“Monetary policy and stability of the Nigerian banking sector in the post-COVID-19 era”

AUTHORS	Taofeek Sola Afolabi Olumide Dotun Aremu Akinyede Oyinlola Morounfoluwa Oluwayinka Samuel Olabode

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Taofeek Sola Afolabi (Nigeria), **Olumide Dotun Aremu** (Nigeria),
Akinyede Oyinlola Morounfoluwa (Nigeria), **Oluwayinka Samuel Olabode** (Nigeria),

MONETARY POLICY AND STABILITY OF THE NIGERIAN BANKING SECTOR IN THE POST-COVID-19 ERA

Abstract

The post-COVID-19 era in Nigeria has witnessed several reforms and policies from the apex bank aimed at enhancing economic recovery. However, concerns have been raised about how these policies have impacted the stability of the banking sector. This study investigated the effect of monetary policies on banking sector stability in Nigeria in the post-COVID-19 era. The policy tools included monetary rate (CBN benchmark rate), nominal exchange rate, interest rates, and cash reserve ratio. Banks' stability was proxied by an aggregate z-score of four broad banking soundness indicators (capital adequacy ratio, loan-to-deposit ratio, liquidity ratio, and profitability ratio). Monthly data from January 2021 to February 2024 on these variables were analyzed through the Autoregressive Distributed Lag approach to co-integration technique. Results revealed a significant one-period lagged error correction term (t-stat = –5.76, prob = 0.00) with a 45.2% adjustment speed from short-term to long-term. Further results showed that monetary rate (t-stat = 0.83; prob = 0.016) and nominal exchange rate (t-stat = 4.75; prob = 0.017) both directly and significantly affected the bank soundness index. However, interest rate (t-stat = –3.83; prob = 0.838) and cash reserve ratio (t-stat = –0.61; prob = 0.55) exhibited inverse and non-significant effects on the bank soundness index. The study concluded that monetary rate and nominal exchange rate are key determinants of banking sector stability in Nigeria since the post-COVID-19 era. Therefore, Nigeria's apex bank needs to apply a more cautious approach to fixing monetary policy rates while focusing on boosting its foreign reserves to strengthen the local naira.

Keywords monetary policy rate, nominal exchange rate, interest rate, cash reserve ratio, bank soundness index

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Taofeek Sola Afolabi, Ph.D., Associate Professor, Faculty of Management Sciences, Department of Finance, Redeemer's University, Nigeria. (Correspondence author)

Olumide Dotun Aremu, MSc, Postgraduate Student, Faculty of Management Sciences, Department of Finance, Redeemer's University, Nigeria.

Akinyede Oyinlola Morounfoluwa, Ph.D., Associate Professor, Faculty of Management Sciences, Department of Finance, Redeemer's University, Nigeria.

Oluwayinka Samuel Olabode, MSc, Lecturer I, Department of Economics, Redeemer's University, Nigeria.

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INTRODUCTION

Banks play crucial roles in a nation's financial sector, and their investments are a catalyst for reducing poverty and fostering broadly based, sustainable economic growth. This is because investment creates jobs and entrepreneurship opportunities, which raise incomes for both the rich and the poor. Banks also serve as financial intermediaries between lenders and borrowers by collecting savings and making loans. This drives international trade, balance of payments, and investment, thus making the banking industry essential to an economy's monetary policy (Nyang, 2012; Ekpung et al., 2015).

There are twenty-four (24) commercial banks in the Nigerian banking sector, and they play key roles in the economy (CBN, 2024). The sector has more than 100 thousand employees who facilitate various banking operations and approximately 133.5 million bank accounts owned by citizens and foreigners (NIBSS, 2023). These suggest that any catastrophe in the sector will be counterproductive to the advancement of the

nation's economy. The Central Bank of Nigeria (CBN) is saddled with the responsibility of protecting the country's financial system through reforms and policies. However, there have been concerns about how these policies have enhanced stability in the sector, particularly since the COVID-19 pandemic (Didigu et al., 2022).

When the pandemic broke out in 2020, the Nigerian government initiated policies in an effort to curtail its spread and stabilize the economy. Banking operations were altered, and the nation's financial industry was under threat as many banks were only able to offer skeletal services (Ayodele et al., 2021). The series of economic activities in the post-COVID-19 era eventually culminated in the nation's economy entering a recession (CBN, 2022). Since then, the CBN has implemented several banking reforms at different times in an attempt to steer the economy out of this precarious state (Afolabi et al., 2023). These include an upward review of the Monetary rate (MPR), the liberalization of the naira exchange rate, the cash reserve policy (money supply), and other interest rate control policies.

Despite efforts from the CBN, the country has witnessed an unprecedented soar in the exchange rates, which went as high as 1US dollar to 1,500 naira in the parallel market, as of early 2024 (CBN, 2024). Furthermore, the MPR rose to about 18.75% by the end of 2023, with headline inflation rising to a double-digit and approximately 30%, since the post-COVID-19 era. Similarly, banks still struggle to maintain the cash reserve requirement of 32.5% from the CBN, and the sector has witnessed a takeover of a few banks in recent times (CBN, 2024). The cashless policy in early 2023 also came with its mixed experiences for both the citizens and the banking sector. The economy is yet to fully recover from its negative impacts, as cash scarcity still looms in the country.

1. LITERATURE REVIEW AND HYPOTHESES

Monetary policies are instruments to prevent inflation in order to ensure price stability, exchange rate stability, and a sustainable level of economic growth and development through an equilibrium balance of payments position (CBN, 2009). A good example is the monetary rate, and Ayodele (2014) defined it as a key tool for economic stabilization, commonly used by the apex bank to monitor the flow of credit and money within an economy. Another monetary policy tool is the nominal exchange rate. The US dollar represents a basis for measuring the strength of the Nigerian naira, and the exchange rate could therefore be defined in this context as the amount of naira that exchanges for one dollar. The treasury bill rate on government bonds is also a vital interest rate policy tool by the central bank, for mopping up excess money in an economy (Ngugi & Kabubo, 1998). Cash reserve ratio is a very potent monetary tool in the hands of the apex bank for controlling the amount of cash in circulation in any economy. It is the amount of cash a bank is required to keep with the central bank per period and is usually a function of the cash reserve requirement in the sector.

There are several indicators of bank soundness index in the literature; however, the focus of this study is on capital adequacy, profitability, and liquidity ratios. While the capital adequacy ratio measures the availability of funds or capital to a bank, the liquidity ratio reveals its strength in meeting up with debts and other financial commitments. Profitability of banks is a measure of their financial performance, and studies have commonly used returns on assets (ROA) or returns on shareholders' equity (ROE) (Chen et al., 1986).

This study is founded on the Benign neglect and the leaning against the wind theories, as postulated by Bernanke and Blender (1992) and Cecchetti et al. (2002), respectively. The Benign neglect theory argues that monetary policy ought to be targeted toward ensuring price stability, which will in turn result in stability of the financial sector. This theory suggests a reactive approach to any crisis in the banking sector. The hypothesis suggests the implementation of interest rate policies to tackle the impact of a financial crisis after it has occurred. However, the leaning against the wind theory holds contrary, suggesting a proactive approach in the implementation of the policies.

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In many studies outside Nigeria, scholars have established a link between monetary policy tools and bank stability. Zulverdi et al. (2007) studied Indonesian bank portfolio behavior that was based on macroeconomic theory. Their results proved an inverse relationship between policy rate and loan volume. Using the VAR methodology, Kassim et al. (2009) found that Islamic banks' balance sheet items were comparatively more susceptible to changes in monetary policy than those of conventional banks. This provided more evidence that the functioning of Islamic banks can be impacted by monetary policy.

The Structural Vector Autoregressive (SVAR) approach has also been used to investigate the influence of the central bank's policies on financial stability. Cocris and Nucu (2013), as reported by Didigu et al. (2022), used the SVAR technique on monthly data from 2003 to 2012 to study the effect of monetary policy on financial stability in selected European countries. Their findings demonstrated that, although interest rates did not improve financial stability, they did have a short-term impact on it. Ouhibi and Hammami (2015) also used the SVAR model to examine the same study variables among selected Southern Mediterranean countries. The results showed that financial stability was impacted by monetary policy strategy through short-term interest rates for an elastic exchange rate regime, as opposed to an inelastic one.

Tabak et al. (2013) used a fixed effect panel method to examine how monetary policy contributes to Brazil's financial stability, with the aid of monthly data from 2003 to 2009. The results revealed a favorable correlation between Brazil's financial stability and monetary policy. In Jordan, Khataybeh and Al-Tarawneh (2016), as reported by Didigu et al. (2022), assessed the link between monetary policy and banks' stability, utilizing monthly data and the VAR technique (Didigu et al., 2022). The findings indicated that modifications to domestic lending and surplus reserves have a favorable impact on financial stability. Using the generalized method of moments (GMM) technique, Ayomi et al. (2021), as reported by Didigu et al. (2022), studied the effects of monetary policy and bank rivalry on banks' default. This outcome in Indonesia showed that while credit interest rates negatively influenced the risk of banking stability, monetary policy through the benchmark rate had a favorable impact.

Numerous studies on the variables under study have also been conducted in Nigeria. For example, Atoi (2018) examined the causes of loan defaults and their impact on the stability of banks in Nigeria using quarterly data between 2014 and 2017. Findings demonstrated that non-performing loan rates were influenced by lending rates, exchange rates, and liquidity ratios, and that shocks to non-performing loan rates had an inverse effect on banking stability. The study, however, failed to look at the role of other monetary policies on bank stability. "Hamilton et al. (2020) conducted a study on the impact of monetary policy on banking system distress in Nigeria from 1989 to 2018, using the Error Correction Model (ECM) technique" (Didigu et al., 2022, p. 7). The findings demonstrated that the monetary policy rate had a long-term negative impact on banking distress and a short-term favorable impact, while exchange rates had a beneficial impact on banks. In a similar study, Chukwudi and Henry (2020) used the ECM technique on quarterly data from 2008Q1 to 2016Q2 to investigate the impacts of monetary policy on stability among Nigerian banks. The outcome demonstrated how open market operations and exchange rates improved financial stability.

In more recent studies in Nigeria, Ajisafe et al. (2021), as reported by Didigu et al. (2022), worked on data from 1986 to 2017 in the banking sector. The outcome, through the Vector Error Correction method, demonstrated that exchange rates have a major impact on Nigeria's financial stability. Didigu et al. (2022) further expanded the scope of this investigation to cover quarterly data between 2007 and 2021. Their findings established the long-run impact of monetary policy indicators (monetary rate, liquidity rate & cash reserve ratio) on banking sector stability.

While the scopes of these previous studies in Nigeria are before or just a year into the COVID-19 pandemic, the concern in the current study is to examine if the findings still hold for the banking sector, particularly in the post-COVID-19 era. In addition, there have been more recent monetary policies in Nigeria, such as the cashless policy in 2023, which created a lot of tension in the economy, and banks were also at the receiving end. The nominal exchange rate has also been on an upward trajectory since the current government's

modifications to the foreign exchange market operations in 2023. Therefore, this study sought to analyze the effect of these recent policy trends on the stability of the Nigerian banking sector. To achieve this objective, the following hypotheses were stated:

H_1: *Monetary rate (CBN benchmark rate) does not significantly affect the stability of the Nigerian banking sector in the post-COVID-19 era.*

H_2: *Nominal exchange rate does not significantly affect the stability of the Nigerian banking sector in the post-COVID-19 era.*

H_3: *Interest rate does not significantly affect the stability of the Nigerian banking sector in the post-COVID-19 era.*

H_4: *Cash reserve policy does not significantly affect the stability of the Nigerian banking sector in the post-COVID-19 era.*

2. METHOD

This study adopted the *ex post facto* research design, involving monthly data on the study variables from CBN and the National Bureau of Statistics. The post-COVID-19 period of January 2021 to February 2024 provided a total of 38 observations, which served as the time series data. The econometric model representing the relationship between the core variables was adapted from Didigu et al. (2022) and specified as;

$$BSI_t = \alpha_0 + \alpha_1 \left(MPR\right)_t + \alpha_2 \left(NER\right)_t + \alpha_3 \left(ITR\right)_t + \alpha_4 \left(CRR\right)_t + \mu_t \left(i\right), \quad (1)$$

where *BSI* = Bank Stability Index (measured as the aggregate z-score of four broad banking soundness indicators: capital adequacy ratio, loan to deposit ratio, liquidity ratio, and return on assets). *MPR* = Monetary Rate (measured as rate set by the central bank for transaction in the money market); *NER* = Nominal Exchange Rate (measured as number of unit of the naira that can exchange for one US dollar); *ITR* = Interest Rate (measured as the CBN treasury bill rate); *CRR* = Cash Reserve Ratio (measured as the ratio of total deposits that must be kept by banks with the apex bank); α_0 = Constant or the intercept; $\alpha_{i\,(i=1,2,3,4)}$ = Parameters/coefficient of explanatory variables. μ_t = error term.

The descriptive analysis was done using basic statistical tools, including the Jarque-Bera test. The inferential analysis involved the Autoregressive Distributed Lag (ARDL) approach to co-integration, unit root test, and the estimation of the Error Correction Model (ECM). Furthermore, a post-estimation diagnostic test was conducted to test for serial correlation (Breusch-Godfrey test) and heteroskedasticity (Breusch-Pagan-Godfrey test). The ARDL, together with ECM techniques, was used in this study and presented in equation (2).

$$\begin{aligned}\Delta BSI_t &= \phi + \pi_1 \left(BSI\right)_{t-1} + \pi_2 \left(MPR\right)_{t-1} \\ &+ \pi_3 \left(NER\right)_{t-1} + \pi_4 \left(IPR\right)_{t-1} + \pi_5 \left(CRR\right)_{t-1} \\ &+ \sum_{i=1}^{p} \alpha \Delta BSI_{t-i} + \sum_{i=0}^{q1} \beta \Delta MPR_{t-i} + + \sum_{i=0}^{q2} \lambda \Delta NER_{t-i} \\ &+ \sum_{i=0}^{q3} \delta \Delta IPR_{t-i} + \sum_{i=0}^{q4} € \Delta CRR_{t-i} + \mu_t .\end{aligned} \quad (2)$$

3. RESULTS

The statistical tools in Table 1 show important insights into the key economic variables, including the Bank Soundness Index (BSI), Cash Reserve Ratio (CRR), Interest Rate Policy (ITR), Monetary Rate (MPR), and Nominal Exchange Rate (NER). These insights were further highlighted with the trend lines in Figures 1 to 5.

Table 1. Descriptive statistics

Source: Outputs from E-views 10 (2024).

Statistics	BSI	CRR	1TR	MPR	NER
Mean	0.451619	29.05405	15.40676	15.09459	510.8632
Median	0.689660	27.50000	14.53000	14.00000	415.5200
Maximum	1.797620	32.50000	21.15000	24.75000	1191.940
Minimum	–1.006960	0.500000	11.08000	11.50000	380.5500
Std. Dev.	0.889031	5.438780	2.904149	3.700296	187.4771
Skewness	–0.196791	–3.966751	0.451792	0.603465	1.917346
Kurtosis	1.444467	21.77233	2.075723	2.471407	6.125877
Jarque-Bera	3.969157	640.3171	2.575744	2.676472	37.73378
Probability	0.137439	0.00000	0.275857	0.262308	0.000000

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Source: Outputs from E-views 10 (2024).

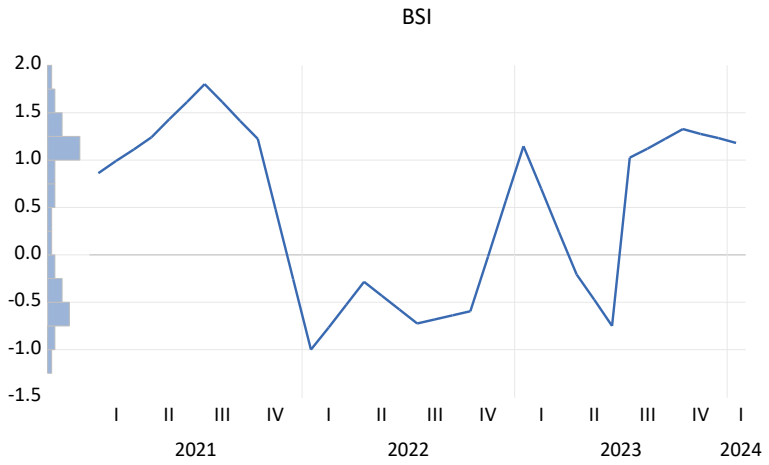

Figure 1. Line plot for Bank Soundness Index

In Table 1, the Bank Soundness Index, with a mean of 0.45 and a deviation of 0.89, indicates a relatively stable banking sector with moderate variability across observations. This suggests that while the overall soundness is around the average, there are some fluctuations in the index across different time periods or entities. Specifically, from the line plot in Figure 1, it can be observed that bank soundness indices in the year 2022 were all below 0. This was the period of uncertainties surrounding the Emefiele-led CBN, where banks appeared to be affected by policies emanating from the apex

Source: Outputs from E-views 10 (2024).

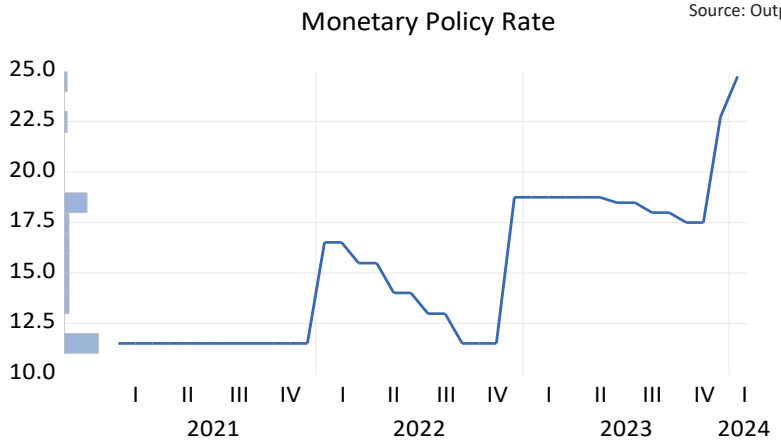

Figure 2. Line plot for Monetary rate

Source: Outputs from E-views 10 (2024).

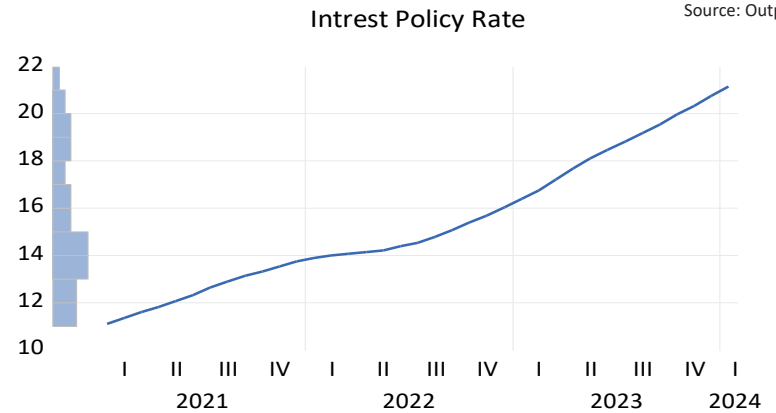

Figure 3. Line plot for Interest Rate Policy

bank. Additionally, the statistics for the skewness and kurtosis indicate a normal spread for the distribution of the BSI time series data. This is also confirmed by the Jarque-Bera statistics.

In terms of the monetary policy tools, both the interest rate and monetary rate display moderate variability, as seen in Table 1. The mean interest policy rate of 15.41 reflects the average rate at which the CBN lends to the banks, with a standard deviation of 2.90, suggesting some variation in this rate over the post-COVID-19 era. Similarly, the MPR of 15.09 represents the rate at which CBN lends short-term funds to banks, and a standard deviation of 3.70, indicating moderate fluctuations. These fluctuations in interest rates highlight the dynamic nature of monetary policy and the need for flexibility in response to changing economic conditions. In addition, the line plots in Figures 2 and 3 show a steady increase for both the MPR and ITR during the post-COVID-19 era. The MPR rose from the lowest value of 11.5 to its highest value of 24.75. This movement can be associated with the actions of the CBN through its MPR committees to cushion the post-COVID-19 economic effects on the country. A similar pattern can be observed for the ITR, having a steady growth from 11.08% to 21.2% within the period. The results of the skewness, kurtosis, and Jarque-Bera further reveal that the data representing these variables are normally distributed, thus making them fit for the analysis.

Results from Table 1 reveal that the cash reserve ratio, on the other hand, demonstrates relatively low variability, with a mean of 29.05 and a stan-

Source: Outputs from E-views 10 (2024).

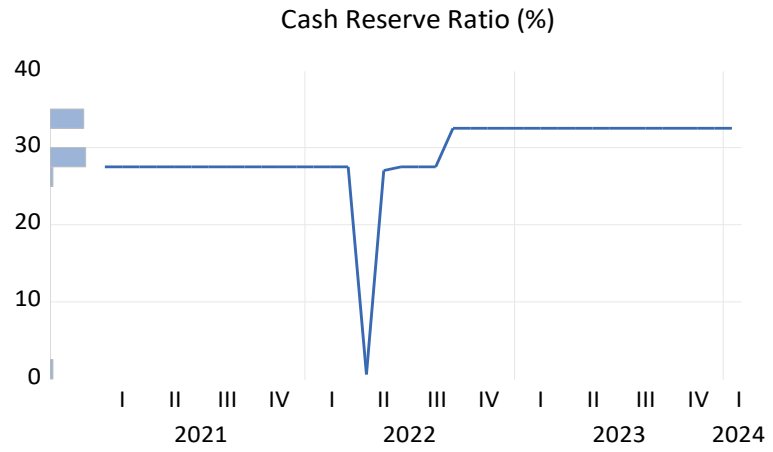

Figure 4. Line plot for Cash Reserve Ratio

Source: Outputs from E-views 10 (2024).

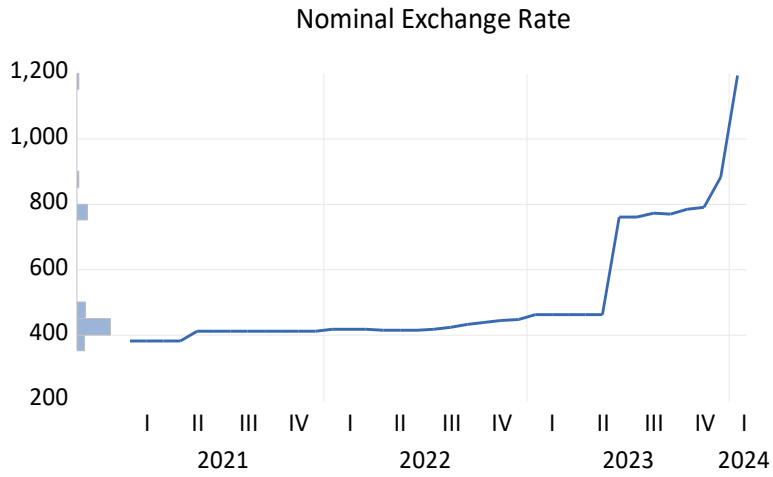

Figure 5. Line plot for Nominal Exchange Rate

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dard deviation of 5.44. This suggests that, on average, the proportion of deposits that banks must hold as reserves remains relatively stable across different periods or entities, with less fluctuation compared to interest rates. However, the nominal exchange rate exhibits significant variability, with a mean of 510.86 and a standard deviation of 187.48. This highlights the volatile nature of exchange rates and the potential impact on international trade and investment flows. Furthermore, the line plot in Figure 4 reveals a steady CRR for banks in Nigeria during the post-COVID-19 era, although a sharp decline was experienced in the second quarter of 2022. The graph of the NER in Figure 5 also shows a fairly stable rate until the second quarter of 2023. This can be attributed to the new economic policies by the current Tinubu-led government, since it assumed power in May 2023. The exchange rate of a naira to a dollar has since witnessed an unprecedented rise, despite all efforts by the CBN to curtail it. The economy of the country is still battling hard to withstand the shocks arising from the behavior of the NER.

Table 2 shows the ADF and PP unit root test results for both the level and the first difference stage.

Results from Table 2 justify the initial curiosity and confirm that the variables attained stationarity at the level and first difference. Hence, the null hypothesis, which states that the variable contains a unit root, is rejected at the 5% significance level.

Furthermore, all the variables in the analysis showed stationarity at the level and first difference stage, except for the interest rate. At the level stage, only the cash reserve ratio was found to be stationary, while the bank soundness index, monetary rate, and nominal exchange rate were found to be stationary after the first difference. Due to these mixed combinations of stationarity at different levels, it becomes theoretically correct to use the ARDL Bound cointegration test.

Table 3 indicates that the F-statistic for the ARDL Bound test is 17.15, which is above the lower and upper bound critical values at 10%, 5% and 1%,

Table 2. Unit root test

Source: Outputs from E-views 10 (2024).

Variables	Level Stage					
	Constant		Constant and Trend		No Constant and No Trend	
	ADF	PP	ADF	PP	ADF	PP
BSI	–2.1301	–1.4339	–2.0131	–1.3184	–1.9064	–1.2428
	[0.2347]	[0.5549]	[0.5741]	[0.8671]	[0.0550]	[0.1926]
CRR	–4.1957	–4.2827	–4.9632	–4.9744	–0.1537	–0.0566
	[0.0022]*	[0.0018]*	[0.0015]*	[0.0015]*	[0.6235]	[0.6572]
ITR	1.2927	2.5640	–1.1628	0.0035	1.8310	10.2592
	[0.9981]	[1.0000]	[0.9082]	[0.9948]	[0.9819]	[1.0000]
MPR	–0.4000	–0.4290	–2.2300	–2.4880	1.1154	1.2483
	[0.8986]	[0.8934]	[0.4595]	[0.3318]	[0.9282]	[0.9431]
NER	2.2195	6.6645	4.0326	3.0181	2.5518	2.5959
	[0.9999]	[1.0000]	[1.0000]	[1.0000]	[0.9966]	[0.9970]
Variables	**First Difference Stage**					
	Constant		**Constant and Trend**		**No Constant and No Trend**	
BSI	–4.2268	–4.1342	–4.2337	–4.0132	–4.2907	–4.2029
	[0.0021]*	[0.0027]*	[0.0102]*	[0.0174]*	[0.0001]*	[0.0001]*
CRR	–	–	–	–	–9.8647	–17.7155
					[0.0000]*	[0.0000]*
ITR	–1.2996	–1.2197	–2.0610	–2.0216	–0.0796	–0.0796
	[0.6188]	[0.6549]	[0.5487]	[0.5696]	[0.6492]	[0.6492]
MPR	–5.3593	–5.3246	–5.4235	–5.3978	–5.2155	–5.1942
	[0.0001]*	[0.0001]*	[0.0005]*	[0.0005]*	[0.0000]*	[0.0000]*
NER	–3.3805	–3.3768	–4.0626	–3.3319	0.8724	–2.9925
	[0.0186]*	[0.0188]*	[0.0155]*	[0.07777]	[0.8924]	[0.0039]*

Note: * represents stationarity at the 5% level. *BSI* = Banking Soundness Index; *CRR* = Cash Reserve Ratio; *ITR* = Interest Rate Policy; *MPR* = Monetary Rate; *NER* = Nominal Exchange Rate.

implying co-integration among the variables. Therefore, the null hypothesis of no cointegration is rejected, and it is concluded that a long-term relationship exists among the variables.

Table 3. ARDL bound test

Source: Outputs from E-views 10 (2024).

F-Bounds Test	Null Hypothesis: No level relationship			
Test Statistic	Value	Significance	I (0)	I (1)
F-statistic	17.1467	10%	2.525	3.560
k	4	5%	3.058	4.223
		1%	4.280	5.840

The results in Table 4 reveal the long-run estimates of the ARDL model. From the results, MPR has a positive coefficient (β = 0.0269), suggesting a direct long-run relationship with BSI, where a unit increase in MPR causes a corresponding 2.6% increase in soundness index. The t-statistic of this coefficient (t-stat = 0.83) is also significant at the 5% level (p = 0.016). This suggests that in the long run, the monetary rate has a significant effect on the bank soundness index. Similarly, the NER has a positive coefficient (β = 0.0049), implying a direct relationship where a unit increase in NER results in a corresponding 0.5% increase in the soundness index. The t-statistic of this coefficient (t-stat=4.75) is significant at the 5% level (p = 0.017), suggesting that in the long run, the nominal exchange rate significantly affects the bank soundness index.

Further results from Table 4 show that interest rate (β = –0.3082) and cash reserve ratio (β = –0.0087) both have an inverse relationship with the bank soundness index. However, the t-statistics of these relationships are not significant at the 5% level (p = 0.84 & 0.55, respectively), indicating that interest rate and cash reserve ratio have no long-run effect on the bank soundness index.

Table 5 shows the Error Correction Model (ECM) results, with the one-period lagged error correction term in bold. This term passed the required criteria of being less than 1, statistically significant, and negative. The 0.452 coefficient also shows a high speed of adjustment from the short run to the long run. The R-squared further suggests that the model has a good fit, where the endogenous variables explain 50.69% of the variation in the exogenous variable. For the overall model significance test, a look at the t-statistic (–5.76) reveals a p-value which is statistically significant at the 5% level, implying that the model is statistically significant.

Table 4. Long-run estimates

Source: Outputs from E-views 10 (2024).

Levels Equation Case 1: No Constant and No Trend				
Variable	Coefficient	Std. error	t-Statistic	Prob.
MPR	0.0269	0.0323	0.8323	0.0160
ITR	–0.3082	0.0805	–3.8269	0.8376
NER	0.0049	0.0010	4.7506	0.0171
CRR	–0.0087	0.0143	–0.6071	0.5487

Table 5. ECM regression results

Source: Outputs from E-views 10 (2024).

Levels Equation Case 2: Restricted Constant and No Trend				
Variable	Coefficient	St. error	t-Statistic	Prob.
CointEq(-1)	–0.452003	0.078494	–5.758431	0.0000
R-squared	0.506958	Mean dependent var	0.008881	
Adjusted R-squared	0.477077	S.D dependent var	0.450085	
S.E. of regression	0.325472	Akaike info criterion	0.672576	
Sum squared resid	3.495762	Schwarz criterion	0.804536	
Log likelihood	–9.106373	Hannan–Quinn criterion	0.718634	
Durbin-Watson stat	0.986349		–	

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The Breusch-Godfrey Serial Correlation and heteroskedasticity ARCH tests were computed to check for the robustness of the model used in this study. The result of the Breusch-Godfrey test in Table 6 shows the absence of serial correlation, which implies that the error terms in the model are not serially correlated, with their values at any one period, independent of the values they assume in any other previous periods.

Table 6. Breusch-Godfrey serial correlation LM test

Source: Outputs from E-views 10 (2024).

Null hypothesis: No serial correlation at up to 2 lags			
F-Statistic	0.907679	Prob. F (7, 28)	0.5147
Obs*R-squared	6.658230	Prob. Chi-Squ (2)	0.4653

The summary of the Breusch-Pagan-Godfrey test in Table 7 shows the homogeneity of the variances of the residuals. This suggests homoskedasticity and implies that the error terms in the model have constant variance.

Table 7. Heteroskedasticity test: Breusch-Pagan-Godfrey

Source: Outputs from E-views 10 (2024).

Null hypothesis: Homoskedasticity			
F-Statistic	0.907679	Prob. F(7, 28)	0.5147
Obs*R-squared	6.658230	Prob. Chi-Square (7)	0.4653
Scaled explained SS	3.946883	Prob. Chi-Square (7)	0.7859

Results from the long run estimates in Table 4 provided the basis for the test of hypotheses. For the monetary rate, the t-statistic (t = 0.83) of its coefficient is significant at the 5% level (p-value = 0.016). Therefore, the stated null hypothesis (H_1) is rejected, and it is concluded that the monetary rate (CBN benchmark rate) significantly affects the Nigerian banking soundness index in the post-COVID-19 era. Similarly, the t-statistic (t = 4.75) of the coefficient of the nominal exchange rate variable is significant at the 5% level (p-value = 0.017). Hence, the stated hypothesis (H_2) cannot be accepted, implying that the nominal exchange rate significantly affects the Nigerian banking soundness index in the post-COVID-19 era.

Furthermore, the t-statistic (t = –3.83) of the coefficient of the interest rate policy variable is not significant at the 5% level (p-value = 0.838). Therefore, the specified null hypothesis (H_3) cannot be rejected, and it is concluded that interest rate policy does not significantly affect the Nigerian banking soundness index in the post-COVID-19 era. Lastly, the result of the t-statistic (t = –0.607) of the coefficient of the cash reserve ratio is also not significant at the 5% level (p-value = 0.549). Hence, the stated null hypothesis (H_4) cannot be rejected, and it is thus concluded that the cash reserve policy does not significantly affect the Nigerian banking soundness index in the post-COVID-19 era.

4. DISCUSSION

This study has examined the effect of monetary rate, nominal exchange rate, interest rate, and cash reserve ratio on the Nigerian banking soundness index in the post-COVID-19 era. The empirical findings indicate that monetary rate (MPR) has a direct and significant impact on the banking soundness index. It was observed that the MPR has witnessed an upward rise since the post-COVID-19 era, and this has improved the health and stability of the banking sector in Nigeria. This, therefore, implies that government actions on MPR through the apex bank (CBN) have yielded positive results. This finding agrees with the conclusions reached by Zulverdi et al. (2007), Kassim et al. (2009), Hamilton et al. (2020), Ayomi et al. (2021), and Didigu et al. (2022). However, it disagrees with the works of Cocris and Nucu (2013) and Ouhibi and Hammami (2015).

Similarly, the study has shown that the nominal exchange rate directly and significantly affects the soundness index of the Nigerian banking sector in the post-COVID-19 era. This implies that the exchange rate is a key determinant of the stability of the banking sector. While the exchange rate has witnessed a usual rise since the current government came into power in 2023, and the citizens are groaning under its influence, findings here suggest that banks have benefited. The result here is supported by those of Chukwudi and Henry (2020), Hamilton et al. (2020), Ajisafe et al. (2021), and Didigu et al. (2022) but fails to agree with Ouhibi and Hammami (2015).

In addition, empirical results have revealed that interest rate policy has an inverse, but non-significant effect on the Nigerian banking soundness index in the post-COVID-19 era. This implies that the CBN

policies on interest rates have no major impact on the stability of the banking sector. The result appears to negate the usual trend, where higher interest rates are expected to increase banks' net income. This is not far-fetched from the economic impact of the COVID-19 pandemic, in which most businesses were grounded and investors rarely patronized banks. The finding here corroborates those of Coscris and Hammami (2015), Ouhibi and Hammami (2015), Ayomi et al. (2021), but disagrees with Somoye and Ilo (2009) and Didigu et al. (2022). Further results have also shown that the cash reserve ratio has an inverse, but non-significant effect on the Nigerian banking soundness index in the post-COVID-19 era. This suggests that while the apex bank increases the cash reserve ratio for banks, their stability is threatened, although the impact is not noticeable. This agrees with the findings of Coscris and Hammami (2015), Ouhibi and Hammami (2015), but fails to agree with Khataybeh and Al-Tarawneh (2016) and Didigu et al. (2022).

CONCLUSION

The aim of this study was to investigate the impact of monetary policy on the stability of the banking sector in Nigeria. This has generated a lot of debates and divergent opinions. Specifically, the current study examined the effect of monetary rate, interest rate policy, nominal exchange rate, and cash reserve ratio on the banking sector stability, focusing on the post-COVID-19 era in Nigeria. Empirical analysis was conducted using the autoregressive distributed lag model approach to cointegration, and the findings revealed that the monetary rate and nominal exchange rate have a direct and significant effect on the banking sector soundness index. Furthermore, the government's policies on interest rates and cash reserve ratio were seen to have an indirect but non-significant effect on the bank soundness index.

The study concludes that monetary rate and nominal exchange rate are the major government monetary policies affecting the stability of the banking sector in Nigeria since the post-COVID-19 era. Therefore, it is recommended that the CBN ensure proper and efficient supervisory functions through its relevant committees before determining and fixing the Monetary Rate (MPR). A moderate MPR is needed to stabilize the lending rate and reduce the burden of loan defaults on banks. In addition, it is imperative for the Nigerian government to urgently re-evaluate its recent policies on the naira exchange rate, which have not yielded the expected result.

Furthermore, there is a need for policies targeted at generating more foreign revenues for the country so as to boost foreign reserves and thereby strengthen the naira. This can be in the form of access to quick and low-interest credits by local factories, to boost local production and aid exportations. The government should also, by way of policy, ensure conducive business environments for local and foreign investors. This will help to develop more industries, increase outputs, and reduce the country's over-reliance on importation, thereby improving the exchange rate.

AUTHOR CONTRIBUTIONS

Conceptualization: Olumide Dotun Aremu, Taofeek Sola Afolabi.
Data curation: Olumide Dotun Aremu.
Formal analysis: Olumide Dotun Aremu, Taofeek Sola Afolabi.
Funding acquisition: Olumide Dotun Aremu, Taofeek Sola Afolabi, Akinyede Oyinlola Morounfoluwa, Oluwayinka Samuel Olabode.
Investigation: Olumide Dotun Aremu.
Methodology: Olumide Dotun Aremu, Taofeek Sola Afolabi.
Project administration: Taofeek Sola Afolabi, Oluwayinka Samuel Olabode.
Resources: Olumide Dotun Aremu, Akinyede Oyinlola Morounfoluwa, Oluwayinka Samuel Olabode.

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Software: Olumide Dotun Aremu, Taofeek Sola Afolabi.
Supervision: Taofeek Sola Afolabi, Akinyede Oyinlola Morounfoluwa.
Validation: Taofeek Sola Afolabi, Oluwayinka Samuel Olabode.
Visualization: Olumide Dotun Aremu.
Writing – original draft: Olumide Dotun Aremu.
Writing – reviewing & editing: Taofeek Sola Afolabi, Akinyede Oyinlola Morounfoluwa, Oluwayinka Samuel Olabode.

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