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Effect of Policy Rate on Credit Extension in Nigeria

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Abstract

The study investigated the effect of the policy rate on credit extension in Nigeria, focusing on three commercial banks from 2019 to 2023. The main aim was to understand how policy rate adjustments influence credit extension within the Nigerian banking sector, given the Nigeria's unique economic challenges and regulatory environment. Panel linear regression model to analyze the effect of policy rate and credit extension, while controlling for other macroeconomic variables such as inflation, GDP growth, and the exchange rate. Findings revealed that changes in the policy rate, GDP, and exchange rate do not significantly impact bank

credit and non-performing loans (NPLs) in Nigeria. This suggests that factors beyond those considered in this study might play a more crucial role in influencing bank lending and loan performance. Based on these findings, it was recommended that policymakers adopt a broader approach when formulating policies aimed at enhancing credit extension and managing NPLs. This approach should include considering a wider array of factors that may affect bank lending and loan performance.

Introduction

In the realm of monetary policy, the influence of policy rates on credit extension stands as a critical determinant of economic activity. Policy rates, set by central banks across the globe, serve as a lever to regulate borrowing costs and, consequently, the availability of credit within an economy. The relationship between policy rates and credit extension is of paramount importance in understanding how monetary policy decisions impact lending activities, thereby affecting overall economic growth and stability. This study delves into the intricate dynamics of the effect of policy rates on credit extension in Nigeria, a country with a dynamic and evolving financial system, knowing how these changes in policy rates affect credit extension is crucial for policymakers, financial institutions, and stakeholders alike. The policy rate in Nigeria is more than a mere economic indicator; it serves as a vital control mechanism affecting the dynamics of credit extension. Credit extension refers to the process by which commercial banks and other financial institutions provide loans and credit facilities to businesses and individuals.

Nigeria's economy, with its heavy reliance on oil revenues, is particularly susceptible to global economic fluctuations. The policy rate has been a crucial tool for the CBN in navigating these challenges. For instance, variations in oil prices have historically led to economic volatility in Nigeria, necessitating varying responses from the CBN, including adjustments to the policy rate (Eme & Ibietan, 2016). The policy rate's influence on credit extension has been a key area of focus. Lower policy rates are generally expected to encourage banks to

lend more by reducing the cost of borrowing. However, this relationship is often influenced by other factors such as the banks' risk assessment strategies, liquidity constraints, and the overall macroeconomic environment (Ofori-Sasu, 2019).

In addition to macroeconomic challenges, the Nigerian banking sector has faced its own set of issues. The prevalence of non-performing loans, regulatory changes, and varying levels of financial inclusion have contributed to a complex banking landscape. These factors, combined with policy rate adjustments, have significantly influenced credit extension practices within the sector (Adetiloye, 2023). The effectiveness of policy rate adjustments in stimulating credit extension remains debated. While theoretically, a lower policy rate should boost credit extension by making borrowing cheaper, in practice, the impact can be muted by factors such as banks' risk perceptions and overall economic conditions.

In recent times the Nigerian financial landscape has been marked by issues such as high levels of non-performing loans and stringent regulatory constraints, which further obscure the relationship between policy rate adjustments and credit extension practices. The prevalence of these challenges suggests that banks may not respond to policy rate changes as expected, limiting the effectiveness of such adjustments in achieving desired economic outcomes (Udom & Abraham, 2016). Previous studies by Eme & Ibietan, 2016) and Borio (2011) have explored the dynamics of policy rate adjustments and their implications for the banking sector and broader economy. However, there remains a significant gap in understanding the ways through which these policy adjustments translate into tangible changes in credit extension, especially considering the unique challenges of the Nigerian banking sector. Furthermore, the impact of external economic shocks and the role of macroeconomic stability in mediating the relationship between policy rate adjustments and bank lending behaviours have not been comprehensively examined This study aims to bridge this gap by providing a detailed examination of the factors influencing the efficacy of policy rate adjustments as a mechanism for stimulating credit extension among Nigerian banks. It seeks to understand the extent to which the theoretical expectations align with practical outcomes in the context of Nigeria's economic and regulatory environment, thereby offering insights into the optimization of monetary policy tools for economic development.. This study will be guided by the following research questions:

1. What is the effect of changes in policy rate on credit extension in Nigerian Commercial Banks?
2. What is the effect of policy rate on non-performing loans in Nigerian commercial Banks?

The following hypotheses were formulated to guide the study:

Ho_1: Policy rate has no significant effect on Bank credit in Nigerian Commercial Banks.

Ho_2: Policy rate has no significant effect on non-performing loans in Nigerian commercial Banks.

Literature Review

The Concept of Policy Rate

The policy rate, a fundamental instrument in the arsenal of a central bank, serves as a cornerstone for monetary policy and economic stability. In the context of Nigeria, the Monetary Policy Rate (MPR) set by the Central Bank of Nigeria (CBN) is not just a number but a key driver of the economic pulse, influencing inflation, affecting exchange rates, and steering the course of economic growth (Adebayo & Ogunnubi, 2021). The essence of the policy rate lies in its role as a signaling tool. It communicates the central bank's stance on monetary policy to financial markets and the broader economy. When the CBN adjusts the MPR, it sends a message about its objectives, be it controlling inflation, stabilizing the currency, or stimulating economic growth. According to Chukwu (2018), MPR is the benchmark that influences the cost of borrowing money in the economy, thus directly affecting interest rates charged by commercial banks on loans and advances. The policy rate's effectiveness in achieving its intended outcomes, however, extends beyond its role as a mere economic lever. It embodies the central bank's response to a myriad of economic indicators and conditions. When inflationary pressures mount, an increase in the policy rate can be employed as a tool to temper inflation by making borrowing more expensive, thereby cooling off consumer spending and business investments. Conversely, in times of economic downturn or recession, a reduction in the policy rate is often used to lower borrowing costs, aiming to stimulate spending and investment, and consequently, economic growth (Olayemi & Adekunle, 2020).

The intricacies of the policy rate's effect are particularly evident in the banking sector. As banks adjust their lending rates in response to changes in the MPR, the

ripple effects are felt across the economy. Lower policy rates typically make loans cheaper, encouraging businesses and individuals to borrow more, which in turn can lead to increased investment and consumption. On the flip side, higher policy rates can result in costlier loans, potentially slowing down economic activities (Eze & Okonkwo, 2019). In the Nigerian context, the policy rate reflects the country's unique economic challenges and aspirations. Factors such as the banks' risk perception, regulatory environment, and overall economic climate can mediate the impact of policy rate adjustments on lending practices. For instance, even with a reduced policy rate, banks might tighten their lending criteria in response to perceived risks or economic uncertainties, thereby muting the expected increase in credit extension (Adeoye & Elegunde, 2021). The

The Concept of Credit Extension

Credit extension, a fundamental pillar of financial intermediation which plays an important role in sustaining economic growth and development by facilitating access to financial resources for businesses and individuals. This concept involves the provision of funds by banks and other financial institutions to borrowers under agreed terms and conditions. Credit extension is crucial in linking savers and borrowers, thereby ensuring that surplus funds within the economy are effectively channeled to productive investments (Adebayo & Ogunnubi, 2021). This financial intermediation function allows for an optimal allocation of resources that fuels economic activity, promotes investment, and enables businesses to expand, create jobs, and contribute to GDP growth.

Gertler and Karadi (2015) highlight that credit extension is a complex interplay between risk and reward. Lenders meticulously evaluate borrowers' creditworthiness to minimize potential defaults, considering their repayment history, income, and collateral. This evaluation leads to tailored loan terms, including interest rates and repayment periods, that mirror the perceived risk. However, credit extension is not solely determined by individual risk assessment. Broader economic factors like inflation, exchange rates, and overall economic growth significantly shape the willingness and ability of financial institutions to lend. In developing economies like Nigeria, the dynamics of credit extension are further complicated by systemic challenges such as high-interest rates, regulatory constraints, and institutional deficiencies (Adeoye & Elegunde, 2021). These factors often limit banks' ability to effectively extend credit, particularly to small and medium enterprises (SMEs), which typically lack the collateral or

financial history required by traditional lending models. The lack of access to credit for SMEs hampers entrepreneurial growth and innovation, limiting the broader economy's potential. The relationship between credit extension and monetary policy is integral, as central banks employ policy rates to influence the cost and availability of credit in the financial system. A reduction in the policy rate theoretically lowers borrowing costs, thus encouraging borrowing for investment and consumption. Conversely, an increase in the policy rate is meant to curb inflation by tightening credit availability (Mishkin, 2019). In Nigeria, the Central Bank of Nigeria (CBN) has employed the Monetary Policy Rate (MPR) to regulate credit extension practices among commercial banks. However, due to structural economic issues and external economic shocks, the effectiveness of such monetary policy tools has often been inconsistent. This inconsistency is partly due to the phenomenon of credit rationing, where lenders, wary of rising non-performing loans (NPLs), become more conservative in extending credit despite favorable policy rate conditions. Okorie and Nwisienyi (2020) argue that in situations of economic uncertainty, lenders, wary of rising non-performing loans (NPLs), become more conservative in extending credit despite favorable policy rate conditions. This behavior undermines the theoretical expectations of policy rate adjustments on credit extension and necessitates a more nuanced approach to understanding the credit market.

Additionally, the regulatory environment plays a crucial role in shaping credit extension practices. Banks operate under a framework that requires them to maintain certain liquidity and capital adequacy ratios, which can influence their lending capacity. For instance, high minimum capital requirements can force banks to limit their exposure to risky loans, thereby reducing credit extension to sectors perceived as high risk, such as agriculture or SMEs (Uche & Emeka, 2018). The concept of credit extension is further enriched by the recent developments in financial technology (fintech), which have revolutionized traditional lending models. Fintech firms leverage big data analytics, alternative credit scoring models, and automated processes to assess borrowers' creditworthiness, thereby expanding access to credit for individuals and businesses that traditional banks might overlook (Beck, 2019). While fintech presents new opportunities for credit extension, it also introduces regulatory challenges, as existing frameworks are often ill-equipped to manage the risks associated with digital lending.

Despite these challenges, credit extension remains a cornerstone of economic development. By providing the necessary funding for investment and

consumption, it stimulates aggregate demand, fosters economic diversification, and enhances financial inclusion. In Nigeria, enhancing credit extension practices is particularly critical given the country's large informal economy, which, if better integrated into the formal credit market, could unlock significant economic potential (Adebayo & Ogunnubi, 2021).

Credit Extension in the Banking Sector

Credit extension in the banking sector is a critical process that fuels economic growth and development. In Nigeria, the role of commercial banks in extending credit to businesses and consumers is very important as it encompasses not just the provision of loans but also the creation of various credit facilities, which are essential for stimulating business activities, financing large projects, and enabling consumer spending (Olayemi & Adekunle, 2020). At its core, credit extension is influenced by a myriad of factors, among which the policy rate set by the Central Bank of Nigeria (CBN) is significant. However, the interplay between the policy rate and the actual lending practices of banks is complex. Theoretically, a lower policy rate should lead to reduced borrowing costs, thereby encouraging banks to lend more. However, in practice, the decision to extend credit involves considerations beyond just the prevailing policy rate (Chukwu, 2018). Banks, in their role as financial intermediaries, must balance the need to extend credit with the imperative of managing risks. This balancing act involves a careful assessment of factors such as the creditworthiness of borrowers, the economic climate, and the regulatory environment. In Nigeria, banks often face challenges such as high rates of non-performing loans and regulatory constraints, which can influence their lending behavior irrespective of the policy rate (Adeoye & Elegunde, 2021).

Moreover, the regulatory environment plays a crucial role in shaping credit extension practices. Regulations regarding capital requirements, liquidity ratios, and loan provisions can have a direct impact on banks' ability and willingness to lend. In Nigeria, regulatory measures have often been implemented to ensure financial stability, but they can also lead to tighter lending conditions, especially for certain sectors or high-risk borrowers (Lawal & Olowu, 2017). The relationship between interest rates and credit extension is another area of interest. While lower interest rates, influenced by a lower policy rate, can theoretically make borrowing more attractive, the responsiveness of banks to these changes is not always immediate or proportional. Banks must consider

their deposit base, the cost of funds, and their operational costs when setting lending rates. Therefore, the transmission of policy rate adjustments to actual lending rates can be delayed or diluted (Ibrahim & Aliyu, 2019). In summary, credit extension in the Nigerian banking sector is a multifaceted process influenced by a range of factors. While the policy rate is a key determinant, banks' lending decisions are also shaped by risk assessments, economic conditions, regulatory frameworks, and the level of financial inclusion. Understanding these dynamics is crucial for policymakers and stakeholders in the Nigerian financial system, as they seek to foster an environment conducive to sustainable credit growth and economic development. Policy rate adjustment ripple through various channels that influence the economy such as interest rate, Asset Price, Exchange Rate, Bank Lending, Expectations channels. (Adetiloye, 2023)

Policy Rate Effects on Credit Extension

The policy rate is a critical tool in the arsenal of a central bank, primarily used to influence economic activity by modulating the cost of credit. It directly influences the interest rates that banks charge on loans and pay on deposits, thereby affecting their willingness to lend and consumers' and businesses' propensity to borrow different types of credit, namely; consumer credit, mortgage lending, business loans, agriculture, manufacturing and industrial sectors and services sector.

THEORETICAL REVIEW

Bank Lending Channel Theory

The Bank Lending Channel Theory, rooted in the broader monetary transmission mechanism, examines how monetary policy affects credit extension through its impact on bank lending behaviour. It gained prominence in the late 20th century through the work of researchers like Bernanke and Blinder (1988). They argued that changes in policy rates influence banks' ability and willingness to lend due to shifts in their funding costs. This theory underscores the role of banks as intermediaries in the transmission of monetary policy and how their lending capacities can be influenced by central bank actions (Acha, 2018). Central to this theory is the notion that changes in the policy rate by the central bank, such as the Monetary Policy Rate (MPR) adjustments by the Central Bank of Nigeria (CBN), directly influence the amount of reserves banks

hold. When the central bank lowers the policy rate, it typically increases the liquidity in the banking system, making it cheaper for banks to obtain funds. This increased liquidity enhances banks' ability to offer more loans, thereby increasing credit availability in the economy (Mishkin, 2019).

In Nigeria, the effectiveness of the bank lending channel can be influenced by several factors. One significant factor is the health and stability of the banking sector. In scenarios where banks are dealing with issues like high levels of non-performing loans or regulatory constraints, their responsiveness to changes in the policy rate might be limited (Adeoye & Elegunde, 2021). Also, in Nigeria, the bank lending channel is a crucial mechanism through which monetary policy affects the real economy. However, its effectiveness can be influenced by factors such as the level of non-performing loans in the banking sector, the degree of competition among banks, and the regulatory environment (Uche & Emeka, 2018; Okoye, 2023). Another factor is the level of financial market development and integration. In more developed financial markets, the impact of the bank lending channel may be diluted as businesses and consumers have access to alternative sources of finance outside the traditional banking sector. However, in an economy like Nigeria's, where the banking sector plays a dominant role in financing, the bank lending channel's impact can be more pronounced (Olayemi & Adekunle, 2020).

The theory acknowledges the role of banks' balance sheet strength. Banks with stronger balance sheets are more capable of withstanding economic shocks and are in a better position to adjust their lending practices in response to policy rate changes. Conversely, banks with weaker balance sheets may be more risk-averse, particularly in times of economic uncertainty, which can affect their lending behavior irrespective of policy rate changes (Kim et al., 2023). The Bank Lending Channel Theory provides a crucial insight into how monetary policy is transmitted through the banking sector to the broader economy. It highlights the significance of banks' roles in the credit creation process and how their lending capacities can be influenced by central bank policies. Understanding this theory is vital for policymakers, particularly in developing economies like Nigeria, as it can inform more effective monetary policy decisions and strategies to enhance economic growth.

EMPIRICAL REVIEW

A recent study by Olayemi and Adekunle (2020) conducted a detailed analysis of the Nigerian banking sector, highlighting that while lower policy rates generally led to an increase in credit extension, the response was not uniform across different banks and sectors. Also Eze and Okonkwo (2019), who noted a significant lag in banks' response to policy rate changes, attributing this to internal risk management and liquidity constraints. Adeoye and Elegunde (2021)

examined the impact of regulatory frameworks on banks' lending behaviors in Nigeria. Their study indicated that regulatory changes often influenced lending practices more prominently than policy rate adjustments. Adebayo and Ogunnubi (2021) argued for a more detailed understanding of the monetary transmission mechanism, suggesting that the unique structural characteristics of the Nigerian economy played a critical role in mediating the impact of policy rate on credit extension. Williams and Johnson (2023) explored the role of bank balance sheets in the lending process, finding that banks with stronger balance sheets were more responsive to policy rate changes, while banks with weaker balance sheets were more cautious, often limiting credit extension despite favorable policy rate adjustments.

METHODOLOGY

This study adopted the ex post factor design The study used secondary data from First bank, Guaranty Trust Bank and Zenith Banks annual financial reports, Central bank bulletins and National Bureau of Statistics reports in Nigeria. The data were collected from the Annual Financial Report of the selected banks. Data were analyzed using pooled regression method with the aid of SPSS 25 software which includes both time series and cross-sectional data.

Model Specification

The model for this study focused on effect of policy rate on credit extension. The model specification is as follows:

$$BCR_{it} = \alpha_{oit} + a_1 MPR_{it} + a_2 GDP_{it} + a_3 EXR_{it} + \mu_{it} \quad 1$$

$$NPL_{it} = ß_{oit} + ß_1 MPR_{it} + ß_2 GDP_{it} + ß_3 EXR_{it} + ₵_{it} \quad 2$$

Where:

BCR_{it} = Bank credit of bank i at time t

NPL_{it} = Non-performing loan of bank i at time t

MPR_{it} = Monetary policy of bank i at time t

GDP_{it} = Gross Domestic product of bank i at time t

EXR_{it} = Exchange rate of bank i at time t

The Pooled Regression Method

When working with panel data, the simplest and most fundamental approach is the pooled regression method. By combining all cross-sections and assuming that cross-sectional heterogeneity is negligible, this technique represents panel data as time series. The following is the model for this model:

$$y_{it} = \alpha + \beta x_{it} + e_{it}$$

The dependent variable is denoted as yit, the independent variable as xit, the model parameters as α and β, which are presumed to remain constant throughout time, and the error term as e_{it}. The common slope parameter is denoted by β, whereas α stands for the common mean for all cross- sectional

units. For the primary variables, the subscripts i and t denote their respective cross- sectional and time series dimensions. Since all cross-sectional units are identical according to model, the main regression results would be unaffected by any differences that were not found.

The Fixed Effects Method

A distinct assumption is made by the fixed effects method. It acknowledges that panel data are not always comparable across time points and contends that unobserved company-specific characteristics have an effect on the dependent variable and are associated with the primary model explanatory variables. This method's regression model is provided below:

$y_{it} = \alpha + \phi_i + \beta x_{it} + e_{it}$

In order to account for the unobserved effects, the model incorporates the fixed effects parameter ϕi, in contrast to the pooling model above. This metric doesn't have a time subscript, hence it seems to fluctuate solely cross-sectionally to represent variances between sections or factors peculiar to the company. The correlated and significant ϕi is assumed by the fixed effects model withx_{it}. Thus, ≠ oand (ϕ_i, x_{it}) ≠ o.

The Random Effects Method

A separate premise underpins the random effects approach as well. Even while it acknowledges the panel data's cross-sectional differences, it contends that these unobserved company-specific characteristics are uncorrelated with the key explanatory components, much like the fixed effects method. Because of this, the model accounts for them in the following way, under the error term:

$y_{it} = \alpha + \beta x_{it} + (\phi_i + e_{it})$

Compared with the fixed effects method, the random effects parameter ϕ_i, which represents the unobserved cross-sectional differences, is treated as a deviation from the common mean, hence, it forms part of the error term. If ϵ_{it} = $\phi_i + e_{it}$, then the random effects model can be rewritten as follows:

$y_{it} = \alpha + \beta x_{it} + \epsilon_{it}$

Model Selection Procedure

Pooled Model vs Fixed Effects Model (Likelihood Ratio Test)

The fixed effects method argues that the unobserved effects are significant determinants of firm financial performance, hence, ϕ_i, γ_i and $\theta_i$in models are all significantly different from zero. On the other hand, the pooled regression

method argues that these unobserved factors are not statistically significant, hence, ϕ_i, γ_i and θ_i all are statistically zero. The Likelihood Ratio test is a formal test used to select between the two methods. The test statistic is given by:

$LR = -2(L_{Pooled} - L_{FE}) \sim \chi^2(m)$

Where LR = likelihood ratio statistic, L_{Pooled} = log-likelihood function of the pooled regression model, L_{FE} = is the loglikelihood function of the fixed effects model. The test asymptotically follows a chi-square distribution and the null hypothesis to be tested is consistent with the pooled method assumption. If the test is significant, then, the pooled regression assumption is rejected, and the fixed effects assumption is validated

Random Effects Model vs Fixed Effects Model (Hausman Test)

While the random effects technique contends that there are no correlations between ϕi, γi, and θi in models, the fixed effects method maintains that there are. To choose between the two approaches, one can utilize the formal Hausman test.

RESULTS AND DISCUSSION

Table 1: Data collected for the estimation of the models from 2019 to 2023 for 3 selected banks.

Bank	YEAR	code	BCR	NPL	MPR	INFL	GDP	EXCR
First Bank	2019	1	16749	9.9	13.51	13.56	145639.13	306.4226894
	2020	1	11301	7.7	12.52	14.74	154252.3189	358.3107973
	2021	1	16526	6.1	11.53	19.37	176075.5019	401.9847027
	2022	1	18370	5.4	16.54	19.46	202365.0268	425.4140298
	2023	1	16749	4.5	18.73	22.365	217583.208	473.1950364
GTB	2019	1	1500572046	6.5	13.5	13.56	145639.1394	306.4226894
	2020	1	1662731699		12.5	14.74	154252.3189	358.3107973
	2021	1	1802587381	6	11.5	19.37	176075.5019	401.9847027
	2022	1	1885798639	5.2	16.5	19.46	202365.0268	425.4140298
	2023	2	2480183368	4.2	18.74	22.365	217583.208	473.1950364
Zenith	2019	2	2305565	4.98	13.511	13.56	145639.1394	306.4226894
	2020	2	2779027	4.3	12.511	14.74	154252.3189	358.3107973
	2021	2	3355728	4.2	11.511	19.37	176075.5019	401.9847027
	2022	2	3499021	4.3	16.511	19.46	202365.0268	425.4140298
	2023	2	4024102.5	4.4	18.75	22.365	217583.208	473.1950364

Source: Annual Financial Report of the 3 selected Banks

Table 2: Descriptive statistics

	BCR	*NPL*	*MPR*	*GDP*	*EXCR*
Mean	623,194,418.10	5.55	14.56	179,183.04	393.07
Standard Dev	931,502,011.96	1.63	2.77	28,416.68	59.03
Kurtosis	(0.91)	2.98	(1.40)	(1.69)	(1.05)
Skewness	0.96	1.69	0.50	0.17	(0.17)
Minimum	11,301.00	4.20	11.50	145,639.13	306.42
Maximum	2,480,183,368.00	9.90	18.75	217,583.21	473.20
Count	15	14	15	15	15

Source: SPSS 25.0

Table 2 shows the summary statistics for the variables used in the study. It shows the descriptive statistics for the dependent and independent variables and revealed that the mean values of bank credit (BRC) is 623,194,418.10, non-performing loans (NPL) is 5.55, Monetary Policy Rate (MPR) is 14.56, Gross Domestic Product (GDP) is 179,183.04 and Exchange rate is 393.07. The Standard deviations are 931,502,011.96, 1.63, 2.77, 3.38, 28,416.68 and 59.03. The implication of the result is that most of the result have low standard deviation, indicating that the values do not exhibit volatile characteristics.

Table 3: Correlation Analysis

	BCR	*NPL*	*MPR*	*GDP*	*EXCR*
BCR	1				
NPL	-0.091	1			
MPR	0.097	-0.401	1		
INFL	0.112	-0.591	0.646		
GDP	0.112	-0.588	0.821	1	
EXCR	0.115	-0.612	0.698	0.967	1

Source: SPSS 25.0

Table 3 shows the correlations matrix between the dependent and independent variables. The correlation matrix shows the degree of relationship that exists between the variables. The result revealed that MPR, GDP and EXCR correlated to BCR and NPL positively and negatively respectively. The correlation coefficient for MPR on BCR and NPL are 9.7% and -40.1%. The correlation between BCR and NPL are 11.2% and -59.1%. The correlation between GDP and BCR and NPL are 11.2% and -58.8% and for the correlation between EXCR and BCR and NPL are 11.5% and -61.2%.

Model one Estimation

$BCR_{it} = \alpha_{oit} + a_1 MPR_{it} + a_2 GDP_{it} + a_3 EXR_{it} + \mu_{it}$

Table 4: Hausman

Correlated Random Effects - Hausman Test
Equation: Untitled
Test period random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Period random	4.490821	1	0.0341

Source: SPSS 25.0

The result in table 4 shows the result of the Hausman test. The null hypothesis; random effects is inconsistent. While the alternate hypothesis stated that the fixed effect is consistent. If the Chi-square statistic P-value is < 0.05, reject the Hausman null and do not use the random effects. If the Chi-square statistic P-value is > 0.05, do not reject the Hausman null hypothesis and use the random effects. It revealed that the P-value of 0.0341 is < 0.05. This means that the fixed effects model is a consistent method and was used as against the random effects model, which is not consistent for this research.

Table 5: Summary of Fixed effects results

Dependent Variable: BCR
Method: Panel Least Squares
Date: 06/11/24 Time: 13:25
Sample: 2019 2023
Periods included: 5
Cross-sections included: 3
Total panel (balanced) observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPR	46317976	60965160	0.759745	0.4692
GDP	-10275.09	16730.92	-0.614138	0.5562
INFL	43498343	96896029	0.448918	0.6654
EXCR	2645668.	5423940.	0.487776	0.6388
C	-28459732	4.98E+08	-0.057097	0.9559

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.969549	Mean dependent var	6.23E+08
Adjusted R-squared	0.946712	S.D. dependent var	9.32E+08
S.E. of regression	2.15E+08	Akaike info criterion	41.51518
Sum squared resid	3.70E+17	Schwarz criterion	41.84561
Log likelihood	-304.3639	Hannan-Quinn criter.	41.51166
F-statistic	42.45354	Durbin-Watson stat	0.840920
Prob(F-statistic)	0.000012		

Source: SPSS 25.0

The result revealed that the R^2 is 96.9%. This means that a change in the dependent variable bank credit (BCR) is caused by change in the independent variables MPR, GDP and EXCR. The result of the fixed effect revealed that the effect of policy rate on bank credit was found to be positive. This means that the continuous increase in the policy rate will bring about a positive increase in bank credit, but this effect does not bring about a significant impact on bank credit. Consequently, the effect of exchange rate and inflation rate were found to be positively impacting on bank credit in Nigeria. But they do not show any significant effect. **Model Two Estimation**

$NPL_{it} = ß_{oit} + ß_1MPR_{it} + ß_2GDP_{it} + ß_3EXR_{it} + ₵_{it}$

Table 6: Summary of Random effects results

Dependent Variable: NPL
Method: Panel EGLS (Period random effects)
Date: 06/11/24 Time: 11:26
Sample: 2019 2023
Periods included: 5
Cross-sections included: 3

Total panel (unbalanced) observations: 14
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
MPR	0.079404	0.456560	0.173919	0.8658
GDP	-1.42E-05	0.000127	-0.112321	0.9130
INFL	0.165486	0.771124	0.214604	0.8349
EXCR	-0.021634	0.045995	-0.470352	0.6493
C	12.51176	3.758030	3.329339	0.0088

Effects Specification

	S.D.	Rho
Period random	1.07E-06	0.0000
Idiosyncratic random	1.610378	1.0000

Weighted Statistics

R-squared	0.379305	Mean dependent var	5.548571
Adjusted R-squared	0.103440	S.D. dependent var	1.631832
S.E. of regression	1.545130	Sum squared resid	21.48684
F-statistic	1.374967	Durbin-Watson stat	0.228665
Prob(F-statistic)	0.316534		

Unweighted Statistics

R-squared	0.379305	Mean dependent var	5.548571
Sum squared resid	21.48684	Durbin-Watson stat	0.228665

Source: SPSS 25.0

The result revealed that the R^2 is 37.9%. This means that a change in the dependent variable bank credit (BCR) is caused by change in the independent variables MPR, GDP and EXCR. The result of the random effect revealed that the effect of policy rate on non-performing loan (NPL) was found to be positive. This means that the continuous increase in the policy rate will bring about a positive increase in non-performing loan, but this effect does not bring about a significant impact on non-performing loan.

FINDINGS

The results of this study clearly shows that Policy rate has no significant effect on bank credit.

The first result showed that hat the coefficient of the Policy rate was found to be positive and insignificant to bank credit that is p-value of policy rate is 0.4692 > 0.05 showing that that Policy rate has no significant effect on bank credit while the coefficient of the policy rate was found to be positive and significant to NPL with the p-value of the policy rate 0.8658 > 0.05 showing that Policy rate has significant effect on non-performing loans in commercial banks in Nigeria.

DISCUSSION OF FINDINGS

The study used descriptive statistics and correlation coefficient, pooled regression as analytical method with the aid of SPSS 25. Results showed that Policy rate has no significant effect on bank credit which is derived from the correlation coefficient of 0.4692 > 0.05. The effect of exchange rate and inflation rate were found to be positively impacting on bank credit in Nigeria. But they do not show any significant effect. This means that the continuous increase in the policy rate will bring about a positive increase in bank credit, but this effect does not bring about a significant impact on bank credit. However, economic growth effect on bank credit was found to be negative and insignificant. This means that the growth rate of economic in Nigeria has not resulted to a stable efficient bank credit. This result does agree with the findings of Olayemi and Adekunle (2020) who conducted a detailed analysis of the Nigerian banking sector, highlighting that while lower policy rates generally led to an increase in credit extension, the response was not uniform across different banks and sectors But it was found to inconsistent with study of Eze and Okonkwo (2019), who noted a significant lag in banks' response to policy rate changes, attributing this to internal risk management and liquidity constraints. Thus the first null

hypothesis is accepeted. This means that a change in the dependent variable bank credit (BCR) is not caused by change in the independent variables MPR, GDP and EXCR.

The second result of the study showed that Policy rate has significant effect on non-performing loans in commercial banks in Nigeria. This is derived from correlation coefficient of 0.8658 > 0.05 found to be positive and significant to NPL. Hence the second null hypothesis was rejected. The result of the random effect revealed that the effect of policy rate on non-performing loan (NPL) was found to be positive. This means that the continuous increase in the policy rate will bring about an increase in non-performing loan.

Nigerian banking sector's approach to credit extension is shaped by macroeconomic conditions. In economic uncertainty or inflationary pressures, banks adopt a more cautious stance towards lending. This caution is often a response to risks associated with loan defaults and the overall health of the economy. Conversely, in a stable or growing economy, banks may be more inclined to extend credit, driven by the prospects of higher returns and lower risk of defaults (Eze & Okonkwo, 2019). This result is not consistent with the study of Chukwu (2018) who studied a longitudinal analysis, showing that over time, the responsiveness of Nigerian banks to policy rate changes has been inconsistent, influenced by macroeconomic stability and bank-specific factors.

CONCLUSION

The study concludes that changes in the policy rate, inflation, GDP, and exchange rate do not significantly affect bank credit but does affect NPLs in Nigeria. This suggests that other factors might be influencing bank lending and the performance of loans more significantly other than the monetary policy rate alone. The results highlight the complexity of the relationship between monetary policy and bank performance, suggesting that a multifaceted approach is necessary when formulating policies aimed at enhancing credit extension and managing non-performing loans.

RECOMMENDATIONS

Based on the results and conclusions findings of the study, the following recommendations were made:

1. The Central Bank of Nigeria should consider other factors that affect credit extension in addition to the policy rate. These factors may include the level of economic activity, the availability of credit, and the risk appetite of banks.
2. The Central Bank of Nigeria should continue to monitor the banking sector and take steps to ensure that banks are lending responsibly. This may include setting limits on the amount of credit that banks can extend to certain sectors of the economy.

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