk. Liquid 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. Another quality of liquid assets is price stability. Based on this characteristic, bank deposits and short-term securities are more liquid than equity investments due to the fact that the prices of the former are fixed than the prices and value of the later (Richard, 2013) the liquidity in the commercial bank represents the ability to fund its obligations by the contractor at the time of maturity. Which includes lending and investment commitments, withdrawals, deposits, and

accrued liabilities (Amengor, 2010). With respect to finance and financial institutions, liquidity may be defined as the banks' ability to meet maturing obligations without incurring unacceptable losses. A study of liquidity is of major importance to both the internal and external environments of a financial institution and analysts because of its close relationship with day to day operations of a business (Bhunia, 2010). According to Bank for International Settlements (2008), liquidity is defined as banks' ability to acquire funds required to meet obligations when due without incurring any substantial losses. Liquidity is a bank capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. Liquidity is also used to determine the financial health of a business or personal investment portfolio. Three liquidity ratios are used for this purpose, including the current ratio, the quick ratio and the capital ratio. Liquidity not only helps ensure that a person or business always has a reliable supply of cash close at hand, but it is a powerful tool when it comes to determining the financial health of future investments as well (Clementi,2001). Prudent bank management requires that the liquidity position of a bank should be ascertained accurately during operations, in other words, every working day. The liquidity of a firm is measured by liquidity ratios; a class of financial metrics that is used to determine a company's ability to pay off its short-term debt obligations. From regulatory authority point of view, liquidity ratio refers to the reserve requirement which is a bank regulation that sets the minimum reserve each bank must hold. Commonly used liquidity ratios are the current ratio and the quick (or acid test) ratio. Vishnani and Bhupesh (2007) affirmed that the most common measure of liquidity is current ratio and return on investment for profitability. The current ratio is used to test a firm's liquidity, that is, its current or working capital position by deriving the proportion of the firm's current assets available to cover its current liability. A higher current ratio indicates a larger investment in current assets which means, a low rate of return on investment for the firm, as excess investment in current assets will not yield enough return. A low current ratio means smaller investment in current assets which means a high rate of return on investment for the firm, as no unused investment is tied up in current assets. However, there is consensus in theoretical literatures that the higher the ratio, the better. The concept behind this ratio is to ascertain whether a company's short-term assets are readily available to pay off its short-term liabilities (Loth, 2012). In summary, banks face two central issues regarding liquidity. Banks are responsible for managing liquidity creation and liquidity risk. Liquidity creation helps depositors and companies stay liquid, for companies especially when other forms of financing become difficult. Managing liquidity risk is to ensure the banks own liquidity so that the bank can continue to serve its function.

2.1.2. Liquidity Management

Liquidity management is essential for the outstanding performances of all business entities, particularly to financial institutions due to the fact that customer confidence of the banks is to a large extent dependent on the accessibility of funds in good time. Inadequacy of liquidity can destruct the

proper operations of banks even as they might be unsuccessful to meet the financial demands of the customers in time. This would result to tight relationship with their customers, and so it is of vital importance to formulate policies for the efficiency of liquidity management. This is possibly in the form of suitable courses of actions for the evaluation, control and management of liquidity (Andrew & Osuji, 2013).Bhattacharyya and Sahoo (2011) opined that liquidity management includes the conservation of adequate cash balance and its corresponding balances to give satisfaction to the needs of the customers at any moment and in addition, making sure that money is also at hand to carry out the day-to-day functions of the bank. In the course of discharging these functions, the banks ought to be able to make profit for all stakeholders who are necessary for its continuous existence and running. Nevertheless, attaining profitability requires the stabilization of liquidity and how it is being managed.

2.1.3 Concept of Financial Performance

Financial performance is the financial condition of a company over a certain period of time. It is measured using different business-related formulas that enable users to calculate specific details in relation to a company's potential effectiveness. Financial performance gauges the ability of the management in utilizing the resources of the organization. Financial performance is examined differently by the users. For internal users, it is examined to assess their respective companies' welfare and position among other standards. For external users, financial performance is evaluated to indicate likely investment opportunities and to discover if a company is profitable. Financial performance of a firm normally originates from the financial position and structure of the firm. This information is derived from the financial statement which is the yard stick to evaluate and monitor performance. Business executives use financial statements to draft a comprehensive financial plan that will maximize shareholders wealth and minimize possible risks that may preexist. Financial Statements evaluate the financial position and performance of a firm. These statements are prepared and produced for external stakeholders for example: shareholders, government agencies and lender (Rahaman, 2010). Financial performance measures how well a firm generates value for the owners. It can be measured through various financial measures such as profit after tax, return on assets (ROA), return on equity (ROE), earnings per share and any market value ratio that is generally accepted (Pandey, 1985). The financial performance of financial institutions can be measured using a combination of financial ratios analysis, benchmarking, and measuring performance against budget or a mix of these methodologies. The financial statements of financial institutions commonly contain a variety of financial ratios designed to give an indication of the corporation's performance (Oye, 2006). Profit is the ultimate goal of commercial banks. To measure the profitability of commercial banks there are variety of ratios used of which ROA, ROE and Net Interest Margin (NIM) are the major ones (Murthy & Sree, 2003). This study only looked at the financial performance of commercial bank and not at the non-financial performance. Financial performance has

implications on organizations health and ultimately its survival. The Firms management effectiveness and efficiency in making use of company's resources is highly reflected by high financial performance and this in turn contributes to the country's economy at large (Naser & Mokhtar, 2004). Company financial performance is very essential to management and other stakeholders such as shareholders, debt holders and the government as it is an outcome which has been achieved by an individual or a group of individuals in an organization related to its authority and responsibility in achieving the goal legally, not against the law and conforming to the morale and ethic (Iswatia, & Anshoria, 2007). Financial performance which assesses the fulfillment of a firm's economic goals has long being an issue of interest in managerial researches. Firm financial performance relates to the various subjective measures of how well a firm can use its given assets from primary mode of operation to generate profit. The concept of firm performance implies measuring the results of a firm's policies and operations in monetary terms. These results are reflected in the firms return on investment, return on assets, and net profit after tax etc. Performance differences in terms are often the subject of academic research and government analysis (Verreynne & Meyer, 2008). Kothari (2001) defined the value of a firm as the present value of the expected future cash flows after adjusting for risk at an appropriate rate of return. According to Eyenubo (2013), it is the success in meeting pre- defined objectives, targets and goal within a specified time target. Qureshi (2007) put forward four different approaches in which the value of a firm has been identified in corporate finance literature. These are: the financial management approach which focus on the evaluation of cash flows and investment levels before identifying and assessing the impact of financing sources on firm value; the capital structure approach which studies the impact of capital structure changes on the value of firm and how different factors impact directly or inversely the debt and equity component of the firm capital structure; the resource based approach which explains the value of firm as an outcome of firms resources; and finally, the sustainable growth approach which is a summary of the above three approaches to firm value, taking into account the firms operating performance, its investment and financing needs, the financing sources, and its financing and dividend policies for sustainable development of firms resources and maximization of firm value. This study examines one key accounting measures of firm's financial performance which is ROA. Financial performance is measured by its capacity to maximize returns on investors' funds. In the Nigerian economy, bank performance is determined by a number of factors, namely lending rates, deposit rate, management effect ownership and control, market structure (Somayo & Ilo,2008). Performance measurement and reporting is now widespread across the private sector as well as public sector of many industrialized and industrializing countries (Williams, 2003). The main indicators used in the appreciation of bank financial performance are: ROE (Net income/Average Equity), ROA (Net income/Total assets) and the indicator of financial leverage or (Equity/Total Assets) (Dardac & Barbu, 2005). One of the widely used accounting based measures of corporate performance in

literature is ROA (Finkelstein &;Aveni, 1994; Weir & Laing,1999).It assesses the effectiveness of capital employed and provides a basis in which investors can measure the earnings generated by the firm from its investment in capital assets (Epps & Cereola, 2008). The ROA is a measure which shows the amount of earnings that have been generated from invested capital. It is an indication of the number of kobo earned on each naira worth of assets. It allows users, stakeholders and monitoring agencies to assess how well a firm's corporate governance mechanism is in securing and motivating efficient management of the firm (Chagbadari, 2011). The ROA is the ratio of annual net income to total assets of a business during a financial year. It is measured thus: ROA = Annual Net Income/Total Assets A commonly used measure of bank performance is the level of bank profits (Ceylan,Emre &Asl,2008). Bank profitability can be measured by the ROA, a ratio of a bank profits lo its total assets. The income statements of commercial banks report profits before and after taxes. Another good measure on bank performance is the ratio of pre-tax profits to equity (ROE) rather than total assets since banks with higher equity ratio should also have a higher return on assets (Ceylan, Emre & Asl, 2008). Return on assets and return on equity are two financial ratios which are commonly used to measure a firm's financial performance. According to Price Water House Coopers (2008), key performance indicators for banks is its ROA and ROE ratios as they are composed of some very important variables which can measure performance quite effectively.

2.2 Current theoretical Frameworks

Liquidity Preference Theory:

Keynes describes liquidity preference theory saying that people value money for both the transaction of current business and its use as a store of wealth. Thus, they will sacrifice the ability to earn interest on money that they want to spend in the present, and that they want to have it on hand as a precaution. On the other hand, when interest rates increase, they become willing to hold less money for these purposes in order to secure a profit. According to Elgar (1999), one needs money because one has expenditure plans to finance or is speculating on the future path of the interest rate or, finally, because one is uncertain about what the future may have in store so it is advisable to hold some fraction of one resources in the form of pure These motives became known as transactions, Purchasing Power speculative and precautionary motives to demand money. The banks liquidity preference approach suggests that banks pursue active balance sheet policies instead of passively accommodating the demand for credit. Liquidity and risk transformation are the two central roles performed by Commercial banks in the economy according to modern theory of financial intermediation. Analysis of banks role in creating liquidity and thereby spurring economic growth have a long tradition dating back to Adam smith (1776). The theory argues that commercial banks create liquidity on the balance sheet by financing relatively illiquid assets with relatively liquid liabilities. Keynes presents

liquidity preference theory there as a liquidity preference theory of interest, a theory that is supposed to fill the vacuum left by what he regarded as a flawed classical savings theory of interest. In the early post General Theory literature, the notion of liquidity preference quickly became a synonym for the demand for money. Together with constant stock of money liquidity preference was the factor that determined the rate of interest in the money market of Hicks;(1937) seminal investment saving to liquidity preference Money supply model (Jorg,2005). Working capital management practice contradicts with the theory. It involves managing the relationship between a firm's short-term assets and its short-term liabilities. The goal of working capital management is to ensure that the firm is able to continue its operations and that it has sufficient cash flow to satisfy both maturing short-term debt and upcoming operational expenses. For sufficient funds to satisfy both maturing short-term debt and upcoming operational expenses positive working capital is desirable (Afza & Nazit, 2009), Compliance to solvency issues need be given another consideration. Solvency ratios are financial indicators that show the banks' ability and capacity to meet its liabilities from its assets. Solvency indicators are concerned with how much the commercial bank owe in relation to their asset valise, whether they are getting into heavier debt or improving their situation and whether their debt burden seems heavy or light. The Sharpe ratio characterizes how well the return of an asset compensates the commercial bank for the risk taken. Tobin;s q is the ratio between a physical assets market value and its replacement value. These ratios are important at managing liquidity risk.

2.3 Empirical Review

Obim, Takon and Mgbado (2020) examined the effect liquidity has over the profitability of banks. The sourced data was from the Central Bank of Nigeria statistical bulletin. The results of the examination showed that there are positive and negative effect between liquidity and the profitability of banks in Nigeria.

.Sathyamoorthi, Mapharing and Mashoko (2020) analyzed the relationship that exists between liquidity management and financial performances of commercial banks in Botswana. The study sourced data from all the 9 commercial banks in Botswana from 2011 to 2019. The study applied descriptive statistics, correlation and regression to analyze the data. The study showed both significant and insignificant relationships between liquidity management and financial performance. Dzapasi (2020) sought to determine the effect of liquidity management on the financial performance of banks in a bad economy. This research drew a sample of the 5 leading banks in Zimbabwe. The research discovered that there is a strong positive relationship between liquidity management and financial performance of banks in Zimbabwe. .Wuave, Henry and Paul (2020) examined the impact of liquidity management on the financial performance of banks in Nigeria for the period of 2010-2018. The study used data of five deposit money banks listed on the Nigeria Stock Exchange. The variables used to measure liquidity management were Liquidity ratio, Loan to deposit ratio, Cash reserve ratio and Deposit ratio while Return on assets, return on equity and return on net interest margin were the proxies used for financial performance. The

study discovered that Liquidity management has a significant impact on financial performance of deposit money banks in Nigeria.

Afolabi and Williams (2019) carried out a research in order to assess the financial performance of Deposit Money Banks in relation to liquidity management among listed banks in Nigeria. The financial reports for the duration of 2009-2018 were used as the main source of data gathering for the 15 sample firms. The study observed that there are both positive and negative impacts of liquidity management on the financial performance of deposit money banks in Nigeria. The study concluded that liquidity management affects the financial performance of deposit money banks in Nigeria. Edem (2017) carried out a study to discover the empirical evidence of the impact of liquidity management on the financial performance of deposit money banks in Nigeria using the secondary data of the entire deposit money banking industry between 1986 and 2011. Research reveals that there exists both positive and negative impact of liquidity management on financial performance of deposit money banks in Nigeria. Demirgunes (2016) evaluated the possible impact of liquidity on financial performance by making use of the time-series data of the Turkish retail industry in 1998. After the analysis, the study concluded that there is a significant positive relationship between liquidity and financial performance. Stanley and Ali (2016) conducted a survey of liquidity management factors affecting the financial performance of commercial banks in Mogadishu, Somalia. The target population for the study was 112 employees of commercial banks in Modagishu and a sample size of 87 respondents was selected using Slog Van's formula. The study indicated that liquidity management significantly influences the financial performance of commercial banks in Modagishu, Somalia. Gul et al., (2011) used data on top fifteen Pakistani commercial banks over a period 2005- 2009, the study investigated the impact of assets, loans, equity, deposits, economic growth, inflation and market capitalization on profitability indicators i.e. NIM. Their results showed that deposits, among other had positive correlation with ROA. Deposits however, had negative relationship with ROCE. Similarly, total deposits to total assets had negative correlation with ROCE, which shows that banks that rely on deposits for their funding are less profitable. Kamoyo (2010) empirically analyzed the determinants of the liquidity of the commercial banks in Kenya using a multiple linear regression model. The motivation was to establish whether the determinants of liquidity are empirically robust. The focus was exclusively on a cross section of 30 commercial banks in Kenya. The study employed linear regression model uncovered an economically meaningful relationship between bank liquidity and its determinants. The findings from a cross sectional analyses indicate that significant factors that determine the liquidity of the commercial banks in Kenya are liquid liabilities, growth and maturity. Liquid liabilities and maturity have a positive impact on liquidity whereas growth has a negative impact. The other factors such as liquid assets and cash flows have a positive but insignificant effect on the liquidity of commercial banks. Similarly, leverage, size, profitability and loan commitments have an insignificant negative

effect on banks 'liquidity. Dietrich and Wanzeried (2009) using 1919 observations from 453 banks in Switzerland included the yearly growth in deposits in the independent variables that they used to investigate the determinants of commercial banks profitability in Switzerland. Their results showed that the yearly growth in deposits did not affect profitability significantly. The study found no empirical evidence that commercial banks in Switzerland were able to convert at an increasing amount of deposit liabilities into significantly higher income earning assets. Equally, Ratnovski and Huang (2009) found out that Canadian bank compared to other large commercial banks in OECD countries were more resilient during the 2008 economic turmoil since they relied more on depository funding as compared to the other banks that relied more on wholesale funding. The study found out that Canadian banks compared to other large commercial banks in OECD countries were more resilient during the 2008 economic turmoil since they relied more on depository funding as compared to the other banks that relied more on wholesale funding. Nafula (2003) conducted an econometric analysis on the bank portfolios and bank earnings in Kenya. The study results revealed that except for customer deposits and investments in subsidiary companies, all other factors such as loans and advances; certificate of deposit; government securities; deposit balances from other banks; placements, loans and advances to building; societies and other banking institutions; other assets affect bank earnings positively. Generally, customer deposits, which include demand deposits. Savings deposits and time deposits, are a proxy for receivable deposits. These deposits also constitute the cheapest source of funds available to commercial banks. Therefore, the performance of a commercial bank is related to its ability to attract individual deposits. Therefore, one way to improve a bank's profitability or earnings is to formulate aggressive policies for attracting personal deposits. However, the Central Bank of Kenya requires that banks retain a certain proportion of their deposits (liquid cash) with themselves. In her study results, the customer deposits variable enters the equation negatively with very significant coefficients in all the regressions. Naceur and Goiaed (2001) investigated the determinants of the Tunisian banks performances during the period 1980-1995.Empirical evidence indicated that the best performing banks are those who maintained a high level of deposit accounts relative to their assets. Increasing the ratio of total deposits to total assets means increasing the funds available to use by the bank in different profitable ways such as investments and lending activities.

3.1 Model Specification

This research adapted the model of Ajose (2021), in the model, the researcher expressed Liquidity management and deposit money bank in Nigeria

The economic model was specified as:

$LR = f(RQ)$

Where:

LR = Liquidity Ratio

RQ= Return on equity

This study modified the above model to accommodate the variables of the study as follows:

$PRT = f(CRR, LR, LDR)$ ……..……(1)

$PRT = \beta_0 + \beta_1 CRR + \beta_2 LR + \beta_3 LDR + e$ ……(2)

ROE = f (CRR, LR, LDR) ……...……(3)

$ROE = \beta_0 + \beta_1 CRR + \beta_2 LR + \beta_3 LDR + e$ ……(4)

ROA = f (CRR, LR, LDR) ……...……(5)

$ROA = \beta_0 + \beta_1 CRR + \beta_2 LR + \beta_3 LDR + e$ ……(6)

Where:

LR = Liquidity ratio
LDR = Loan to deposit ratio
CRR = Cash reserve ratio
PRT = Profitability
ROE = Return on Equity
ROA = Return on Assets

4.1 Data Presentation

Table 4.1 Presentation of Data for Variables

YEAR	PRT (₦ million)	ROE (%)	ROA (%)	LR	LDR	CRR
2007	4175	14.55	1.28	41.56	83.26	3
2008	17162	9.97	1.66	37.72	86.91	3
2009	-2088	-12.8	-0.3	26.39	84.3	1.3
2010	12931	7.09	1.78	27.39	52.29	1
2011	13660	7.35	1.44	42.02	44.77	8
2012	36353	15.3	2.4	49.72	42.31	12
2013	26211	10.69	1.54	46.23	37.56	12
2014	39941	14.57	2.02	38.27	63.61	20
2015	58924	16.35	2.44	42.35	69.58	20
2016	64026	15.18	2.07	45.95	79.95	22.5
2017	51335	11.03	1.47	54.79	72.84	22.5
2018	73596	16.7	1.85	65.04	60.16	22.5

2019	70115	13	1.11	104.2	58.73	22.5
2020	80039	12.24	1.05	67.6	60.33	27.5
2021	111326	12.77	1.15	61.2	60.48	27.5
2022	166660	15.6	1.33	54.93	61.7	27.5

Source: CBN Statistical Bulletin and Union Bank Financial Statements.

4.2 Data Analysis

4.2.1 Descriptive Statistics

Table 4.1: Descriptive statistics of the variables

	CRR	**LDR**	**LR**	**PRT**	**ROA**	**ROE**
Mean	15.80000	63.67375	50.33500	51522.88	1.518125	11.22438
Median	20.00000	61.09000	46.09000	45638.00	1.505000	12.88500
Maximum	27.50000	86.91000	104.2000	166660.0	2.440000	16.70000
Minimum	1.000000	37.56000	26.39000	-2088.000	-0.300000	-12.80000
Std. Dev.	9.906900	15.10001	18.66487	43904.95	0.648621	7.060008
Skewness	-0.347898	-0.038154	1.425192	1.097569	-1.117769	-2.621946
Kurtosis	1.586353	2.074932	5.411894	3.999868	5.032518	9.628430
Jarque-Bera	1.655021	0.574382	9.294612	3.878910	6.085839	47.62298
Probability	0.437136	0.750368	0.009587	0.143782	0.047695	0.000000
Sum	252.8000	1018.780	805.3600	824366.0	24.29000	179.5900
Sum Sq. Dev.	1472.200	3420.154	5225.661	2.89E+10	6.310644	747.6558
Observations	16	16	16	16	16	16

Source: Output data from E-views 10

The descriptive statistics of the variables of interest were examined in order to evaluate the mean, median, maximum, minimum and other vital descriptive statistics including the Kurtosis. The mean of CRR of the studied years was 15.80 while its median value was

20. The standard deviation of 9.9069 indicates data are clustered around the mean. The maximum value of CRR was 27.50 while the minimum was 1. The Jarque-Bera statistic value was 1.655021 with a probability value of 0.437136 shows that the variable follows a normal distribution. The mean of LDR of the studied years was 63.67375 while its median value was 61.09. The standard deviation of 15.10001 means data are more spread out. The maximum value of LDR was 86.91 while the minimum was 37.56. The Jarque-Bera statistic value was 0.574382 with a probability value of 0.750368, this shows that the variable was normally distributed. The mean of LR of the studied years was 50.335 while its median value was 46.09. The standard deviation of 18.66487 indicates data are clustered round the mean. The maximum value of LR was 104.20 while the minimum was 26.39. The Jarque-Bera statistic value was 9.294612 with a probability value of 0.009587 indicates that the variable was not normally distributed. Thus, changes in LR were subject to other factors. The mean of PRT of the studied years was 51,522.88 while its median value was 45,638. The standard deviation of 43,904.95 indicates data are clustered around the mean. The maximum value of PRT was 166,660.0 while the minimum was -2088. The Jarque-Bera statistic value was 3.878910 with a probability value of 0.143782, this indicates that the variable was normally distributed. The mean of ROA of the studied years was 1.518125 while its median value was 1.505. The standard deviation of 0.648621 indicates data are clustered around the mean. The maximum value of ROA was 2.44 while the minimum was -0.30. The Jarque-Bera statistic value was 6.085839 with a probability value of 0.047695 shows that the variable does not follow a normal distribution. Thus, changes in ROA were subject to other factors. The mean of ROE of the studied years was 11.22438 while its median value was 12.885. The standard deviation of 7.060008 indicates data are clustered round the mean. The maximum value of ROE was 16.70 while the minimum was -12.80. The Jarque-Bera statistic value was 47.62298 with a probability value of 0.000000 indicates that the variable was not normally distributed. Thus, changes in LR were subject to other factors.

4.2.2 Unit Root Test

The data were subjected to unit root tests through Augmented Dickey-Fuller (ADF) to ensure that the variables were devoid of stationary defects that may likely affect the output of the regression equation.

Table 4.2: Unit root test results for variables

Variables	Orderof Integration	ADF	Prob*	Remark
CRR	1(1)	-3.975379	0.0105	Stationary

LDR	1(0)	-4.282805	0.0077	Stationary
LR	1(1)	-3.986418	0.0103	Stationary
PRT	1(1)	-1.975197	0.0493	Stationary
ROA	1(0)	-3.390776	0.0286	Stationary
ROE	1(1)	-5248995	0.0011	Stationary

Source: Extract from E-Views 10 output (see appendix)

4.3 Test of Hypotheses

4.3.1 Test of Hypothesis One

H_0: Liquidity management has no significant effect on profitability of Union bank PLC in Nigeria.

H_1: Liquidity management has a significant effect on profitability of Union bank PLC in Nigeria.

Table 4.3: OLS output for the test of hypothesis one

Dependent Variable: DPRT
Method: Least Squares
Date: 02/15/24 Time: 16:47
Sample (adjusted): 2008 2022
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.

DCRR	-325.8688	2026.307	-0.160819	0.8752
DLR	-234.8026	358.5210	-0.654920	0.5260
LDR	-236.4353	410.8895	-0.575423	0.5766
C	26319.87	27592.15	0.953890	0.3606

R-squared	0.054356	Mean dependent var	10832.33
Adjusted R-squared	0.023547	S.D. dependent var	18909.39
S.E. of regression	20744.79	Akaike info criterion	22.94116
Sum squared resid	4.73E+09	Schwarz criterion	23.12997
Log likelihood	-168.0587	Hannan-Quinn criter.	22.93914
F-statistic	0.210762	Durbin-Watson stat	1.752682
Prob(F-statistic)	0.886850		

Source: E-Views 10 output, 2024

The coefficient of CRR, LR and LDR are negative which shows a negative effect on profitability of Union Bank. The probability value shows that CRR, LR and LDR has no significant influence on PRT. The regression R-squared value of 0.0543 shows that about 5% of the systematic variations in PRT were explained by the independent variables. The Durbin Watson stat of 1.752682 indicates management has no significant effect on profitability of Union bank PLC in Nigeria.

4.3.2 Test of Hypothesis Two

H_0: Liquidity management has no significant effect on return on equity of Union bank PLC in Nigeria.

Table 4.4: OLS output for the test of hypothesis two

that there is no auto correlation problem in the model.

Decision Rule: Since the p-value (F-statistic) is greater than 0.05 at 0.886850; we accept the null and reject the alternate; thus, liquidity

H_1: Liquidity management has a significant effect on return on equity of Union bank PLC in Nigeria.

Dependent Variable: DROE
Method: Least Squares
Date: 02/15/24 Time: 16:51
Sample (adjusted): 2009 2022
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCRR	1.041710	0.680040	1.531835	0.1599
DLR	0.177792	0.122622	1.449922	0.1810
LDR	-0.349575	0.144475	-2.419627	0.0386
C	19.45891	9.342905	2.082748	0.0670
DROE(-1)	-0.717173	0.226875	-3.161101	0.0115

R-squared	0.644922	Mean dependent var	0.402143
Adjusted R-squared	0.487109	S.D. dependent var	9.147777
S.E. of regression	6.551309	Akaike info criterion	6.869660
Sum squared resid	386.2768	Schwarz criterion	7.097895
Log likelihood	-43.08762	Hannan-Quinn criter.	6.848532
F-statistic	4.086629	Durbin-Watson stat	1.538403
Prob(F-statistic)	0.036963		

Source: E-Views 10 output, 2024

The coefficient of CRR, and LDR shows a positive effect while LDR shows a negative effect on return on equity of Union Bank. The probability value shows that CRR and LR has no significant influence on ROE while LDR has a significant influence on ROE. The regression R-squared value of 0.6449 shows that about 64% of the systematic variations in PRT were explained by the independent variables. The Durbin Watson stat of 1.538403 indicates that there is no auto correlation problem in the model.

Decision Rule:

Since the p-value (F-statistic) is less than 0.05 at 0.036963; we reject the null and accept the alternate; thus, liquidity

management has a significant effect on return on equity of Union bank PLC Nigeria.

4.3.3 Test of Hypothesis Three

H_0: There is no significant effect of liquidity management on return on assets of Union bank PLC in Nigeria.

H_1: There is a significant effect of liquidity management on return on assets of Union bank PLC in Nigeria.

Table 4.5: OLS output for the test of hypothesis three

Dependent Variable: ROA
Method: Least Squares
Date: 02/15/24 Time: 16:55
Sample (adjusted): 2008 2022
Included observations: 15 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DCRR	0.070855	0.066182	1.070600	0.3073
DLR	0.010819	0.011710	0.923895	0.3754
LDR	-0.005614	0.013420	-0.418356	0.6837
C	1.758790	0.901204	1.951602	0.0769

R-squared	0.192032	Mean dependent var	1.534000
Adjusted R-squared	0.128323	S.D. dependent var	0.668162
S.E. of regression	0.677558	Akaike info criterion	2.282535
Sum squared resid	5.049931	Schwarz criterion	2.471348
Log likelihood	-13.11901	Hannan-Quinn criter.	2.280524
F-statistic	0.871465	Durbin-Watson stat	2.280761
Prob(F-statistic)	0.485051		

Source: E-Views 10 output, 2024

The coefficient of CRR, and LDR shows a positive effect while LDR shows a negative effect on return on assets of Union Bank. The probability value shows that CRR, LR and LDR has no significant influence on ROA. The regression R-squared value of 0.192032

shows that about 19% of the systematic variations in ROA were explained by the independent variables. The Durbin Watson stat of 2.280761 indicates that there is no auto correlation problem in the model.

Decision Rule:

Since the p-value (F-statistic) is greater than 0.05 at 0.485051; we accept the null and reject the alternate; thus, there is no significant effect of liquidity management on return on assets of Union bank PLC Nigeria.

5.1 Summary of Findings

The findings of the study are summarized as follows:

Liquidity management has no significant effect on profitability of Union Bank Plc in Nigeria.

Liquidity management has a significant influence on return on equity of Union Bank Plc in Nigeria.

Liquidity management has no significant effect on return on assets of Union Bank Plc in Nigeria.

5.2 Recommendations

The study, therefore, recommends the following:

Commercial banks in Nigeria should explore measures such as such as optimizing operational efficiency, fostering innovation in banking services and customer-focused initiatives. Regular assessments and adaptations to the dynamic financial landscape can help to identify new strategies for sustained profitability in the banking sector. Commercial banks should implement a more dynamic risk management framework that aligns with changing market conditions and regulatory requirements. This involves regularly monitoring and adjusting the composition of assets and liabilities to optimize profitability and mitigate risks associated liquidity and lending activities. By doing so, bank can optimize their balance sheet to enhance return on equity while ensuring compliance with regulatory standards. Banks should implement a customer-centric approach by tailoring lending practices to meet customer needs and preferences. This strategy not only positively improves loan performance but also enhances return on assets by fostering a more profitable and sustainable relationship with clients.

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