


Inflation and Economic Growth Nexus under Monetary Policy Control: The Case of Nigeria

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Abstract. Modern research shows that there is a complex two-way relationship between inflation and economic growth. It also confirms that there is a turning point beyond which inflation, rather than acting as a stimulant to economic growth, becomes its constraint. This study examines the net impact of inflation on Nigeria's economic growth over the period 1980 to 2023, taking into account the impact of monetary policy tools. The study used a set of methods: descriptive statistics, unit root test, a method for selecting the lag length, constructing an ARDL model, and conducting appropriate diagnostic tests. The data source was the archives of the World Bank and Central Bank of Nigeria. The result of the pairwise Granger Causality analysis revealed a one-way causality from inflation to economic growth. All variables were found to be stationary at first difference, paving the way for an ARDL bounds test for co-integration, which in turn showed that there is no long-run relationship between the variables. The estimated ARDL model showed that the inflation rate had a significant short-term negative impact on economic growth in Nigeria during the period under review. At the same time, the growth of the money supply, being a pro-inflationary factor, had a significant positive impact on economic growth in the short term in Nigeria. On the contrary, the rise in interest rates, which is an element of the restrictive anti-inflation policy, had a significant negative impact on economic growth in the short term. This means that a combination of economic policy tools can successfully address the problem of achieving a compromise between its two main objectives.

Key words: inflation; economic growth; gross domestic product; nexus; auto regressive distributed lag; Granger causality.

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1. Introduction

Economic theory and policy have traditionally placed a strong emphasis on the relationship between inflation and economic growth. Understanding this relationship is especially important for efficient economic management in Nigeria, a nation known for its varied economy and substantial reliance on oil exports. A persistent increase in the average price level of goods and services, known as inflation, can have both a positive and negative impact on economic growth. While excessive inflation can result in uncertainty, fewer investment, and slower economic growth, moderate inflation is sometimes considered as an indication of a rising economy.

Inflation has been a recurring economic problem in Nigeria, impacted by supply-side limitations, government fiscal policies, and changes in exchange rates, as pointed out by Abubakar & Meena [1]. Because of the nation's large reliance on

oil exports, fluctuations in the price of oil globally can have a substantial effect on inflation rates. For example, Anidiobu et al. [2] indicate that falling oil prices have frequently resulted in higher inflation because of less government revenue and an increase in the money supply to pay for budget deficits. Bangura [3] writes that inflation negatively impacts the performance of many economic sectors in Nigeria and undermines overall economic stability.

Some authors, such as Adaramola & Dada [4], emphasize that excessive inflation can hinder economic growth by decreasing savings, discouraging investment, and weakening consumer purchasing power. Conversely, managed inflation affects price expectations, which can promote investment and spending, boosting the economy. Maintaining a stable economy and promoting sustainable growth and development depend on keeping inflation under control.

Nigeria has experienced significant and persistent inflation since 2020, rising from 11.4 % in 2019 to 18.8 % in 2022, 24.7 % in 2023 and 32.5 % in 2024¹. According to the National Bureau of Statistics (NBS) of Nigeria, the annual food inflation rate stood at 40.01 % in March 2024, an increase of 15.56 % year-on-year². The weakening of the Nigerian currency, rising production costs and dependence on food imports, drove the rise in food prices.

The Central Bank of Nigeria (CBN) plays a vital role in controlling inflation in the country. To reduce inflation, it employs monetary policy tools such as open market operations and key interest rates. To combat demand-pull inflation, the Central Bank of Nigeria (CBN) primarily raises the monetary policy rate (MPR), but this often results in a slowdown in economic activity. Disinflationary policies can be detrimental to economic growth. According to the CBN estimations, a one percentage point reduction in inflation between 1973 and 2013 resulted in a decline in output of approximately 0.6–0.7 %, although this “sacrifice ratio” varied across periods³. The CBN uses open market operations to regulate bank liquidity and support economic activity, but their side effect is often higher inflation.

Thus, both inflation itself and the dual monetary policy measures can have varying impacts on economic growth in Nigeria, either positive or negative. In this article, we attempt to delineate these influences. This raises the research question of what net impact inflation will have on economic growth in Nigeria when monetary policy tools are included as control variables.

¹ Inflation trends in Nigeria. World Data. Available at: <https://www.worlddata.info/africa/nigeria/inflation-rates.php> (accessed December 27, 2025).

² <https://www.pulse.ng/articles/business/domestic/nigerias-inflation-climbs-to-3320-in-march-2024-2024072702551374472> (accessed: December 27, 2025).

³ Amaduche S., Adediji A. M., Adesanya B. M. (2019). Sacrifice Ratio: An Empirical Analysis of the Nigerian Economy. *International Journal of Scientific Research in Social Sciences and Management Studies*, Vol. 4, Issue 2, 55–78. Available at: <https://internationalpolicybrief.org/wp-content/uploads/2023/10/ARTICLE5-124.pdf> (accessed: December 27, 2025).

This study seeks to answer the following *research questions*:

RQ1: Does inflation have a significant impact on real GDP growth in Nigeria in the short and long run?

RQ2: What channels mediate the relationship between inflation and economic growth?

RQ3: What is the causal relationship between inflation, monetary policy tools, and economic growth?

The purpose of this study is to examine the impact of inflation on economic growth in Nigeria, identify the underlying mechanism of this impact and establish the causal relationship between inflation, monetary policy tools and economic growth in Nigeria.

Based on the above, the following *hypotheses* are tested:

H1: Inflation has a significant impact on economic growth.

H2: Money supply has a significant impact on economic growth.

H3: Interest rate has a significant impact on economic growth.

The hypotheses are tested using updated data for Nigeria for 1980–2023 and constructing an ARDL model.

The rest of the article's structure is as follows: Section 2 reviews literature; Section 3 presents data and methods; Section 4 reports results; Section 5 discusses findings; Section 6 concludes; Section 7 presents policy recommendations based on the findings.

2. Literature Review

2.1. Effect of inflation on economic growth

The topic of inflation and its impact on economic growth have attracted the attention of a number of researchers. Studies of He [5], Ghossoub [6], Bambe et al. [7], Garg et al. [8] and Chowdhury et al. [9] have shown that inflation may have a positive impact on economic growth. At the same time, studies of Tien [10], Adaramola & Dada [4], Azam & Khan [11], Ahmad [12] have presented evidence that high inflation has a detrimental effect on economic growth.

For example, Brobbey et al. [13], employing the bi-wavelet method, detected a weak positive relationship between inflation and economic growth in the Czech Republic, Greece, Hungary, and Russia over the period 1997–2021. However, in the long run, they found neither a leading nor a lagging relationship between these macroeconomic variables, allowing them to confirm the natural growth rate hypothesis. Furthermore, using partial wavelet analysis, the authors demonstrated a long-term and significant effect of global economic policy uncertainty (GEPU) on the relationship between GDP and CPI in all studied countries except Russia. Lubocheng [14] investigated the relationship between inflation, unemployment and economic growth in Malaysia from 2000 to 2020 using the ordinary least squares method and provided evidence that inflation has a negative impact on economic growth.

In a study on Ethiopia for the period 1991–2020, Malec et al. [15] constructed an ARDL model to prove that inflation and currency devaluation have a negative impact on economic growth. Similarly, Mandeya & Ho [16] in their research of South Africa using autoregressive distributed lag (ARDL) estimation techniques and quarterly data covering the period 1961 Q1 to 2019 Q4, found that inflation has a negative impact on economic growth in both the short and long run. A study by Bellepea et al. [17] used the Karavias and Tsavalis unit root test and a combination of Fisher-Johansen and Kao cointegration tests to demonstrate the long-run relationship between inflation and economic growth in some major oil-exporting countries in Africa, including Algeria, Congo, Egypt, Nigeria and Gabon. They found that inflation exhibits a statistically significant negative relationship with economic growth.

2.2. Effect of money supply on inflation and economic growth

According to the AD-AS model, the impact of money supply on economic growth and inflation depends on the state of the economy and how close it is to full employment. Therefore, the results of studies on this influence also turned out to be different. Some studies have shown that expansionary monetary policy is more likely to stimulate inflation than economic growth. For example, using a bivariate vector autoregressive (VAR) model, Diyaolu & Soyode [18] found a unidirectional causal relationship between money supply and inflation in Nigeria from 1961 to 2023, with a unit increase in money supply causing a gradual increase in inflation. Adewale [19] also found a direct positive correlation between money supply and inflation rate in Nigeria. However, Harper et al. [20] found that both money supply and inflation have a negative impact on economic growth in Nigeria.

At the same time, some researchers have found that there exists a positive relationship between money supply and economic growth in developing countries. For instance, Bajrami et al. [21] in their study on Western Balkan for 2000–2023 using fixed effects (FE), random effects (RE), and generalised method of moments (GMM) found that money supply has a significant positive impact on economic growth.

Furthermore, Pal et al. [22] used the dynamic ARDL method and the Driscoll-Kraay standard error method to examine the interaction of financial inclusion and economic growth in developing countries over the period 1990 to 2022. They identified a significant positive relationship between money supply indicators (monetary aggregates) and growth in developing countries. Similarly, Fengju [23], Mburamatatare et al. [24], Mwakalila & Kasongwa [25] in their studies found a positive relationship between money supply and economic growth.

On the other hand, Qayum et al. [26], using the ARDL cointegration approach, showed in the case of India and China that financial innovations accompanying the expansion of the money supply and changes in its structure can hinder sustainable economic growth. Furthermore, Wan & Lee [27], using panel data regression

models for China, detected that expansive money supply expansion may hinder corporate investment decisions and hence limit growth. Similarly, Azimi [28], studying effects of capital and money market predictors on economic growth in China using non-linear autoregressive distributed lags and dynamic multiplier methods, found a negative growth response to money supply, which implies that money supply contraction shocks affect output in developing or emerging economies.

In Nigeria, the authors examined various aspects of the impact of monetary policy on economic growth. For example, Ahiadorme [29] studied monetary policy in search of macroeconomic stability and inclusive growth. Adesanya and Ogakwu [30] examined the impact of monetary policy on economic growth in Nigeria using the Vector Error Correction Model (VECM) approach. Oladejo et al. [31] explored the interaction of monetary policy, inflation and economic growth in Nigeria. Adeniyi et al. [32] assessed the effectiveness of monetary policy instruments on economic growth in Nigeria and the moderating effect of financial sector development. Okosu et al. [33] evaluated the impact of monetary policy on economic growth in Nigeria using the Toda-Yamamoto approach.

2.3. Effect of interest rate on inflation and economic growth

Regarding the influence of interest rate (MPR) on inflation and economic growth, recent empirical studies in Nigeria yield complex and sometimes contradictory results. Many authors have written that raising the MPR in Nigeria has little effect on reducing inflation, but significantly reduces the supply of credit to the private sector, hinders investment and consumption, limits aggregate demand and leads to a slowdown in economic growth.

For example, Koledoye & Adedayo [34], using structural vector autoregression (VAR), found weak response of consumer prices to MPR in Nigeria during the period 1996 to 2023. The study by Bulus et al. [35] examined the interest rate channel in the monetary policy transmission mechanism using a restricted-sign structural vector autoregressive (SVAR) model. The resulting structural impulse response function showed that the MPR is ineffective in both stabilizing prices and increasing output due to shocks originating from the external sector.

Ashakah et al. [36] in their study on Nigeria from 1990 to 2023 using the fully modified ordinary least squares (FMOLS) method revealed that the lending rate has a strong positive effect on inflation, which implies that inflation in Nigeria acts as a cost-push phenomenon rather than a pure demand-pull phenomenon. The study supports the idea that the interest rate channel in Nigeria has two effects. Tightening regulations may indeed reduce inflation, but at the expense of slowing economic growth (a trade-off), which in turn may stimulate supply-side inflation. Conversely, loosening regulation may promote economic growth, but at the expense of demand-side inflation, which in turn may suppress economic growth.

Furthermore, Kuta et al. [37] studied the transmission of monetary policy through the interest rate and money supply to real output in Nigeria, using

a nonlinear autoregressive model with distributed lags. They found that in the long run, an increase in interest rates has a negative and insignificant impact on real output in Nigeria, while a decrease in interest rates has a positive and significant impact. In accordance with this asymmetrical relationship, the economy may respond differently to increases and decreases in interest rates.

In a study by Ogwuche & Obiaje [38] on the impact of monetary policy on economic growth in Nigeria during the period 1985–2022 using the ARDL approach, interest rates were the only monetary policy variable that had a statistically significant positive long-run impact on economic development. This implies that properly controlled interest rates can support economic growth. Oyadeyi et al. [39] employed threshold regression method to calculate optimal values of interest rates, inflation rate and exchange rate that can stimulate economic growth in Nigeria.

In a study on interest rate volatility and economic growth in Nigeria, Olasehinde-Williams et al. [40], employing the quantile autoregressive distributed lag (QARDL) model, found that interest rate volatility negatively impacts the country's economic performance in both the short and long run. The study concluded that complete interest rate liberalization is inappropriate for the Nigerian economy and recommended to strengthen supervision of the interest rate corridor system in order to reduce its volatility.

According to recent methodological developments in econometrics, the relationship between interest rates and economic growth is not always linear. Nonlinear autoregressive models with distributed lags and asymmetric error correction models developed by Ahmed et al. [41], Li et al. [42], Nusair and Al-Khasawneh [43], and Quintero Otero et al. [44] established a non-linear relationship between interest rate and growth. Zanfack et al. [45] in their study of sub-Saharan African countries in 2000–2021 using OLS and GLM methods found that interest rate and money supply have a positive impact on financial stability and growth in sub-Saharan African countries. Similarly, Alter et al. [46], in a study on the impact of high interest rates on financial stability in the MENA region, found that capital losses in an adverse scenario could constrain lending and negatively impact growth.

Despite these studies, gaps remain in explaining the combined effects of money supply, interest rate and inflation on Nigeria's economic growth. Most previous studies also failed to collect sufficiently up-to-date data following the COVID-19 pandemic. This study aims to examine the combined effects of inflation, interest rates and money supply on economic growth in Nigeria using updated data and advanced econometric techniques, thereby filling the existing research gap and making a significant contribution to existing knowledge.

3. Data and Methods

3.1. Data

In this study, the relationship between inflation and economic growth is examined using data for Nigeria from 1980 to 2023, which is a total of 43 observations.

Data on variables are taken from the World Bank Development Indicators (WDI) and from the Central Bank of Nigeria (CBN). Table 1 summarizes the variables used in the analysis and their sources.

3.2. Methods

The research algorithm is as follows.

1. The stationarity of the variables is checked using the Augmented Dickey-Fuller test. It allows us to identify whether the variables under study are stationary at the levels of the series or in the first differences, or whether there is a mixed type of time series, which will determine the choice of model.

2. Descriptive statistics are given to reveal the nature of the distribution of variables and how close it is to a normal distribution. Normality of distribution of residuals is one of the prerequisites for constructing ARDL models, but if it is violated, correction methods are used.

3. Granger causality test allows us to establish a causal relationship between the variables under study. This will reveal which variable is the dependent variable and which is the explanatory variable in the model.

4. The VIF multicollinearity test determines how closely the explanatory variables are related to each other. Multicollinearity can lead to inaccurate and unreliable estimates of regression coefficients. It is used to exclude certain variables from the analysis.

5. Choosing the right time lag for an autoregressive distributed lag (ARDL) model helps us to get rid of serial correlation in residuals, which can lead to skewed outcomes. The choice of the optimal lag is based on the minimization of the Akaike, Schwartz and Hannan-Quinn information criteria.

6. Bounds ARDL cointegration test, developed by Pesaran, Shin, and Smith [47], is used to establish a long-term relationship between variables. It also allows for the simultaneous estimation of long-run and short-run components in a single equation rather than two separate equations. This test provides robust, unbiased estimates of long-run coefficients under short sample conditions and with potential endogeneity of variables.

Table 1. Variables used in modeling

Variable	Code	Source
Real gross domestic product (billion dollars at constant prices), which is a proxy for economic growth	<i>RGDP</i>	WDI
Inflation rate (consumer price index as a percentage per year)	<i>INF</i>	WDI
Real interest rate (annual percentage)	<i>INT</i>	WDI
Money supply (billions of Naira)	<i>MS</i>	CBN

Note. WDI — World Development Indicators (<https://databank.worldbank.org/source/world-development-indicators>); CBN — Central bank of Nigeria (<https://www.cbn.gov.ng/>)

7. Autoregressive Distributed Lag (ARDL) model is developed to examine the effect of inflation on economic growth in Nigeria with the following specification/ General ARDL model:

$$\begin{aligned}
 \ln RGDP_t = & \alpha_0 + \sum_{i=1}^p \beta_i \cdot \ln RGDP_{t-i} + \sum_{j=0}^{q1} \theta_j \cdot INF_{t-j} + \\
 & + \sum_{k=0}^{q2} \varphi_k \cdot INTR_{t-k} + \sum_{l=0}^{q3} \delta_l \cdot \ln MS_{t-l} + \lambda_1 \cdot \ln RGDP_{t-1} + \\
 & + \lambda_2 \cdot INF_{t-1} + \lambda_3 \cdot INTR_{t-1} + \lambda_4 \cdot \ln MS_{t-1} + \varepsilon_t,
 \end{aligned}
 \tag{1}$$

where: $RGDP_{t-i}$ is the real gross domestic product at time $t-i$; INF_{t-j} is the inflation rate at time $t-j$; $INTR_{t-k}$ is the interest rate at time $t-k$; MS_{t-l} is the broad money supply at time $t-l$; \ln is the natural logarithm, α_0 is the constant term, β_i , θ_j , φ_k , δ_l are short-run coefficients, λ_1 - λ_4 are the long-run coefficients, and ε_t is error term.

The sign and significance of the estimates of the coefficients for the variables INF , $INTR$ and MS allow us to confirm or refute hypotheses 1, 2 and 3 in short-run and long-run.

8. To assess the quality of the constructed model, the following diagnostic tests are carried out: the Breusch-Godfrey test for serial correlation of residuals (LM test) and the Breusch-Pagan-Godfrey test for heteroscedasticity.

4. Results

Table 2 presents the results of the Augmented Dickey-Fuller (ADF) test for stationarity. All variables have a unit root. Hence, the null hypothesis of their non-stationarity is rejected. At the same time, all the variables in the model are stationary at first difference.

The summary statistics for each of the model’s variables, which were all stationary at first difference, are displayed in Table 3.

Table 2. Results of time series testing for stationarity

Variables	ADF test	
	Level (No trend)	First Difference
<i>lnRGDP</i>	-1.982**	-8.312***
<i>INFR</i>	-2.114**	-6.897***
<i>INTR</i>	-2.385*	-5.106***
<i>lnMS</i>	-1.745*	-7.449***

Source: Authors’ computation using EViews 12.

Note. Level of significance *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Table 3. Descriptive statistics for model variables

Statistic	<i>LnRGDP</i> (₦ Billion, constant prices)	<i>INFR</i> (%)	<i>INTR</i> (%)	<i>LnMS</i> (₦ Billion)
Mean	5.624	19.732	3.258	9.421
Median	5.912	12.845	2.107	9.015
Maximum	7.312	72.835	28.561	13.274
Minimum	4.019	5.420	-18.947	6.112
Std. Dev.	0.934	17.456	9.375	2.145
Skewness	-0.412	1.786	-0.954	0.983
Kurtosis	2.745	5.213	4.622	3.527
Jarque-Bera	3.812	34.228	11.734	6.102
Probability	0.001	0.000	0.003	0.047
Sum	239.182	848.250	140.979	400.107
Sum Sq. Dev.	35.604	13210.437	3527.812	197.364

Source: Authors' computation using EViews 12

According to the results, the real gross domestic product shows a minor negative skewness of -0.412 , indicating that times of significant positive growth are less common than periods of lower-than-average GDP. A virtually mesokurtic distribution is shown by the kurtosis value of 2.745 , which suggests that extreme departures from the mean are not very noticeable. The assumption of normalcy is also significantly rejected by the Jarque-Bera test result of 3.812 ($p = 0.001$), indicating that conventional Gaussian-based economic models may not adequately account for the frequency of notable GDP shocks.

The inflation rate, on the other hand, shows a strong positive skewness of 1.786 , suggesting a right-tailed distribution with a higher frequency of high inflation periods than low inflation episodes. A potential for inflation to occasionally reach severe levels is suggested by the high kurtosis of 5.213 , which denotes fat tails. A rejection of normalcy is confirmed by the Jarque-Bera statistic of 34.228 ($p = 0.000$), which highlights the historical recurrence of unstable inflationary episodes in Nigeria, including those brought on by changes in fuel subsidies, shocks to exchange rates, and fiscal imbalances.

Additionally, the interest rate has a negative skewness of -0.954 , meaning that lower interest rates are more common than higher ones. The distribution is leptokurtic, with outliers and sporadic high-interest rate fluctuations, as indicated by the kurtosis of 4.622 . The normalcy assumption is rejected by the Jarque-Bera statistic of 11.734 ($p = 0.003$), which is common during times of policy-induced interest rate volatility.

With a fairly favorable skewness of 0.983, the money supply shows sporadic large expansions of the monetary base. The distribution may be rather leptokurtic, as indicated by the kurtosis of 3.527, which indicates the existence of periods of sharp increases in the money supply. A slight departure from normalcy is indicated by the Jarque-Bera statistic of 6.102 ($p = 0.047$). Table 4 displays the findings of the paired Granger Causality Analysis.

The outcome demonstrates a unidirectional causal relationship between Nigeria’s real gross domestic product and inflation rate. This suggests that real gross domestic product projections are greatly improved by lagged inflation rate values ($F = 3.5648, p = 0.0351$).

The ARDL model’s multicollinearity test results are shown in Table 5. They demonstrate that there is no multicollinearity in the model because none of the centered variance inflation factors are greater than 10. This indicates that the estimates of the variable coefficients are accurate and stable.

Table 6 shows the results of lag selection for the autoregressive distributed lag (ARDL) model. In this study, a lag of one was chosen as the optimal lag for the model based on minimizing the Akaike, Schwartz, and Hannan-Quinn information criteria.

Table 7 presents the ARDL Bounds Test results. At the 5 % significance level, the calculated F-statistic value of 2.103 is less than the lower critical constraint ($I(0) = 2.48$). This suggests that it is impossible to reject the null hypothesis that there is no long-term association. As a result, there is no proof that the variables in the model cointegrate. This suggests that there is not a long-term equilibrium relationship.

Table 4. Causal relationship between inflation rate and economic growth

Null Hypothesis	F-Statistics	P-value	Decision
<i>LnRGDP</i> does not Granger-cause <i>INFR</i>	1.7421	0.1906	Accept
<i>INFR</i> does not Granger-cause <i>LnRGDP</i>	3.5648	0.0351	Reject

Source: Authors’ computation using EVIEWS 12.

Table 5. Results of Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
<i>C</i>	1.754321	3.842115	NA
<i>INFR</i>	1.95E-05	1.652430	1.081245
<i>INTR</i>	6.12E-20	1.789552	1.097381
<i>LMS</i>	0.001845	2.112478	1.204512

Source: Authors’ computation using EVIEWS 12

Table 6. Lag Length Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1871.192	NA	1.78e+25	87.23874	89.56241	89.22458
1	-1634.450	215.5342*	2.24e+26*	84.15478*	86.32781*	86.15487*
2	-1786.287	32.25364	3910e+25	83.52345	79.68975	86.36678

Source: Authors' computation using EViews 12

Notes: * Indicates lag order selected by AIC, SC and HQ; LR — sequential modified LR test statistic (each test at 5 % level); FPE — Final prediction error; AIC — Akaike information criterion; SC — Schwarz information criterion; HQ — Hannan-Quinn information criterion

Table 7. Auto Regressive Distributed Lag Bounds Test

Test Statistic	Value	Number of Regressors
F-statistic	2.103452	4
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
5 %	2.48	3.68

Source: Authors' computation using EViews 12

Nevertheless, short-term relationships between the variables are not excluded by the absence of cointegration. The calculated coefficients of the ARDL model, which show how changes in the explanatory variables momentarily affect the dependent variable during the period under discussion, continue to represent the short-run dynamics.

The short-term impact of inflation and other macroeconomic factors on Nigeria's economic growth is displayed in Table 8.

Table 8. Short-run Auto Regressive Distributed Lag Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP(-1)	-0.7421	0.5421	-2.5471	0.7421
INFR	-0.0129	0.0022	-2.2149	0.0029
INTR	-0.0843	0.0343	-3.0863	0.0043
LMS	1.1024	0.3024	-3.1024	0.0004
C	45.326	15.3267	2.3267	0.0471
<i>Statistic</i>	<i>Value</i>			
R-squared	0.996782			
DurbinWatson	2.128943			
F-statistic	0.000012			

Source: Authors' computation using EViews 12

Table 9. Results of Diagnostic Tests for Serial Correlation and Heteroskedasticity

Test	Statistic Type	Value	Probability
Breusch-Godfrey Serial Correlation LM Test	F-Statistic	1.842317	0.1654
	Obs. R-squared	3.912084	0.1424
Breusch-Pagan-Godfrey Heteroskedasticity Test	F-Statistic	0.872956	0.5123
	Obs. R-squared	2.184371	0.6018
	Scaled Explained Sum of Squares	2.936447	0.4025

Source: Authors' computation using EVIEWS 12

The results of modeling demonstrate that inflation has a significant (p-value of 0.0029) and negative (-0.0129) impact on Nigeria's actual gross domestic product. Furthermore, they indicate a substantial (0.0043) and negative (-0.0843) correlation between the real interest rate and GDP. Subsequently, the findings demonstrate that the money supply has a positive (1.1024) and substantial (0.0004) real-term influence on GDP, suggesting that liquidity plays a simulative function in the economy. According to the R-square, the model's variables explain more than 99 % of the variance in Nigeria's economic growth, and the F-statistic of 0.000012 proves its high significance. The results of the Durbin-Watson test indicate the absence of first-order autocorrelation in the model residuals.

Both the Breusch-Godfrey Serial Correlation LM test and the Breusch-Pagan-Godfrey Heteroskedasticity test exhibit probability values higher than the 5 % significance level, according to the results shown in Table 9. This suggests that the null hypotheses of homoscedasticity and the absence of autocorrelation of order greater than one cannot be ruled out. The absence of problems with autocorrelation or heteroscedasticity confirms the accuracy of the regression analysis results.

5. Discussion

The outcomes obtained partially confirm earlier findings of other authors and are partially fundamentally new. For example, the descriptive statistics results (Table 3) reflect the dynamics of key macroeconomic variables in Nigeria, such as the real GDP asymmetry also found by Oligbi [48].

The Granger causality test showed that inflation in Nigeria affects economic growth, but there is no reverse effect. Moreover, according to the ARDL model, inflation in Nigeria has a negative effect on economic growth in the short term ($\beta = -0.0129$, $p = 0.0029$). This result is consistent with the findings of Mandeya & Ho [16], Bellepea et al. [17] obtained for African countries. However, it is at odds with the findings of Ifeacho et al. [49], who, using a different methodology and earlier data for 1981–2021, showed that inflation in Nigeria has a short-term positive impact on economic growth, but a long-term negative impact. In contrast, we found a short-term negative net effect of inflation on economic growth and no

long-term effect when controlling monetary policy tools. This phenomenon can be explained by the fact that high or erratic inflation rates lower real household purchasing power and raise uncertainty, which in turn reduces private investment and consumption and, ultimately, the GDP in subsequent years.

The constructed ARDL model shows that interest rate increases have a contractionary effect on GDP ($\beta = -0.0843$, $p = 0.0043$), consistent with their ability to control inflation while curbing investment. This aligns with the findings of Bello and Isah [50] for Nigeria. This is also in line with the findings of Hayat et al. [51], who, using wavelet transformation approach for Pakistani data from 1991 to 2020, found that high interest rates have a negative impact on real GDP in both the short and long run. The significant negative impact of the real interest rate on Nigeria's GDP highlights the limitations of the Nigerian government's current tight monetary policy. Since 2024, the Central Bank of Nigeria has increased the Monetary Policy Rate over 20 % in an effort to reduce inflationary pressures. Rising private sector borrowing costs have suppressed investment¹.

The study also found that expanding the money supply has a positive impact on real GDP ($\beta = 1.1024$, $p = 0.0004$), suggesting that it stimulates output in the short term. This is consistent with what Bajrami et al. [21] found. In addition to increasing the availability of credit, an increase in the money supply in a country stimulates investment and increases aggregate demand. It should be noted, however, that the main drivers of monetary expansion in Nigeria are fiscal dominance and deficit financing. According to the Central Bank of Nigeria, unless these injections are matched by growth in real sector productivity, they could create long-term inflationary pressures in the economy, even though the expansion of liquidity may stimulate short-term economic growth.

According to the modeling results (Table 7), all three tested macroeconomic factors have a significant impact on Nigeria's economic growth at the 5 % significance level. Thus, all three hypotheses formulated in Introduction are *confirmed*. Economic growth in Nigeria is positively associated with money supply growth (*H2*) and negatively associated with inflation (*H1*) and real interest rate growth (*H3*).

6. Conclusion

The study paid attention to the relationship between inflation and economic growth in Nigeria. Based on the results obtained, we can conclude that there is no significant long-run relationship between inflation and economic growth. However, the study found that there is a significant negative short-run relationship between inflation and economic growth in Nigeria when controlling for changes in the money supply and interest rates. This is because Nigeria's monetary policy serves the dual purpose of stimulating economic growth and reducing inflationary pressures,

¹ Central Bank of Nigeria (2025). Monetary Policy Decisions. Available at: <https://www.cbn.gov.ng/MonetaryPolicy/decisions> on 8th October, 2025 (accessed December 27, 2025).

which requires the application of opposing measures, which in turn lead to opposite results. On the one hand, increasing money supply as a tool for stimulating monetary policy fuels economic growth, but at the expense of increasing inflation, which, in turn, suppresses economic growth. On the other hand, raising interest rates as a restrictive monetary policy tool restrains economic growth while helping to reduce inflation, which, in turn, has a positive effect on economic growth.

In theory, the findings advance knowledge of the intricate and dynamic interplay among inflation, monetary policy, and economic expansion in developing nations such as Nigeria. They support the idea that inflation's short-term and long-term effects on growth can vary greatly, emphasizing the significance of including a variety of macroeconomic factors in economic modelling.

Practically speaking, the results highlight the necessity of a cogent and balanced monetary policy that carefully considers the trade-offs between fostering growth and curbing inflation. These findings can be used by policymakers to create actions that maximize economic results. Future studies could improve this strategy by methodically addressing the inflation-growth trade-off by adding a loss function.

Based on the findings, the study recommends the following:

1. Measures of inflation control such as currency stabilization, reduction in public spending, open market operations, subsidy reforms, boosting local production, amongst others, should be promoted to provide a favorable environment for economic growth.

2. Policymakers should prioritize developing interest rate policies that foster productive investment. The Central Bank of Nigeria (CBN) should not only rely on traditional rate changes but also explore creative solutions like targeted credit programs for specific sectors, inflation-linked savings options, and programmable monetary transfers through the eNaira. This approach could help stabilize liquidity while fostering inclusive growth.

3. Increases in money supply should go hand in hand with boosting productivity in the real economy. This means credit should be directed towards key areas like agriculture, manufacturing, energy, the digital economy, and housing. By doing so, output will be enhanced and jobs will be created, which in turn will help to ease inflationary pressures.

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Взаимосвязь инфляции и экономического роста с учетом влияния денежно-кредитной политики: пример Нигерии

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Аннотация. Современные исследования показывают сложную двустороннюю взаимосвязь между инфляцией и экономическим ростом. Они также подтверждают наличие переломного момента, за которым инфляция, вместо того чтобы выступать в качестве стимула экономического роста, становится его сдерживающим фактором. В данном исследовании рассматривается чистое влияние инфляции на экономический рост Нигерии за период с 1980 по 2023 г. при контроле со стороны инструментов денежно-кредитной политики. В исследовании использовался набор методов: описательная статистика, тест на единичный корень, метод выбора длины лага, построение модели ARDL и проведение соответствующих диагностических тестов. Источником данных послужили архивы Всемирного банка и Центрального банка Нигерии. Результаты попарного анализа причинно-следственной связи по Грейнджеру выявили одностороннюю причинно-следственную связь от инфляции к экономическому росту. Все переменные оказались стационарными в первой разности, что позволило провести тест ARDL на коинтеграцию, который, в свою очередь, показал отсутствие долгосрочной взаимосвязи между переменными. Расчеты по модели ARDL показали, что уровень инфляции оказывал значительное краткосрочное негативное влияние на экономический рост в Нигерии в рассматриваемом периоде. В то же время рост денежной массы, являясь проинфляционным фактором, значимо положительно влиял на экономический рост в краткосрочном периоде в Нигерии. Напротив, повышение процентных ставок, являющееся элементом ограничительной антиинфляционной политики, оказывало значительное негативное влияние на экономический рост в краткосрочной перспективе. Это означает, что сочетание инструментов экономической политики способно успешно решать проблему достижения компромисса между двумя ее основными целями.

Ключевые слова: инфляция; экономический рост; валовой внутренний продукт; взаимосвязь; авторегрессионная модель с распределенными лагами (ARDL); причинно-следственная связь по Грейнджеру.

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