
**MODERATING ROLE OF OPERATING ENVIRONMENT IN
THE RELATIONSHIP BETWEEN LIQUIDITY RISK AND
FINANCIAL PERFORMANCE OF DEPOSIT MONEY BANKS IN NIGERIA**

¹Apata Mosimabale Richard, ²Dr. Mohammed Zubairu & ³Dr. Ahmad B. Dogarawa

¹Department of Business Administration, Ahmadu Bello University, Zaria, Nigeria

²Department of Banking and Finance, Ahmadu Bello University, Zaria, Nigeria

³Department of Accounting, Ahmadu Bello University, Zaria, Nigeria

Email: ask4richy2003@gmail.com, Phone: 08032849576, 08058697044

Abstract

The research analyzed the influence of liquidity risk and inflation rate on the financial performance of Nigeria's listed Deposit Money Banks (DMBs) for ten years (2009-2019). Using the ex-post facto research approach to secondary data, a sample size of 12 deposit money institutions that were publicly traded on the Nigerian Stock Exchange was selected. Panel regression analysis which was used in this investigation indicated that liquidity risk has no substantial impact on the return on equity, according to the research. Furthermore, it was shown that during the study period, the rate of inflation had no significant moderating influence on the link between liquidity risk and deposit money bank financial performance. The research concluded that commercial banks should place a greater emphasis on other external environmental forces such as GDP, interest rates, and other aspects of commercial banking that may have a substantial effect on corporate performance.

Keywords: Financial performance, inflation rate, liquidity risk, operating environment

1.0 INTRODUCTION

1.1 Background of the Study

Financial institutions, particularly Deposit Money Banks (DMB), not only, mobilize capital for economic activities by granting credit to diverse enterprises in different parts of the world, but they also generate employment and enhance personal productivity, among other things. In other words, an effective and functional banking system is seen as a critical and required structure for the financial sector of every country throughout the world to survive. Furthermore, the stability of a financial system is the most important foundation for economic growth (Gambo, Bambale, Ibrahim & Sulaiman, 2019). As a result, the banking sector is seen as the key driver of commercial activities. Consequence, regulatory framework such as continuous assessment plays a critical role in financial development to safeguarding assets from possible risk or agency challenges, which

can jeopardize an economy's whole financial system (Adamu & Abdul, 2018). One of the key determinants of the survival and success of a firm is how the management mitigates its risk (Afolabi, Obamuyi & Egbetunde, 2020). Various financial risks management techniques have been proposed to help managers in this task. Liquidity risk is one of those critical areas of risk management that the survival and success of banks largely depend on how they can handle liquidity risk (Elgharbawy, 2020). Among the most difficult responsibilities of financial establishments such as commercial banks is managing liquidity risk. Because banks are the primary providers of liquidity in the financial system, controlling the needed liquidity position and limiting liquidity risk is critical for day-to-day functioning (Ahamed, 2021). An illiquid bank is one that cannot generate adequate cash at a fair

cost by raising liabilities or quickly converting financial resources.

Furthermore, the performance of deposit money banks and the effect of liquidity risk are influenced by their external operating environmental factors (Adeusi & Dada, 2017; De Leon, 2020). The external operating environmental factors referred to those macroeconomic variables that affect the entire financial industry and cannot be controlled by decisions, policies and objectives made internally by the management. These economic indicators include GDP, interest rate, and inflation rate, among others. Among the most significant indicators of bank success is the rate of inflation (Orok, Okoi & Essien, 2017). The inflation rate establishes a condition in which the overall price level in a market continues to grow, particularly over a lengthy period (Lipsey & Chystal, 1995). When there is inflation, central banks use macroeconomic stimulus to raise the cost of debt and reduce the amount of money available in banks (Muluken, 2017). Any country's public finance system utilizes its central bank to oversee the banking industry to ensure an efficient and healthy banking system that prevents financial crises and safeguards depositors' funds. Despite these initiatives by governments, some banks have faced performance-related challenges. An example is deposit money banks in Nigeria which had for several years been experiencing liquidity risk. For instance, in 2018 two incidents happened where Access bank purchased Diamond bank, Sky bank plc had its business license suspended by CBN and the control of the bank was acquired by Polaris bank limited.

Past studies have examined the influence of financial risk factors on performance (Hamza, 2017; Badawi, 2017; Alia & Oudatb, 2020; Ahmad, Salam, Ahmad & Abbas, 2019; Abdellahi, Mashkani & Hosseini, 2017; Alalade, Ogbebor & Akwe, 2020). However, the results of these studies

had been inconsistent with mixed results on the relationship between financial risk factors on performance. Based on these mixed findings, this study seeks to investigate the changes in bank performance that could be caused by liquidity risk while moderating the effect of the operating environment variable of the inflation rate. Examining the moderating role of the inflation rate as an operating environment with liquidity risk and bank performance, particularly in Nigeria is pertinent. This is because it may explain the reason for the low performance of banks in Nigeria. This is because high and variable inflation may pose challenges in loan planning, a key determinant of liquidity risk (Hoggarth, Milne & Wood, 1998). This leads to difficulties in providing credit facilities.

The primary objective of this research is to determine the impact of the inflation rate on the association between liquidity risk and deposit money banks' financial performance in Nigeria.

The **H₀₁**: Liquidity risk has no significant effect on the performance of deposit money banks in Nigeria. While **H₀₂**: Operating environment has no significant moderating effect on the relationship between liquidity risk and financial performance of deposit money banks in Nigeria.

2.0 LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Financial Performance

Financial and non-financial performance measurements are used to evaluate the quality of the operations of the business. Non-financial performance measures, in accordance with Kallunki, Laitinen, and Silvola's (2011) view, indicate the extent to which a firm is cost-effective and exhibit operational efficiency as measured by indicators that include customer satisfaction in terms of speed of delivery and product quality. The degree to which financial objectives are being or have been met is referred to as financial

performance (Masood & Javaria, 2017). It is also described as a metric for determining how successfully a company generates wealth for shareholders. This is accomplished by examining a mix of financial ratios used by banks in the banking business (Warrad, 2017). It is used to assess a company's overall financial health over time and could be deployed to weigh against other organizations in related industries or compare one industry against another industry.

2.1.2 Liquidity risk

The threat of a bank's failure to discharge its commitments when they are required without suffering significant losses is known as liquidity risk (Comptroller of the Currency, 2001). This means that a discrepancy in the duration of a bank's assets and obligations causes liquidity risk. It refers to a firm's vulnerability to sudden fluctuations in industry liquidity (Pastor & Stambaugh, 2003). If banks do not liquidate their assets at an acceptable price, they suffer liquidity risk. As a result, liquidity risk encompasses the amount of profit or loss experienced by participants as market liquidity varies (Ng, J 2011). Liquidity allows a financial entity to compensate for expected and unexpected changes in its financial standing, as well as provide monetary capacity for business growth (Musembi, 2018). In effect, liquidity risk evaluation protects firms against the inability to meet financial obligations that are uncertain due to external factors as well as the actions related to agency cost.

2.1.3 Moderating effect of Operating environment

There is no such thing as a firm that operates in isolation. Countless variables impact the activities of an organization, and these elements are what Cherunilam (2009) collectively referred to as the business environment. The internal environment particularly the external environment puts a lot of pressure on a

firm's capabilities even though it collectively contributes enormously to influencing its capacity to achieve its objectives. External factors, often known as uncontrollable variables are those that shape the mode of operation of commercial banks in a competitive context. These variables include the unemployment rate, rate of inflation, the rate of lending, national expenditure level, the rate of exchange, GDP, and any other external elements that can only be regulated by the government agencies (Azolibe, 2019). The focus of this research will be on the rate of inflation as one of the macro elements affecting a bank's external operating environment.

Inflation is defined as a rise in the price of certain goods and services over a specified period. The inflation rate is one of the external forces that determine the efficiency of banks' day-to-day operations (Kahssay, 2017). Inflation may be caused by either an increase in aggregate demand or a drop in aggregate supply; both of these factors influence an economy's price level. Demand-pull inflation occurs when demand grows faster than supply, causing prices to rise, and cost-push inflation occurs when firms' expenses rise, forcing them to raise prices to preserve profit margins (Simbolon & Purwanto, 2018). Inflation is seen to influence household saving habits in either a favourable or unfavourable way, depending on whether it has a direct or indirect relationship, according to various types of literature (Muluken, 2017). Inflation impacts bank savings in two ways, according to Azolibe (2019). The first is that it diminishes money's purchasing power, resulting in a high cost of living. This means that people can only buy so much with their disposable income, leaving them with almost nothing to save or invest.

2.2 Theoretical Framework

2.2.1 Liquidity Trade-off Theory

The capital markets serve as a medium through which corporate bodies raise funds at a fair price and with no transaction costs because of the information the public has about the prospects of the firm. The trade-off theory was developed by Kraus and Litzenberger (1973), which represents a balance between the cost of illiquidity and debt running cost. This theory states that to sustain an optimal degree of liquidity, a company must balance the costs and advantages of using debt and equity financing. One of the theory's main goals is to understand why businesses are often financed slightly with debt and somehow with equity. Considering the peculiarities of the liquidity premium and possible tax disincentive, the cost of maintaining cash encompasses a low return rate on these investments.

There are two advantages to keeping cash on hand: To begin with, the companies save money on transaction expenses by not having to sell assets to make payments. Second, if alternative means of funding are unavailable or incredibly costly, the company can finance its operations and investments using liquid assets. Jensen (1986) discusses the agency dilemma in the context of free cash flow. According to Jensen (1986), working capital issues may be managed by raising management's ownership in the company or raising the proportion of debt in the capital structure, as well as lowering the amount of "free" cash accessible to managers. The application of the trade-off model as a theory should not be overlooked, as it illustrates how enterprises with substantial debt ratios may incur a high cost of debt payment, impacting their financial health and making it harder for them to borrow capital from other sources. This research is motivated by this hypothesis.

2.3 Empirical Review

Using secondary data, Hamza (2017) investigated the influence of liquidity risk on the performance of Pakistani commercial banks. According to the results, the liquidity risk ratio has a negative but substantial impact on bank performance. Furthermore, Ahmad et al. (2019) looked at the link between credit risk and liquidity risk, as well as their influence on bank financial performance in Pakistan. Credit risk and liquidity risk have a considerable independent influence on financial performance, according to the findings. The influence of credit risk, market risk, and liquidity risk on financial performance (measured using return on assets) of eight financial institutions on the Tehran Stock Exchange were investigated by Abdellahi et al (2017). The panel data regression analysis approach was used in this investigation. Liquidity risk has a weak effect on return on assets, according to the findings.

From 2006 to 2015, Ahmad and Jan (2017) studied the influence of liquidity risk on the performance of several Pakistani banks. The data was analyzed using a panel data regression model, and the results revealed that liquidity risk had a considerable influence on banking institutions' performance. Likewise, Olalekan (2018) looked at the impact of liquidity risk on the performance of Nigerian listed insurance businesses from 2011 to 2015. There are twenty-five (25) listed insurance businesses, of which a sample of twelve (12) was selected for the study. Liquidity risk was proxied as an independent variable using leverage, claim loss ratio, and premium growth, while business performance was proxied using return on asset. According to the results of the random effect, leverage has a considerable negative impact on return on assets. The claim loss ratio has a little negative impact on return on assets, whilst premium growth has a minor positive impact on the firm

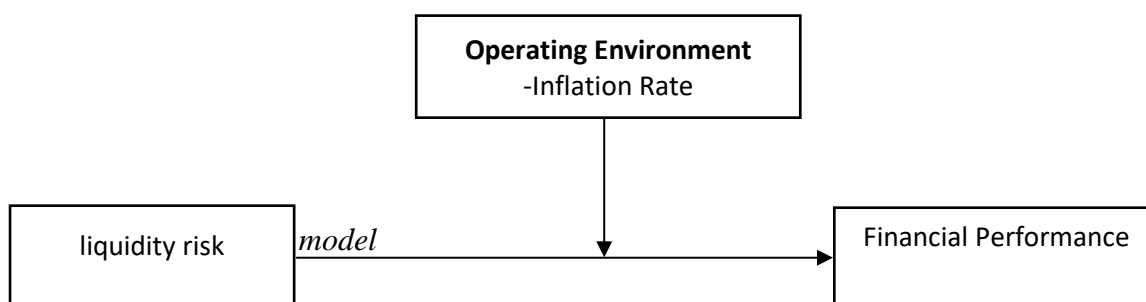
performance of Nigeria's publicly-traded insurance businesses.

Using the financial information of banks from 2005 to 2017, Ahmadyan (2017) explored the influence of liquidity risk on the profitability and competitiveness of financial institutions. The study's findings reveal that risk management, profitability, and bank survival all have a substantial link. Badawi (2017) looked at how credit risk, liquidity risk, and market risk affected the profitability of Indonesian foreign exchange banks. Liquidity risk has a considerable impact on profitability, according to the findings. From 2014 to 2018, Alia and Oudatb (2020) looked at the impact of financial risk on the performance of 11 Bahraini listed banks. According to the regression study, the association between financial performance, exchange

rate risk, liquidity risk, and credit risk are negligible. Furthermore, Alalade et al (2020) looked at the impact of liquidity risk on bank performance in Nigeria within the period of 2009 to 2018. The study used regression analysis on a sample of 15 deposit money banks listed on the Nigerian Stock Exchange. Liquidity risk has a substantial impact on profitability, according to the data.

In conclusion, all of the research examined were confined to a proxy for liquidity risk. The role of operational environment elements such as inflation rate was not taken into account in this study. Furthermore, regression analysis was used in the investigations. The data analysis approach used in this suggested study is PLS-SEM.

2.4 Conceptual Framework



3.0 METHODOLOGY

To effectively achieve the research objectives, the ex-post facto research design was used in this study. This study's sample frame includes all deposit money banks in Nigeria that are publicly traded on the Nigerian Stock Exchange. This sample size of 12 banks was determined using the purposive sampling approach as a way of satisfying the criteria specified for the banks analyzed in terms of gathering the

necessary data. Access Bank, FCMB, Fidelity Bank, First Bank Holding, Guaranty Trust Bank, Stanbic IBTC Holding, Sterling Bank, UBA PLC, Union Bank, Unity Bank, Wema Bank, and Zenith Bank are among these financial institutions. With the help of Eviews, the variables were examined using Generalized Least Squares. Table 1 lists the variables that have been measured.

Table 1: Operational measure of Variables

Variable Acronym	Variable Name	Variable Measurement and Source
ROE	Return on Equity (Dependent Variable)	$\frac{\text{Net Profit}}{\text{Shareholder Equity}}$
LR	Liquidity risk (Independent Variable)	$\frac{\text{Total Loans* 100}}{\text{Total Deposits}}$
InfR	Operating Environment of Inflation Rate (Moderating Variable)	Annual inflation rate

4.0 RESULT AND DISCUSSIONS

4.1 Result

4.1.1 Descriptive Statistics

Table 2: Descriptive Data

	ROE	LIQ	INFLR
Mean	2.66	67.99	11.36
Median	1.91	65.13	11.53
Maximum	53.13	514.26	16.55
Minimum	-13.61	1.32	5.42
Std. Dev.	6.28	41.73	2.97
Skewness	4.46	7.84	-0.14
Kurtosis	33.76	85.10	2.56
Jarque-Bera	6669.08	45409.71	1.78
Probability	0.000	0.000	0.411
Observations	156	156	156

Table 2 presents the descriptive metrics of the 156 data set generated by Eviews version 10. The average Return on Equity (ROE) is 2.66. This indicates that for every dollar put in the specified deposit money institutions, you would get N2.67. Because the standard deviation is larger than the mean value, the standard deviation of 6.28 in terms of ROE indicates that there is a considerable dispersion of the data from the mean. The data analysis on ROE also shows that the minimum amount lost from every N1 invested is N13.61, due to its negative value, while the maximum amount gained from every N1 invested is N53.13 since it has a positive value.

Liquidity (LIQ) shows a mean of 67.99. In order words, the selected banks are exposed to liquidity risk. Because the standard deviation is less than the mean value, the standard deviation of 41.73 in terms of LIQ

indicates that there is small dispersion of the data set from the mean. The data analysis on LIQ also shows that the minimum amount of total loans to total deposits is 1.32 and the maximum is 514.26.

Inflation rate (INFLR) results indicate that it has a mean of 11.362 which shows the average rate of inflation in the country over those years. The standard deviation for INFLR is 2.96. Since this standard deviation is smaller than the mean value, this indicates that the data has less dispersion from the mean. The data analysis on INFLR also shows that the minimum inflation rate is 5.42 and the maximum is 16.55.

The skewness coefficients of 4.46 for ROE and 7.84 for LIQ and INFLR signify a positively skewed distribution (right tail), while the skewness value of -0.14 for

INFLR shows that INFLR is skewed to the left. This is because of the negative value. Furthermore, ROE= 33.76, LIQ =85.10 and INFLR = 2.56 displayed a Kurtosis value greater than one (1), which means the two

variables have a normality problem based on Pallant (2016) cut-off range of -1 and +1. Based on this result, the study variables were transformed before further analysis.

4.1.2 Diagnostic Tests (Normality)

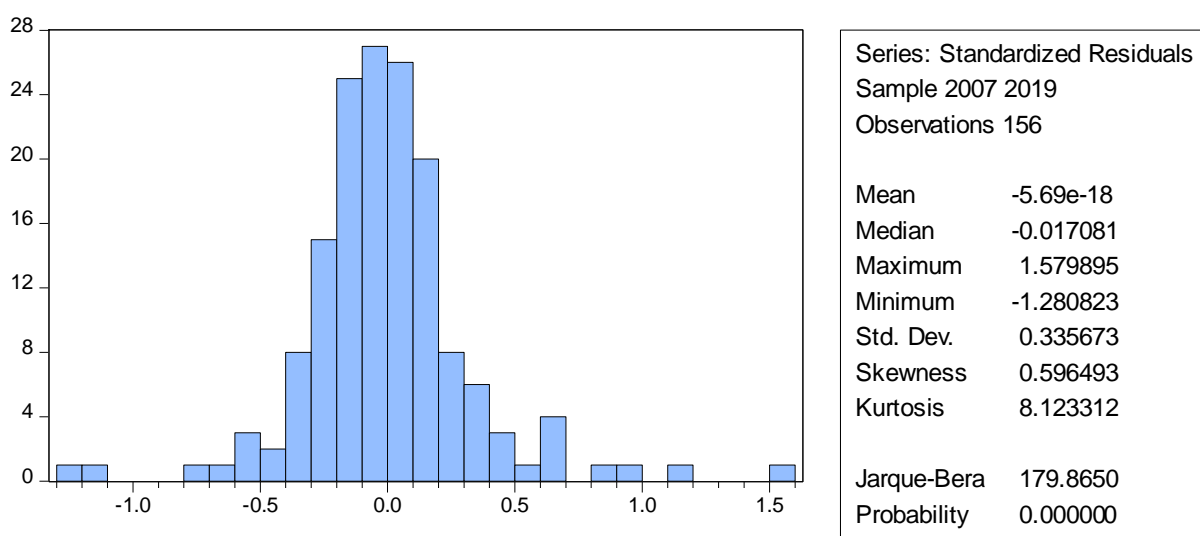


Figure 1: Normality Test

Figure 1 depicts the outcome of the normalcy test. The histogram is required to show a bell-shaped figure when it assumes a normal distribution. The skewness values greater than 3 indicated a skewed distribution, and The Jarque-Bera diagnostic test revealed that the data was not normally distributed with a probability of less than 5%. Moreover, the kurtosis is greater than 3. However, Elliot and Woodward (2007), recommended that

parametric procedures can be used even when the data is not normally distributed.

4.1.3 Diagnostic Tests (Stationarity Test using ADF)

On the assumption that the null hypothesis is non-stationarity, the Augmented Dickey-Fuller (ADF) unit root test was used. If the test statistic is significantly negative than the crucial value at the 5% level of significance, the null hypothesis is rejected. Table 3 shows the outcome.

Table 3: Summary of ADF Test Results

Variables	ADF Statistics	P-Value	Order of Integration	Level of significance
ROE	41.31	0.0154	1 (0)	5%
LIQ	54.86	0.0003	1 (0)	5%
INFLR	40.88	0.0172	1 (0)	5%
LIQ*INFLR	55.75	0.0002	1 (0)	5%

Source: E-views 10 Output

Table 2 above shows the unit root test for Return on Equity (ROE), Liquidity (LIQ), Inflation Rate (INFLR) and the interaction of LIQ and INFLR whose results of ADF of 41.31, 54.86, 40.88 and 55.75 respectively were significant at 5%, indicating that the variables are stationary. In addition, the ADF results also show that ROE, LIQ, INFLR and LIQ*INFLR were differenced at stationary at levels I (0). This implies that ordinary least squares (OLS) are adopted as the technique for data analysis.

Between fixed and random effects, the Hausman Chi-square test was used to select the most suited model. Table 4 shows the outcomes of the Hausman assessment for the ROE model. To analyze the data set, a significant value means that the Fixed effect model should be adopted, whereas an insignificant value recommends that the Random effect model should be adopted. Because the probability value of 0.01458 is less than 5%, the Hausman specification test revealed that the fixed effect model is the best-suited model for the data set.

4.1.4 Diagnostic Tests (Hausman)

Table 4 Hausman Test

Correlated Random Effects - Hausman Test

Equation: Untitled

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	3.850621	2	0.01458

Test of Hypothesis

Regression analysis illustrates the impact of Liquidity (LIQ) and the interaction between Liquidity (LIQ) and Inflation rate (INFLR)

on Return on Equity (ROE) having satisfied the regression assumption test. The empirical results are shown in Tables 5 and 6.

Table 5 Regression Model One

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.311107	0.244505	1.272396	0.2053
LOGLIQ	-0.011743	0.136044	-0.086321	0.9313

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.214715	Mean dependent var	0.290140
Adjusted R-squared	0.148817	S.D. dependent var	0.378886
S.E. of regression	0.349558	Akaike info criterion	0.815363
Sum squared resid	17.47333	Schwarz criterion	1.069518
Log-likelihood	-50.59834	Hannan-Quinn criter.	0.918590
F-statistic	3.258300	Durbin-Watson stat	1.708700
Prob(F-statistic)	0.000357		

The result in Table 5 revealed that the coefficient is not significantly negative at a 5% significant level (coeff. = -0.011743; p-value = 0.9313). This means that liquidity risk had a negative and insignificant impact on the performance of Nigerian Deposit Money Banks within the period under survey. Thus, this study failed to reject hypothesis one.

Furthermore, to observe the interaction of liquidity risk with the inflation rate, the result of regression model two was generated as revealed in Table 6. It can be

seen that with the introduction of the interaction effect, the effect of liquidity risk on performance, increased from -0.011743 to -0.052429 even though this effect is negative and insignificant since the P-value is 0.7996. In addition, the interaction effect on performance is not significant. Because the P-value is more than 5%, it may be deduced that the rate of inflation had no significant moderating influence on the link between liquidity risk and deposit money bank financial performance throughout the period under consideration.

Table 6 Regression Model Two

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.321166	0.248262	1.293659	0.1979
LIQ	-0.052429	0.206175	-0.254294	0.7996
LIQ*INFLR	0.033681	0.127925	0.263290	0.7927

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.215099	Mean dependent var	0.290140
Adjusted R-squared	0.143241	S.D. dependent var	0.378886
S.E. of regression	0.350702	Akaike info criterion	0.827696
Sum squared resid	17.46480	Schwarz criterion	1.101401
Log-likelihood	-50.56027	Hannan-Quinn criter.	0.938863
F-statistic	2.993419	Durbin-Watson stat	1.702078
Prob(F-statistic)	0.000664		

Discussion

The primary goal of this research is to determine the influence of inflation on the link between liquidity risk and deposit money bank performance in Nigeria. The findings indicated that liquidity risk had a negative and insignificant impact on the performance of Nigerian Deposit Money Banks during the research period. Similarly, for the chosen deposit money institutions, the results demonstrated that inflation had no substantial moderating influence on the link between liquidity risk and financial performance. This suggests

that liquidity and inflation rates may not have a significant role in Deposit Money Banks' financial success in Nigeria.

Liquidity risk may be an area of risk assessment where financial institutions have been able to efficiently manage their business operations, since they are largely instrumental in providing liquidity in the financial system, controlling the needed liquidity position, and minimizing it. This is because an illiquid bank cannot thrive in the banking industry. Liquidity protects a financial institution's ability to meet cash payment obligations. This study's findings

are comparable to those of Badawi (2017) and Alia and Oudatb (2020), who showed that liquidity risk had no substantial impact on ROE. However, the findings of Ahmad et al (2019), Abdellahi et al (2017) and Alalade et al (2020), indicated that liquidity risk has a substantial impact on the ratio of net profit to total sales, do not match those of our study.

CONCLUSION AND RECOMMENDATIONS

During the time under consideration, inflation had no substantial moderating influence on the link between liquidity risk and deposit money bank financial performance, as indicated by the findings of this study. The study, therefore, recommended that deposit money banks should focus more on banking operations but still consider other external operating environmental macroeconomic (GDP, Interest rate etc) factors that may significantly influence financial performance. As a result, further research is required to identify other internal factors that influence the financial performance of financial institutions. Recruitment policies of risk assessment officers, for example, should be included in future research.

REFERENCES

- Abdellahi, S. A., Mashkani, A. J. & Hosseini, S. H. (2017). The effect of credit risk, market risk, and liquidity risk on financial performance indicators of the listed banks on Tehran Stock Exchange. *American Journal of Finance and Accounting*, 5(1), 20-30.
- Adamu, A. & Abdul, Z. (2018). Analysis of Quoted Banks' Performance: Pre and Post Political Transition in Nigeria. *Journal of Governmental and Financial Accounting Research, Nasarawa State University Keffi*, 2(1), 94-103.
- Adeusi, S. O. & Dada, O. (2017). Impact of credit risk management on deposit money banks performance in Nigeria. *Journal of Association of Professional Bankers in Education (JAPBE)*, 1(1), 163.
- Afolabi, T. S., Obamuyi, T. M. & Egbetunde, T. (2020). Credit Risk and Financial Performance: Evidence from Microfinance Banks in Nigeria. *IOSR Journal of Economics and Finance*, 11(1), 8-15.
- Ahamed, F. (2021). Determinants of Liquidity Risk in the Commercial Banks in Bangladesh. *European Journal of Business and Management Research*, 6(1), 164-169.
- Ahmad, I. & Jan, F. A. (2017). Liquidity risk and its impact on the financial performance of financial institutions in Pakistan. *Sarhad Journal of Management Sciences*, 3(02), 334-351.
- Ahmad, I., Salam, S., Ahmad, A. & Abbas, S. (2019). The nexus between credit risk and liquidity risk and their impact on banks financial performance: Evidence from Pakistan. *Sarhad Journal of Management Sciences*, 5(1), 67-86.
- Ahmadyan, A. (2017). Measuring Liquidity Risk Management and Impact on Bank Performance in Iran. *Journal of Money and Economy*, 12(3), 295-315.
- Alalade, Y. S., Ogbebor, P. I. & Akwe, M. (2020). Liquidity Risk and Profitability of Listed Deposit Money Banks in Nigeria. *globalization*, 11(8), 23-43.
- Alia, B. J. & Oudatb, M. S. (2020). Financial Risk and the Financial Performance in listed Commercial and Investment Banks in Bahrain Bourse. *International Journal of*

- Innovation, Creativity and Change*, 13(12), 160-180.
- Azolibe, C. B. (2019). Macroeconomic dynamics, bank-specific factors and deposit mobilization of the Nigerian banking sector. *Asian Journal of Economics, Business and Accounting*, 1-16.
- Badawi, A. (2017). Effect of Credit Risk, Liquidity Risk, and Market Risk Banking on Profitability Bank (Study on Devised Banks in Indonesia Stock Exchange). *European Journal of Business and Management*, 9(29), 1-8.
- Cherunilam, F. (2009). *Business environment* (p. 642). Himalaya Publishing House.
- Comptroller of the Currency (2001), *Liquidity: Comptroller's Handbook, Comptroller of the Currency: Administrator of the National Banks*, Washington, DC
- De Leon, M. (2020). The impact of credit risk and macroeconomic factors on profitability: the case of the ASEAN banks. *Banks and Bank Systems*, 15(1), 21-29.
- Elgharbawy, A. (2020). Risk and risk management practices. *Journal of Islamic Accounting and Business Research*, 11(8), 1555-1581.
- Elliot, A. & Woodward, W. (2007). Nonparametric analysis procedures. *Statistical analysis quick reference guidebook*, 195-196.
- Gambo, H., Bambale, A. J. A., Ibrahim, M. A. & Sulaiman, S. A. (2019). Credit Risk Management and Financial Performance of Quoted Deposit Money Banks in Nigeria. *Journal of Finance, Accounting and Management*, 10(1), 26-42.
- Hamza, S. M. (2017). Impact of credit risk management on banks performance: A case study in Pakistan banks. *European Journal of Business and Management*, 9(1), 57-64.
- Hoggarth, G., Milne, A., & Wood, G. (1998). Financial innovation and financial stability: some lessons from Germany and the UK. *Financial Stability Review*.
- Jensen, M. C. (1986). Agency Cost of Free cash flow, Corporate Finance and Takeovers. *The American Economic Review*, 76 (2), 323-329.
- Kahssay, T. (2017). Determinants of inflation in Ethiopia: A time-series analysis. *Journal of Economics and Sustainable Development*, 8(19), 1-6.
- Kallunki, J. P., Laitinen, E. K. & Silvola, H. (2011). Impact of enterprise resource planning systems on management control systems and firm performance. *International Journal of Accounting Information Systems*, 12(1), 20-39.
- Lipsey R. G. & Chrystal K. A. (1995), *An Introduction to Positive Economics* 8th Edition. Oxford: Oxford University Press, N.Y.
- Masood, O. & Javaria, K. (2017). Liquidity Risk Management and Financial Performance of Islamic Banks: Empirical Evidence from Global Islamic Banks. *Journal of Islamic Financial Studies*, 3(02), 62-70.
- Muluken, D. (2017). *Determinants of deposit mobilization in private commercial banks of Ethiopia* (Doctoral dissertation, St. Mary's University).
- Musembi, D. M. (2018). *Effect of liquidity risk determinants on financial performance of commercial banks listed at Nairobi securities exchange, Kenya* (Doctoral dissertation).
- Ng, J. (2011). The effect of information quality on liquidity risk. *Journal of accounting and economics*, 52(2-3), 126-143.

- Olalekan, L. I. (2018). Effect of Liquidity Risk, Premium Growth on the Performance of Quoted Insurance Firms in Nigeria: A Panel Data Analysis. *American Finance & Banking Review*, 2(1), 44-53.
- Orok, A. B., Okoi, I. O., & Essien, A. (2017). Inflation and deposit mobilization in deposit money banks—the Nigerian perspective. *International Journal of Public Administration and Management Research*, 4 (4): 109, 21.
- Pallant, J. (2016). *SPSS Survival Manual: A step-by-step guide to data analysis using IBM SPSS* (6thed.). Berkshire-England: McGraw-Hill Education.
- Pástor, L. & Stambaugh, R. F. (2003). Liquidity risk and expected stock returns. *Journal of Political economy*, 111(3), 642-685.
- Simbolon, L., & Purwanto. (2018). The Influence of Macroeconomic Factors on Stock Price: The Case of Real Estate and Property Companies. *Research in Finance*, 19–39.
- Warrad, L. H. (2017). Financial Risk, Liquidity Risk and their Effect on the Listed Jordanian Islamic Bank's Performance. *International Journal of Academic Research in Business and Social Sciences*, 7(9), 545-561.