Scientific Research Publishing

Open Journal of Business and Management, 2025, 13(1), 813-836
https://www.scirp.org/journal/ojbm
ISSN Online: 2329-3292
ISSN Print: 2329-3284

Monetary Policy, Inflation and Economic Growth in Nigeria

Titilope Idowu Oladejo[1], Adegbemi Babatunde Onakoya[1], Ezekiel Oseni[2], Joseph Olusegun Ajibola[1], Ishola Rufus Akintoye[3]

[1]Department of Economics, Babcock Business School, Babcock University, Ilishan-Remo, Ogun State, Nigeria
[2]Department of Finance, Babcock Business School, Babcock University, Ilishan-Remo, Ogun State, Nigeria
[3]Dean Babcock Business School, Babcock University, Ilishan-Remo, Ogun State, Nigeria
Email: toladejo5@gmail.com, onakoyaa@babcock.edu.ng, zikoseni@yahoo.com, ajibolao@babcock.edu.ng

How to cite this paper: Oladejo, T. I., Onakoya, A. B., Oseni, E., Ajibola, J. O., & Akintoye, I. R. (2025). Monetary Policy, Inflation and Economic Growth in Nigeria. *Open Journal of Business and Management, 13,* 813-836.
https://doi.org/10.4236/ojbm.2025.132043

Received: October 29, 2024
Accepted: February 14, 2025
Published: February 17, 2025

Abstract

Inflation remains an important microeconomic variable in gauging the state of the economy. It requires close monitoring by regulators and economy managers to ensure financial stability and economic growth and development. Despite the Central Bank of Nigeria's efforts to control inflation through monetary policy adjustments, Nigeria has faced persistent challenges with inflation, particularly in food prices. This study investigated the nexus between GDP growth, inflation, and monetary policy in Nigeria, focusing on the effectiveness of the Monetary Policy Rate (MPR) in managing core and food inflation. Using secondary data from the Central Bank of Nigeria and an ex-post facto research design covering the period from 2006 to 2023, the study employed an autoregressive distributed lag model, including an error correction mechanism and cointegration test, to analyze the variables. The results indicated that while an increase in MPR effectively moderated core inflation by reducing demand-pull factors, it had a limited impact on food inflation due to external shocks such as weather and supply chain disruptions. The findings highlighted the need for a comprehensive approach, combining monetary policy with agricultural reforms and regulatory oversight to stabilize prices. Policy recommendations included implementing advanced agricultural technologies, enhancing supply chain logistics, integrating fiscal measures with monetary policy, and promoting market transparency to mitigate opportunistic pricing behaviours.

Keywords

Autoregressive Distributed Lag Model, Economic Growth, Gross Domestic Product, Monetary Policy, Inflation

1. Introduction

In recent years, Nigeria's GDP growth has been significantly influenced by its oil

sector, which has contributed a substantial portion of its GDP. From 2019 to 2023, Nigeria's GDP growth showed a mixed trend, with a growth rate of approximately 2.2% in 2019, driven by agriculture, manufacturing, and services improvements. The COVID-19 pandemic in 2020 led to a sharp economic contraction, with a GDP decline of about 1.8% (Aitalohi, 2021). Recovery efforts rebounded, with GDP growth rates of 3.4% in 2021 and 3.6% in 2022 (Statistics, 2021). By 2023, the growth rate slowed to 2.5% due to ongoing inflation and security issues (IMF, 2023). In the first quarter of 2024, Nigeria's economy advanced by 2.98% year-on-year, marking the 14th consecutive quarter of economic expansion, driven by robust growth in the oil sector and healthy progress in the non-oil sector, despite some slowdown in the agricultural and industrial sectors (Taborda, 2022). Positive GDP growth has been associated with increased investment in infrastructure, improved public services, and higher living standards, enabling the government to enhance healthcare, education, and social services (Enya & Ezeali, 2021; African Development Bank, 2020; Economic Overview, 2023). Sustained GDP growth also attracts foreign direct investment (FDI), which is crucial for job creation, technology transfer, and industrialization, contributing to economic diversification and resilience against global economic shocks (Emeka, 2024; World Bank, 2024; Akiwumi, & Onyekwena, 2022). Despite these benefits, challenges such as income inequality and youth unemployment persist, underlining the need for inclusive growth policies (Mwakalila, 2023).

The World Bank reports that global food price inflation remains high, with inflation levels exceeding five percent in 63.2% of low-income countries like Ethiopia and Afghanistan, 73.9% of lower-middle-income countries like Nigeria and India, 48% of upper-middle-income countries like Brazil and South Africa, and 44.4% of high-income countries including the United States and Germany (Inokotong & Inokotong, 2024). This inflation is driven by agricultural productivity, supply chain disruptions, and climate change (Tchonkouang et al., 2024). The COVID-19 pandemic exacerbated food inflation and remained a concern due to ongoing supply chain issues and geopolitical tensions (Macias, & Massa, 2023).

In Nigeria, food inflation has persisted, intensified by factors such as poor agricultural productivity, insecurity in farming regions, and volatile exchange rates (Adeosun et al., 2023). As of March 2024, Nigeria's food inflation rate was 40.1%, with rising costs of staple foods like rice and maize straining household budgets and contributing to broader economic inflationary pressures. Agricultural inefficiencies, inadequate infrastructure, and limited access to modern farming techniques hinder productivity (Dhillon & Moncur, 2023). Supply chain issues, transportation challenges, market instability, and climate change impacts reduce crop yields and drive food prices higher (Tchonkouang et al., 2024; Godde et al, 2021; Çevik, 2024; de Castro et al, 2024). Insecurity in farming regions, mainly due to conflicts and banditry, disrupts agricultural activities and exacerbates food shortages (Sadiq et al., 2024; Ezeh, 2021). Other factors include the devaluation of the Naira, rising import costs, and inadequate government policies to support local farmers (Akpaeti et al., 2023; Adefila et al., 2022). Addressing food inflation in

Nigeria requires strategies that enhance agricultural productivity, stabilize the macroeconomic environment, and improve food supply chain infrastructure (Bhattacharya & Jain, 2020; Kidane & Woldemichael, 2020).

Monetary policies are actions by a nation's central bank to control money supply and interest rates to manage the economy and stabilize growth (Brock, 2024). In Nigeria, the Central Bank of Nigeria (CBN) implements monetary policy to maintain price stability and achieve sustainable economic growth. The CBN uses tools such as adjusting interest rates, controlling the money supply, and managing inflation. The Monetary Policy Rate (MPR), influencing lending rates and liquidity, is a primary instrument (Central Bank of Nigeria, 2023). Open Market Operations (OMO) control liquidity by buying or selling government securities (Audu, 2020). The Cash Reserve Ratio (CRR) impacts banks' lending ability (MacCarthy, 2016). Other tools include the Liquidity Ratio (LR), Standing Lending Facility (SLF), Standing Deposit Facility (SDF), and Foreign Exchange Interventions, aiming to manage inflation, stabilize the currency, and promote economic development (CBN, 2021; IMF, 2022).

GDP growth and food inflation have a bidirectional relationship (Ezako, 2023). Higher GDP leads to increased food demand, potentially causing demand-pull inflation if supply does not keep pace (Ali & Asfaw, 2023; Condon et al., 2023). High food inflation erodes purchasing power, reduces real income, and can slow economic growth (Umar & Umar, 2022; Ali & Asfaw, 2023). In Nigeria, food inflation often outpaces general inflation, affecting consumption patterns and savings (Economic Overview, 2023; Obiora et al., 2023). High food prices can lead to social unrest, destabilizing the economy and hindering GDP growth (Fan et al., 2018). Monetary policy impacts inflation and economic growth by adjusting interest rates and controlling the money supply to maintain inflation within target ranges while fostering growth (Mehar, 2023; Agarwal & Shah, 2019). Lower interest rates can stimulate borrowing and investment, leading to higher GDP growth (Araujo, 2017). However, rapid growth can lead to high inflation, requiring monetary policy adjustments to stabilize prices (Akarara & Azebi, 2018; Central Bank of Nigeria, 2023).

Economic growth, food inflation, and monetary policy are inherently cyclical (Köse & Ünal, 2022). Economic booms lead to higher inflation due to increased demand (Callen, 2019). Central banks may tighten monetary policy to control inflation, slowing economic growth and leading to a recession. Lower demand during recessions reduces inflationary pressures, prompting expansionary monetary policy to stimulate growth. Policymakers must constantly adjust strategies to balance growth and inflation (Macchiarelli et al., 2022). Studying the nexus between GDP, inflation, and monetary policy is crucial for understanding and managing economic stability and development. Thus, the study investigates the relationship between monetary policy, inflation and economic growth in Nigeria.

The remaining part of the study is structured as thus: Section 2.0 identified the theoretical framework adopted in the study. Section 3.0 described the material and method used in analyzing and investigating the relationship between monetary

policy, inflation and economic growth in Nigeria. In Section 4.0, the result and the discussion of findings were discussed while Section 5.0 talked about the conclusion, recommendation and limitation of the study.

2. Literature Review

2.1. Theoretical Framework

In this study, Keynesian Economics, Monetarism, the Phillips Curve, Structuralist Inflation Theory, and Endogenous Growth Theory are the foundational theories used to investigate the dynamics of GDP growth, inflation, and monetary policy in Nigeria. Each theory provides a distinct perspective on the mechanisms influencing economic stability and growth. Keynesian Economics, formulated by John Maynard Keynes during the 1930s, emphasizes the role of aggregate demand in driving economic growth and managing inflation (Blinder, 2020). According to Keynes, government intervention through fiscal and monetary policies is essential to stabilize the economy, especially during periods of recession (Chen, 2024). This theory posits that government spending can stimulate demand, which in turn boosts production and employment, mitigating the adverse effects of economic downturns (Jahan, Mahmud, & Papageorgiou, 2014).

The relevance of Keynesian economics to the Nigerian context lies in its ability to analyze how government spending and central bank policies impact GDP growth and inflation rates, particularly in response to economic challenges such as declining oil prices and global economic instability. Monetarism, closely associated with Milton Friedman, posits that controlling the money supply is key to managing inflation and fostering economic growth (Cagan, 2018). Monetarists argue that variations in the money supply have significant short-term and long-term effects on national economies (Momoh, 2024). This theory underscores the importance of a stable and predictable monetary policy in controlling inflation (Friedman, 1970). The Central Bank's monetary policy tools in Nigeria help adjust interest rates and regulate the money supply. This can be scrutinized through the lens of monetarism to evaluate their effectiveness in curbing inflation and promoting economic stability. The Phillips Curve illustrates the inverse relationship between inflation and unemployment, suggesting that policies aimed at reducing inflation may increase unemployment in the short run, and vice versa (Hoover, 2020).

This trade-off is crucial for understanding the short-term dynamics between GDP growth and inflation in Nigeria. Policymakers must balance these factors to achieve both stable prices and low unemployment rates (Samuelson & Solow, 1960). By applying the Phillips Curve, this study can explore the interactions between Nigeria's GDP growth, inflation, and employment levels, providing insights into the potential impacts of inflation-targeting policies. Structuralist Inflation Theory focuses on the structural factors that cause inflation, such as supply chain disruptions and production inefficiencies (Kim, 2023). This theory is particularly relevant for analyzing food inflation in Nigeria, where agricultural productivity and supply chain issues significantly influence price levels (Taylor, 2004). By

examining structural bottlenecks and sectoral imbalances, this study can identify the root causes of food inflation and assess their impact on overall economic stability. Understanding these structural issues is vital for developing targeted policies to enhance agricultural productivity and stabilize food prices in Nigeria. Endogenous Growth Theory emphasizes the role of internal factors like human capital, innovation, and knowledge in driving long-term economic growth (Hill, 2018). According to this theory, infrastructure, education, and technology investments can lead to sustained GDP growth (Romer, 1990). Applying endogenous growth theory to Nigeria involves assessing the potential for sustainable economic development through strategic investments in key areas. This approach highlights the importance of fostering a conducive environment for innovation and skill development to achieve robust and enduring economic growth.

2.2. Empirical Review

The empirical analysis of monetary policy's impact on economic growth yields diverse insights across different economies and contexts. Ajibola and Oluwole (2018) explored the Nigerian context using multivariable regression analysis, finding that while the money supply and the exchange rate had an insignificant positive impact on economic growth, the interest rate and liquidity ratio negatively impacted growth significantly. This highlights the effectiveness of monetary policy in inflation targeting over economic stimulation. Similarly, Olisaemeka et al. (2018) confirmed that money supply significantly influenced economic growth, while the exchange rate negatively impacted GDP.

On the other hand, Chaudhry, Qamber, and Farooq (2024) extended the analysis to Pakistan, identifying significant relationships between financial depth, real exchange rate, and budget deficit with real GDP and emphasizing the bi-directional causality between real GDP and real exchange rate. Doan Van (2020) highlighted the long-term inflationary effects of continuous money supply increases in Vietnam and China, with strong correlations between money supply growth and inflation. Kaur (2023) reviewed monetary policy's response to food inflation, noting complexities due to supply chain inefficiencies and fiscal interventions. Mahmoudinia (2023) examined Iran, highlighting the asymmetric effects of monetary policy, currency crises, and oil prices on food inflation through quantile regression, demonstrating nuanced impacts across different economic conditions. Mehar (2023) assessed the post-COVID-19 impact of credit expansion in 186 countries, concluding that credit to the private sector and external debt enhance investment in infrastructure, significantly driving GDP growth. These studies collectively underscore the multifaceted nature of monetary policy's impact on economic growth, with significant variations influenced by specific economic contexts and policy environments.

3. Methodology

To explore the relationships among monetary policy, inflation, and economic

growth in Nigeria, an autoregressive distributed lag (ARDL) model was employed. This method is particularly suitable for analyzing time-series data and capturing both short-term and long-term effects of monetary policy on economic variables. The ARDL model specifications involved determining appropriate lag lengths for dependent (economic growth) and independent variables (monetary policy indicators and inflation). The critical monetary policy indicators include the monetary policy rate (MPR) and money supply (M2). At the same time, economic growth is measured by the gross domestic product (GDP), and inflation is measured by the consumer price index (CPI).

The analysis included conducting stationarity tests, such as the Augmented Dickey-Fuller (ADF) test discussed in Harris (1992), to ensure that the time-series data are stable and suitable for ARDL modeling. Following this, the optimal lag length for the ARDL model was determined using criteria like the Akaike Information Criterion (AIC) and the Schwarz Bayesian Criterion (SBC). Subsequently, the ARDL model was estimated to analyze both short-run dynamics and long-run relationships between monetary policy, inflation, and economic growth. The Bounds test for cointegration was performed to confirm a long-term equilibrium relationship among the variables. The Error Correction Model (ECM) was also derived to identify the speed of adjustment to long-term equilibrium after short-term shocks. The ARDL model was estimated using statistical software (e.g., R Studio), which allowed for robust analysis of the relationships between variables. Diagnostic tests, such as serial correlation, heteroscedasticity, and stability tests, were applied to ensure the validity and reliability of the model results. The findings from the ARDL model provide insights into how monetary policy adjustments influence economic growth and inflation in Nigeria, informing policy decisions aimed at fostering sustainable economic development.

3.1. Data Sources

The data sources are publications from the Central Bank of Nigeria (CBN), such as the CBN statistical bulletin, CBN statement of account, annual reports, and National Bureau of Statistics (NBS) publications covering the study period. The relevant variables sourced include gross domestic product (GDP), monetary policy rate (MPR), and food inflation from 2006 to 2023.

3.2. Method of Data Analysis

The autoregressive distributed lag (ARDL) model is employed in this study to examine the dynamic relationships between GDP growth, monetary policy rate (MPR), inflation, and food inflation in Nigeria. This econometric approach allows for the analysis of how changes in these variables affect GDP growth over time. El-Yaqub et al. (2021) have effectively applied the ARDL model to assess the impact of monetary policy on economic growth in Nigeria. They found significant short-term and long-term effects of MPR on GDP growth, justifying the efficacy of the ARDL approach in analyzing dynamic economic relationships.

$$\Delta Y_t = \alpha + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \cdots + \beta_p \Delta Y_{t-p} + \gamma_0 \Delta X_{t-1} + \gamma_1 \Delta X_{t-2} + \cdots + \gamma_q \Delta X_{t-q} + \varepsilon_t \quad \text{General Model}$$

$$\Delta Y_t = \alpha + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \beta_3 \Delta Y_{t-3} + \gamma_0 \Delta MPR_{t-1} + \gamma_1 \Delta MPR_{t-2} + \gamma_2 \Delta MPR_{t-3} + \varepsilon_t \quad \text{Model 1}$$

$$\Delta Y_t = \alpha + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \beta_3 \Delta Y_{t-3} + \beta_4 \Delta Y_{t-4} + \gamma_0 \Delta MPR_{t-1} + \gamma_1 \Delta MPR_{t-2} + \gamma_2 \Delta MPR_{t-3} + \gamma_0 \Delta Inflation_{t-1} + \gamma_1 \Delta Inflation_{t-2} + \gamma_2 \Delta Inflation_{t-3} + \varepsilon_t \quad \text{Model 2}$$

$$\Delta Y_t = \alpha + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \beta_3 \Delta Y_{t-3} + \beta_4 \Delta Y_{t-4} + \gamma_0 \Delta MPR_{t-1} + \gamma_1 \Delta MPR_{t-2} + \gamma_2 \Delta MPR_{t-3} + \gamma_0 \Delta FoodInflation_{t-1} + \gamma_1 \Delta FoodInflation_{t-2} + \gamma_2 \Delta FoodInflation_{t-3} + \varepsilon_t \quad \text{Model 3}$$

where:

- Y_t represents the dependent variable at time (economic growth) t;
- $Y_{t-1}, Y_{t-2}, Y_{t-3}, \cdots, Y_{t-p}$ are the lagged differences of the dependent variable;
- $MPR_{t-1}, \cdots, MPR_{t-3}$ Lagged differences of the monetary policy rate;
- $Inflation_{t-1}, \cdots, Inflation_{t-3}$ Lagged differences of the inflation rate;
- $FoodInflation_{t-1}, \cdots, FoodInflation_{t-3}$ Lagged differences of the food inflation rate;
- α is the intercept or constant term;
- $\beta_1, \beta_2, \cdots, \beta_p$ are the coefficients of the lagged differences of Y_t;
- $\gamma_0, \gamma_1, \cdots, \gamma_q$ are the coefficients of the lagged differences of X_t;
- ε_t represents the error term at time t.

To investigate the dynamics between Gross Domestic Product (GDP), Monetary Policy Rate (MPR), and inflation in Nigeria, a comprehensive approach incorporating both descriptive and econometric techniques was adopted. This analysis aims to capture monetary policy's short-term and long-term effects on these economic variables, using time-series data from 2006 to 2023. Descriptive statistics will be computed for GDP, MPR, inflation, and food inflation, including measures of central tendency, dispersion, and distribution shape. Trend analysis was conducted to examine changes over time by plotting the annual values of the economic variables. This helped to identify significant fluctuations and periods of growth or decline.

The stationarity of the time-series data was assessed using the Augmented Dickey-Fuller (ADF) test, a crucial assumption in time-series analysis to ensure that the statistical properties of the series do not change over time. Three Autoregressive Distributed Lag (ARDL) models were used to explore relationships among the economic variables. To ensure the validity and reliability of the ARDL model results, various diagnostic tests were conducted, including tests for serial correlation, heteroskedasticity, and model stability. These tests confirmed the robustness and credibility of the models, providing a comprehensive understanding of how monetary policy influences economic variables in Nigeria. The findings from this analysis were expected to inform policy decisions to foster sustainable economic development in the country.

4. Data Analysis and Discussion

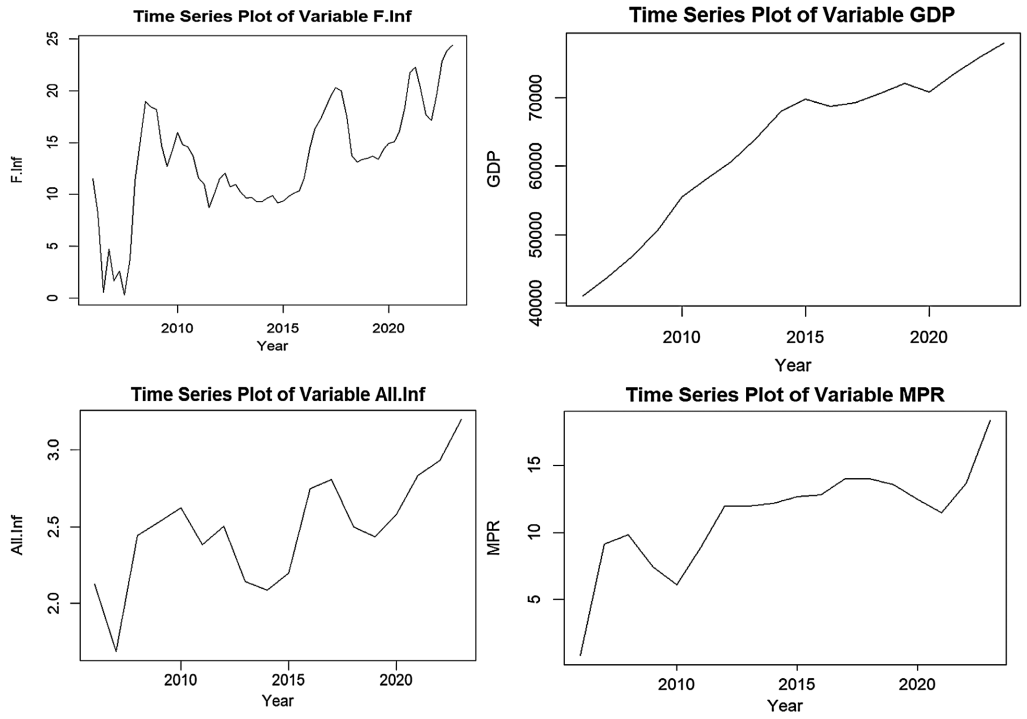
4.1. Descriptive Analysis and Unit Root Test

Table 1. Results of descriptive analysis.

	Mean	SD	Min	Max	Skew	Kurtosis
GDP	23,385.03	12,192.18	12,790.38	50,564.26	1.3	−0.09
MPR	11.33	3.47	3.33	18.75	−0.45	0.19
Inflation	12.75	4.7	4.33	28.15	0.81	0.86
Food Inflation	14.03	6.12	0.3	32.76	0.28	0.62

Source: Researcher's Field Survey, 2024.

As shown in Table 1, the descriptive statistics overview four key economic variables: Gross Domestic Product (GDP), Monetary Policy Rate (MPR), Inflation, and Food Inflation. GDP, averaging 23,385.03, indicates the nation's economic production, with significant variability (standard deviation of 12,192.18) suggesting both economic booms and declines. MPR, set by the central bank at an average of 11.33, shows stable monetary policy with slight variation (standard deviation 3.47) and ranges from 3.33 to 18.75. Inflation averages 12.75, with moderate fluctuation (standard deviation 4.7) and ranges from 4.33 to 28.15, skewed positively (0.81) due to occasional high inflation episodes. Food inflation, averaging 14.03, reflects faster rising food costs than general inflation, with significant volatility (standard deviation 6.12) ranging from 0.3 to 32.76, showing moderate positive skewness (0.28) and kurtosis (0.62), indicating a distribution somewhat more peaked around the mean than normal.



Key economic data from 2006 to 2023 are analyzed, and clear patterns are shown in food inflation, GDP, inflation rates, and the Monetary Policy Rate (MPR). Over the time, food inflation (F.Inf) varied greatly; it peaked about 2009 after first falling precipitously in 2006. Cycles of growth and fall followed in the years that followed, with notable lows in 2012 and 2015. Food inflation began to rise steadily in 2015 and by 2023 it had reached sharp peaks, showing that food prices had been erratic and increasing recently. Conversely, GDP showed steady increase during the time frame; it began close to 40,000 and climbed beyond 60,000 in 2014 before surpassing 70,000 by 2023. This tendency shows a strong and resilient economy that can maintain expansion even in the face of sporadic downturns. Broad swings in inflation (All.Inf) were seen; it started off low and peaked about 2010. Inflation rates increased after 2015, with sporadic declines between 2015 and 2017, and by 2023 they had reached new highs, indicating ongoing inflationary pressures. Furthermore, significant developments were shown by the MPR graph, which showed a first steep rise from 2006 to 2010 that suggested proactive changes to monetary policy. Up to 2020, the years saw sporadic swings followed by stabilization, indicating consistent policies in a rather steady economic climate. Nevertheless, the MPR increased significantly starting in 2020, maybe in reaction to concerns about inflation or initiatives to support the post-pandemic economic recovery. By pointing up dynamic changes in inflation, economic growth, and monetary policy across the studied time, these studies offer insights into the economic environment.

Table 2. Stationarity test (augmented dickey fuller test).

	ADF (I(0))	ADF (I(1))	ADF (I(2))
Inflation	−3.49**	−4.44***	−4.56***
Food Inflation	−4.58***	−3.77**	−3.94**
GDP	−2.03	−3.62**	−5.41***
MPR	−2.52	−2.81	−4.71***

*Significance at 10%, **Significance at 5%, ***Significance at 1%. The asterisks indicate the rejection of the null hypothesis of unit root. All the variables are in the natural log form.

As presented in Table 2, the stationarity of time series data is assessed using the Augmented Dickey-Fuller (ADF) test to ascertain if their statistical characteristics stay the same throughout time. The orders used for differencing are (I(0), I(1), and I(2)) to evaluate stationarity for four important economic variables: inflation, food inflation, GDP, and the monetary policy rate (MPR). An ADF test statistic of −3.49 at I(0) confirms that inflation is stable without differencing, therefore refuting the unit root theory. Further establishing stationarity, first-order differencing (I(1)) raises the test statistic to −4.44; I(2) keeps significant findings at -4.56. Similarly, food inflation exhibits significant stability at I(0) with a test statistic of −4.58, hence confirming stationarity without differences. With statistical significance at −3.77 and −3.94, respectively, even at I(1) and I(2), the series shows

persistent stability across time. GDP shows non-stationarity at I(0) with a non-significant test value of −2.03. Nevertheless, the statistic becomes better to −3.62 after first-order differencing, reaching significance at the 5% level, and it gets even stronger to −5.41 at I(2), significant at the 1% level. These data imply that in order to attain stationarity and remove underlying growth patterns, GDP must be detrended. The MPR series is non-stationary throughout; for I(0) and I(1), the test statistics of −2.52 and −2.81, respectively, fall short of conventional significance criteria. The test statistic only significantly improves to −4.71, significant at the 1% level, at I(2), suggesting that MPR needs greater differencing to reach stationarity.

4.2. Model 1: GDP and MPR

Selected Model: ARDL (8, 6).

4.2.1. F-Bound Test (Table 3)

Table 3. F-bound test for GDP and MPR relationship.

F-Statistics	12.78
P-Value	0.000

Source: Researcher's Field Survey, 2024.

4.2.2. Long Run Model

Table 4. Long run model for GDP and MPR relationship.

	Estimate	SD Error	t	Pr (>|t|)
(Intercept)	0.00	0.02	0.09	0.928
L (GDP, 1)	−1.04	0.14	−7.20	0.000***
L (GDP, 2)	−1.00	0.18	−5.49	0.000***
L (GDP, 3)	−0.91	0.19	−4.69	0.000***
L (GDP, 4)	−0.61	0.21	−2.93	0.005***
L (GDP, 5)	−0.57	0.21	−2.79	0.008**
L (GDP, 6)	−0.64	0.19	−3.33	0.002**
L (GDP, 7)	−0.55	0.18	−3.06	0.004***
L (GDP, 8)	−0.36	0.14	−2.56	0.014**
MPR	−0.11	0.39	−0.29	0.776
L (MPR, 1)	−1.11	0.40	−2.77	0.008***
L (MPR, 2)	0.63	0.37	1.69	0.098*
L (MPR, 3)	1.21	0.39	3.13	0.003***
L (MPR, 4)	0.73	0.43	1.70	0.096*
L (MPR, 5)	0.45	0.21	2.20	0.034**

Continued

L (MPR, 6)	0.23	0.16	1.40	0.169
Adjusted R-Squared	0.60			
P-Value	0.000***			

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level. Source: Researcher's Field Survey, 2024.

The ARDL model utilized lags of eight for GDP and six for MPR to analyze their relationship. An F-statistic of 12.78, significant at the 1% level (*P*-value = 0.000), confirms a robust long-term relationship between GDP and MPR regarding Table 4. The intercept estimate is not statistically significant (*P*-value = 0.928), indicating other factors predominantly drive GDP fluctuations. Lagged GDP coefficients range from −1.04 to−0.36, all negative and significant at 1% or 5%, showing past GDP significantly influences current GDP, with the immediate past having the most substantial effect. For MPR, the present coefficient is not significant (*P*-value = 0.776), but lagged coefficients are significant: notably, L (MPR, 1) has a negative impact, while coefficients for MPR from earlier periods show positive effects on GDP, significant at various levels. The adjusted R-squared of 0.60 indicates that the model explains 60% of GDP fluctuations well, with the overall model highly significant (*P*-value = 0.000), demonstrating its strong explanatory power for the GDP-MPR relationship.

4.2.3. Short Run Model

Table 5. Short run model for GDP and MPR.

Variables	Coefficient	*P*-Value
GDP (−1)	−0.52	0.087
MPR (−1)	0.22	0.107
ECT (−1)	−0.44	0.229

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level. Source: Researcher's Field Survey, 2024.

Table 5 presents the short-run model and examines the immediate effects on GDP from past GDP and MPR values, along with the Error Correction Term (ECT). GDP (−1) shows a significant negative impact (*P*-value = 0.087), indicating a 0.52 unit decrease in present GDP for every one-unit increase in past GDP. MPR (−1) displays a positive relationship with present GDP (*P*-value = 0.107), suggesting potential delayed impacts of prior period's MPR changes on current GDP, despite not achieving statistical significance. The ECT (−1) coefficient (−0.44, *P*-value = 0.229) indicates no significant short-term correction towards long-term equilibrium, implying limited immediate adjustments in GDP and MPR towards sustained balance.

4.3. Model 2: Inflation, GDP, MPR

Selected Model: ARDL (5, 7, 6).

4.3.1. F-Bound Test

Table 6. Long run model for inflation, GDP, and MPR.

	Estimate	Std. Error	t-value	Pr (>|t|)
(Intercept)	0.00	0.01	−0.19	0.853
L (All.Inf, 1)	−0.11	0.15	−0.69	0.495
L (All.Inf, 2)	−0.23	0.14	−1.58	0.123
L (All.Inf, 3)	−0.20	0.14	−1.45	0.156
L (All.Inf, 4)	−0.16	0.14	−1.16	0.253
L (All.Inf, 5)	−0.26	0.13	−1.96	0.057*
MPR	0.37	0.19	1.92	0.063*
L (MPR, 1)	0.03	0.21	0.14	0.891
L (MPR, 2)	−0.21	0.22	−0.96	0.345
L (MPR, 3)	−0.10	0.23	−0.43	0.673
L (MPR, 4)	0.19	0.16	1.15	0.256
L (MPR, 5)	−0.06	0.16	−0.39	0.702
L (MPR, 6)	0.10	0.14	0.75	0.456
L (MPR, 7)	0.00	0.10	−0.01	0.989
GDP	0.03	0.08	0.36	0.721
L (GDP, 1)	0.08	0.11	0.75	0.460
L (GDP, 2)	0.03	0.12	0.27	0.788
L (GDP, 3)	0.07	0.13	0.59	0.561
L (GDP, 4)	0.01	0.10	0.06	0.952
L (GDP, 5)	0.02	0.09	0.25	0.804
L (GDP, 6)	0.13	0.07	1.92	0.063*
Adj. R-Squared	0.49			
P-Value	0.042**			

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level. Source: Researcher's Field Survey, 2024.

4.3.2. Long Run Model

Table 7. F-bound test for Inflation, GDP, and MPR.

F-Statistics	6.95
P-Value	0.000

As shown in Table 6, the ARDL (5, 7, 6) model examines inflation with GDP and the Monetary Policy Rate (MPR) as independent variables. Table 7 shows the F-Bound test yields a *P*-value of 0.000 and an F-statistic of 6.95, indicating a strong long-run relationship among these variables, suggesting that changes in GDP and MPR over time are associated with inflation. In the long-run model, the intercept is non-significant, indicating no fixed component to inflationary behavior. Among the inflation lags, only the fifth lag is significant at the 10% level, with a coefficient of −0.26, suggesting past inflation exerts a modest but significant negative effect on current inflation.

The present MPR coefficient is significantly positive at the 10% level (0.37), implying higher MPR tends to increase inflation, reflecting direct effects of monetary policy changes. However, none of the MPR lags are significant, indicating short-lived effects of MPR adjustments. For GDP, the sixth lag is significant at the 10% level (0.13), suggesting GDP has a delayed positive effect on inflation. None of the first five GDP lags are significant, highlighting the time it takes for economic growth to influence inflationary outcomes.

The model's adjusted R-squared of 0.49 indicates it explains nearly 49% of inflation variation. The overall model *P*-value of 0.042 confirms a statistically significant relationship between predictors and inflation, reinforcing the model's robustness in explaining inflation dynamics.

4.3.3. Short Run Model

Table 8. Short run model for inflation, GDP, and MPR.

Variables	Coefficient	*P*-value
INF (−1)	−0.47	0.046**
MPR (−1)	−0.48	0.090*
GDP (−1)	0.03	0.040**
ECT (−1)	−0.49	0.057*

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level. Source: Researcher's Field Survey, 2024.

In the short-run dynamics of the ARDL model with inflation as the dependent variable and GDP and MPR as independent variables, key relationships emerge as presented in Table 8. The lagged inflation (INF(−1)) coefficient is −0.47 with a *P*-value of 0.046, significant at the 5% level. This negative coefficient suggests that past inflation dampens current inflation, indicating a mean-reverting behavior where high inflation periods are followed by lower inflation. The lagged Monetary Policy Rate (MPR(−1)) coefficient is −0.48 with a *P*-value of 0.090, significant at the 10% level. This indicates that higher MPR in the previous period leads to lower current inflation, aligning with the conventional role of monetary policy in controlling inflation by slowing economic growth. The lagged GDP (GDP(−1)) coefficient is 0.03 with a *P*-value of 0.040, significant at the 5% level. This positive

correlation suggests that higher GDP in the past corresponds to higher inflation presently, reflecting increased demand pressures and economic expansion. the error correction term (ECT(−1)) coefficient is −0.49 with a *P*-value of 0.057, significant at the 10% level. This indicates that 49% of deviations from long-run equilibrium are corrected each cycle, ensuring that short-term imbalances revert towards long-term stability in the relationship between inflation, GDP, and MPR.

4.4. Model 3: Food-Inflation, GDP, MPR

4.4.1. Selected Model: ARDL (6, 7, 0)

In this model, the optimal lag selection for Inflation, GDP and MPR was identified through a comprehensive selection process. The analysis determined that the most suitable lag values for the respective variables were 6, 7, and 0. These lag values were chosen based on statistical criteria to ensure the model's accuracy and effectiveness in capturing the dynamic relationship between inflation, GDP and MPR.

Table 9. F-bound test.

F-Statistics	10.05
P-Value	0.000

Source: Researcher's Field Survey, 2024.

4.4.2. Long Run Model

Table 10. Long run model for food inflation, GDP, and MPR.

	Estimate	Std. Error	t-value	Pr (>|t|)
(Intercept)	−0.004	0.01	−0.33	0.743
L (F.Inf, 1)	0.11	0.13	0.84	0.406
L (F.Inf, 2)	−0.07	0.08	−0.84	0.409
L (F.Inf, 3)	−0.03	0.07	−0.41	0.685
L (F.Inf, 4)	−0.09	0.06	−1.54	0.131
L (F.Inf, 5)	0.00	0.04	−0.08	0.934
MPR	0.55	0.19	2.97	0.005***
L (MPR, 1)	−0.14	0.21	−0.68	0.500
L (MPR, 2)	−0.02	0.21	−0.09	0.933
L (MPR, 3)	−0.03	0.24	−0.14	0.889
L (MPR, 4)	0.33	0.21	1.55	0.130
L (MPR, 5)	0.09	0.23	0.40	0.691
L (MPR, 6)	−0.01	0.22	−0.03	0.976
L (MPR, 7)	0.05	0.18	0.30	0.769
GDP	−0.03	0.08	−0.37	0.717

Continued

L (GDP, 1)	0.05	0.11	0.42	0.678
L (GDP, 2)	−0.04	0.12	−0.35	0.730
L (GDP, 3)	0.04	0.14	0.31	0.756
L (GDP, 4)	0.13	0.12	1.08	0.286
L (GDP, 5)	0.05	0.09	0.52	0.604
L (GDP, 6)	0.23	0.06	3.58	0.001***
Adj. R-Squared	0.63			
P-value	0.000			

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level. Source: Researcher's Field Survey, 2024.

The F-Bound test in Table 9 indicates a robust combined effect of MPR and GDP on food inflation (F-statistic = 10.05, $P = 0.000$), explaining the variance in food inflation caused by these factors. Meanwhile, the ARDL model reveals significant insights into the relationship between GDP, Monetary Policy Rate (MPR), and food inflation as shown in Table 10. The intercept for food inflation is not significant ($P = 0.743$), suggesting no systematic bias when other variables are zero, the current MPR coefficient is notably significant at 0.55 ($P = 0.005$). This indicates that higher MPR values are strongly associated with higher food inflation levels, highlighting the significant impact of MPR changes over the long term. However, present GDP levels do not significantly impact food inflation ($P = 0.717$).

Regarding lagged effects, except for GDP lagged six periods, which negatively influences food inflation significantly ($P = 0.001$), most coefficients for lagged MPR and GDP are not statistically significant. This suggests that changes in GDP from six periods ago may detrimentally affect current food inflation. The model explains approximately 63% of the variation in food inflation, as indicated by the adjusted R-squared value of 0.63. Furthermore, the overall *P*-value of 0.000 underscores the statistical significance of the model's findings.

4.4.3. Short Run Model

Table 11. Short run model for food inflation, GDP, and MPR.

Variables	Coefficient	*P*-value
F.INF (−1)	−0.31	0.039
MPR (−1)	3.05	0.212
GDP (−1)	−0.01	0.040**
ECT (−1)	−0.90	0.062*

*Significant at the 10% level, **Significant at the 5% level, ***Significant at the 1% level. Source: Researcher's Field Survey, 2024.

Lagged Food Inflation (F.INF) exhibits a significant negative coefficient of −0.31 ($P = 0.039$), indicating that previous increases in Food Inflation lead to subsequent decreases in current levels, suggesting a self-adjusting mechanism as presented in Table 11. The Lagged Monetary Policy Rate (MPR) does not significantly affect current Food Inflation at conventional levels ($P = 0.212$), suggesting that MPR changes from the previous period do not immediately influence short-term Food Inflation dynamics, despite their long-term impact. Gross Domestic Product (GDP) lagged by one period has a statistically significant coefficient of -0.01 ($P = 0.040$), suggesting that fluctuations in GDP from one period to the next slightly dampen current Food Inflation, implying a stabilizing effect in the short term. Error Correction Term (ECT) lagged by one period shows a marginally significant coefficient of −0.90 ($P = 0.062$), significant at the 10% level, indicating a rapid adjustment towards equilibrium, where deviations from long-run equilibrium are largely corrected within one period.

5. Discussion

According to a recent Central Bank of Nigeria (CBN) analysis of the rise of the Monetary Policy Rate (MPR), food and core inflation are impacted differently. A vital tool for containing inflation, the MPR impacts economic interest rates. Raising the MPR, which can reduce investment and consumption, usually leads to higher borrowing rates for people and businesses. Slowing down economic activity seeks to lessen inflationary effects.

The MPR rise has significantly impacted core inflation, which accounts for volatile items like food and energy prices. Core inflation is a crucial measure of underlying inflation trends because it eliminates the sometimes very variable and is susceptible to outside shocks of food and energy costs. Policymakers focusing on core inflation may be better able to make decisions knowing and understanding long-term inflationary patterns. Demand-pull inflation is lowered when increased MPR causes less business investment and consumer expenditure. When borrowing prices rise, consumers usually reduce their purchases of goods and services, while businesses may delay or reduce their investment plans. Prices are not as much pushed upward since less spending and investment reduces the overall demand of the economy. Adequately managed demand-pull inflation occurs when the supply of goods and services exceeds the demand.

The data shows that a tighter monetary policy effectively manages demand-driven inflationary factors, as the higher MPR has helped slightly moderate core inflation. For instance, studies indicate that central banks usually use interest rate hikes as their primary tool to lower inflationary expectations and stabilize the economy (Abdullahi et al., 2021). Experiments from several economies demonstrate that a rise in the policy rate can eventually result in sharply lower inflation rates (Brózda-Wilamek, 2021). Nigerian statistics currently support the impact of the MPR rise on core inflation. The country's core inflation rate has started to stabilize following the sequence of MPR increases, according to reports issued by

the Central Bank of Nigeria. According to this tendency, which is consistent with theoretical forecasts of the effectiveness of the monetary policy, the higher MPR has successfully lowered demand-pull inflation (Adrian et al., 2018).

However, the MPR's impact on food inflation is less clear. External factors like weather, agricultural production, and supply chain disruptions often influence food costs, making them less responsive to monetary policy changes. Severe weather conditions, low agricultural productivity, and supply chain issues can all contribute to higher food prices, as seen in Nigeria. These factors have maintained high food inflation despite the rise in MPR, corroborating research by Udochukwu et al. (2024), which indicates that structural issues in the agricultural sector often dictate food prices more than monetary policy changes.

The persistence of high food inflation in Nigeria, even after MPR increases, highlights the limitations of monetary policy. Reports from the Central Bank of Nigeria (CBN) suggest that bad weather, pest infestations, and global supply chain disruptions have kept food prices high. This situation underscores the need for a comprehensive approach to stabilize food prices, which includes supply chain improvements, agricultural reforms, and broader economic measures. As Ayinde et al. (2020) suggested, investments in agricultural technology and infrastructure can help boost productivity and reduce food price volatility.

Global experiences also support the need for a multifaceted strategy to stabilize food prices. Countries like Brazil and India have successfully combined monetary policy with government subsidies and investments in agricultural expansion (Duarte et al., 2022; Amaglobeli et al., 2024). This approach highlights the importance of coordinated efforts across multiple sectors to manage food inflation effectively.

Moreover, the phenomenon known as the "greed effect" has exacerbated inflationary pressures in Nigeria. Companies raise prices excessively to profit from the inflationary climate, contributing to overall inflation. Studies by Saungweme and Odhiambo (2021) show that greed significantly impacts inflation dynamics in developing countries like Nigeria. This opportunistic pricing behavior creates a self-reinforcing cycle where rising prices lead to higher wage demands, further increasing costs and prices.

The greed effect challenges the Central Bank of Nigeria (CBN) in controlling inflation, as it is driven more by market psychology and expectations than fundamental economic factors. Conventional monetary policy tools, like interest rate hikes, are less effective against this type of inflation. Addressing the greed effect requires a different approach, including improving market transparency, increasing competition, and implementing robust regulatory frameworks. Public awareness programs about inflation and price-setting behavior can also help manage expectations and reduce speculative activity (Stiglitz & Regmi, 2023). The "greed effect" concept suggests that inflationary pressures, particularly in food prices, may be driven by the profit-maximizing behaviors of producers, traders, and retailers. While this concept is relevant to the understanding of inflation dynamics, the discussion of the "greed effect" in this study lacks depth and empirical evidence. The

study introduces the idea but does not provide sufficient data or analysis to substantiate its role in driving food inflation in Nigeria. In the context of Nigeria, where food prices are influenced by a combination of factors such as supply chain disruptions, government policies, and external shocks like oil price volatility, the "greed effect" could potentially contribute to inflation. However, without robust empirical support, it remains speculative. The study could have benefitted from more concrete evidence, such as pricing data from key food sectors, comparisons between producer price changes and retail prices, or interviews with market participants to gauge their role in inflating prices for profit maximization.

Collaboration between the CBN and other government agencies is crucial. Fiscal strategies, such as providing necessary subsidies, can complement monetary measures to stabilize prices. Careful monitoring and regulation of critical sectors prone to the greed effect can ensure that actual cost changes justify price increases.

The greed effect has significantly increased Nigeria's inflationary pressures, hindering the CBN's attempts to control inflation. This phenomenon requires a comprehensive policy response combining monetary, regulatory, and fiscal measures. Effective inflation management in Nigeria will require coordinated efforts to enhance market transparency, promote competition, and align public expectations with economic realities.

MPC Rate Optimal to Lower Inflation

The best Monetary Policy Committee (MPC) rate to reduce inflation is obtained by balancing the need to prevent price increases with promoting economic growth. Using models and simulations, this paper investigated the impact of various MPC rate scenarios on inflation.

Research indicates that, at this point, Nigeria would benefit most from an MPC rate of about 15%. Increased rates to this level would lower inflation without needlessly impeding economic growth. The study backs this up with an emphasis on the complex relationships between inflation, economic activity, and monetary policy. According to research on the relationship between interest rates and inflation, an MPC rate of about 15% achieves a suitable compromise between the goals of price stability and economic expansion (Duarte et al., 2022).

Information from countries with inflation control laws agrees with the suggested MPC rate. Policy rates, for example, are widely used in this area by nations like Nigeria that have effectively lowered inflation. Nigeria should set its MPC rate in line with these global best practices and facts to meet its inflation targets.

Studies of the likely impacts of such a rate on other economic sectors also backed the proposed rate. According to the analysis, a 15% rate would be manageable for corporate activity and consumer borrowing even if it significantly reduces inflation. For example, even if relatively increased borrowing rates could lower consumer spending and business investment, the overall impact would still be within reasonable parameters, preserving the capacity of the economy to grow (Abdullahi et al., 2021).

A policy rate of 15% achieves the best compromise between price stability and economic growth. The analysis indicates that this rate would be acceptable for economic activity while sharply reducing inflation. Including this rate in its all-encompassing monetary policy strategy would enable the Central Bank of Nigeria to control inflation and promote general economic health.

There are several reasons the CBN has been hesitant to apply rates unique to a certain industry. It may be quite resource- and administratively intensive to vary rates often and carefully to reflect sector-specific conditions. It may also make monetary policy more difficult to implement and communicate, lowering its effectiveness (Stiglitz & Regmi, 2023). Preferential treatment of specific industries may also lead to market distortions and inefficiencies. Offering preferred businesses lower interest rates, for example, might encourage excessive borrowing and risk-taking in such sectors while disregarding others. This might lead to misallocation of funds and further financial instability (Sudjono, 2024). They would much rather maintain the economy mostly steady and inflation under control everywhere by using a single policy rate. This strategy facilitates the execution of monetary policy and ensures that every sector operates in the same economic conditions, promoting fairness and efficiency. The CBN may enhance the credibility and predictability of its monetary policy by using a single policy rate to provide a clear and constant signal to the market (Borio & Hofmann, 2017). It takes a careful adjustment of the MPC rate to balance economic growth and inflation control. By taking a unified approach to monetary policy, the CBN avoids sector-specific rates, preserving general economic stability and equity. Without this comprehensive tack, the dual objectives of price stability and steady economic development cannot be achieved.

6. Conclusion and Recommendation

This study explored the complex dynamics among Gross Domestic Product (GDP), Monetary Policy Rate (MPR), and inflation in Nigeria using the autoregressive distributed lag (ARDL) model. The findings highlight the critical role of the Monetary Policy Rate (MPR) in managing core inflation by reducing consumer spending and business investments, aligning with global evidence on interest rate adjustments. However, MPR's impact on food inflation is limited due to external factors like weather and supply chain issues, indicating a need for a multifaceted approach that includes agricultural and supply chain reforms. Addressing this requires enhanced market transparency, competition, and regulatory measures. The analysis suggests an optimal MPC rate of around 15% to balance inflation reduction and economic growth. The CBN's preference for a unified policy rate over sector-specific rates is discussed to maintain economic stability and fairness.

To foster collaboration between the CBN and other government agencies to implement a cohesive strategy addressing core and food inflation, integrating policies that enhance food security and economic stability. There is also the need to

establish a robust monitoring and evaluation framework to assess the impact of implemented policies and adjust strategies as the need arises, with continuous data collection and analysis to refine policy measures. Finally, lessons should be taken from global experiences and adopt best practices in monetary policy and inflation management, benchmarking against successful models from other countries to provide valuable insights and guide to policy formulation in Nigeria.

Limitations and Suggestions for Further Study

Further studies could explore the use of primary data collection to better understand how market practices influence inflation and economic growth. While the ARDL model provides useful insights, it may not fully capture the complexities of the Nigerian economy. Key factors such as the large informal sector, oil price volatility, and political instability are not directly addressed within the model. These elements could either be incorporated into the model for a more comprehensive analysis or acknowledged as limitations, as they may significantly affect the results and the model's ability to reflect the full scope of economic dynamics in Nigeria.

The analysis does not incorporate other tools used by the Central Bank of Nigeria (CBN), such as the Cash Reserve Ratio (CRR) and Open Market Operations (OMO). These tools play a crucial role in shaping monetary policy and are essential for understanding its full impact. By excluding these instruments, the study overlooks potential interdependencies and interactions between various monetary policy tools, which could provide a more nuanced and complete understanding of how monetary policy influences inflation and economic growth in Nigeria. In addition, further study could also consider the dataset before 2006. Incorporating this pre-2006 data would provide a more comprehensive understanding of the long-run relationship between the variables and could potentially reveal different or more nuanced long-run trends that may not be captured within the current time frame.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

References

Abdullahi, S. I., Shehu, K. K., Shuaibu, M., Saleh, S. G., & Usman, M. D. (2021). Monetary Variables, Economic Growth and Monetary Policy in Nigeria. *Journal of Advanced Studies in Finance, 12,* 115-125.

Adefila, J. O. et al. (2022). Government Policies to Support Local Farmers in Nigeria. *Food Policy Journal, 21,* 390-412. https://doi.org/10.1016/j.foodpol.2021.102034

Adeosun, O. et al. (2023). Poor Agricultural Productivity, Insecurity Affecting Farming Regions, and Volatile Exchange Rates. *Journal of Agricultural Economics, 15,* 234-256. https://doi.org/10.1007/s00191-022-00850-1

Adrian, T., Laxton, M. D., & Obstfeld, M. M. (2018). *Advancing the Frontiers of Monetary Policy*. International Monetary Fund. https://doi.org/10.5089/9781484325940.071

African Development Bank (2020). Economic Overview of Nigeria. *African Economic*

Outlook, 2020, 152-176. https://doi.org/10.1201/9781003109022

Agarwal, M., & Shah, I. A. (2019). *Monetary Policy Effect on Inflation and Growth. Research and Information System for Developing Countries*. https://www.ris.org.in/sites/default/files/Publication/DP___239%20Manmohan%20Agarwal%20and%20Irfan%20Ahmed%20Shah_0.pdf

Aitalohi, G. (2021). *Resilience through Reforms*. The World Bank.

Ajibola, A., & Oluwole, A. (2018). Impact of Monetary Policy on Economic Growth in Nigeria. *Open Access Library, 5*, 1-12.

Akarara, E. A., & Azebi, O. I. (2018). The Effectiveness of Monetary Policy in the Control of Inflation in Nigeria: An ECM Approach. *IOSR Journal of Economics and Finance (IOSR-JEF), 9,* 86-94.

Akiwumi, D., & Onyekwena, C. (2022). Foreign Direct Investment in Nigeria. *International Journal of Development Studies, 24,* 270-295.

Akpaeti, A., Offor, O., & Archibong, M. (2023). Effect of Naira Depreciation on Nigerian Agricultural Export Volume and Farmers' Income in Nigeria. *International Journal of Agriculture and Rural Development, 26,* 6660-6669.

Ali, M., & Asfaw, S. (2023). Demand-Pull Inflation in Rapidly Growing Economies. *Development Economics Review, 33,* 45-67.

Amaglobeli, D., Benson, T., & Mogues, T. (2024). Agricultural Producer Subsidies: Navigating Challenges and Policy Considerations. *IMF Notes, 2024,* A001.

Araujo, T. (2017). *Does Lowering the Interest Rate Stimulate Economic Growth? An Analysis of Current Macroeconomic Policy*. Honors Undergraduate These, University of Central Florida. https://stars.library.ucf.edu/honorstheses/206

Audu, S. (2020). The Role of the Central Bank of Nigeria Analytical Balance Sheet in Monetary Policy Implementation. *Bullion, 44,* Article 4. https://dc.cbn.gov.ng/bullion/vol44/iss3/4

Ayinde, I. A., Otekunrin, O. A., Akinbode, S. O., & Otekunrin, O. A. (2020). Food Security in Nigeria: Impetus for Growth and Development. *Journal of Agricultural Economics, 6,* 808-820.

Bhattacharya, S., & Jain, R. (2020). Strategies to Address Food Inflation. *Agricultural Economics Research Review, 29,* 42-58.

Blinder, A. (2020). *Keynesian Economics*. https://www.econlib.org/library/Enc/KeynesianEconomics.html

Borio, C. E., & Hofmann, B. (2017). *Is Monetary Policy Less Effective When Interest Rates Are Persistently Low?* https://ideas.repec.org/p/bis/biswps/628.html

Brock, T. (2024). Monetary Policy Meaning, Types, and Tools. *Investopedia*. https://www.investopedia.com/terms/m/monetarypolicy.asp

Brózda-Wilamek, D. (2021). The Impact of the Federal Reserve System's Interest Rate Channel on the Components of Aggregate Demand. *Economics and Law, 20,* 479-496.

Cagan, P. (2018). Monetarism. In *The New Palgrave Dictionary of Economics* (pp. 1-9). Palgrave Macmillan. https://doi.org/10.1057/978-1-349-95121-5_814-2

Callen, T. (2019). Understanding the Business Cycle. *Finance & Development, 56,* 45-48.

Central Bank of Nigeria (2021). *Monetary Policy Tools and Economic Regulation. CBN Annual Report 2021*. https://www.cbn.gov.ng/annualreport

Central Bank of Nigeria (2023). Overview of Monetary Policy in Nigeria. *CBN Monetary Policy Review*. https://www.cbn.gov.ng/reports/mpreview

Çevik, V. A. (2024). Impacts of Climate Change on Logistics and Supply Chains. *Afet ve*

Risk Dergisi, 7, 368-391. https://doi.org/10.35341/afet.1361151

Chaudhry, I. S., Qamber, Y., & Farooq, F. (2024). Monetary Policy, Inflation and Economic Growth in Pakistan: Exploring the Co-Integration and Causality Relationships. *Pakistan Journal of Commerce and Social Sciences, 6,* 332-347. http://hdl.handle.net/10419/188062

Chen, J. (2024). Who Was John Maynard Keynes & What Is Keynesian Economics? *Investopedia*. https://www.investopedia.com/terms/j/john_maynard_keynes.asp

Condon, J., Kwiatkowski, K., & Smit, S. (2023). *Global Economics Intelligence Executive Summary, January 2023*. McKinsey & Company. https://www.mckinsey.com/capabilities/strategy-and-corporate-finance/our-insights/global-economics-intelligence-executive-summary-january-2023

de Castro Moura Duarte, A. L., & Picanço Rodrigues, V. (2024). The Sustainability Challenges of Fresh Food Supply Chains: An Integrative Framework. *Environment, Development and Sustainability, 1,* 1-25. https://doi.org/10.1007/s10668-024-04850-9

Dhillon, R., & Moncur, Q. (2023). Small-Scale Farming: A Review of Challenges and Potential Opportunities Technological Advancements Offer. *Sustainability, 15,* Article 15478. https://doi.org/10.3390/su152115478

Doan Van, D. (2020). Money Supply and Inflation Impact on Economic Growth. *Journal of Financial Economic Policy, 12,* 121-136. https://doi.org/10.1108/JFEP-10-2018-0152

Duarte, A., Frost, J., Gambacorta, L., Koo Wilkens, P., & Shin, H. S. (2022). *Central Banks, the Monetary System and Public Payment Infrastructures: Lessons from Brazil's Pix*.

Economic Overview (2023). GDP and Economic Trends in Nigeria. *Economic Review Journal, 14,* 233-255. https://doi.org/10.1080/02692171.2022.2023030

El-Yaqub, A. B., Musa, I., & Ismail, Y. (2024). Assessment of the Impact of Monetary Policy on Economic Growth in Nigeria (1986-2021): Evidence from Autoregressive Distributed Lag. *Quest Journal, Journal of Research in Business*. https://www.researchgate.net/profile/Ibrahim-Musa-39/publication/380245298_Assessment_of_the_Impact_of_Monetary_Policy_on_Economic_Growth_in_Nigeria_1986_-2021_Evidence_from_Autoregressive_Distributed_Lag/links/66325fca06ea3d0b741f5ab8/Assessment-of-the-Impact-of-Monetary-Policy-on-Economic-Growth-in-Nigeria-1986-2021-Evidence-from-Autoregressive-Distributed-Lag.pdf

Emeka, P. (2024). Impact of Foreign Direct Investment on Nigeria's Economy. *International Economics Journal, 32,* 78-101.

Enya, F. O., & Ezeali, B. O. (2021). Public Investment in Infrastructure and Economic Growth in Nigeria (1980-2020). *African Journal of Economics and Sustainable Development, 4,* 1-22. https://doi.org/10.52589/AJESD-0JM1VBER

Ezako, J. T. (2023). Analyze of Inflation and Economic Growth Relationship in Burundi. *Cogent Economics & Finance, 11,* Article 2210914. https://doi.org/10.1080/23322039.2023.2210914

Ezeh, P. (2021). Insecurity in Nigerian Farming Regions. *Journal of African Security Studies, 9,* 245-267. https://doi.org/10.1080/09724521.2020.1832997

Fan, S. et al. (2018). Economic Consequences of Food Price Volatility. *World Development Journal, 15,* 276-299. https://doi.org/10.1016/j.worlddev.2017.10.020

Friedman, M. (1970). A Theoretical Framework for Monetary Analysis. *Journal of Political Economy, 78,* 193-238.

Godde, C. M., Mason-D'Croz, D., Mayberry, D. E., Thornton, P. K., & Herrero, M. (2021). Impacts of Climate Change on the Livestock Food Supply Chain: A Review of the

Evidence. *Global Food Security, 28,* Article 100488. https://doi.org/10.1016/j.gfs.2020.100488

Harris, R. I. D. (1992). Testing for Unit Roots Using the Augmented Dickey-Fuller Test. *Economics Letters, 38,* 381-386. https://doi.org/10.1016/0165-1765(92)90022-q

Hill, J. (2018). Social Issues. In *FinTech and the Remaking of Financial Institutions* (pp. 315-330). Elsevier. https://doi.org/10.1016/b978-0-12-813497-9.00016-0

Hoover, K. (2020). Phillips Curve. *Econlib*. https://www.econlib.org/library/Enc/PhillipsCurve.html

IMF (2022). *Nigeria: Managing Inflation and Promoting Economic Development. International Monetary Fund Report 2022*. https://www.elibrary.imf.org/view/journals/002/2023/093/002.2023.issue-093-en.xml

IMF (2023). *Nigeria's GDP Growth Analysis. IMF Country Report 2023*. https://tradingeconomics.com/nigeria/gdp-growth-annual

Inokotong, J., & Inokotong, J. (2024). *Global Food Prices Remain High—World Bank Report. Tribune Online*. https://tribuneonlineng.com/global-food-prices-remain-high-world-bank-report/

Jahan, S., Mahmud, A. S., & Papageorgiou, C. (2014). What Is Keynesian Economics? *Finance & Development, 51,* 53-54.

Kaur, S. (2023). *A Decade of Impact of Monetary Policy on Food Inflation: An Overview and Future Direction*. https://journals.sagepub.com/doi/abs/10.1177/09722629211015603

Kidane, D., & Woldemichael, A. (2020). Enhancing Food Supply Chain Infrastructure. *Journal of Development Policy and Practice, 6,* 14-29. https://doi.org/10.1177/2455133320970810

Kim, H. (2023). Inflation in OECD Countries: An Empirical Assessment of a Structuralist Theory of Inflation. *Review of Political Economy, 36,* 1557-1581. https://doi.org/10.1080/09538259.2023.2171285

Köse, N., & Ünal, E. (2022). The Effects of the Oil Price and Temperature on Food Inflation in Latin America. *Environment, Development and Sustainability, 26,* 3269-3295. https://doi.org/10.1007/s10668-022-02817-2

MacCarthy, J. (2016). The Effect of Cash Reserve Ratio (CRR) on the Financial Performance of Commercial Banks and Their Engagement in CSR in Ghana. *Journal of Finance, 4,* 1-12. https://doi.org/10.2139/ssrn.2862349

Macchiarelli, C. et al. (2022). Balancing Growth and Inflation: The Role of Central Banks. *Economic Policy Journal, 12,* 145-167.

Macias, J. B., & Massa, I. (2023). Exchange Rates and Agricultural Productivity. *Journal of International Agriculture, 19,* 178-195.

Mahmoudinia, D. (2023). The Asymmetric Effects of Monetary Policy, Currency Crises and Oil Price on Food Inflation in Iran: An Application of Quantile Regression. *Macroeconomics and Finance in Emerging Market Economies,* 1-23.

Mehar, M. A. (2023). Role of Monetary Policy in Economic Growth and Development: From Theory to Empirical Evidence. *Asian Journal of Economics and Banking, 7,* 99-120. https://doi.org/10.1108/AJEB-12-2021-0148

Momoh, O. (2024). What Is Monetarism? Theory, Formula, and Comparison to Keynesian Economics. *Investopedia*. https://www.investopedia.com/terms/m/monetarism.asp#:~:text=According%20to%20monetarism%2C%20variations%20in,prices%2C%20production%2C%20and%20employment

Mwakalila, E. (2023). Income Inequality: A Recipe for Youth Unemployment in Africa. *SN Business & Economics, 3,* Article No. 15. https://doi.org/10.1007/s43546-022-00394-0

Obiora, C. U., Ezeh, M. C., George, C. I., Orjiakor, S. N., Anigbogu, C. B., Nwabude, C. G., & Omologbe, F. (2023). The Impacts of Inflation on Food Security in Nigeria: A Review. *Asian Journal of Food Research and Nutrition, 2,* 476-495. https://journalajfrn.com/index.php/AJFRN/article/view/71

Olisaemeka, L., Odimgbe, S., Ezeabalisi, V., & Alajekwu, U. (2018). *Effect of Monetary Policy on Economic Growth in Nigeria: An Empirical Investigation*. https://core.ac.uk/download/pdf/267905451.pdf

Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy, 98,* S71-S102.

Sadiq, M. S., Singh, I., & Ahmad, M. (2024). The Influence of Armed Banditry on Food Supply Chains in North-West Nigeria: A Comprehensive Review. *Krjals, 1,* 1-19. https://doi.org/10.47310/krjals.2024.v01.i01.003

Samuelson, P. A., & Solow, R. M. (1960). Analytical Aspects of Anti-Inflation Policy. *American Economic Review, 50,* 177-194.

Saungweme, T., & Odhiambo, N. M. (2021). Public Debt and Inflation Dynamics: Empirical Evidence from Zimbabwe. *Croatian Review of Economic, Business and Social Statistics, 7,* 14-30. https://doi.org/10.2478/crebss-2021-0007

Statistics, S. (2021). *Gross Domestic Product*. https://www.bea.gov/sites/default/files/2022-02/gdp4q21_2nd.pdf

Stiglitz, J. E., & Regmi, I. (2023). The Causes of and Responses to Today's Inflation. *Industrial and Corporate Change, 32,* 336-385. https://doi.org/10.1093/icc/dtad009

Sudjono, S. (2024). The Effect of Financial Globalization on Economic Instability: The Case of the Global Financial Crisis. *Journal of Law and Sustainable Development, 12,* e3154. https://doi.org/10.55908/sdgs.v12i1.3155

Taborda, J. (2022). Nigeria GDP Growth Slows in Q1. *Trading Economics*. https://tradingeconomics.com/articles/07152014180521.html

Taylor, L. (2004). *Reconstructing Macroeconomics: Structuralist Proposals and Critiques of the Mainstream*. Harvard University Press.

Tchonkouang, R. D., Onyeaka, H., & Nkoutchou, H. (2024). Assessing the Vulnerability of Food Supply Chains to Climate Change-Induced Disruptions. *Science of the Total Environment, 920,* Article 171047. https://doi.org/10.1016/j.scitotenv.2024.171047

Udochukwu, N. E., Chinedu, O. A., Ogah, E. B., & Desmond, U. C. (2024). Monetary Policy Rate and Food Inflation in Nigeria. *International Journal of Research and Innovation in Social Science, 8,* 4494-4506. https://doi.org/10.47772/ijriss.2024.8080345

Umar, U. A., & Umar, A. (2022). Effects of Exchange Rate on Food Inflation in Nigeria: A Non-Linear ARDL Approach. *Gusau International Journal of Management and Social Sciences, 5,* 195-209.

World Bank Group (2024). *Staying the Course on Reforms: Progress Amidst Challenges*. https://www.worldbank.org/en/news/press-release/2024/10/17/nigeria-staying-the-course-on-reforms-progress-amidst-challenges