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- I. Title page
- II. Abstract (150-250 words)
- III. Keywords (3-5)
- IV. Introduction
- V. Literature Review
- VI. Methodology
- VII. Results and Discussion
- VIII. Conclusion and Recommendations
- IX. References (APA 7th Edition)
- X. Appendices (if necessary)
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EFFECT OF MONETARY POLICY INSTRUMENTS ON CAPITAL ADEQUACY OF LISTED DEPOSIT MONEY BANKS IN NIGERIA

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ABSTRACT

This study examines the effect of monetary policy instruments on capital adequacy of listed deposit money banks in Nigeria. This study specifically investigates the influence of Monetary Policy Rate (MPR) and Cash Reserve Ratio (CRR) on Capital Adequacy Ratio (CAR) of listed Deposit Money Banks in Nigeria. Using sample of 13 banks and covering a study period of 10 years from 2015 to 2024, and data were extracted from the Central Bank of Nigeria statistical bulletins, published annual reports and account of the banks and were analysed using multiple regression techniques. The findings revealed that Monetary Policy Rate and Cash Reserve Ratio exert negative effects on capital adequacy; however, these effects are statistically insignificant. This suggests that although monetary tightening through higher interest rates and reserve requirements tends to place downward pressure on banks' capital positions, such pressures do not significantly erode capital buffers within the study period. The study concludes that monetary policy actions have limited direct impact on banks' capital strength in Nigeria and therefore recommends amongst others an enhanced coordination between monetary policy and prudential regulation to ensure sustained banking sector resilience and financial stability.

Keywords: Monetary Policy Rate, Cash Reserve Ratio, Capital Adequacy, Deposit Money Banks, Nigeria

1.0 Introduction

The stability of the banking sector is fundamental to the effective functioning of modern economies, given the central role of commercial banks in financial intermediation, credit allocation, and investment facilitation. In the aftermath of the global financial crisis of 2007–2009, the vulnerability of undercapitalized banks to systemic shocks became evident, leading to heightened regulatory emphasis on bank capital adequacy worldwide. Capital adequacy, commonly measured by the Capital Adequacy Ratio

(CAR), reflects the extent to which a bank's capital can absorb potential losses arising from credit, market, and operational risks (Basel Committee on Banking Supervision [BCBS], 2011; World Bank, 2010). Adequate capital buffers are therefore essential for safeguarding depositor funds, promoting financial stability, and reducing systemic risk (Sanusi, 2012).

International regulatory frameworks, particularly Basel II and Basel III, have reinforced the importance of capital adequacy as a cornerstone of banking sector

resilience. Empirical evidence suggests that well-capitalized banks are better positioned to withstand economic downturns and maintain lending activities during periods of financial stress (Altunbas, Gambacorta & Marques-Ibanez, 2011). However, the literature also cautions that excessively stringent capital requirements may constrain banks' lending capacity, thereby dampening economic growth. This underscores the delicate trade-off between ensuring financial stability and supporting credit expansion in bank-based economies.

In developing regions such as Africa, the relevance of capital adequacy is amplified by heightened macroeconomic volatility, shallow financial markets, and institutional fragilities. Studies indicate that African banks with stronger capital buffers demonstrate greater resilience to economic shocks and are more capable of sustaining credit supply during periods of uncertainty (World Bank, 2010; Oduor, 2017). Nonetheless, tighter regulatory capital requirements may impose binding constraints on banks' balance sheets, particularly in economies where banks serve as the primary source of financing for the real sector. These mixed outcomes suggest that the determinants of capital adequacy must be examined within specific institutional and policy contexts.

In Nigeria, capital adequacy has remained a central focus of banking sector regulation due to recurrent episodes of financial instability, non-performing loans, and exposure to macroeconomic shocks. Empirical studies have shown that higher capital adequacy enhances bank stability and performance, while weak risk management practices and asset quality deterioration erode capital buffers (Akinbola & Akinbola, 2024). In response to evolving risks and the need to strengthen the resilience of the banking system, the Central Bank of Nigeria (CBN) in 2024 announced a major recapitalization directive, raising minimum capital requirements to ₦500 billion for internationally authorized banks, ₦200 billion for national banks, and ₦50 billion for regional banks (Central Bank of Nigeria [CBN], 2024; Vanguard, 2024). This policy intervention highlights the renewed regulatory emphasis on capital adequacy as a mechanism for enhancing systemic stability and supporting sustainable economic growth.

Monetary policy constitutes a key macroeconomic tool through which the Central Bank of Nigeria influences liquidity conditions, credit creation, and financial stability. Instruments such as the Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR), Liquidity Ratio, and Open Market Operations directly affect banks' cost of funds, availability of loanable resources, and risk-taking behaviour. Increases in the MPR tend to raise borrowing costs and compress credit demand, thereby affecting banks' profitability

and internal capital generation (Olofinlade, Aremu, & Ogunwole, 2021). Similarly, higher CRR requirements restrict the volume of funds available for lending, potentially weakening banks' capacity to build capital buffers through retained earnings (RSI International, 2023). These transmission channels suggest that monetary policy decisions can exert both direct and indirect effects on banks' capital adequacy.

The impact of monetary policy instruments on capital adequacy, however, may not be uniform across banks. Bank size has been identified as a critical factor shaping banks' responses to monetary and regulatory shocks. Larger banks often benefit from economies of scale, diversified portfolios, and greater access to capital markets, which enhance their ability to absorb policy-induced pressures (Berger & Bouwman, 2013). Smaller banks, by contrast, are typically more vulnerable to interest rate fluctuations, liquidity constraints, and changes in reserve requirements, making their capital positions more sensitive to monetary policy actions. These differences suggest that bank size may moderate the relationship between monetary policy instruments and capital adequacy.

Despite the growing body of literature on monetary policy and banking sector performance in Nigeria, empirical evidence on the direct effect of monetary policy instruments on capital adequacy remains limited. Moreover, most existing studies adopt linear frameworks and overlook the potential role of bank-specific characteristics, such as size, in shaping the monetary policy–capital adequacy nexus. Given Nigeria's heterogeneous banking sector and recent regulatory reforms, a focused examination of how monetary policy instruments influence capital adequacy is both timely and policy-relevant.

Against this background, this study investigates the effect of monetary policy instruments specifically the Monetary Policy Rate and Cash Reserve Ratio on the capital adequacy of listed deposit money banks in Nigeria. By concentrating on listed banks and recent policy dynamics, the study contributes to the literature by providing empirical evidence on the monetary policy–capital adequacy relationship in a developing, bank-based financial system. The findings are expected to inform monetary authorities, regulators, and bank management on the design of policies that balance macroeconomic stabilization objectives with the need for sustained banking sector resilience.

1.2 Objectives of the Study

The main objective of this study is to examine the effect of monetary policy instruments on capital adequacy of listed deposit money banks in Nigeria.

The specific objectives are to:

- i. examine the effect of the Monetary Policy Rate on the capital adequacy of listed deposit money banks in Nigeria; and

- ii. determine the effect of the Cash Reserve Ratio on the capital adequacy of listed deposit money banks in Nigeria.

1.3 Research Hypotheses

The following null hypotheses were formulated and tested in the study:

H₀₁: Monetary Policy Rate has no significant effect on the capital adequacy of listed deposit money banks in Nigeria.

H₀₂: Cash Reserve Ratio has no significant effect on the capital adequacy of listed deposit money banks in Nigeria.

2.0 Literature Review

Monetary policy plays a critical role in shaping the operating environment of banks and, by extension, their capital positions. Broadly, monetary policy refers to the deliberate actions undertaken by central banks to regulate money supply, credit conditions, and interest rates in pursuit of macroeconomic objectives such as price stability, sustainable growth, and financial stability (Friedman, 1968; Mishkin, 2007). Central banks employ a range of instruments to achieve these objectives, with interest rate policy and reserve requirements constituting the most prominent tools in developing economies. Through these instruments, monetary authorities influence liquidity conditions, the cost of funds, and risk-taking behaviour within the banking system.

In Nigeria, monetary policy is implemented by the Central Bank of Nigeria (CBN) primarily through instruments such as the Monetary Policy Rate (MPR) and the Cash Reserve Ratio (CRR). The CBN defines monetary policy as actions designed to influence monetary aggregates and interest rates to achieve price stability and ensure a sound financial system (CBN, 2020). Given the dominance of deposit money banks in Nigeria's financial system, changes in monetary policy instruments have direct implications for banks' balance sheets, profitability, and capital adequacy.

The Monetary Policy Rate serves as the benchmark interest rate that guides lending and deposit rates across the banking sector. Adjustments to the MPR signal the stance of monetary policy and influence short-term interest rates, credit expansion, and investment decisions (CBN, 2023). A contractionary stance, characterized by an increase in the MPR, raises borrowing costs and tends to reduce credit demand, which may compress banks' interest income and profitability (Mishkin, 2019). Conversely, an expansionary policy lowers borrowing costs and stimulates lending activity. While higher interest rates may temporarily improve capital ratios by restraining asset growth, prolonged tightening can weaken capital adequacy by increasing loan defaults and reducing retained earnings (Eze & Okoye, 2020). In Nigeria,

the effectiveness of the MPR is sometimes constrained by structural rigidities and weak monetary transmission, which may dampen its direct impact on bank lending behaviour (Uchendu, 2019).

The Cash Reserve Ratio represents another powerful monetary policy instrument, requiring banks to hold a specified proportion of their deposits as non-interest-bearing reserves with the central bank. By adjusting the CRR, the CBN directly influences liquidity conditions and the volume of loanable funds in the banking system (CBN, 2023). An increase in the CRR reduces banks' ability to extend credit, thereby tightening liquidity and curbing inflationary pressures, while a reduction enhances liquidity and supports credit growth (Blanchard & Johnson, 2017). However, high reserve requirements can weaken banks' earning capacity by limiting income-generating assets, thereby constraining profit retention and capital accumulation (Adegbite & Olayemi, 2020). Frequent and abrupt changes in the CRR may also create uncertainty in banks' liquidity and capital planning processes, particularly in volatile macroeconomic environments such as Nigeria (Uchenna & Okoye, 2015).

Capital adequacy is widely recognized as a cornerstone of banking sector resilience. The Basel Committee on Banking Supervision defines capital adequacy as the requirement for banks to maintain sufficient capital relative to their risk-weighted assets to absorb losses and protect depositors (BCBS, 2010). In Nigeria, capital adequacy is assessed using the Capital Adequacy Ratio (CAR), which compares regulatory capital to risk-weighted assets and serves as a key indicator of bank soundness (CBN, 2020). Adequate capital buffers enhance banks' ability to withstand financial shocks, maintain market confidence, and continue lending during economic downturns (Ajayi & Ojo, 2006; Olweny & Shiphoo, 2011). Conversely, weak capital positions expose banks to solvency risks and heighten systemic vulnerability.

Empirical evidence on the relationship between monetary policy and capital adequacy remains mixed, particularly in developing economies. Some studies emphasize the indirect nature of monetary policy effects on capital adequacy, operating through profitability, liquidity, and credit risk channels. Olarewaju and Akande (2016) find that bank-specific factors such as profitability and size significantly influence capital adequacy among Nigerian banks, although their study does not incorporate monetary policy variables. Olawale (2024) reports that the effect of monetary policy on capital adequacy is context-dependent, with monetary tightening improving capital positions in some periods through enhanced risk management, while eroding capital in others by reducing profitability.

Studies focusing specifically on reserve requirements provide evidence of a negative relationship between CRR and capital adequacy. Adegbite and Oladele (2020) show that higher CRR constrains lending capacity and profitability, which can weaken capital accumulation, particularly among smaller banks. Ibrahim and Musa (2021) similarly find that increases in CRR reduce capital adequacy, although larger banks exhibit greater resilience due to diversified funding sources and stronger balance sheets. Chukwuma and Eze (2019) and Onu and Okafor (2022) further demonstrate that while CRR tightening negatively affects capital adequacy in the short run, banks may adjust over time through asset reallocation and capital restructuring.

Despite these contributions, relatively few Nigerian studies explicitly examine the joint effects of key monetary policy instruments particularly the Monetary Policy Rate and Cash Reserve Ratio on capital adequacy using recent panel data on listed deposit money banks. Existing findings are often inconsistent, reflecting differences in methodology, sample periods, and institutional contexts. Moreover, many studies focus on bank performance or liquidity outcomes rather than capital adequacy as a core measure of banking sector resilience.

The theoretical foundation for examining the monetary policy capital adequacy nexus is provided primarily by the Monetary Policy Transmission Mechanism Theory. The theory explains how central bank actions influence economic activity through interest rate, credit, and balance-sheet channels (Mishkin, 1995; Bernanke & Gertler, 1995). In bank-based financial systems, monetary policy directly affects banks' funding costs, lending capacity, and profitability, which in turn shape capital adequacy.

Empirical evidence from Nigeria supports the relevance of this framework, indicating that monetary policy variables influence banks' liquidity, credit supply, and financial performance (Ajayi & Atanda, 2012; Ibe, 2013).

Complementing this perspective is the Capital Buffer Theory, which posits that banks maintain capital above regulatory minima to absorb shocks, avoid regulatory sanctions, and preserve market confidence (Calem & Rob, 1999). According to this theory, banks strategically adjust their capital buffers in response to regulatory and macroeconomic conditions, including monetary policy tightening. Empirical studies confirm that banks build or deplete capital buffers depending on profitability, risk exposure, and regulatory pressure (Jokipii & Milne, 2008; Ogege & Shiro, 2012). In Nigeria's volatile macroeconomic environment, the theory provides useful insights into how banks manage capital adequacy amid liquidity constraints and policy uncertainty.

The literature suggests that monetary policy instruments influence capital adequacy primarily through indirect channels related to liquidity, profitability, and risk exposure. However, the magnitude and significance of these effects remain context-specific and underexplored in the Nigerian setting, particularly for listed deposit money banks. This study contributes to the literature by providing updated empirical evidence on the effects of the Monetary Policy Rate and Cash Reserve Ratio on capital adequacy in Nigeria, thereby enriching the understanding of monetary policy transmission within a developing, bank-dominated financial system.

CONCEPTUAL FRAMEWORK

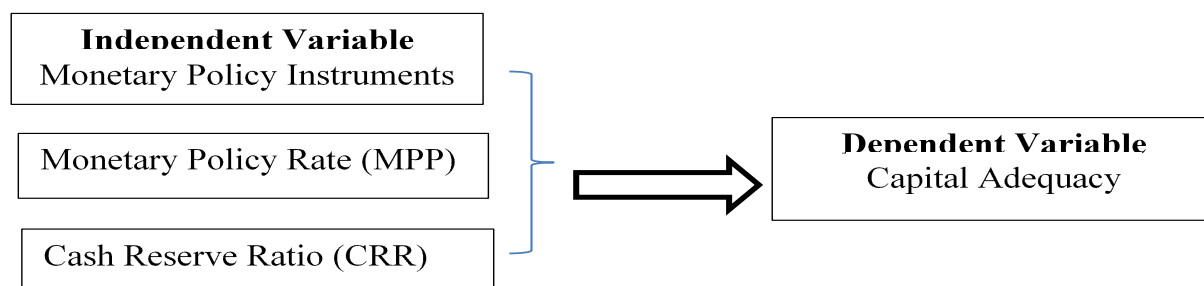


Figure 1. Conceptual Framework

3.0 Methodology

This study adopted an ex-post facto research design, which is appropriate for investigations that rely on historical data and examine relationships among variables without direct manipulation (Creswell & Creswell, 2018). The design was considered suitable because monetary policy variables and bank capital positions are determined externally and cannot be controlled by the researcher. The population of the study comprised all the 13 listed deposit money banks

as recognized by the Nigerian Exchange Group as at 31 December, 2024 which were included in the sample. The study covers period of ten years (2015-2024).

The study relied exclusively on secondary data. Data on monetary policy instruments specifically the Monetary Policy Rate (MPR) and Cash Reserve Ratio (CRR) were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletins and Monetary



Policy Communiqués. Data on capital adequacy were sourced from the audited annual financial statements of the sampled banks, ensuring reliability and consistency with regulatory disclosures. The study covered a ten-year period (2015–2024), which was considered sufficient to capture variations in monetary policy regimes and banking sector dynamics. Data analysis was conducted using panel data regression techniques, which allow for the control of unobserved heterogeneity across banks and over time (Baltagi, 2008). Descriptive statistics were first employed to summarize the characteristics of the variables. Correlation analysis was conducted to examine the direction and strength of relationships among variables.

MODEL SPECIFICATION

To examine the effect of monetary policy instruments on capital adequacy, the functional relationship was specified as:

Table 1: Descriptive Statistics of Study Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
CAR (%)	130	15.72	4.81	7.12	29.40
MPR (%)	130	13.94	2.13	11.00	18.75
CRR (%)	130	25.80	4.56	20.00	32.50

Note. CAR = Capital Adequacy Ratio; MPR = Monetary Policy Rate; CRR = Cash Reserve Ratio.

Source: Authors’ computation from CBN Statistical Bulletin and banks’ annual reports (2015–2024).

Table 1 presents the descriptive statistics of the key variables used in the study for the period 2015–2024, based on 130 bank-year observations. The Capital Adequacy Ratio (CAR) recorded a mean value of 15.72 percent, indicating that, on average, listed deposit money banks in Nigeria maintained capital buffers above the regulatory minimum requirement throughout the study period. However, the standard deviation of 4.81 percent suggests notable variation in capital adequacy across banks and over time, with some banks recording CAR as low as 7.12 percent, reflecting periods of capital vulnerability, while others attained levels as high as 29.40 percent, indicating strong capitalization.

The Monetary Policy Rate (MPR) had an average value of 13.94 percent, reflecting a generally tight monetary policy stance during the study period. The relatively low standard deviation of 2.13 percent suggests moderate fluctuations in policy rates, with minimum and maximum values of 11.00 percent and 18.75 percent respectively. This indicates that banks operated under varying degrees of monetary

$$CAR = f(MPR, CRR)$$

This relationship was transformed into an econometric panel regression model as follows:

$$CAR_{it} = \beta_0 + \beta_1 MPR_t + \beta_2 CRR_t + \epsilon_{it}$$

Where

CAR_{it} represents the capital adequacy ratio of bank i at time t,

MPR_t represents the monetary policy rate,

CRR_t represents the cash reserve ratio,

β₀ is the intercept,

β₁, β₂ are the slope coefficients, and

ε_{it} is the error term.

4.0 Results and Discussion

The results of the empirical analysis are presented below, beginning with descriptive statistics, followed by correlation analysis and panel regression results.

tightening, which potentially influenced their funding costs, lending activities, and capital accumulation capacity.

Similarly, the Cash Reserve Ratio (CRR) recorded a mean value of 25.80 percent, underscoring the restrictive liquidity environment imposed by the Central Bank of Nigeria over the period. The standard deviation of 4.56 percent indicates meaningful variation in reserve requirements, with values ranging from 20.00 percent to as high as 32.50 percent. Such high reserve ratios imply significant liquidity sterilization, which may have constrained banks' ability to generate income and build capital buffers.

The descriptive statistics reveal substantial variability in banks' capital adequacy alongside a persistently tight monetary policy environment, providing an appropriate empirical basis for examining the effect of monetary policy on the capital adequacy of Nigerian deposit money banks.

Table 2: Correlation Matrix of Monetary Policy Instruments and Capital Adequacy

Variables	CAR	MPR	CRR
CAR	1.000		
MPR	-0.312	1.000	
CRR	-0.228	0.461	1.000

Note. p < .01.

Source: Author’s EViews 12 output (2025).

Negative coefficients indicate inverse relationships between variables.



Table 2 presents the correlation matrix showing the relationships among capital adequacy ratio (CAR), monetary policy rate (MPR), and cash reserve ratio (CRR). The results indicate that CAR is negatively correlated with both monetary policy instruments. Specifically, the correlation between CAR and MPR is -0.312 , suggesting a moderate inverse relationship, where increases in the monetary policy rate are associated with reductions in the capital adequacy of deposit money banks. This implies that tighter monetary policy, through higher policy rates, may increase banks' cost of funds and risk exposure, thereby constraining their ability to maintain adequate capital buffers.

Similarly, the correlation between CAR and CRR is -0.228 , indicating a weak but negative association.

This suggests that higher cash reserve requirements, which limit the proportion of deposits available for lending and investment, may marginally reduce banks' capacity to build or sustain capital adequacy.

In contrast, MPR and CRR exhibit a positive correlation of 0.461 , reflecting a moderate direct relationship between the two monetary policy instruments. This implies that these tools are often adjusted in the same direction by the monetary authorities as part of a coordinated monetary policy stance. All reported correlations are statistically significant at the 1 per cent level ($p < .01$), underscoring the robustness of the observed relationships.

Table 3: Fixed Effects Regression Result (Model 1)
Dependent Variable: Capital Adequacy Ratio (CAR)

Variable	Coefficient	Std. Error	t-Statistic	Probability
Monetary Policy Rate (MPR) ...		0.142	-1.41	0.161
Cash Reserve Ratio (CRR)	-0.144	0.107	-1.34	0.182
Constant	-18.012	10.404	-1.73	0.087
Model Statistics Value				
R ²	0.303			
Adjusted R ²	0.289			
F-Statistic	8.74			
Prob (F-statistic)	0.000			
Durbin-Watson	1.87			

Note. Fixed Effects estimation.

Source: Author's EViews 12 output (2025).

Table 3 reports the fixed effects regression results examining the effect of monetary policy instruments on the capital adequacy ratio (CAR) of listed deposit money banks in Nigeria. The model explains approximately 30.3 per cent of the variations in CAR, as indicated by the R² value, while the adjusted R² of 0.289 suggests that the explanatory power of the model remains reasonably strong after adjusting for degrees of freedom. The overall model is statistically significant, as shown by the F-statistic of 8.74 with a corresponding probability value of 0.000, indicating that the monetary policy variables jointly have a significant effect on capital adequacy. The Durbin-Watson statistic of 1.87 suggests the absence of serious autocorrelation in the model.

Individually, the monetary policy rate (MPR) exhibits a negative coefficient (-0.201), implying that an increase in the policy rate is associated with a decrease in banks' capital adequacy ratio. However, this effect

is not statistically significant at conventional levels ($p = 0.161$), indicating that changes in MPR do not have a significant independent effect on CAR within the period under review. Similarly, the cash reserve ratio (CRR) has a negative coefficient (-0.144), suggesting that higher reserve requirements tend to reduce banks' capital adequacy, although this relationship is also statistically insignificant ($p = 0.182$).

The constant term is negative and marginally significant at the 10 per cent level ($p = 0.087$), reflecting the baseline level of capital adequacy when the explanatory variables are held constant. The findings suggest that while monetary policy instruments exert a negative influence on capital adequacy, their individual effects are weak, though jointly they significantly explain variations in CAR among deposit money banks.

Table 4 : Decision on Research Hypotheses

Hypothesis	Statement	Empirical Result	Decision
..	Monetary Policy Rate has no significant effect on capital adequacy	Negative, insignificant	Not Rejected
..	Cash Reserve Ratio has no significant effect on capital adequacy	Negative, insignificant	Not Rejected

Source: Authors' Output E-views 12 (2025)

Table 4 presents the decisions on the research hypotheses based on the empirical findings of the fixed effects regression analysis. Hypothesis H₁, which states that the monetary policy rate (MPR) has no significant effect on capital adequacy, is not rejected. This decision is supported by the empirical result showing a negative but statistically insignificant relationship between MPR and the capital adequacy ratio. The implication is that variations in the monetary policy rate do not exert a significant direct influence on the capital strength of deposit money banks during the period under review.

Similarly, Hypothesis H₂, which posits that the cash reserve ratio (CRR) has no significant effect on capital adequacy, is also not rejected. Although the estimated coefficient for CRR is negative, indicating an inverse relationship with capital adequacy, the effect is statistically insignificant. This suggests that changes in reserve requirements do not significantly determine banks' capital adequacy levels.

Overall, the results indicate that while monetary policy instruments tend to move inversely with capital adequacy, their effects are not strong enough individually to significantly alter banks' capital positions. This underscores the possibility that other bank-specific or macroeconomic factors play a more dominant role in influencing capital adequacy among deposit money banks in Nigeria.

4.2 Discussion of Findings

The regression analysis results reveal that the Monetary Policy Rate (MPR) has a negative but statistically insignificant effect on the Capital Adequacy Ratio (CAR) of listed deposit money banks in Nigeria. This finding implies that increases in the policy rate tend to weaken banks' capital positions; however, the magnitude of the effect is not strong enough to be statistically significant during the study period. The negative relationship observed is theoretically consistent with the monetary policy transmission mechanism, which suggests that higher policy rates increase banks' cost of funds, reduce credit expansion, and compress net interest margins, thereby limiting retained earnings available for capital accumulation (Mishkin, 2016). In the Nigerian context, persistent monetary tightening may therefore exert pressure on banks' capital buffers, even if such pressure does not translate into statistically significant capital erosion in the short run.

This finding agrees with the studies of Uchenna and Ezeabasili (2020), Adegbite and Oladele (2020), and Olawale (2024), who documented that restrictive monetary policy negatively affects banks' capital positions. These studies argued that increases in MPR heighten funding costs and reduce retained earnings, which ultimately weakens capital adequacy. The present study confirms this inverse relationship,

although the insignificant coefficient suggests that regulatory capital requirements and internal capital management strategies may have mitigated the full impact of interest rate changes on bank capital during the period under review.

The results further indicate that the Cash Reserve Ratio (CRR) exerts a negative but statistically insignificant effect on the capital adequacy of listed deposit money banks in Nigeria. This implies that increases in reserve requirements tend to constrain banks' liquidity and reduce income-generating lending activities, thereby weakening their ability to build capital buffers. However, the insignificant nature of the effect suggests that banks may have adjusted their asset allocation and liquidity management strategies to cushion the impact of higher reserve requirements. This finding is consistent with the empirical evidence provided by Ibrahim and Musa (2021), Onu and Okafor (2022), and Chukwuma and Eze (2019), who reported that increases in CRR reduce banks' lending capacity and weaken capital strength. These studies emphasized that higher reserve requirements tighten liquidity conditions, reduce credit earnings, and place downward pressure on capital adequacy, particularly in developing economies such as Nigeria.

The insignificant coefficient obtained in this study suggests that although CRR tightening exerts a contractionary influence on banks' balance sheets, its direct impact on capital adequacy may be moderated by regulatory compliance mechanisms, earnings retention policies, and supervisory oversight by the Central Bank of Nigeria. This result supports the view that monetary policy instruments may influence capital adequacy indirectly through profitability and credit channels rather than through immediate and direct effects.

The findings indicate that monetary policy instruments specifically the Monetary Policy Rate and Cash Reserve Ratio exert negative but weak direct effects on the capital adequacy of listed deposit money banks in Nigeria. While monetary tightening tends to place pressure on banks' capital positions, the absence of statistical significance suggests that other factors, such as bank-specific characteristics and prudential regulation, may play more dominant roles in determining capital adequacy. These results align with earlier Nigerian studies that report limited direct effects of monetary policy on bank capital strength (Adegbite & Oladele, 2020; Udeh, 2015), but differ from findings in developed economies where monetary policy has been shown to exert stronger capital effects (Berger & Bouwman, 2013). The divergence underscores the importance of institutional and regulatory context in shaping the monetary policy bank capital relationship.

5.0 Conclusion and Recommendations

Based on the findings, the study concludes that both the Monetary Policy Rate and the Cash Reserve Ratio exert negative but statistically insignificant effects on the capital adequacy of listed deposit money banks in Nigeria. The insignificant effects observed in this study imply that monetary policy instruments alone do not constitute the primary determinants of capital adequacy among listed deposit money banks in Nigeria. Rather, capital adequacy appears to be influenced more strongly by bank-specific factors, regulatory capital requirements, and supervisory interventions. The overall significance of the regression model, however, suggests that monetary policy variables jointly contribute to explaining variations in capital adequacy, albeit weakly. This study contributes to the existing literature by providing empirical evidence that monetary policy instruments exert negative but weak direct effects on bank capital adequacy in Nigeria. The findings enrich the discourse on monetary policy effectiveness in emerging economies and provide a basis for future studies to explore additional channels and moderating factors that may shape the relationship between monetary policy and banking sector resilience.

Emanating from the findings of this study, the following recommendations are proposed for policymakers, regulators, and bank management:

- i. Monetary authorities should implement monetary policy with prudence and balance when adopting tightening measures. Although increases in the Monetary Policy Rate and Cash Reserve Ratio do not significantly weaken banks' capital adequacy, their negative directional effects suggest that prolonged or excessive tightening could gradually erode capital buffers. The CBN should therefore consider the cumulative impact of monetary policy actions on the banking sector while pursuing price stability objectives.
- ii. There is a need for stronger coordination between monetary policy and prudential regulation. Since capital adequacy appears to be influenced more by regulatory requirements and supervisory interventions than by monetary policy instruments alone, macroprudential tools such as countercyclical capital buffers and stress testing frameworks should be strengthened. This will help ensure that banks maintain adequate capital levels even during periods of monetary tightening.
- iii. Deposit money banks should enhance their internal capital planning and risk management strategies. Banks are encouraged to adopt

proactive capital management practices, including earnings retention, cost efficiency improvements, and diversification of income sources. By reducing overreliance on interest income, banks can better withstand policy-induced pressures on profitability and capital accumulation.

- iv. Regulatory authorities should intensify continuous monitoring and supervisory oversight, especially during periods of frequent monetary policy adjustments. Regular stress tests that incorporate interest rate and liquidity shocks would enable early identification of vulnerabilities in banks' capital positions and support timely regulatory intervention where necessary.
- v. Future research should extend this study by incorporating additional explanatory variables such as profitability, asset quality, liquidity ratios, and macroeconomic indicators. Comparative studies involving non-listed banks or cross-country analyses within sub-Saharan Africa would also provide deeper insights into the broader implications of monetary policy for banking sector capital adequacy.

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