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EFFECT OF PRUDENTIAL GUIDELINES ON THE FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT:

This study examined the effect of prudential guidelines on the financial performance of deposit money banks in Nigeria. The specific objective of the study were to: examine the impact of capital adequacy regulation on the financial performance of DMBs in Nigeria; ascertain the impact of liquidity regulation on the financial performance of DMBs in Nigeria and assess the impact of credit risk regulation on the financial performance of DMBs in Nigeria. The study was anchored on agency and liquidity preference theories. The study adopt multivariate regression estimation analysis, correlation analysis and descriptive statistics. The study used Capital Adequacy Regulation (CAR), Liquidity Regulation (LR) and Credit Risk Regulation (CRR) as a proxy for Prudential Guideline and Return on Asset (ROA) and Return on Equity (ROE) as a measure for Financial Performance. The result show that CAR has a negative but insignificant effect on ROA, but has a positive and significant effect on DMBs' ROE in Nigeria. LR is negatively correlated with DMBs financial performance in Nigeria. CRR has a detrimental negative effect on DMBs' financial performance in Nigeria. The study recommended among other things that the minimum capital requirement of DMBs in Nigeria should be reviewed on a regular basis to ensure that it remains at an optimal level, and Nigerian banks should be capitalized to enable them to access cheaper sources of funds, resulting in increased profit margins. This would go a great way toward restoring public trust in banks, as the latter would be better equipped to provide consumers' credit demands while also safeguarding depositors' funds.
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1. INTRODUCTION

The Nigeria banking sector has witnessed a boom leading to many changes in the areas of regulations and reforms; the number of institutions, the structure of ownership, depth and breadth of operations in an attempt to reposition the industry to play its financial intermediation role

efficiently and profitably (Dogarawa, 2011). The factors that led to the creation of a fragile financial system that extremely ends into crisis by the global financial meltdown include: Macro Economic instability caused by large and sudden capital outflows, major failures in corporate governance of banks, lack of investor and consumer sophistication, inadequate disclosure and transparency about the financial position of banks, a critical gap in prudential guideline and uneven supervision and enforcement (Sanusi, 2010). The banking sector has been one of the most regulated industries in Nigeria, the wave of regulations in the industry can be traced back to 2004 when the Central Bank of Nigeria (CBN) embarked on a policy-induced consolidation programme by increasing minimum bank capitalization from 2 billion to 25 billion Naira. This consequently led to a reduction in the number of operating banks, from 120 to 25 by 2005 (Babalola, 2011). The consolidation programme resulted in dramatic growth and internationalization of the Nigerian banking sector, attracting unprecedented and sudden foreign capital inflows into the stock market (Sarah, 2014). However, the 2008/2009 financial crisis undermined some of the gains of the consolidation programme as most banks were significantly exposed to maturity mismatch and liquidity problems, because of the drying-up of capital inflows and portfolio divestments from banking equities on the stock market, which created a bubble in banking stocks **(**Foluso, 2014**).** Deposit Money Banks (DMBs) are resident depository corporations and quasi-corporations which have liabilities in the form of deposits payable on demand, transferable by cheque or otherwise usable for making payments.

DMBs play a vital function in the economic resource distribution of countries. For survival and growth, banks need to be profitable, which has a serious impact on economic growth. Good financial performance promotes high shareholders returns and further investment, poor financial performance led to failure and financial crunch which have undesirable impacts on economic growth (Ongore & Gemechu, 2013, Wuave, Yua &Yua, 2020). Banks play an important and sensitive role in a developing nation hence their performance directly affects the growth, efficiency, and stability of the economy (Oladipupo & onotaniyohuwo, 2011). DMBs are the major holder of the nation's financial assets which presents the largest potential risk for financial and reputational losses in the event of corporate failure and distress; To be efficient, they must be regulated because of the failure of the market system to recognize social rationality and the tendency for the market participants to take undue risk which could impair the stability and solvency of their institution (Omoye & Aniefor, 2016).

The experiences of many countries show that regulation and supervision are essential for a stable and healthy system and the need becomes greater as the number and variety of banks increase and the market in which they serve depend on two key factors: the degree of competition that exists

among the institutions and the nature of the regulations to which they are subject to, therefore there are needs to examine ways to increase efficiency through competition and a more flexible regulatory framework (Ojo, 2010). To avoid bank failure, adequate attention must be paid to various financial performance indicators. It was in this regard that CBN Published a circular in 1990 that resulted in the Prudential Guidelines for Licensed banks which aimed at ensuring a stable, safe and sound banking system and are meant to serve as a guide to ensure a prudent approach in the creation of high-quality loans assets and its associated earning streams. In addressing the challenges faced by Banks the CBN introduced a four-pillar reform programme in 2010 tailored towards; enhancing the quality of banks, establishing financial stability, enabling healthy financial sector evolution, and ensuring the financial sector contributes to the real economy (Sanusi, 2010).

A prudential guideline is a measure initiated by the Central Bank of Nigeria to strengthen its regulatory and supervisory framework. The decision to review and enhance the 1990 Prudential Guidelines was informed by the need for adequate supervision to promote the safety and soundness of the banking system and the financial system. The 1990 Prudential Guidelines were constrained because they did not cover certain sector-specific credits; they were silent on the need for a moratorium associated with maturities in credits to sectors requiring long gestation periods. As part of the initiative to enhance the quality of banks, the CBN undertook a review of the 1990 Prudential Guidelines in July 2010 which aim is to address various aspects of DMBs operation such as Risk Management, Corporate Governance, Know your customer (KYC) and Anti-money Laundering, project financing, object financing, real estate and commercial estate, Small and Medium Enterprises financing, Agriculture financing, Microfinance loans, retail financing, loan loss provisioning and peculiarities of different loan type and finance to different sectors using differs financial soundness indicators which involves Liquidity, Capital Adequacy, Asset Management, earnings/ profitability, exposure to foreign Exchange Risk, leverage and debt service capacity among others (CBN, 2010).

However, the CBN prudential Guideline outline seven financial soundness indicators that are used to measure the true health of each financial institution. The indicators are Capital Adequacy Regulations, Asset Quality Regulation, Earnings/profitability regulation, liquidity regulation, Exposure to FX risk regulation, leverage regulation, and debt service capacity regulation. The financial performance of DMBs globally is the hub and the pillar of every nation's economic and financial system, hence, the stability and underlying economic performance of the banks is vital and paramount to the macroeconomic development of a nation. The assessment of these banks as to how they are managed, and their performance can be best made through their financial statement

and asset quality. Hence the quality of financial statement prepared and presented and the quality of asset given by them goes a long way in fostering public confidence in the industry as well as to evaluating their performance (Adebisi, 2014). DMBs prudential guidelines aim to prevent banks' failure by establishing standard policies, procedures, disciplines, and practices that would ensure the easy and reliable valuation of banks which has left many questions as to whether or not the implementation has made any significant impact on the financial performance of DMBs in Nigeria. Over the years, DMBs in Nigeria has faced numerous challenges such as under-capitalization, slow branch expansion and weak management, insider fraud abuse and imprudent lending, lack of technical skill, banking knowledge and illiquidity related to their inability to meet customer cash withdrawals. Thus government, shareholders and other stakeholders continue to show considerable concern about how they are performing.

The financial performances of DMBs are affected by inadequate capital, illiquidity, and Non-Performing Loan (NPL) among others. Thus, making it difficult to attract investors and lenders thereby affecting their ability to purchase other financial resources. Illiquidity affects a bank's earnings, working capital and in extreme circumstances may result in distress, high impaired loans, and poor investment portfolios. Banks are expected to maintain adequate capital to meet their financial obligations, operate profitably and contribute to promoting a sound financial system. Inadequate capital was attributed to the low level of initial capital, affected inflation and the large portfolio of NPL maintained by some banks. Thus, the introduction of Prudential Guidelines requires suspending interest due but unpaid on classified assets and provisions for non-performing credit facilities (Babalola, 2011). This study intends to examine the impact of Prudential Guidelines on the Financial Performance of DMBs in Nigeria. Specifically, the study intend to: examine the impact of capital adequacy regulation on the financial performance of DMBs in Nigeria; ascertain the impact of liquidity regulation on the financial performance of DMBs in Nigeria and assess the impact of credit risk regulation on the financial performance of DMBs in Nigeria.

1.1 Objectives of the Study

The broad objective of this study is to investigate the effect of Prudential Guidelines on the Financial Performance of Deposit Money Banks in Nigeria. The specific objectives are to:

1. examine the effect of capital adequacy regulation on the financial performance of DMBs in Nigeria;
2. ascertain the effect of liquidity regulation on the financial performance of DMBs in Nigeria;
3. assess the effect of credit risk regulation on the financial performance of DMBs in Nigeria.

1.2 Research Hypotheses

Given the objective stated above, the following null hypotheses form the basis for the study:

Ho_1: Capital adequacy regulation has no significant effect on the financial performance of DMBs in Nigeria.

Ho_2: Liquidity regulation has no significant effect on the financial performance of DMBs in Nigeria.

Ho_3: Credit risk regulation has no significant effect on the financial performance of DMBs in Nigeria.

2. LITERATURE REVIEW

2.1 Conceptual review

2.1.1 Prudential Guidelines

Sauda et al. (2017) observe that prudential guidelines are forms of government procedures that subject banks to certain requirements, boundaries and strategies that create transparency between the banks, government, and the customers. The absence of these regulations can affect the banking system, but good rules can impact the banking system drastically. Kiplagat and Kalui (2020) observed that prudential regulation forms a critical part of the operations of banks as it protects investors, consumers and ensures systemic stability they are required to maintain adequate capital, liquidity, asset quality, credit risk and management efficiency. These regulations comprise adherence and enforcement of the rules and policies sets and compliance of the critical banks' asset management policies, financial capacity of the banks and its managements (Diana, 2018). The CBN require the DMB to exercise particular care in their operations so that specified outcomes are realized. Hence, the set of laws, rules and regulations that are designed to minimize the bank risk; ensure the safety and soundness of both individual institutions and the system which establishes limits and constraints on the banking sector, it is an element in preventing, limiting or stopping the damage caused by poor management.

2.1.2 Deposit Money Banking

The generic name "Deposit Money Bank" was adopted for all Commercial and Merchant banks operating in Nigeria during the universal banking era of 2001. Banks owe some basic responsibilities to their communities; the traditional responsibility in form of financial intermediation must be efficiently delivered to retain the confidence of their clients (Ndifon and Sackey, 2014). Banks tend to have wielded tremendous influence on every nation's financial landscape which makes them relevant in the focus of monetary authorities in the task of managing the country's economy (Obamuyi, 2009).

DMBs provide a range of retail financial services to their clients which could comprise opening cheque current accounts and intermediation services among others (Somayo, 2008). DMBs are central in financing economic activity in any economy, most especially the developing countries like Nigeria. The DMBs have played a significant role through their crucial functions of financial intermediation, provision of efficient payment system and facilitating the implementation of monetary policies thus, the government have evolved an efficient banking system not only to promote efficient intermediation but also to protect depositor fund, encourage competition in the system and protection against systemic risk and collapse. For DMBs to be efficient, they must be regulated and supervised (Dauda, 2015).

2.1.3 Bank financial performance indicator

2.1.3.1 Return on Asset (ROA)

ROA is a ratio that indicates profitability, efficiency and Income to the total assets. It measures the ability of banks to generate income by utilizing liquid at their disposal and how the management is generating a net income from all the resources (Khrawish, 2011)**.** Wen (2010) asserts that higher ROA shows that the bank is more efficient in using its resources which means it is good in translating assets into profit. ROA provides good information about a firm's financial performance in terms of using assets to create income (Car cello et al., 2000). It also measures a bank's financial performance that corrects the size of the bank which is a useful measure of how well a bank manager is doing on the job because it indicates how well a bank's assets are being used to generate profits. Pandey (2009) points out that the appropriate measure of profit is profit before tax because it shows earnings arising directly from the commercial operations of the business without the effect of financing. Given this backdrop, this study will measure ROA as Net income divided by total assets as one of the proxy measures of bank performance.

2.1.3.2 Return on Equity (ROE)

ROE is a financial ratio that refers to how much profit a bank earned compared to the total amount of shareholders' equity invested or found on the balance sheet which is seen as shareholders return on their investment (Vincent & Gemechu, 2013). A bank that has a high return on equity is more likely to be capable of generating cash internally thus, the higher the ROE the better the bank in terms of profit generation. Khrawish (2011) observes that ROE is the ratio of Net Income after Taxes divided by Total Equity Capital. It represents the rate of return earned on the funds invested in the bank by its stockholders. It reflects how effectively a bank's management is using shareholders' funds. Thus, the better the ROE the more effective the management is in utilizing the shareholders' capital.

2.1.4 Credit risk regulation

Financial institutions are exposed to a variety of risks among them are interest rate risk, foreign exchange risk, political risk, market risk, liquidity risk, operational risk and credit risk but Credit risk is the most significant risk faced and the success of DMBs depends on accurate measurement and efficient management of this risk to a greater extent than any other risk. Therefore, it is a serious threat to the performance of Banks. To tackle the issues of credit risk regulation in Nigeria, the CBN entered into an agreement in 1987 known as Basel I and Basel II accords. Both accords emphasized the importance of capital adequacy for mitigating credit risk which cushions the effects of sudden financial losses on banks (Iwedi & Onuegbu, 2014). Credit risk explains an assessment of the possibility of loan default coupled with an assessment of its marketability (Molefe & Muzindutsi, 2015). The quality of asset evaluates the prices through which a bank can trade a loan to a different party as the borrower determines, this asset quality comprise long term and short-term assets quality, credit assortment alongside additional investments. The biggest component of bank assets is loans and makes up the utmost degree of threat to their capital (Nyanga, 2012). Real estates, off-balance-sheet components, outstanding cash from accounts and premises represent other components having a likely influence on the worth of assets.

Accordingly, Gostineau (1992) posits that credit risk is the possibility of losing the outstanding loan partially or totally due to credit events; Credit events comprise bankruptcy, failure to pay a due obligation, credit rating change and restructure. Basel Committee on Banking Supervision (1999) explains credit risk as a potential that a bank borrower fails to meet its obligations following agreed terms, Dima and Orzea (2009) indicate two primary sorts of credit risk that a portfolio or position is presented to be specific, credit default risk and credit spread risk. Chen and Pan (2012) identify the division of Bank Credit risks as default risk, exposure risk and recovery risk. Heffernan (1996) observes that credit risk is an uncertainty that an asset or a loan becomes irrecoverable in the case of outright default or delay in the servicing of a loan. Bessis (2002) ascertains that it is critical since the default of a small number of important customers can generate large losses which can lead to insolvency, thus DMBs need to manage credit risk mainly NPLs as it is very crucial for banks survival and profitability (Juliana 2017). Coyle (2000) says credit risk is a loss from the refusal or inability of credit customers to pay what is owed in full and on time. DMBs employ different credit risk management policies majorly determined by; ownership of the bank, credit policies of banks, credit scoring systems, banks' regulatory environment and the calibre of management of the banks (Nworji, Olagunju & Adeyanju, 2011). Basel Committee on Banking Supervision (2000) identify the Principles for Assessment of Banks' Management of Credit Risk thus; Establishing an appropriate credit risk environment, operating under a sound

credit granting process, maintaining an appropriate credit administration, measurement and monitoring process, ensuring adequate controls over credit risk, bank Supervisors maintaining effective system to identify, measure, monitor and control credit risk as part of an approach to risk management and conduct an independent evaluation of a bank's strategies, policies, procedures and practices related to the granting of credit and Supervisors considering setting prudential limits to restrict bank exposures to single borrowers or groups of connected counterparties and Establishing an Appropriate Credit Risk Environment.

Machiraju (2008) posits that bank centred on the five Cs standards in the estimation of borrowers' financial soundness to reduce the credit risk which comprises: Character (borrower's personal qualities; trustworthiness and responsibility), Capacity (borrowers' capacity to service debt), Capital (the monetary state of the borrower), Collateral (The resources portable property, sworn against the execution of a commitment) and Condition (the financial circumstance). Therefore, credit risk guidelines are policies that coordinated activities for managing the uncertainty of banks through the incorporation of risk management tactics concerning the organization's objectives which affects financial instruments other than loans.

2.1.5 Liquidity Regulation

Liquidity regulations are financial regulations designed to ensure that banks have the necessary assets on hand to prevent liquidity disruptions due to changing market conditions that are related to reserve requirement but focus on specific liquidity risk of assets that are held and it was imposed to negate liquidity risks of banks that played a prominent role in financial crises. Liquidity regulation is also useful since it is effective at managing liquidity stress and its macroeconomic costs are very modest compared to capital regulation. Bank liquidity shows the ability of banks to ensure the availability of funds to always meet financial commitments or maturing obligations at a reasonable price. Bank liquidity entails monetary resource that is used to satisfy the withdrawal needs of the customers (Wasiuzzaman & Tarmizi, 2010). Jagongo & Makori (2013) say, it is the responsibility of all banks to encounter their fiscal duties; banks convert their current assets into the shape of cash to pay the due obligations, The banks having less amount in current assets will face difficulties in ongoing its processes and if the amount of currents assets is too high, this displays that the return on investment for the bank is not in the unspoiled state.

2.1.6 Capital Adequacy Regulation

The capital adequacy regulation is an international standard to safeguard the banks by setting a risk-sensitive minimum capital requirement (Aysa & Razali, 2020). According to the Capital Adequacy Standard (CAS) set by the Bank for International Settlements (BIS), banks must have

a primary capital base equal to at least to 8 per cent of their assets Since bank-specific characteristics differ in Nigeria, CBN set an arbitrary N25 billion minimum capital bases after considering all capital adequacy variables (total assets, owners' funds, customers' deposits and loans and advances) to forestall all future financial downturns (Jalloh, 2017). Bank management desires to make a profit which is the essential requirement for conducting any business (Davis & Zhu, 2011**).** Insufficient capital requirements might result in investors and depositors being cautionary by refraining from dealing with the bank which will therefore harm the profitability of the bank. Gale (2010) and Kerwer (2005) say the increase in minimum capital requirements reduces the risk of bank distress which will then result in increased profitability.

In Nigeria, the Central Bank being the apex regulator of the banking industry increased the minimum capital base for DMBs to twenty-five billion Naira in 2005. This policy popularly referred to as the recapitalization or consolidation policy resulted in the reduction of Nigerian banks from eighty-nine banks to twenty-five bigger, stronger, and more resilient financial institutions (Williams, 2011). However, recapitalization may increase the capital adequacy in the short run but may not necessarily increase it in the long run as banks may increase their risk portfolio at the expense of their capital base as a result of increased liquidity and overall financial position (Abba, 2018) Capital adequacy protects banks against excess leverage, insolvency and keeps them out of difficulty. An appropriate level of capital adequacy ensures that the bank has sufficient capital to expand its business while its net worth is enough to absorb any financial downturns without becoming insolvent.

2.2 Theoretical Review

2.2.1 Agency theory

Agency theory was developed by Jensen and Meckling (1976) to address limitations that face the relationships between principals and agents and how they can be tapped to govern cooperation to realize its goal. Shareholders hire managers to control their finances by making them productive, there is bound to be a challenge where the managers feel their efforts are not well rewarded whereas the shareholders might feel that the managers are employees whose reward should only be income for services rendered (Bamberg & Spremann, 1987).

Jensen and Meckling (1976) model on agency costs and ownership structure holds a central role in evaluating the financial performance of an organization. The shareholders who are the owners of capital have no time in the day to day running of the organization hence they hand over the duties to run the organization to the agents who are the Chief Executive Officer (CEO) and the managers. This theory separates ownership from control, and the attendant agency problem

(Wambua, 2011). If DMBs shareholders are satisfied then it will attract more investors, create customer loyalty and in the long run affect the financial performance positively. The theory informed the first specific objective in the study that tends to relate Capital Adequacy Regulation with the Financial Performance of DMBs in Nigeria.

2.2.2 Liquidity Preference Theory

Liquidity Preference Theory was proposed by John Maynard Keynes in 1936. The theory states that the demand for money is not to borrow money but the desire to remain liquid; all factors held constant people prefer to hold cash rather than any other form of assets and they will demand a premium for investing in illiquid assets such as bonds and stocks. It contends that the compensation demanded parting with liquidity increases at the period of getting liquidity back. The theory dominates the central concepts in finance in its application on liquidity as the Central Banks set interest rates to control the circulation of liquid through the demand for money, The theory explains the existence of three motives of holding cash as the motive to keep cash for daily transactional need, the motive to keep cash for precautionary tendencies and finally the speculative motive to take advantage of opportunities (Bibow, 1995).

The analogy of liquidity preference theory is imperative on the assets and liabilities functions of DMBs, as it explains why banks will undertake to compensate for liabilities and provides the essence of why banks will seek compensation for their assets. This compensation describes the interest rate factor that is affected by the rate of liquidity in DMBs. The theory informed the second objective of the study that relates Liquidity Regulation to the Financial Performance of Deposit Money Banks in Nigeria.

2.2.3 Portfolio Theory

Portfolio theory was proposed by Harry Max Markowitz in 1952 in an article that drew attention to a general practice of risk diversification and demonstration on how investors can reduce their standard deviation of Portfolio return by selecting securities that do not move exactly together (Akinsulire, 2011). The theory was extended and refined by Sharpe (1934), Litner (1983), Tobin (1918), and others in the subsequent decades as it plays an important role in bank performance and asset studies (Nzongang & Joseph, 2006). The theory is a form of diversification, under certain assumptions and for specific quantitative definitions of risk and return and explains how to find the best possible diversification strategy. It looks at the success of reducing risks and focuses on the risk elements that banks face such as liquidity risk and asset quality. Asset quality remains one of the biggest risks that banks face and its concentration has a great impact on profitability (Margrabe, 2007).

Therefore, Portfolio theory underpins the study of prudential guidelines and financial performance as measured by Return on Asset (ROA) and Return on Equity (ROE), thus Bank investors or Shareholders construct their portfolio based on the financial performance of banks and diversify this portfolio by increasing their investment through purchase of more shares to the bank. Bank management makes relevant decisions towards the improvement of financial performance through diversifying their portfolio; consequently, improved financial performance enables investors to diversify their portfolio by increasing their investment through the purchase of more shares in the bank.

2.3 Empirical Review

Studies have been carried out on prudential guidelines and financial performance of DMBs; some of these studies are as follows: Kplagat and Kalui (2020) evaluated the effect of prudential regulations on the financial performance of commercial banks in Kenya. The scope of the study was all 43 commercial banks operating in Kenya within the period 2013 and 2017. The study adopts a correlation research design and a multiple regression model to determine the linear relationship between prudential regulations and profitability of commercial banks with the aid of the secondary data extracted from the CBK website. The result revealed that liquidity management, credit risk management and management efficiency have a significant effect while capital adequacy and asset quality have no significant effect on the performance of commercial banks in Kenya. However, this study only restricts in scope to Kenya, whereas the current focus is on Nigeria Deposit Money Banks.

Mugo and Shiundu (2020) examined the consequence of the prudential system on the performance of Kenyan banks. The explicit goal was to examine capital adequacy, liquidity and credit risk regulation relating it to the moderating effect of bank size on the interlink between prudential regulations and financial performance of banks with relevant theory such as Stakeholder Theory, Liquidity Preference and Market Power concepts. A casual design of the research was utilized and the population target of 42 banks from 2013 to 2018. The study used secondary data, the analysis applied both descriptive and panel regression analysis using STATA. The result revealed that regulation of capital adequacy had a statistically significant influence at p-value ($p=0.000<0.05$), regulation of liquidity had a statistically significant at p-value ($p=0.035<0.05$), credit risk is a significant determiner of financial performance of commercials banks in Kenya ($p=0.014<0.05$) and it is founded that bank size did not significantly influence the relationship between prudential regulations and financial performance ($p=0.289>0.05$). The only sampled population randomly

without evaluating if the banks are listed or not and other relevant criteria and the observation were too, rendering the result irrelevant.

Uche et al (2018) appraised the effect of liquidity on the financial performance of DMBs in Nigeria. A sample of five banks was used with Secondary data collected for ten years period (2011-2016) using multiple regression analysis. Results revealed that Liquidity has a positive and significant effect on banks' profitability ratios and has a positive and significant effect on Return on Capital Employed (ROCE).

Gabriel et al (2018) investigated the determinants of capital adequacy of DMBs in Nigeria. The study analyzed the bank-specific determinants using balanced panel data collected from financial statements of 12 selected quoted banks for ten years 2005-2014. ROA was found to be the most important determinant of CAR, having recorded the highest coefficient in the multiple regressions result was indicated that Nigerian banks' risk portfolio is quite high, and ROA is quite low. Unlike the study of Gabriel that examine the determinants of capital adequacy as a ratio, the current study tends to focus on the regulation that governs capital adequacy in a sampled bank.

Amahalu et al (2017) investigated the effect of capital adequacy on the financial performance of quoted DMBs in Nigeria for a period of five years (2001-2015). The study used secondary data obtained from fact books, annual reports and account of the DMBs under study. The data were subjected to statistical analysis using Pearson Coefficient of Correlation, Multiple Regression Analysis, Variance Inflation Factors (VIF), Multicollinearity, Heteroskedasticity test and Hausman test. The result revealed that a positive and significant relationship between Capital Adequacy and Financial Performance and it was empirically verified that Capital Adequacy has a statistically significant effect on Financial Performance on DMBs at a 5% level of significance.

Jalloh (2017) examined the impact of capital adequacy on the performance of Nigeria Banks using the Basel Accord Framework. The specifics for the study were total assets, owners' funds, customers' deposits and loans and advances on banks' performance in Nigeria. Data were collected using the cross-panel methodology from nine DMBs with significant foreign operations. The results of the Ordinary Least Square (OLS) regression showed that 76 per cent of the variations in Profit After Tax (PAT) were caused by capital adequacy and unit change in Total Assets (TA), Loans and Advances (LA), Customer Deposits (CD) and Owners' Capital (OC) led to 4.1, 1.6, 3.7 and 1.7 per cent change in PAT respectively.

Giami and Obari (2017) investigated the interrelationship between liquidity and corporate performance of banks in Nigeria from 1984 to 2014, Cash Reserve Ratio, Liquidity Ratio and Loan-to-Deposit Ratio were proxies for liquidity; Return on Shareholders' funds as the proxy for

performance. These were subjected to OLS Regression, Johanson Cointegration, Granger Causality test and Error Correction Model and the study revealed that banks' reserve ratio and loan-to-deposit ratio negatively impacted the banks' performance within the period under review and the DMBs performance maybe because of the industry structure.

Aigbogun (2011) investigated the impact of prudential guidelines on services and performance of CB in Nigeria which set out to examine prudential guidelines on bank safety and confidence of Nigerians. The study employed both primary and secondary sources of data from samples derived from the populations of selected CB and data were analyzed using the Chi-Square (X2) analytical technique. Findings revealed that there is an increased need for bank supervision by the regulatory bodies and also prudential guidelines have helped to check NPL, ensure proper scrutiny of loan proposals and enhanced regulatory activities in the banking industry. The present study tries to deal with the proxies that are related to Deposit Money Bank directly in Nigeria thereby dealing with research gaps.

3. MATERIAL AND METHOD

The methods adopted in this study require the use of empirical analysis of multivariate regression estimation analysis, correlation analysis and descriptive statistics. The purpose of constructing this models is to find out the impact of Prudential Guidelines and Financial Performance of DMBs in Nigeria using Capital Adequacy Regulation (CRR), Liquidity Regulation (LR) and Credit Risk Regulation (CRR) as a proxy for Prudential Guideline and Return on Asset (ROA) and Return on Equity (ROE) as a measure for Financial Performance.

Thus, The Multivariate regression model for the study is specified as:

Model 1: $ROA_{1it} = \beta_{01} + \beta_1 CAR_{1it} + \beta_2 CRR_{1it} + \beta_3 LDR_{1it} + ei_{1it}$

Model 2: $ROE_{2it} = \beta_{02} + \beta_1 CAR_{2it} + \beta_2 CRR_{2it} + \beta_3 LDR_{2it} + ei_{2it}$

Where:

ROA_{1it}	Return on Asset for DMBs i in time t
ROE_{2it}	Return on Equity for DMBs i in time t
CAR_{it}	capital adequacy regulation for DMBs i in time t
CRR_{it}	credit risk regulation for DMBs i in time t
LDR_{it}	Liquidity regulation for DMBs i in time t
e_{it}	Error terms
β_{01}	Intercept
β_1-β_2	Model coefficient

4. RESULT AND DISCUSSIONS

4.1 Data Analysis

4.1.1 Descriptive Statistics

The descriptive statistics are presented in table 1 below:

Table 1: Descriptive Statistics

	ROE	ROA	LDR	CRR	CAR
Mean	0.138194	0.022191	0.620380	1.801334	0.313591
Median	0.144900	0.021400	0.852600	1.118693	0.160000
Maximum	0.394500	0.226519	62.04310	9.531753	2.184775
Minimum	-0.260800	-0.095318	0.309900	0.000000	0.050000
Std. Dev.	0.109717	0.028390	6.080533	2.281580	0.424535
Skewness	-0.063100	2.396255	9.008818	1.639119	2.663376
Kurtosis	3.545222	7.098101	86.80786	5.541999	9.553901
Sum	16.16868	2.596342	189.5845	210.7560	36.69010
Sum Sq. Dev.	1.396376	0.093497	4288.854	603.8507	20.90668
Observations	117	117	117	117	117

Source: Author's computation from E-views 10 output, 2023

Table 1 presents the descriptive statistics for the dependent variables (ROA, ROE) and independent variables (LDR, CRR, CAR). The table indicated a mean value of 0.138 (13.8%) for ROE. The minimum and maximum values for ROE during the study period are -0.26and 0.39 respectively. The mean score of 13.8% for ROE revealed that for every N100 invested in the DMBs the shareholders made an average return on investment of N13.8 within the study period. The ROA is observed to have a mean of 2.21%. The maximum and minimum values were -9.5% and -22.7% respectively. Which indicates that on average, for a period of twelve (12) years the ROA stood at 2.21%. This result indicates that for every N100 invested in asset generated an average of N2.21k earned for the sampled DMBs for the period under study.

Table 1 further indicated a mean value of 0.62 for LDR. The minimum and maximum values of LDR during the study period are 0.31 and 62.04 respectively. The mean score revealed that LDR of the sampled DMBs stood at 62%. The CBN maintained that all DMBs will have to maintain a minimum liquidity ratio of 30% in line with regulatory requirements. However, since the selected DMBs have a liquidity ratio mean value of 62% this further revealed that the selected DMBs liquidity regulations are adequate and show the ability of the banks to meet their financial needs as at when fall due without the occurrence of unforeseen losses.

Similarly, Table 1 shows that CAR have a mean value of 0.31 during the study period which implies that on the average of period 12 years the CAR stood at 31%. The result for the CAR revealed that the selected DMBs are strong and stable since the mean CAR (31%) is above the CBN prudential Guideline requirement of 10% to 15%. However, DMB's capital is enough and acts as a buffer to absorb potential losses and be able to meet depositors' demands for their money. The CRR is observed to have a mean of 1.80% with the maximum and minimum values of 2.18% and 0.05% respectively. This result indicates that on average, for the period of twelve (12) years the CRR stood at 1.80%. This result indicates that the selected DMBs has a good credit rating of A+ status. This further revealed that the credit risk in the selected DMBs is very low and adverse consequences of undesirable risk are hereby reduced.

Confirming the normality of the data set, both skewness and kurtosis values are above the tolerable range of +1 to -1, establishing the fact that the data were normally distributed in each construct. According to Park (2008), a normal distribution should have a skewness of zero or very close to zero. However, the skewness for all the variables ROE, ROA, CAR and CRR were all close to +1 or -1 with values of -0.06, 2.40, 1.64 and 2.66respectively. However, the dataset for ROE, ROA, CAR and CRR are normally distributed therefore signifying the absence of outliers in the data set. Confirming this result is the Kurtosis values for ROE, ROA, CAR and CRR were all below the threshold of 10 with values of 3.54, 7.10, 5.54 and 9.6 respectively. Similarly, the skewness and Kurtosis values for LDR are 9 and 86.8 respectively. However, this signifies the presence of outliers in the data set.

Therefore, to reach the normal distribution, the high values of skewness and kurtosis for LDR which signify the presence of outliers in the data set were resolved through data transformation using the reciprocal of the variable (1/LDR). The transformation of data was necessary to take care of outliers in the data that could produce spurious regression results.

4.1.2 Residuals Diagnostics Test

The accuracy of the regression model and by implication the regression result is a function of the results of the diagnostic tests. This section examines whether the primary findings hold in the case of the violation of the OLS assumptions, and confirm the reliability of the t-test results from the panel data regression. Residuals from a regression should never contain any systematic information since this is a sign that this information is not included in the regression model. The tests in this section include the Serial Correlation LM test, heteroscedasticity, multicollinearity checks (VIF test and correlation matrix) of the different regression estimators.

4.1.3 Serial Correlation LM Test

The presence of serial correlation is examined by Breusch-Godfrey Serial Correlation LM Test. Residuals for OLS output is tested for serial correlation, using the following hypothesis:

H_0: There is no serial correlation

H_a: There is a serial correlation

Table 2: Breusch-God+frey Serial Correlation LM Test:

F-statistic	1.185619	Prob. F(2,111)	0.3094
Obs*R-squared	2.447136	Prob. Chi-Square(2)	0.2942

Source: Eviews 10 Output, 2023

Table 2 presents the summary of the serial correlation LM test from E-views output. The p-value from the serial correlation is 0.3 which is greater than the critical value of 0.05, therefore, the test accepts the hypothesis of no serial correlation. The LM test both indicate that the residuals are not serially correlated.

4.1.4 Heteroskedasticity Test

This test was conducted using the Breusch-Pagan-Godfrey test of heteroskedasticity to check if the variability of error terms is constant. The presence of heteroskedasticity indicates that the variation of the residuals or error terms may not be constant and could affect inferences made from beta coefficients, coefficient of determination (R2) and F-statistics of the study model. However, this test is important to confirm the robustness of the OLS output since we cannot rely on them in the presence of heteroscedasticity.

The hypotheses are:

H_0: Homoskedasticity

H_a: Heteroskedasticity

Table 3: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.356830	Prob. F(3,76)	0.7843
Obs*R-squared	1.111181	Prob. Chi-Square(3)	0.7744
Scaled explained SS	8.304051	Prob. Chi-Square(3)	0.0401

Source: Eviews 10 Output, 2023

Table 3 summarizes the Eviews output from the Heteroskedasticity test. The p-value for the Heteroskedasticity test revealed a value of 0.78 (78%) which is greater than the critical value of

5% (0.05). However, we, therefore, accept the null hypothesis of the presence of homoscedasticity and thus OLS t-test results can be trusted.

4.1.5 Multi-collinearity Test

Table 4 below brings out in clearer terms the extent to which the standard error of regression coefficients may be inflated due to the relationship between the predictor variables. In other words, the Variance Inflation Factors (VIF) were conducted to measure the degree of correlation between one independent variable and another. As a rule of thumb (Kennedy 1992; Hair, Anderson, Tatham & Black, 1995; & Rogerson, 2001), a VIF in excess of 10 suggests a strong presence of multi-collinearity and vice versa.

Table 4: Variance Inflation Factors

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	7.902865	10.75559	NA
LDR	2.268900	6.747436	1.113444
CAR	5.149135	4.263447	1.018564
CRR	1.464064	1.830650	1.123994

Source: Eviews 10 Output, 2023

The result from Table 4 revealed the absence of multi-collinearity among the variables (LDR, CAR, CRR) as all the VIF values are less than 10 with values 1.11, 1.02 and 1.12 respectively. Based on this, the model is fit and robust for the study since there is no evidence of multi-collinearity. Hence, there is no tendency that the standard errors of the regression coefficients would have been erroneously inflated.

Table 5: Correlation Matrix of Dependent and Independent Variables

Correlation	ROA	ROE	LDR	CAR	CRR
ROA	1.000000				
ROE	0.533198	1.000000			
LDR	-0.166188	-0.014030	1.000000		
CAR	-0.090890	0.458173	0.082943	1.000000	
CRR	-0.058047	-0.192841	-0.316281	-0.127282	1.000000

Source: E-views 10 output, 2023

Table 5 presents correlation values between dependent and independent variables and the correlation among the independent variables themselves. This test was carried out to check if there is a strong correlation among the independent variables that may produce misleading results. From Table 5, it is observed that the independent variables of the study correlate perfectly well (between -0.32 and 0.53). There is no relationship among the independent variables that is large enough (greater than 0.7) to pose the problem of the singularity of data (Hassan, 2011). The result revealed a low magnitude of correlations among the independent variables, with all the correlation coefficients far below the threshold of 0.8 indicating an absence of multicollinearity in the sampled dataset.

4.2 Panel Regression Analysis

Panel data regression method was used to analyse the regression result of this study. For the purpose of analysis, the Hausman test was conducted to make a choice between Fixed and Random Effects Model estimates. The study has two regression models, the ROA model and the ROE model and will be presented in the two-fold analysis.

4.2.1 Regression Model

4.2.1.1 ROA Regression Model

Results of the Hausman test for the ROA model is given in Table 6 below.

Table 6: Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.072922	3	0.5574

Source: E-views 10 Output, 2023

Hausman specification test was then conducted to choose the preferred model between the fixed effect and random effect regression models. The test basically checks if the error terms are correlated with the regressors. The result from Table 6 shows that the error terms are correlated with the regressors as the chi-square probability is insignificant at 5% (0.5574). The result suggests that the random effect regression model is most appropriate for the sampled data. Consequently, the regression result presented in Table 7 and analysed in this study is based on the Random Effect Model.

Table 7: ROA Regression Analysis (Random Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.045049	0.009767	4.612188	0.0000
LDR	-0.012151	0.004954	-2.452783	0.0157
CAR	-0.000523	0.000778	-0.671800	0.5031
CRR	-0.002028	0.001182	-1.716566	0.0888
R-squared	0.261212	Mean dependent var		0.014084
Adjusted R-squared	0.236288	S.D. dependent var		0.027223
S.E. of regression	0.026711	Sum squared resid		0.080620
F-statistic	2.855982	Durbin-Watson stat		1.940199
Prob(F-statistic)	0.046702			

Source: E-views 10 Output, 2023

Table 7 reveals an R2value of 0.26. The R2, which represents the coefficient of multiple determination implies that 26% of the total variation in the dependent variable (ROA) of listed DMBs in Nigeria is jointly explained by the explanatory variables (LDR, CAR, CRR). Though the R2of 0.26 may appear low, it does not constitute a problem to the study because the F- statistics value of 2.86 Prob.>F = 0.047) indicates that the model is fit to explain the relationship expressed in the study model and further suggests that the explanatory variables are properly selected, combined and used. This suggests that apart from prudential guidelines indicators, other factors that mitigate the financial performance (ROA) of the sampled DMBs in Nigeria constituted 74% (i.e., 100-26) not considered in this model. The adjusted R-square compensates for the model complexity to provide a fairer comparison of model performance. The result is supported by the value of the adjusted R2 which is to the tune of 23% showing that if the entire population was used, the result will deviate by 3% (26% -23%). The Durbin-Watson statistics of 1.940 (Close to 2) implies the absence of an auto-correlation problem in the residuals of regression analysis.

The regression constant is 0.05, giving a predictive value of the dependent variable when all other variable is zero. The regression result revealed that LDR, CAR and CRR have a negative effect on the ROA of the DMBs in Nigeria. This implies that a percentage increase in LDR, CAR and CRR will decrease ROA of the selected DMBs by 1.2%, 0% and 0% respectively.

4.2.2 ROE Regression Model

Results of the Hausman test for the ROE model is given in Table 8 below.

Table 8 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.665678	3	0.8812

Source: E-views 10 Output, 2023

Hausman specification test was then conducted to choose the preferred model between the fixed effect and random effect regression models. The test basically checks if the error terms are correlated with the regressors. The result from Table 8 shows that the error terms are correlated with the regressors as the chi-square probability is insignificant at 5% (0.8812). The result suggests that the random effect regression model is most appropriate for the sampled data. Consequently, the regression result presented in Table 9 and analysed in this study is based on the random effect model.

Table 9: ROE Regression Analysis (Random Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.087505	0.035665	2.453501	0.0157
LDR	-0.019922	0.016713	-1.191966	0.2358
CAR	0.014299	0.002681	5.332596	0.0000
CRR	-0.008769	0.003890	-2.254249	0.0261
R-squared	0.240634	Mean dependent var		0.060193
Adjusted R-squared	0.220473	S.D. dependent var		0.098286
S.E. of regression	0.086628	Sum squared resid		0.847989
F-statistic	11.93609	Durbin-Watson stat		1.465040
Prob(F-statistic)	0.000001			

Source: E-views 10 Output, 2023

Table 9 reveals an R2value of 0.24. The R2, which represents the coefficient of multiple determination implies that 24% of the total variation in the dependent variable (ROE) of selected listed DMBs in Nigeria is jointly explained by the explanatory variables (LDR, CAR, CRR).

Though the R2of 0.24 may appear low, it does not constitute a problem to the study because the F- statistics value of 11.9 Prob.>F = 0.000) indicates that the model is fit to explain the relationship expressed in the study model and further suggests that the explanatory variables are properly selected, combined and used. This suggests that apart from prudential guidelines indicators, other factors that mitigate the financial performance (ROE) of the sampled DMBs in Nigeria constituted 76% (i.e., 100-24) not considered in this model. The adjusted R-square compensates for the model complexity to provide a fairer comparison of model performance. The result is supported by the value of the adjusted R2 which is to the tune of 22% showing that if the entire population was used, the result will deviate by 2% (24% -22%). The Durbin-Watson statistics of 1.465 (Close to 2) implies an absence of auto-correlation problem in the residuals of regression analysis.

The regression constant is 0.09, giving a predictive value of the dependent variable when all other variable is zero. The regression result revealed that LDR and CRR have a negative effect on the return on equity of the DMBs in Nigeria. This implies that a percentage increase in LDR and CRR will decrease the ROE of the selected DMBs by 2% and 1% respectively. However, the CAR has a positive effect on the return on equity of the DMBs in Nigeria. This implies that a percentage increase in CAR will decrease the ROE of the selected DMBs by 1.4%.

4.3 Test of Hypotheses

The three (3) hypotheses formulated in this study were tested using the p-value. The decision rule is that the researcher will accept the null hypothesis if the p-value is greater than 0.05 level of significance. Rather, if the p-value is < 0.05, then we have adequate statistical evidence to reject the null hypothesis

4.3.1 Hypotheses One

Ho_i: Capital adequacy regulation has no significant impact on the financial performance of DMBs in Nigeria

4.3.1.1 Decision Rule: To test this hypothesis, Tables 6 and 8 are used. The strength of the relationship between CAR and financial performance (ROA, ROE) of selected DMBs in Nigeria is measured by the calculated p-value of 0.50 and 0.00 for ROA and ROE models respectively and a significance level (α) of 0.05. However, since the computed p-values of 0.50 for the ROA model is greater than the significance level (α) of 0.05, thus, the null hypothesis is accepted. However, the computed p-values of 0.00 for ROE is less than the significance level (α) of 0.05, thus, the null hypothesis is rejected for the ROE model Therefore, specifically capital adequacy regulation has no significant effect on ROA but significantly affect the ROE of DMBs in Nigeria.

The negative relationship between CAR and the ROA is consistent with the findings of Morshedur, Ali and Mouri (2018), Barno and Odonkor (2012), Goddard et al (2004). This implies that as more capital is set aside as a buffer for banks' safety, it affects bank performance, implying that the negative relationship between CAR and ROA emphasizes that various efforts by regulators to review the capital base of the banking sector are not always motivated by a desire to improve bank profitability. However, the positive and significant relationship between CAR and the ROE is consistent with the documentation of Agbeja, Adelakun and Olufemi, (2015), and Ndifon and Ubana (2014).

This further implies that banks with more equity capital are perceived to have more safety and such advantage can be translated into higher ROE. The higher the capital ratio, the more profitable a bank will be.

4.3.2 Hypotheses Two

$Ho_{ii:}$ Liquidity regulation has no significant impact on the financial performance of DMBs in Nigeria

4.3.2.1 Decision Rule: To test this hypothesis, Tables 6 and 8 are used. The strength of the relationship between LDR and financial performance (ROA, ROE) of selected DMBs in Nigeria is measured by the calculated p-value of 0.02 and 0.24 for ROA and ROE models respectively and a significance level (α) of 0.05. However, since the computed p-values of 0.02 for the ROA model is less than the significance level (α) of 0.05, thus, the null hypothesis is rejected. However, the computed p-values of 0.24 for ROE is greater than the significance level (α) of 0.05, thus, the null hypothesis is accepted for the ROE model Therefore, specifically liquidity regulation has a significant effect on ROA but insignificantly affect the ROE of DMBs in Nigeria.

The result of the study is consistent with the findings of Calistus et al (2018), Ahmad (2016), Okaro and Nwakoby (2016), Lartey et al (2013) that the LR has a negative impact on profitability. This means that LR decreases profitability, which may be explained by the fact that banks with a higher financing gap ratio lack steady and cheap funding and must consequently rely on costly external sources to satisfy their funding needs. As a result, the banks' profitability suffers. (Arif & Nauman Anees, 2012; Chen et al., 2018).

4.3.3 Hypotheses Three

$Ho_{iii:}$ Credit risk regulation has no significant impact on the financial performance of DMBs in Nigeria.

4.3.3.1 Decision Rule: To test this hypothesis, Tables 6 and 8 are used. The strength of the relationship between CRR and financial performance (ROA, ROE) of selected DMBs in Nigeria is measured by the calculated p-value of 0.09 and 0.03 for ROA and ROE models respectively and a significance level (α) of 0.05. However, since the computed p-values of 0.09 for the ROA model is greater than the significance level (α) of 0.05, thus, the null hypothesis is accepted. However, the computed p-values of 0.03 for the ROE model is less than the significance level (α) of 0.05, thus, the null hypothesis is rejected for the ROE model Therefore, specifically, CRR has no significant effect on ROA but significantly affect the ROE of DMBs in Nigeria.

The study findings are supported by the documentation of Wakarindi (2018), Oduro, Asiedu and Gadzo (2019), Ndubuisi and Amedu (2018), Kayode, Obamuyi, Owoputi and Adeyefa (2015), Dietrich and Wanzenried (2011), Ongore and Kusa (2013), and Islam and Nishiyama (2016) that credit risk has a negative effect on bank financial performance. This might imply that when the quality of lending is not good in a given market, high loan loss provisions could occur, which could lead to higher NPL, eventually leading towards lower bank profitability.

CONCLUSION AND RECOMMENDATIONS

This study investigated the effect of prudential guidelines on the financial performance of Listed DMBs in Nigeria. The conclusions for this study were drawn based on the results of the study. In consonance with the foregoing, the study concludes that CAR has a negative but insignificant effect on ROA, but has a positive and significant effect on DMBs' ROE in Nigeria. This means that as more capital is placed aside as a buffer for banks' safety, it has a negative impact on their ROA, implying that regulators' attempts to examine the capital basis of banks are oftentimes ineffective towards maximizing DMBs ROA. This research further concludes that banks with more equity capital are perceived to have more safety and such advantage can be translated into higher ROE. The higher the capital ratio, the more profitable DMBs will be.

The study also concludes that LR is negatively correlated with DMBs financial performance in Nigeria. This demonstrates that LR reduces profitability, which may be explained by the fact that banks with a higher financing gap ratio lack consistent and inexpensive funding, forcing them to rely on costly external sources to satisfy their funding needs. As a result, negatively affect their financial performance. Furthermore, the study concludes that CRR has a detrimental negative effect on DMBs' financial performance in Nigeria. This might imply that when lending quality is

poor in a market, substantial loan loss provisions may be incurred, resulting in a rise in non-performing loans and, ultimately, decrease bank profitability.

In line with the findings of the study, the following recommendations should be taken into considerations:

i. The minimum capital requirement of DMBs in Nigeria should be reviewed on a regular basis to ensure that it remains at an optimal level, and Nigerian banks should be capitalized to enable them to access cheaper sources of funds, resulting in increased profit margins. This would go a great way toward restoring public trust in banks, as the latter would be better equipped to provide consumers' credit demands while also safeguarding depositors' funds.

ii. This study also suggests that banks adjust their credit policies in order to reduce credit risk and ensure that they are protected against it. Good credit policies, on the other hand, lead to lower poor credit in banks and hence greater profitability.

iii. Furthermore, the CBN should maintain the minimum liquidity requirement for DMBs at 30%, since this has an insignificant negative effect on DMBs' profitability and, as a result, the long and short-term stability of the whole system is crucial. DMBs' survival is dependent on liquidity management and profitability, thus focus on implementing steps to assure successful liquidity management. The actions will help to reduce or eliminate the negative consequences of excess and insufficient cash.

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