Monetary Policy and Profitability of Deposit Money Banks in Nigeria

Kayode David KOLAWOLE¹

¹Faculty of Economic and Financial Sciences, Walter Sisulu University,

Mthatha, Private Bag X1, UNITRA, 5117, South Africa, kolawolekayode@yahoo.com

| ARTICLE DETAILS | ABSTRACT |
|--|---|
| History Received: September 12, 2024 Accepted: December 23, 2024 Published: January 01, 2025 | Purpose The significance of banking sectors for economic development, in every economy, cannot be overemphasized. This research investigates how monetary policy impacts the profitability of deposit-taking banks in Nigeria. Methodology The study employs an approach based on a static panel data estimator and the Dumitrescu and Hurlin panel causality tests to evaluate the defined objectives. The study's data spanning 2012 to 2022, was obtained from the yearly reports of the chosen banks and |
| Keywords Banking Sector Economic Development Panel Data Dumitrescu and Hurlin Causality Tests | Central Bank Statistical Bulletin. Findings The study revealed that monetary policy rates are a key factor influencing return on equity among banks in Nigeria at 1% level of significance. Furthermore, this research found the cash reserve ratio to be a significant factor influencing return on assets across banks in Nigeria at 5% level of significance. It was determined that monetary policy is a significant determinant of the profitability of banks in Nigeria. |
| This is an open-access article distributed under the <u>Creative</u> <u>Commons Attribution License</u> 4.0 | Conclusions This study extends evidence to examine how monetary policy impacts the profitability of deposit-taking banks in Nigeria. Amongst others, the research suggests that the central bank's administration of monetary policy be flexible, allowing deposit- taking banks to perform their duties effectively to the public. |

Corresponding author's email address: kolawolekayode@yahoo.com

1. Introduction

Monetary policy is an essential tool that governments use to influence economic activity. Depending on the state of the economy, monetary policy is frequently employed to either increase or decrease the amount of money in circulation and control inflation (Gbadebo & Mohammed, 2015). Examples of monetary policy tools include changing bank reserve requirements, adjusting interest rates, and revising monetary policy rates (Central Bank of Nigeria [CBN], 2017). Given its significant impact on a nation's financial sector—where poor performance can lead to a sharp economic decline—the importance of monetary policy cannot be understated (Oladipupo & Oladipo, 2022). The Central Bank implements monetary policy through directives to the banking industry. Like other businesses, banks aim to maximize profits by engaging in various activities such as accepting deposits, advancing loans, and safeguarding valuables (Osakwe et al., 2021; Oko, 2024). Providing loans to clients is one of the most fundamental functions of banks. Borrowers are obligated to repay the principal amount plus interest, which constitutes a major source of revenue for banks.

Profitability is crucial in banking operations, as it ensures sufficient earnings to maximize shareholder wealth through dividend payments, share capital appreciation, and expansion (Owoeye et al., 2023; Gbadebo et al., 2023). Alalade et al. (2020) observed that, despite the consistent rise in the financial value of various deposit-taking banks, Nigeria experienced periodic declines in total credit between 1984 and 2018. An increase in the monetary policy rate raises interest rates on consumer loans, leading to a higher percentage of non-performing assets held by banks. For instance, after the monetary policy rate was raised from 12% to 13% in 2015, the percentage of non-performing loans from deposit money banks in Nigeria increased by 78.8%. Recent bank failures in the United States and Switzerland on May 1, 2023—linked to ongoing interest rate hikes—also had a negative impact on the U.S. banking industry's broad portfolio, raising concerns about the possibility of another global financial contagion (Abel et al., 2018; CBN, 2023; Uruakpa, 2023).

Several studies (e.g., Udeh, 2015; Ekpung et al., 2015; Andabai et al., 2019) have analyzed how monetary policy influences bank profitability, using the cash reserve ratio, exchange rate, and liquidity ratio as proxies for monetary policy, and return on equity as a proxy for profitability. However, these studies have produced inconsistent findings, highlighting gaps in the literature. To address these gaps, the present study incorporates additional monetary policy measures, including broad money supply, as independent variables. Moreover, dependent variables such as net interest margin and return on assets are included, as few prior studies have used more than two profitability measures. This study also examines data from 2012 to 2021, providing a more recent perspective not yet explored in existing literature.

The main objective of this study is to examine the impact of monetary policy on the profitability of banks in Nigeria. The specific objectives are to: (i) analyze the impact of monetary policy rate on the profitability of deposit money banks in Nigeria; (ii) evaluate the impact of liquidity ratio on the profitability of deposit money banks in Nigeria; (iii) analyze the impact of cash reserve ratio on the profitability of deposit money banks in Nigeria; (iv) investigate the impact of exchange rate on the profitability of deposit money banks in Nigeria; and (v) analyze the impact of broad money supply on the profitability of deposit money banks in Nigeria; and (v) analyze the impact of broad money supply on the profitability of deposit money banks in Nigeria. This study provides empirical evidence and will be useful to policymakers, regulators, and other stakeholders in the financial sector. It enables students and learners to gain insights on how monetary policy impacts banks' profits. The next section deals with the literature review followed by methodology.

deals with data presentation and analysis while the final section will be conclusion and recommendations. The study is divided into introduction, literature review, methodology, result and discussion, and conclusion.

2. Literature Review

According to Keynesian theory, introduced by John Maynard Keynes in 1936, a shift in the money supply can permanently influence variables such as the interest rate, aggregate demand, employment, output, and income. Keynes advocated for a loose monetary policy in the presence of unemployment (Udeh, 2015). The hypothesis suggests that the money supply is one of the primary factors influencing the real economy (International Monetary Fund [IMF], 2014, 2024). It further posits that when unemployment persists, all factors of production remain in perfectly elastic supply, and all unemployed resources are homogeneous. Additionally, the theory assumes that if resources are underutilized, effective demand and the money supply fluctuate in the same proportion. It also assumes constant returns to scale, which help maintain stable prices as output increases. However, Keynes critiqued this theory, arguing that because resources are homogeneous, effective demand does not fluctuate in exact proportion to the money supply. Moreover, as employment increases, returns tend to decrease rather than remain constant (Akeem, 2022; Bala, 2022; Gimba, 2020; Oluwapelumi, 2021).

Several researchers have examined the relationship between monetary policy and the financial performance of deposit-taking banks, employing different methodologies and reaching various conclusions. Some of these studies are summarized below: Alalade et al. (2020) analyzed the impact of monetary policy on the financial performance of deposit-taking institutions using time-series data spanning 35 years (1984–2018). They employed the autoregressive distributed lag (ARDL) method and the ordinary least squares (OLS) method, with results based on stationarity tests. Their findings indicate that monetary policy significantly influences the financial performance of deposit money institutions. Cruz-Garcia (2020) examined the effects of monetary policy on bank profitability using panel data from 31 countries spanning 2000–2017. The study found that expansionary monetary policy negatively impacted net interest margins and, consequently, bank profitability. Additionally, the relationship between interest rates, the slope of the yield curve, and profitability was found to be non-linear—specifically, concave—suggesting that flatter and lower yield curves have stronger negative effects.

Hamilton et al. (2020) investigated whether monetary policy contributes to banking distress, incorporating institutional and macroeconomic factors as control variables. Their findings suggest that monetary policy has both positive and negative effects on the likelihood of banking distress in Nigeria. They recommended institutional and economic reforms to ensure that monetary policy tools support the development of an inclusive financial system. Using a causal research approach, Mbabazize et al. (2020) analyzed the relationship between monetary policy and the profitability of Ugandan commercial banks. Data from all registered commercial banks operating between 2010 and 2018 were included. Bank profitability was measured using return on assets, and the empirical model was estimated using a dynamic two-step system generalized method of moments (GMM) panel estimator. The results indicate that monetary policy, particularly fluctuations in the lending rate, significantly influences return on assets. Omankhanlen et al. (2021) examined the effects of monetary policy on bank profitability, considering variables such as the money supply (M2), interest rates, and liquidity ratios. Their findings suggest that, over the long term, deposit-taking banks' profitability is positively correlated with liquidity ratios and the money supply (M2) but negatively correlated with interest rates. Vijay et al. (2020) employed the GMM estimator to investigate the relationship between monetary policy and bank profitability in New Zealand. Their sample comprised 19 banks from 2006 to 2018. The findings suggest that banks become more profitable when short-term borrowing rates rise, while profitability declines with increases in long-term borrowing rates. Bank profitability was also positively associated with the capital adequacy ratio but negatively influenced by the cost-to-income ratio and the non-performing loan ratio.

Afzal et al. (2021) explored the effects of monetary policy on bank profitability, focusing on 15 listed commercial banks in Bangladesh. Their regression analysis revealed that the reserve requirement ratio was negatively correlated with the profitability of these deposittaking banks. Bala et al. (2022) applied the ARDL method to analyze secondary data from the Central Bank of Nigeria's (CBN) statistical bulletin and Index Mundi. Using bank lending rates, liquidity rates, and interest rates as monetary policy variables, they found that monetary policy significantly affects bank profitability to varying degrees. Their research suggests that the Nigerian central bank should refine its monetary policy tools to make them more attractive to banks, thereby encouraging their broader adoption.

Hoffman and Assifuah-Nunoo (2023) studied the performance of Ghanaian listed banks in response to the monetary policy rate. Their research used interest rates, liquidity rates, minimum rediscount rates, cash reserve rates, and monetary policy rates as dependent and independent variables. Employing a census sampling technique with nine banks, the study found that the wide range of monetary policy rates (as reflected in a standard deviation of 4.87) may create challenges for banks in planning and decision-making. Their report also noted that only a small portion of banks' deposits must be held in reserve with the central bank. Shirya et al. (2023) examined the relationship between monetary policy tools and the financial performance of commercial banks in Nigeria using panel data and inferential statistical techniques. Their regression analysis demonstrated that monetary policy has a positive and significant impact on financial performance.

3. Methodology

3.1. Data

Secondary data ranging from the year 2012 to 2022 was collected from the Central Bank of Nigeria statistical bulletin, and financial statement and other different editions, yearly reports and financial statement of selected deposit-taking banks in Nigeria. Thirteen listed banks in Nigeria were chosen. The selected banks are the banks listed on the stock exchange market (Central Bank of Nigeria, 2021). The selected banks include: Access Bank PLC, Fidelity Bank PLC, First City Monument Bank (FCMB) PLC, Guaranty Trust Bank PLC, Union Bank of Nigeria PLC, United Bank of Africa (UBA) PLC, Zenith Bank PLC, Ecobank Nigeria PLC, Polaris Bank PLC, Stanbic IBTC Bank PLC, Sterling Bank PLC, Unity Bank PLC, and Wema Bank PLC. Panel data methodology was used due to the nature of the data used in this research. Hausman test was conducted to choose the most appropriate panel estimation between fixed effect and random effect (Greene, 2002). The fixed effect model assumes that the individual-specific effect is correlated to the independent variable while the random effect allows making inferences on the population data based on the assumption of the normal distribution (Ajitesh, 2022).

Post-estimation regression diagnostic tests were conducted to ascertain the validity of the statistical inferences for the study. The Variance Inflation Factor (VIF) was also used to measure the strength of the correlation between the independent variables. The Breusch-Pagan Serial Correlation LM Test will be used in this study because it is a more general test for autocorrelation up to the nth order, unlike others which are tests only for consecutive errors related to each other.

3.2. Method

The panel data technique was employed as the principal technique for data analysis. Further, the Dumitrescu-Hurlin panel causality test was employed to test the casualty. The models were used provided below.

| ROE = f(MPR, LQR, CRR, ER, M2) | (1) |
|--------------------------------|-----|
| ROA=f(MPR, LQR, CRR, ER, M2) | (2) |
| NIM = f(MPR, LQR, CRR, ER, M2) | (3) |

The econometric form of the model is stated as: $ROE_{it} = \beta_0 + \beta_{1MPRit} + \beta_{2LQRit} + \beta_{3CRRit} + \beta_{4ERit} + \beta_{5M2it} + \mu$ (4) $ROA_{it} = \beta_0 + \beta_{1MPRit} + \beta_{2LQRit} + \beta_{3CRRit} + \beta_{4ERit} + \beta_{5M2it} + \mu$ (5) $NIM_{it} = \beta_0 + \beta_{1MPRit} + \beta_{2LQRit} + \beta_{3CRRit} + \beta_{4ERit} + \beta_{5M2it} + \mu$ (6)

Where: ROE= Return on Equity; ROA= Return on Assets; NIM= Net Interest Margin; MPR= Monetary Policy Rate; LQR= Liquidity Ratio; CRR= Cash Reserve Ratio; ER = Exchange Rate; M2= Broad money supply; β = Constant Intercept; and μ = Error Term.

After the estimation, The Granger causality was applied, based on the Dumitrescu and Hurlin Panel Causality procedure. The approach assumes to measure the association between both dependent and independent variables according to the model below:

$$Y_{it} = \sum_{i=1}^{n} \alpha_{11i} X_{t-i} + \sum_{j=1}^{n} \beta_{11i} Y_{t-j} + \mu_{11t}$$
(7)

$$X_{it} = \sum_{i=1}^{n} \alpha_{21i} Y_{t-i} + \sum_{j=1}^{n} \beta_{21i} X_{t-j} + \mu_{21t}$$
(8)

For this analysis, the two primary Granger causality models are shown in equations (7) and (8). Y stands for profitability of banks (Return on equity, return on asset and net interest margin) while X stands for monetary policy rates, cash reserve ratios, liquidity ratio, money supply, and exchange rate.

4. Results and Implications 4.1. Results

The descriptive statistics of the variables used in the study are presented in Table 1. The results showed that, on average, the Cash Reserve Ratio, Broad money supply, Monetary Policy Rate, Liquidity Ratio, and Exchange Rate are 161.4312, 27557, 13.20968, 1293.139, and 184.9420 respectively. The standard deviations are 217.9343, 14940.64, 4.323914, 1968.783, and 89.10856 for the variables respectively. The minimum of CRR and M2 are 1.007078 and 13779.26 while the maximum values are 828.1020 and 63218.72 respectively. Also, MPR and LQR have a minimum of 6 and 11.19260 as well as maximum of 26 and 7118.979 respectively in the same vein, the minimum and maximum values of ER are 74.62500 and 307 respectively. This shows a significant variation in all the

variables over the period. This enormous variation is worth investigating. Therefore, this current study evaluates the impact of working capital management on the financial performance of companies listed on the Nigeria Stock Exchange over the period 2012 to 2022.

Table 4.2 presents the multicollinearity in independent variables gives spurious results even when the results seem good. This study conducts pairwise and variance inflation factors to detect multicollinearity in the model. Although, it is generally accepted that the benchmark should be less than 0.8 for a model not to exhibit multicollinearity, the result of the pairwise collinearity shows all the variables are less than 0.8, indicating no collinearity in the model. The results of the variance inflation factor which is also not up to 5 depicted the absence of multicollinearity in the model.

| Table 4.1. Descriptive statistics | | | | | |
|-----------------------------------|---------|----------|--------|----------|---------|
| | CRR | M2 | MPR | RQ | ER |
| Mean | 161.431 | 27557.18 | 13.209 | 1293.139 | 184.942 |
| Median | 53.048 | 21177.92 | 13.000 | 477.734 | 148.813 |
| Maximum | 828.102 | 63218.72 | 26.000 | 7118.979 | 307.000 |
| Minimum | 1.0071 | 13779.26 | 6.000 | 11.192 | 74.625 |
| Std. Dev. | 217.934 | 14940.64 | 4.324 | 1968.783 | 89.109 |
| Skewness | 1.575 | 1.1973 | 0.752 | 1.9208 | 0.494 |

Source: Author's own elaboration

| Table 4.2. Correlation Matrix |
|-------------------------------|
|-------------------------------|

| Variables | MPR | CRR | RQ | M2 | ER | VIF |
|-----------|-------|-------|--------|-------|-----|------|
| MPR | 1 | | | | | 1.24 |
| CRR | 0.099 | 1 | | | | 1.65 |
| RQ | 0.329 | 0.164 | 1 | | | 1.55 |
| M2 | 0.133 | 0.128 | 0.033 | 1 | | 1.3 |
| ER | 0.126 | 0.118 | -0.128 | 0.102 | 2 1 | 1.2 |

Source: Author's own elaboration

The result shows that the Hausman test rejects the null, thus depicting that the random effect is the most suitable technique. The MPR, CRR, and M2 are key factors influencing return on equity based on the results of the random effect model. This is attributed to the fact that half of the coefficients of these variables are higher than the coefficients' standard errors. The money supply, CRR, and MPR all have coefficient values of 6.3011, 0.6483, and 0.4133, respectively, while the standard error is 0.0459, 0.0190, and 2.1411. A value greater than the standard deviations is obtained when the coefficients are split by two. As a result, key factors influencing return on equity include the money supply, CRR, and MPR.

Nonetheless, the cash reserve ratio has an adverse effect on return on equity, but monetary policy and the money supply have a favorable association with it. Therefore, raising the money supply and monetary policy rate will boost the banks' profitability. This suggests

that raising the monetary policy rate will boost bank profits by raising loan fees. Likewise, it was discovered that the reserve requirement ratio negatively affects deposit-taking institutions' return on equity. Thus, a 1% rise in the reserve requirement ratio will lead to a 0.4133 drop in return on equity. The p-value of the Haussman test shows a value of 0.33 depicting that the null hypothesis is rejected depicting that the random effect is the most appropriate technique. The results of the random effect model showed that the M2, ER, CRR, LR, and MPR are all important factors that affect return on equity. This is because the standard errors are less than half of the values of the coefficients of these variables. While the standard error is 7.9655, 0.1907, 131.7275, 110.7735, and 7.9656, respectively, the coefficient values for the money supply, cash reserve ratio, and monetary policy rate are 16.5264, 2.8306, 294.9026, 282.793, and 16.5264 accordingly. The value obtained by dividing the coefficients by two is more than the standard deviations. Hence, the factors influencing return on assets include the money supply, exchange rate, cash reserve ratio, and monetary policy rate. The M2, ER, CRR, and MPR all exhibit positive links with return on assets. The profitability of deposit-taking banks will therefore rise with increases in the M2, ER, CRR, LR and MPR. This suggests that raising the monetary policy rate will boost bank profits by raising loan fees.

The p-value of the Hausman test shows a value of 0.86 depicting that the null hypothesis is rejected thereby the random effect is the most appropriate technique. The results of the random effect model showed that the M2, ER, CRR, LR, and MPR are all important factors that affect the net interest margin. This is because the standard errors are less than half of the values of the coefficients of these variables. The standard errors for the MPR, CRR, and M2 are 0.28421, 0.6908, 0.0414, 5.3614, and 0.56231, respectively, while the coefficient values are 7.3764, 0.27142, 0.4328, 6.43134, and 6.3081. The value obtained by dividing the coefficients by two exceeds the standard deviations. Therefore, important factors influencing net interest margin are the M2, ER, CRR, LR, and MPR. Nonetheless, there is a positive correlation between net interest margin, monetary policy, and money supply. Therefore, raising the M2, CRR, and MPR rates will raise the financial performance of Nigerian deposit-taking banks. This indicated that raising the monetary policy rate will boost bank profits by raising loan fees.

| | Random Effects | | | |
|---------|----------------|-----------|----------|--|
| | Coeff | Std.Error | t-value | |
| Const | -2.6122*** | 0.2124 | -12.2987 | |
| MPR | 0.6483*** | 0.0459 | 14.1121 | |
| CRR | -0.4133*** | 0.0191 | -21.6550 | |
| LQR | 0.0000 | 0.0008 | 0.0406 | |
| M2 | 6.3012** | 2.1411 | 2.9430 | |
| ER | 6.1336 | 0.2142 | 28.6311 | |
| Hausman | 0.31 | 0.57 | | |

Table 4.3.Estimated Models for Return on Equity (ROE)

Note: ***, ** and * denote 1%, 5% and 10% level of significance respectively

Source: Author's own elaboration

| Table 4.4.Estimated Models for Return on Asset (ROA) | | | |
|--|---------------------|--|--|
| Variables | Random Effects | | |
| | Coeff. & Std errors | | |
| Const | -2.8306*** | | |
| | (0.1907) | | |

| MPR | 16.52642** |
|--------------|------------|
| | (7.965505) |
| CRR | 2.8306*** |
| | (0.1907) |
| LQR | 294.9026** |
| | (131.7275) |
| M2 | 282.793** |
| | (110.7735) |
| ER | 16.52642** |
| | (7.965505) |
| Hausman Test | 3.28 |
| | (0.33) |

Note: Standard errors in parentheses***, ** and * denotes 1%, 5% and 10% level of significance respectively. Source: Author's own elaboration

| Table 4.5.Estimated Models for Net Interest Margin | | | |
|--|---------------------------------------|--|--|
| Variables | Random Effects Coeff. & Std errors | | |
| Const | -2.57289*** | | |
| | (.04215) | | |
| MPR | 7.37644*** | | |
| | (.28421) | | |
| CRR | 27142*** | | |
| | (.69089) | | |
| LQR | 43284*** | | |
| | (.04136) | | |
| M2 | 6.43134** | | |
| | (5.36147) | | |
| ER | -6.30814** | | |
| | (.56231) | | |
| Hausman Test | 0.25 (0.86) | | |

Source: Author's own elaboration

To examine the causality between monetary policy and the return on equity of banks in Nigeria, a causality test was conducted which is presented in Table 4.6 (Panel A). The results show that a one-way causality existed from return on equity to the monetary policy rate. Likewise, the cash reserve ratio has a unidirectional causality with return on equity. To test the causality between monetary policy and the return on assets of banks, a causality test was conducted which is presented in Table 4.6 (Panel B). The results show that a bidirectional causality existed between the return on assets and the monetary policy rate. The causality test was employed to examine how causality flows between monetary policy and deposit money institutions' performance, and the findings applied to all banks included in the study. To test the causality between monetary policy and NIM, a causality test was conducted which is presented in Table 4.6 (Panel C). The monetary policy rate and net

interest margin have a unidirectional causal link, per the findings of the causality links between all the variables.

| Null: | W-Stat. | Z-Stat. | P-Value |
|-----------------------------|---------|----------|----------------|
| Papal A · Caucality for BOF | | | |
| MPR ⇒ROE | 6.75 | 0.7518 | 0.452 |
| ROE ⇒ MPR | 5.079 | -2.223 | 0.021 |
| CRR ⇒ ROE | 8.707 | 3.078 | 0.002 |
| ROE ⇒ CRR | 4.777 | -1.582 | 0.114 |
| LQR ⇒ ROE | 6.062 | 0.214 | 0.456 |
| ROE ⇒ LQR | 5.0992 | 0.206 | 0.359 |
| M2 ⇒ ROE | 4.9201 | 0.477 | 0.793 |
| ROE ⇒ M2 | 3.240 | 0.197 | 0.963 |
| ER ≠ ROE | 2.706 | 0.202 | 0.622 |
| ROE ≠ ER | 3.132 | 0.836 | 0.562 |
| Panal B: Caucality for BAA | | | |
| MPR \Rightarrow ROA | 7.31312 | 2.15213 | 0.0132 |
| ROA ⇒ MPR | 7.28376 | 2.21055 | 0.0241 |
| CRR ≄ ROA | 8.41767 | 3.09237 | 0.0331 |
| ROA ⇒ CRR | 3.22748 | -1.81450 | 0.0812 |
| LQR ⇒ ROA | 3.66219 | 1.69313 | 0.0807 |
| ROA ⇒ LQR | 2.72916 | -1.52920 | 0.1123 |
| M2 ⇒ ROA | 7.64802 | 0.97403 | 0.3300 |
| ROA ≠ M2 | 8.80504 | 1.70731 | 0.0878 |
| ER ⇒ ROA | 6.28465 | 0.10998 | 0.9124 |
| ROA ⇒ ER | 8.74968 | 1.67222 | 0.0945 |
| Panel C. Causality for NIM | | | |
| MPR \Rightarrow NIM | 5.07708 | -2.66524 | 0.0159 |
| NIM ⇒ MPR | 5.67238 | -0.24080 | 0.8097 |
| CRR ⇒ NIM | 4.71072 | -0.76861 | 0.4421 |
| NIM ⇒ CRR | 5.36186 | -0.41123 | 0.6809 |
| LQR ⇒ NIM | 5.21373 | -0.49253 | 0.6223 |
| NIM ⇒ LQR | 9.43852 | 1.82626 | 0.0678 |
| M2 ⇒ NIM | 2.74818 | 0.63509 | 0.5254 |
| NIM ⇒ M2 | 2.10263 | -0.14440 | 0.8852 |
| ER ⇒ NIM | 2.60752 | 0.34677 | 0.7288 |
| NIM ⇒ ER | 1.86323 | -0.32310 | 0.7466 |

 Table 4.6.Panel Causality for ROE

Note: \Rightarrow suggests does not homogeneously cause

Source: Author's own elaboration

4.2. Summary of Findings

The research determined that there is a positive and notable connection between MPR and ROE of deposit-taking banks in Nigeria. This aligns with the findings of Bala et al. (2022). The null hypothesis that there is no significant connection between monetary policy rates and return on equity should be rejected. Hence, the performance of banks will depend on monetary policy rates. The research determined that there is a positive and notable connection between MPR and ROA of deposit-taking banks in Nigeria. Hence, the null hypothesis that there is no significant connection between the monetary policy rate and the return on assets of deposit-taking banks in Nigeria should be rejected.

Furthermore, the research found that there exists a positive and notable connection between monetary policy rate and net interest margin of deposit-taking banks in Nigeria. Hence, the null hypothesis that there is no notable connection between monetary policy rate and return on equity of deposit-taking banks in Nigeria should not be accepted. The research found that there exist a unidirectional between the monetary policy rate and the return on assets of deposit-taking banks in Nigeria. While a bi-directional between monetary policy rate and return on equity of deposit-taking banks in Nigeria. This study is consistent with the studies of Osakwe et al. (2021); Belavadi and Shivakumar (2021) and Hoffman and Assifuah-Nunoo (2023).

5. Conclusions

The study examined the impact of monetary policy on the profitability of deposit money banks in Nigeria. In order to provide meaningful insights, the study specifically examined (i) the impact of monetary policy rate on the profitability of deposit money banks in Nigeria; (ii) the impact of liquidity ratio on the profitability of deposit money banks in Nigeria; (iii) the impact of cash reserve ratio on the profitability of deposit money banks in Nigeria; (iv) the impact of exchange rate on the profitability of deposit money banks in Nigeria; and (v) the impact of broad money supply on the profitability of deposit money banks in Nigeria.

The data obtained for the study ranges from 2012 to 2022 and were sourced from the annual reports of the selected banks and Central Bank Statistical Bulletin. Static Panel data Estimator and Dumitrescu and Hurlin Panel Causality Tests were used to estimate the specified objectives of the study. It was determined that monetary policy rates have influence on Nigerian banks' profitability. The study suggested that to effectively regulate the monetary system, the monetary authority should endeavour to create indirect monetary instruments. The monetary authorities should investigate exchange rate policies in a manner that will increase Nigerian banks' profitability.

For monetary policy to effectively impact Nigerian deposit-taking banks' financial performance, deposit-taking banks must refrain from holding excess reserves that they could use under a restrictive monetary policy. They must also be unable to continuously borrow money or rediscount bills to avoid negating the effects of open market operations, which involve the sale of securities to deplete bank reserves. This study makes a substantial contribution to knowledge in several ways. First off, by considering multiple profitability variables - such as return on equity, net interest margin, and return on assets - instead of just one dependent variable, this study greatly deviates from earlier research in this field of finance, accounting, and economics. The Dumitrescu and Hurlin Panel causation Tests were used in a novel way in this work to test for causation. Future research should compare

the influence of monetary policy on the performance of African banks across multiple countries. Future research ought to consider how interest rates affect banks' performance.

Author Contributions: Kayode conducted conceptualization, Analysis, Overall Draft, and Review.

Funding: No Funding

Conflicts of Interest: No conflict of interest

References

- Abel, S., Hlalefang, K., Roux, P., & Mutandwa, L. (2018). A review of the banking sector profit persistence. *International Journal of Economics and Financial Issues*, 8(1), 54-63.
- Akeem, L. B., Taiwo, O. O., Augustine, A. A., Edinaeval, A. P., & Olawumi, L. B. (2022). Monetary policy and financial performance: Empirical evidence from listed deposit money banks in Nigeria. *Journal of Positive School Psychology*, 6(9), 5135-5145.
- Akindutire, S. O., & Adesina, O. D. (2021). Asymmetric evaluation of banking stability and bank performance in Nigeria: An NARDL approach. *European Journal of Accounting, Auditing and Finance Research*, 9(4).52-70.
- Akinleye, G. T., & Oluwadare, O. E. (2022). Cash reserve requirement and banks' profitability: evidence from deposit money banks in Nigeria. *Academy of Accounting and Financial Studies Journal*, 26(1), 1-13.
- Alalade, Y. S. A., Oseni, E., & Adekunle, O. A. (2020. Monetary policy and financial performance of deposit money banks in Nigeria. Asian Social Science, 16(11), 123-135.
- Ali, M., & Ibrahim, P. (2018). Inflation and companies' performance: cross-sectional analysis-Journal of Computational and Theoretical Nano-Science. http://doi.orhg/ 10.1166/asl.2018.11694.
- Andabai, P. W., Ikeora, J. J. E. and Anah, S. A. (2019). Impact of monetary policy on economic growth in Nigeria. International Journal of Developing and Emerging Economies, 7(3), 14-21.
- Bala, U., Godiya, I., Hadith, N., & Maijama'a, R. (2022). The effect of monetary policy on the performance of deposit money banks in Nigeria Rabiu Maijama'a. *Journal of Business Management and Economic Research*, 6(1), 10-23. DOI: 10.29226/TR1001.2022.292.
- Batayneh, K., Wasfi, A. S., & Momani, M. Q. M. (2021). The impact of inflation on the financial sector development: Empirical evidence from Jordan. *Cogent Economics* and Finance, 9:1, 1970869. <u>https://doi.org/10.1080/23322039.2021.1970869</u>.
- Batsinda, G., & Shukla, J. (2019). Inflation and profitability of commercial banks in Rwanda: A case study of bank of Kigali. *International Journal of Business and Management*, 14, 35-47. <u>https://doi.org/10.5539/ijbm.v14n10p35</u>.
- Central Bank of Nigeria (2017). Monetary policy at a glance. Retrieved from <u>https://www.cbn.gov.ng/out/2017/ccd/monetary%20policy%20at%20a%20glance.p</u><u>df</u>
- Central Bank of Nigeria (2023). Central Bank of Nigeria Communiqué no. 147 of the Monetary Policy Committee Meeting. Retrieved from <u>https://www.cbn.gov.ng/Out/2023/CCD/Central%20Bank%20of%20Nigeria%20Co</u> <u>mmunique%20No.%20147%20of%20The%20Monetary%20Policy%20Committee</u>

%20Meeting%20Held%20on%20Monday%2020th%20and%20Tuesday%2021st%2 0March%202023%20and%20Personal%20Statements%20of%20Members%20(1).p df

- Cruz-García, P. (2020). The Impact of Monetary Policy on Bank Profitability. Palgrave Macmillan Studies in Banking and Financial Institutions, in: Caterina Cruciani & Gloria Gardenal & Elisa Cavezzali (ed.), *Banking and Beyond*, 105-135, Palgrave Macmillan.
- Dang, V. D., & Huynh, J. (2022). Monetary policy and bank performance: The role of business models. The North American Journal of Economics and Finance, 59: 101 602. <u>https://doi.org/10.1016/j.najef.2021.101602</u>.
- Ekpung, G. E., Udude, C. C., & Uwalaka, H. I. (2015). The impact of monetary policy on the banking sector in Nigeria. *International Journal of Economics, Commerce and Management*, United Kingdom, 3(5).
- Gbadebo A., Akande, J. & Adekunle, A. (2023). Detecting Earnings Management in The Reporting of Nigerian Banks: The Distribution of Ratios Approach. *Journal of Governance Risk Management Compliance and Sustainability* 3(1):11-30. 10.31098/jgrcs.v3i1.1196.
- Gbadebo, A.D. & Mohammed, N. (2015). Monetary Policy and Inflation Control in Nigeria. Journal of Economics and Sustainable Development, 6(8), 108
- Gimba J. T., Vincent, H. S., & Oyedokun, G. E. (2020). Effect of monetary policy on the performance of listed deposit money banks In Nigeria. *Annals of Faculty of Economics, University of Oradea, Faculty of Economics,* 1(1), 482-503.
- Hamilton, S., Ogbeide, F., Adeboje, O., & Mande, B. (2020). Monetary policy and banking system distress in Nigeria. *NDIC Quarterly*, 35(1 & 2), 114-135.
- Hoffman, B., & Assifuah-Nunoo, E. (2023). The Effect of Monetary Policy Rate on the Performance of Listed Banks in Ghana over Five-year Period. International Journal of Multidisciplinary Studies and Innovative Research, 11(2), 35–49. https://doi.org/10.53075/Ijmsirq/6414343635
- International Monetary Fund (2014). Annual Report 2014 from Stabilization to Sustainable Growth.

https://www.imf.org/en/Publications/AREB/Issues/2016/12/31/International-Monetary-Fund-Annual-Report-2014-Financial-Statements-41824.

- International Monetary Fund (2024). World Economic Outlook: Global growth is expected to remain stable yet underwhelming. <u>https://www.imf.org/en/Publications/WEO/Issues/2024/10/22/world-economic-outlook-october-2024</u>.
- Mbabazize, R. N., Turyareeba, D., Ainomugisha, P., & Rumanzi, P. (2020). Monetary policy and profitability of commercial banks in Uganda. Open Journal of Applied Sciences, 10(1), 625-653. <u>https://doi.org/0.4236/ojapps.2020.1010044</u>.
- Muhoho, K. G., Ndung'u, S., & Abayo, R. (2019). Monetary policy implications on financial performance of commercial banks listed in the Nairobi securities exchange, Kenya. International *Journal of Management and Commerce Innovations*, 7(1), 617-625.
- Oko, O. P. (2024). The Impact of Monetary Policy on the Performance of Banks and Nigerian Economy (1991-2022). *African Banking and Finance Review Journal*, *13*(13), 28–42. Retrieved from <u>https://www.abfrjournal.com/index.php/abfr/article/view/205</u>
- Oladipupo, O. F. & Oladipo, O. N. (2022). Monetary policy on firm performance of listed deposit money bank in Nigeria. Journal of Accounting and Management, 12(3), 205-217.

- Oluwapelumi, O.S. (2021). The Effects of Monetary Policy on Portfolio Management in the Nigerian Banking Industry. European Journal of Accounting, Finance and Investment, 7 (7).
- Omankhanlen A.E, Ilori N, Isibor A & Okoye L.U (2021) Monetary Policies and the Achievement of Bank Profit Objective Journal of Central Banking Theory and Practice, 2, 201-220.
- Osakwe, C. I., Okoye, N. J., George, E., & Okeke, L. N. (2021). Monetary policy instruments: effect on the performance of deposit money banks in Nigeria. Journal of Contemporary Issues in Accounting (JOCIA), 1(1), 74-90.
- Owoeye, S. D., Kajola, S. O., Oyetayo, O. J., & Oshadare, S. A. (2023). Effect of monetary policy on deposit liabilities of commercial banks in Nigeria. Nigerian Journal of Banking and Financial Issues (NJBFI), 9(1), 241-250.
- Shirya, A., Njoka, C. & Abdul, F. (2023) Relationship between Monetary Policy Instruments and Financial Performance of Commercial Banks in Nigeria. Open Journal of Business and Management, 11, 945-962. doi: <u>10.4236/ojbm.2023.113051</u>.
- Udeh, S. N. (2015). Impact of Monetary Policy Instruments on Profitability of Commercial Banks in Nigeria: Zenith Bank Experience. Research Journal of Finance and Accounting, 5(10), 190–206.
- Uruakpa, P. C. (2023). Monetary Policy and Deposit Money Banks' Profitability: Evidence from Nigeria. European Journal of Accounting, Finance and Investment, 9(12), 19– 28. <u>https://cirdjournals.com/index.php/ejafi/article/view/1205</u>.
- Vijay, K. & Sanjeev, A. & Ly, T.H. (2020). Does Monetary Policy Influence the Profitability of Banks in New Zealand? *IJFS*, *MDPI*, 8(2).