

## **Liquidity Risk Management as Determinant of Financial Performance of Listed Deposit Money Banks in Nigeria**

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### **Abstract**

*This study was carried out to examine liquidity risk management as determinant of financial performance of deposit money banks (DMBs) in Nigeria. The study anchored on the liability management theory adopted an ex post facto approach hence data were collected from annual reports of banks for the period 2014-2018. The study adopted descriptive, correlation and regression analysis as methods of data analysis. The empirical result of the research indicates a significant positive relationship between liquidity risk management and financial performance of listed banks in Nigeria. The study also indicates that credit risk management has a negative but insignificant influence on the level of profitability. The study also indicates that operational risk management has a positive but not significant relationship with financial performance of sampled banks. The study therefore concludes that liquidity risk management enhances and improves the financial performance of deposit money banks in Nigeria and recommends the need for deposit money banks to monitor and take a closer look at liquidity risk management and ensure adequate liquidity which will go a long way in improving the financial performance of the banks.*

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**Keywords:** *Financial Performance, Liquidity Risk, Credit Risk, Operational Risk, Deposit Money Banks.*

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### **Introduction**

Financial management crisis in the Nigerian banking sector in the recent past has proven that risk management practices are vital for organizations that aim at sustaining customer and shareholder patronage. Before now, risk management was not seen as a central component to the operations of most organizations in Nigeria; rather, it was relegated to an office space at the corporate headquarters. It is in view of this that the Central Bank of Nigeria in 2018 highlighted the need for risk management and corporate governance as major factors that are necessary for smooth

operational performance of financial institutions in Nigeria. It has been observed that customers confidence can be retained through the enthronement of good corporate governance and the establishment of a well-structured risk management system in the financial industry, given the role of the industry in the mobilization of funds, the allocation of credit to the needy sectors of the economy, the payment and settlement system and the implementation of monetary policy (Central Bank of Nigeria, 2018).

According to Agwu, Iyoha, Ikpefan and Okpara (2015) there are five kinds of risk challenges to the Nigerian banking system. These are credit, liquidity, operational, foreign exchange and interest rate risks. The Central Bank of Nigeria Prudential Guidelines also categorized these risks into two: systematic and unsystematic risks. The unsystematic risks are the credit, operational and liquidity risks, which result from internal operations and management decisions of the banks, whereas the systematic risks which are foreign exchange and interest rate risks are imposed on banks by external forces like the Central Bank of Nigeria, Policy and Foreign Exchange Market operations. All these risks affect bank performance in Nigeria (CBN, 2005)

Deposit money banks are strategic in lubricating the economy as they act as mobilisers and depositories of savings, and as purveyors of credit or finance. They render services such as resource mobilization and allocation, financial intermediation and facilitation of foreign exchange transactions to enhance international trade (Okere, Isiaka & Ogunlowore, 2018).

The financial system has often been referred to as the life blood of any economy. In view of this, issues concerning the management of financial institutions especially the deposit money banks are always considered important. Failure of the banking industry can negatively affect the economic development of the country. Banking activities such as receiving deposits of money, lending money, processing transactions and the creating of credit have an intrinsic risk in them. Consequently, banking sector is a very risky industry and cannot be waived aside (Soyemi, Ogunleye & Ashogbon, 2014). However, proper and adequate risk management measures can be adopted to control the degree and direction of their impact on corporate performance of money deposit banks. To this end, the study is carried out to examine liquidity risk management practices as determinants of financial performance of deposit money banks in Nigeria.

## **Literature Review**

### **Liquidity Risk Management**

The possibility of a bank not having adequate cash when needed to satisfy customers demand or credit request of clients is referred to as liquidity risk (Drehmann & Nikolaou, 2013). Liquidity problems may lead to loss of customers and reduced earnings. If the cash crunch continues, the bank may end in ultimate collapse due to loss of customers' goodwill. It is also described as the risk of a funding crisis, such as unexpected event in the form of large charge off, loss of confidence, or a crisis of national proportion like existence crisis. According to Owojori, Akintoye and Adidu (2011), risk management centers on liquidity facilities and portfolio structure. Recognizing liquidity risk leads the banks to recognize liquidity itself as an asset, and portfolio design in the face of illiquidity concerns as a challenge.

### **Credit Risk Management**

Credit risks occur due to banks' customers' inability to pay back or service loans borrowed from a bank. When customers are unable to settle their debts, these defaults result in losses that can

ultimately eat into the bank's capital. A bank is susceptible to a credit risk each time it issues a credit facility to a client (Ongore & Kusa, 2013).

Luv (2010) argues that credit risk arises whenever a lender is exposed to loss from a borrower, counterparty, or an obligator who fails to honour their debt obligation as they have contracted. This loss may derive from deterioration in the counterparty's credit quality, which consequently leads to a loss to the value of the debt, or the borrower defaults when he is willingly to fulfill the obligations.

It has been stated that most bank failures are resultant effects of credit risk management. Inability to collect loans and advances extended to customers and creditors or companies related to directors or managers had contributed mainly to the distress of liquidated banks in Nigeria (Kolapo, Ayeni & Ojo, 2012; Owojori, Akintoye & Adidu, 2011).

### **Operational Risk Management**

Operational risks arise from inadequate or failed internal processes, people and systems, or from external events. They include: fraud, security failure, legal breaches, physical (e.g. infrastructure failure) or environmental risks. Operational risks affect customers' satisfaction, an organization's reputation and its relationship with its stakeholders, and shareholder value. It increases volatility of operating costs and earnings (Muriithi & Waweru, 2017). Operational risks are usually not willingly incurred nor are they revenue driven, and are notoriously difficult to pin down and to quantify or measure reliably. Categorising operational risks makes sense of the potential harm and helps creating the model structure and analytical framework necessary to assist addressing the risks and importantly prioritize management time (Santomero, 1997)

### **Financial Performance**

The major objective of bank management is to increase shareholders' return signifying performance. However, this objective comes at the cost of increasing risk hence banks motivation for risk management comes from those risks which can lead to banks' performing below par. Several financial ratios such as net after-tax income, returns on equity (ROE), net earnings, and return on assets (ROA) have been adopted by previous studies as indicators and measures of financial performance. The European Central Bank (2010) identified risk-adjusted return on capital (RAROC) as a measure of a bank's performance, which allows the allocation of the bank's capital to individual business units taking into consideration the business risk of an individual business unit, but concluded that RAROC was only appropriate for determining statistical risk. The EY Global Financial Services Institute (2015) stated that ROE was commonly used as a performance metric of banks based on banks' appetite for risk in the form of an asset-quality and risk-normed leverage as the explicit driver of ROE. It also disclosed that ROE was a product of ROA and RAROC. Based on the foregoing arguments, this study recognizes ROE as a measure of the financial performance of banks.

### **Theoretical Review: Liability Management Theory**

The Liability Management Theory developed in the 1960s claims that maintaining adequate liquidity for withdrawal by depositors enhances customer confidence and continued borrowing and hence bank profitability. A bank can create additional liabilities against itself by acquiring reserves from different sources, issuing of certificates of deposits, borrowing from other commercial banks and central bank, issuing of shares and debentures as well as ploughing back of

profits are the different sources available to the bank. This theory thus encourages banks to consider both sides of the balance sheet as sources of liquidity. The management of bank risks reduces the level of bank and customer defaults. The bank that lacks liquid assets can default in honouring financial obligations that fall due, likewise the customer that did not fund his/her account. Thus shiftability of assets, consistent cash flow in customer accounts, and meeting customer withdrawals are essential for effective risk management. Hence this theory has a link with the issue in the study.

### **Empirical Review**

Studies on risk management and corporate performance have produced divergent results which necessitated the gap for this study. Okere, Isiaka and Ogunlowore (2018) in a study explored the impact of risk management (credit and liquidity) on financial performance of money deposit banks in Nigeria. The study employed panel methodology and other econometric techniques such as Hausman test, descriptive statistics. Results from the panel regression show a positive relationship between risk management and financial performance of money deposit banks.

Olusanmi, Uwuigbe and Uwuigbe (2015) examined the impact of effective risk management on banks' financial performance in Nigeria. The data set covered a sample of 14 banks listed on the floor of the Nigerian Stock Exchange over a period of 6 years (2006-2012). The dependent variable was Return on Equity (ROE) while the explanatory variables included Non-performing loan ratio, Capital Ratio, Loan to Total Deposit and Risk Disclosure. The results from Ordinary least square regression showed that there is a negative insignificant relationship between risk management proxies and bank's performance

In another study, Chukwunulu, Ezeabasili and Igbodika (2019) examined the effect of risk management on bank performance in Nigeria. Two bank performance indicators (return on assets and return on equity) were used as the dependent variables while unsystematic risk management measures including credit risk, liquidity risk, operational risk and capital adequacy risk are the independent variables. The data for the study covering 23 years from 1994 to 2016 were obtained from NDIC annual reports. Coefficient of determination showed that risk management variables explained 41% and 23% of changes in return on equity and return on assets respectively. Furthermore, credit risk was shown to have a significant negative effect on return on equity and insignificant negative effect on return on assets; Liquidity management has no significant effect on bank performance; operational risk has no significant effect on bank performance in Nigeria; while capital adequacy has a significant positive effect on return on equity but a negative insignificant effect on return on assets. The study concluded that there is a poor risk management practice in Nigerian banks

Adeusi, Akeke, Adebisi and Oladunjoye (2014) carried out a study to examine the effect of association of the risk management practices on bank financial performance in Nigeria. The study employed a panel of ten commercial banks for a period of four years covering 2006 to 2009. Using two variables of financial performance, return on assets and return on equity to develop two models with liquidity, credit and capital risks, the regression result showed that there is a significant relationship between bank performance and risk management.

Wanjohi (2013) carried out a study on the financial risk management on financial performance of Kenyan commercial banks. The study employed five components of risk management including the risk management environment of the institution, risk measurement skills, risk mitigation

procedures, risk monitoring and adequate internal controls of the organization as the independent variables. The dependent variable was the mean of ROA for a period of five years covering 2008 to 2012. The study found that financial risk management strongly affected the financial performance of Kenyan commercial banks.

Soyemi, Ogunleye and Ashogbon (2014) investigated the effect of risk management practices on financial performance of banks in Nigeria. A cross-sectional model of eight quoted commercial banks was collected in 2012 for the study. The variables of risk management employed are non-performing loan ratio, liquidity ratio, cost to income ratio, capital adequacy ratio while two dependent variables used to form two models for the study were Return on Assets (ROA) and Return on Equity (ROE). The OLS regression result showed that financial performance is greatly determined by risk management practices. Ofosu-Hene and Amoh (2016) investigated the relationship between risk management and bank performance among the listed banks on Ghana Stock Exchange over the period 2007–2014. The performance of banks was measured using ROA and ROE while the explanatory variables included risk index, size of bank, bank solvency, bank liquidity, non-performing loans, inflation, and exchange rate. The regression result showed that risk management is positively related to performance.

### **Methodology**

The study adopts an ex-post facto research design as archive data were used. The study involves the analysis of corporate annual reports hence content analysis approach which has been widely used by previous researches.

### **Population and Sampling**

The population of the study consists of all deposit money banks listed on the Nigeria Stock Exchange. Ten deposit money banks were randomly selected. Data for the study were retrieved from financial statements of the sampled banks for the period 2014 – 2018. Data collected were subjected to analysis through descriptive statistics, correlation and linear regression analysis.

### **Empirical Model**

In order to achieve the objective of the study, a liner and multivariate regression model which expresses banks' financial performance as a function of liquidity risk management is stated in functional form as follows:

$$FINP = f(LQR, CRR, OPR)$$

This can be written in an explicit econometric form as:

$$FINP_{it} = \beta_0 + \beta_1 LQR_{it} + \beta_2 CRR_{it} + \beta_3 OPR_{it} + \epsilon_{it}$$

Where – FINP = Financial Performance; LQR; Liquidity risk; CRR- Credit Risk OPR- Operational risks.  $\beta_1$ -  $\beta_3$  are Regression Parameters and  $\epsilon$  is error term; i represent sampled banks while t is the time dimension.

### **Measurement of Variables**

#### **Dependent Variable**

The dependent variable is Return on Equity measured as profit after tax scaled by total equity

#### **Independent Variables**

Liquidity Risk: Liquidity risk is measured as liquid asset divided by current liabilities

Credit Risk: Non-performing loan scaled by total loans

Operational Risk: This is measured in terms of proportion of expected loss to amount involved (%), that is, amount lost to bank frauds and forgeries.

## Presentation of Results and Discussion

**Table 01: Descriptive Statistics**

	<b>ROE</b>	<b>LQR</b>	<b>CRR</b>	<b>OPR</b>
Mean	0.78900	6.75500	2.99000	0.71000
Maximum	1.80000	13.8000	4.50000	0.50000
Minimum	0.09000	1.50000	0.50000	0.40000
Std. Dev.	0.77979	2.61716	0.47276	0.17151

*Source: Analysis of financial Statements*

Table 01 displays the descriptive statistics for the data. As observed, return on equity has a mean value of 0.78900 for the time examined. The maximum and minimum values for ROE for the 5 years period are 1.8000 and 0.09 respectively. The standard deviation measuring the spread of distribution stood at 0.77979 indicating no considerable variations in the data series. Also, LQR, CRR and OPR showed mean values of 6.75, 2.99 and 0.711 respectively. The descriptive statistics also indicated that during the five years under review, the variables also recorded maximum and minimum values of 13.8 and 1.50; 4.50 and 0.50; and 0.50 and 0.40 respectively for liquidity, credit and operational risks.

**Table 02: Correlation Analysis**

	<b>ROE</b>	<b>LQR</b>	<b>CRR</b>	<b>OPR</b>
ROE	1.00000			
LQR	0.03432	1.00000		
CRR	0.04538	-0.24585	1.00000	
OPR	-0.34225	-0.36986	0.34218	1.00000

*Source: Analysis of financial Statements*

Table 02 shows the relationship among the variables. ROE is observed to correlate positively with LQR ( $r= 0.03432$ ) and CRR ( $r=0.04538$ ). The correlation also shows that ROE has a negative relationship with OPR ( $r = -0.034225$ ). The table also shows that LQR has a negative link with both CRR ( $r=-0.24585$ ) and OPR ( $r=-0.3698$ ). CRR is observed to have a positive correlation with OPR ( $r=0.3421$ ).

## Analysis of Findings



Findings of the study using results of the regression estimates are discussed below:

**Table 03: Regression Results**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.64234	1.103448	0.34143	0.5817
LQR	0.03423	0.021336	1.27288	0.0213
CRR	-0.08290	0.014219	0.36157	0.4532
OPR	0.05751	0.035995	1.06530	0.2347

The regression table 03 shows the relationship between risk management measures and financial performance of deposit money banks. LQR is found to have a positive and significant association with financial performance using ROE at 5% significant level ( $\beta_1 LQR_{it} = 0.03423$ ,  $t\text{-Statistic} = 1.272$ ). The result met our *a priori* expectation and is in tandem with Wanjohi (2013) and Soyemi, Ogunleye and Ashogbon (2014) but did not agree with results of Olusanmi, Uwuigbe and Uwuigbe (2015).

Further, the coefficient of the variable CRR is observed to be negative but not significant ( $\beta_2 CRR_{it} = -0.0829$ ,  $t\text{-Statistic} = 0.3615$ ). This indicates that financial performance is not significantly influenced by credit risk management practices of banks. The result did not meet our *a priori* expectation. However the result is consistent with previous studies such as Chukwunulu, Ezebasili and Igbodika (2019) and Olusanmi, Uwuigbe and Uwuigbe (2015).

The regression result on OPR variable shows a positive association but not statistically significant at 5% ( $\beta_3 OPR_{it} = 0.0575$ ,  $t\text{-Statistic} = 1.0653$ ). This position met our *a priori* expectation and agrees with studies such as Olusanmi, Uwuigbe and Uwuigbe (2015).

### Conclusion and Recommendations

This study was carried out to examine liquidity risk management as determinants of financial performance of deposit money banks (DMBs) in Nigeria. The study adopted an ex post facto approach hence data were collected from annual reports of banks for the period 2014-2018. The study analyzed some descriptive statistics and correlation analysis as well as adopted regressions to verify the relationship among and between the variables.

The empirical result of the research indicates a significant positive relationship between liquidity risk management and financial performance of listed banks in Nigeria during the period under investigation. The implication is that the better liquidity risk management improves the profit a bank. This is because when a bank is liquid it has more liquid assets such as cash and other cash equivalents to lend out to existing and potential customers. Also findings from the regression estimates indicate that credit risk management has a negative but insignificant influence on the level of profitability of banks during the

period studied. The implication of this finding is that high credit risk measures of the banks do not enhance profitability of the banks. Finally, the empirical analysis of the study also indicates that operational risk management has a positive but not significant relationship with financial performance of sampled banks. The study therefore concludes that liquidity risk management enhances and improves the financial performance of deposit money banks in Nigeria and recommends the need for deposit money banks to monitor and take a closer look at liquidity management which will go a long way in improving the financial performance of the banks. Adequate liquidity is a *sin qua non* of banking.

Also, the Central Bank of Nigeria (CBN) should step-up its close monitoring of the deposit money banks so as to comply with the prudential guidelines and other rules on effective credit administration and address the issue of nonperforming loan and advances.

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