EFFECTIVENESS OF MONETARY POLICY IN CONTROLLING NIGERIA'S INFLATION (1990-2023)

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Abstract

The study examined the effectiveness of monetary policy in controlling Nigeria inflation, using annual data spanning the period 1990 to 2023. Inflation remains a major threat to Nigeria's economic growth despite the various monetary efforts that have been adopted by the Central Bank of Nigeria. In this regard, the study employed the Autoregressive-Distributed Lag (ARDL) approach and investigate the nexus between inflation rate and interest rate, government expenditure, Gross Domestic Product, exchange rate, and broad money supply. The findings revealed that Gross Domestic Product (GDP) has negative and significant impact on Inflation rate (INFR) in the short run likewise in the long run. Exchange rate (EXCHR) has a negative and significant impact on Inflation rate (INFR) in the short-run likewise in the long-run. Government Expenditure (GEXP) has a positive and insignificant impact on Inflation rate (INFR) in Nigeria in the short-run likewise in the long-run. The result further revealed that Interest rate (INTR) has a negative and insignificant impact on Inflation rate (INFR) in the current year but however negative and significant at lag 1 in the short-run. The long run result however showed that interest rate (INTR) has insignificant positive impact on Inflation rate (INFR) in Nigeria. The coefficient of Broad Money Supply (BMS) has a positive and insignificant impact on Inflation rate (INFR) in the short-run but however positive and significant in the long-run. The study recommended that A framework for effective macroeconomic policy coordination needs to be established to achieve the much-needed price stability, and both monetary and fiscal policies must be employed to mitigate the inflation rate.

Keywords: Monetary Policy, Inflation rate, Exchange Rate, Interest Rate and Autoregressive Distributive Lag (ARDL).

1. Introduction

Monetary policy is acknowledged to be a vital instrument that a country can deploy for the preservation of domestic price stability and sustainable economic growth. Its role in ensuring an overall macroeconomic stability cannot be over-emphasized (Amassoma, Nwosa, & Olaiya, 2011). Largely, monetary policy approaches were put in place to achieve policy objectives such as price stability as well as maximum employment in an economy. Monetary policy effective framework deals with intermediate targets such as short-run interest rate (Coeure, 2016).

In most of these developing worlds, series of policies have been deployed through the CentralBanks of those countries to achieve the impact of inflation since the consequences are many. Particularly, the monetary policyhas been very active in the fightagainst the associated effects of inflation. Monetary policy has been in used since the Central Bank of Nigeria (CBN) comes into existence through the CBN Act in 1958. This role has made it possible for the emergence of active money market where treasury bills, a financial instrument used for open market operations (OMO) and raising debt for government, have grown in volume and value, becoming a prominent earning asset for investors and sources of balancing liquidity in the market (Ufoeze, Odimgbe, Ezeabalisi & Alajekwu, 2018).

The primary objective of monetary policy includes stable prices and low unemployment. In adherence, the monetary policy guides the Central Bank's supply of money to achieve the objectives of price stability (or low inflation rate), with high employment, and growth in aggregate income (Nyambok, 2010). This is essential because money is a medium of exchange and changes in its demand relative to supply, necessitating spending adjustments.

Inflation which is viewed as an economic state where more money is required in periodswhen the value of the currency in circulation is low due to gradual and continuous rise in thegeneral price level of goods and services has been a major challenge mostly, in emergingeconomies. This is so because of the debilitating effects on prices of goods and services,failing of the real value of money, etc. For instance, when the general price level increases,each unit of currency buys fewer goods and services than before hence, a negative effect onthe economy. In the same vein, it also brings about uncertainty over the future as no one canpredict when it stops hence, may discourage investment and savings. In periods of highinflation, there may be scarcities of goods as consumers usually engage in hoarding. Gbadeboand Muhammed, (2015) opined that inflation weakens the purchasing power of money whilereducing the standard of living of the people in the country. CBN has always been waging a war on inflation with only a limited achievement.

Over the years, CBN has made remarkable efforts in theconduct of monetary policy in the country although the impact seems to havebeen very insignificant seeing the incessant rise in the general price in Nigeria.The Federal Government of Nigeria (FGN) through the central bank has adopted different policy objectives, deploying them at different times, depending on dominant economicconditions with the use of various monetary policy tools such as reserve requirements, interestrates, discount rates, open market operations, inflation targeting etc. These monetary policyinstruments are usually alternated in terms of use because there have been situations in Nigeria

where the CBN had to shift from the use of one monetary instrument to another depending

on which of the objectives the Apex Bank wants to attain.

There is certainty that it is monetary policy that is used as the major tool in addressinginflationary pressures in Nigeria, but the real effectiveness in curbing these inflationarypressures in such developing economies has been a major argument as most of

the macroeconomictargets set to be achieved by the monetary authority have not been met as desired althoughsignificant progress has been made in this respect since the introduction of various financialsector modifications in the country which dates as far back as 1986 (Goshit 2006).

2. Literature Review

2.1 Conceptual Review

2.1.1 Monetary Policy

Monetary policy refers to the mixture of measures designed to regulate the value, supply and cost of Money in an economy. It can be described as the art of controlling the direction and movement of credit Facilities in pursuance of stable price and economic growth in an economy (Chowdhury, Hoffman and Schubert, 2013). Put in a different way, monetary policy refers to the actions of the Central Bank to regulate the Money supply which could be through discretional monetary policy instruments such as the open market Operation (OMO), discount rate, reserve requirements, moral suasion, direct control of banking system Credit, and direct regulation of interest rate (Loayza, and Schmidt- Hebbel, 2002).

2.1.2 Inflation

The concept of inflation is infamously difficult to define. This is a result of the fact that thecauses of inflation are multi-dimensional. It can be seen as an upward movement in the generalprice level or the upward movement in the prices that is shared by all components of the price deflator which is the consumer price index. According to Clement, et al., (2021), inflation refers to the continuous rise in the general price level of goods and services which usually comes in the form of a fall in the value of money in the economy in question. To Nnadi and Falodun, (2009), inflation is an economic situation in which prices are rising rapidly and continuously, causing a corresponding fall in the value of money. In the same vein, Hameed, (2010) defines inflation as a persistent increase in the general price level at a certain rate in which it can be concluded that it is too high and hence unacceptable. Pomeyie, (2010) perceives it as a persistent and appreciable increase in the general price.However, inflation refers to the continuous rise in the general price level of goods and services in an economy, manifesting in the form of a decline in the value of money. The effects of high inflation are generally considered to be harmful on the economy. That is why the achievement of price stability has always been one of the fundamental objectives of macroeconomic policy in both developed and less developed countries (Orubu, 1996).

2.2 Theoretical Framework

2.2.1 Monetary Theory of Inflation

Modern quantity theorists understand inflation as a monetary phenomenon that arises from a rapid expansion in the quantity of money than in total output (Friedman, 1956). Inflation everywhere is said to be based on an increased demand for goods and services as stated in the fact that people try to spend their cash balances (Jhingan, 2003). Their

deduction was that inflation is always a monetary phenomenon relying on Fisher's equation;

MV=PQ

Where; M- money supply, V- velocity of money, P- price level, Q- level of real output. V and Q are assumed constant, while the price level (P) varies proportionally with the supply of money (M).

In Nigeria, the attempts made to reduce the inflation rate have mainly been by adopting a monetarist approach and not the structuralist approach (Sanni and Folarin, 2010). The above task rests directly on the shoulders of the Central Bank of any nation. This the Central Bank of Nigeria has been carrying out via its monetary policy framework. Saxegaard (2006), discovered that excess liquidity deteriorates monetary policy transmission mechanism and thus the capability of monetary authorities to influence demand conditions in the economy is crucial for the success of monetary policy.

2.4 Empirical Review

Several empirical studies have been carried out to examine the impact of monetary policy on inflation at both international and national levels.

Lindiwe et al. (2023) investigated the relationship between interest rates and inflation inSwaziland using quarterly data from 2015 to 2021. Their analysis revealed a positive andstatistically significant correlation between the two variables, implying that risinginflation was typically followed by increases in interest rates. This suggests a reactivemonetary policy approach, where the central bank adjusts interest rates in response toinflationary pressures, rather than proactively curbing inflation before it escalates.

Tehranian, K. (2023). "Monetary Policy & Stock Market." The econometric tool used TaylorRule Equation Analysis. Findings show that the central bank's policy rate is linked to theinflation rate and output gap, with implications for asset price volatility. Concluded thatmonetary policy decisions influence both macroeconomic indicators and financial markets.Recommended thatgovernment consider asset price movements when formulating monetarypolicy to ensure financial stability. IMF (2023) analyzed global inflation trends and policy responses. The report stated that thetight monetary policy worked to control inflation but this came at the cost of creating risks of slowdown to the economy.

Galadima et al (2022) investigates the impact of monetary policy variables on core inflation in Nigeria. Data for the study covered a period of 156 months form January, 2007 – December, 2019, and were sourced from the Central Bank of Nigeria Statistical Bulletin (2020). The variables on which data were collected were core inflation rate, liquidity ratio, monetary policy rate, broad money supply and treasury bill rate. The data were analyzed using the Autoregressive Distributed Lag model (ARDL-ECM).ARDL bound test result revealed the existence of long-run relationship between the core inflation, the liquidity ratio, money supply rate, monetary policy rate, and Treasury bill rateThe monetary policy rate was found to decrease the core inflation rate in the long-run

only. Musa (2021) explored the relationship between interest rates and inflation in Nigeriafrom 2007 to 2019. Employing unit root and Johansen co-integration tests, the study usedmultiple proxies for interest rates, including the monetary policy rate, maximum lendingrate, and deposit rate. Results indicated that while interest rates had little short-termimpact on inflation, they were more influential in the long run.

Ezeanyeji and Ejefobihi (2021), focused on the impact of monetary policy on inflation control in Nigeria. The scope of the study was from 1980 to 2019, using the Augmented Dickey Fuller test, Johansen's co-integration test, the Error correction Model (ECM) as tools of analysis. Exchange rate, money supply (%GDP), treasury bill rate and monetary policy rate were used as independent variables against inflation rate as dependent variable. The research showed that monetary policy has no significant impact on inflation control in Nigeria both in the long and short run.

Ogundipe and Akinbobola (2020) employed an Autoregressive Distributed Lag (ARDL) Bounds Testing approach to investigate the relationship between monetary policy variables (money supply, interest rate, and exchange rate) and economic growth. The empirical results suggest that there is a significant positive relationship between money supply and economic growth in the short run, while in the long run, both money supply and exchange rate have significant positive impacts on economic growth. On the other hand, the study found that interest rate has a negative impact on economic growth both in the short and long run. The study concludes that the monetary policy variables considered in the analysis can be used to promote economic growth in Nigeria if appropriately implemented by policymakers.

Okotori, (2019) also used Augmented Dickey-Fuller (ADF), Unit Root Test, and Error Correction Model (ECM) to examine the dynamics of monetary policy and inflation in Nigeria from 2000 to 2017. The findings shows that monetary policy is a viable policy in addressing inflation, it was recommended that the Apex Bank continue deploying monetary policy tools to regulate inflation in Nigeria.

Ayodeji andOluwole (2018) empirically examined the impact of monetary policy on economic growth in Nigeria using an Error Correction Model using time series data covering 1981-2016. It was revealed that supply and exchange rate had a positive but fairly significant impact on economic growth. Also, interest rate and liquidity ratio have negative but highly significant impact on economic growth which supports the argument that monetary policies are better suited when they are used in targeting inflation rather than in stimulating growth.

The study of Ogunmuyiwa and Babatunde (2017), where they examined the impact of money policy on inflation in Nigeria from January 2010 to October 2016 using the ARDL model, including unit roots test which revealed a long and short run equilibrium. It was established that narrow money and interest rate have positive and significant impact on inflation. The study concluded that monetary policy variables have significant impact on inflation in Nigeria.

Nasko (2016)examined the impact of monetary policy on economic growth in Nigeria. The study used time-series data covering the range of 1990 to 2010. In concluding the analysis, multiple regressions were employed to analyze data on variables such as money

supply, interest rate, financial deepening and gross domestic product. These variables were all found to have marginal impact on the economic growth of Nigeriadue to change in monetary policy application.

Again, Nwoko et. al., (2016) examined the impact of monetary policy on the economic growth of Nigeria covering the period of 1990-2011. The study used the money supply, average price, interest rate and labour force were tested on Gross Domestic Product using multiple regression models as the main statistical tool of analysis. The study revealed that average price and labour force have significant influence on Gross Domestic Product while money supply was not significant.

3. Methodology

The estimation method adopted in this study is theAutoregressive Distributive Lag (ARDL) method of co integration analysis. The models used are estimated using data on Gross Domestic Product (GDP), Broad Money Supply (BMS), Government Expenditure (GEXP), Exchange Rate (EXCHR) Interest Rate (INTR) and Inflation Rate (INFR) for the period 1990-2023.

INFR = Inflation rate, INTR = Interest rate, BMS = Broad Money Supply, GEXP= Government Expenditure, EXR= Exchange rate, GDP = Gross Domestic Product

3.1 Model Specification

A model was formulated in which a linear relationship is established between change in inflation rate as the dependent Variable Gross Domestic Product (GDP), Broad Money Supply (BMS), Government Expenditure (GEXP), Exchange Rate (EXCHR) Interest Rate (INTR) and Inflation Rate (INFR)

The functional relationship between the variables is;

INFR= F(EXCHR, GDP, BMS, INTR, GEXP)……..…….(1)

Equation 1 can be stated in econometric form as:

$INFR = \beta o + \beta 1\ EXCHR + \beta 2\ GDP + \beta 3\ BMS + \beta 4 GEXP + \varepsilon t$……..……..…….(2)

Where;

INFR = Inflation rate, βo = Constant Intercept, β1 = Slope of coefficient of EXCHR. β2 = Slope of coefficient of GDP, β3 = Slope of coefficient of BMS, β4 = Slope of coefficient of GTE, EXCHR= Exchange rate, GDP = Gross domestic product, EXCHR= Exchange rate, INFR = Inflation Rate, BMS = Broad Money Supply, GEXP = Government Expenditure, Ɛt = The disturbance/Error term. As stated in this study, inflation rate i.e. INFR, has a functional relationship with Exchange Rate (EXCHR), Inflation Rate (INFR)Gross domestic product (GDP)Broad Money supply (BMS)and Government Expenditure (GTE)

3.2 Autoregressive Distribution lag (ARDL) Model.

The ARDL Model estimation technique is capable of estimating short-run and long coefficients on variables that are purely I(1) or even variables that have the combination of I(1) and I(0) (Pesaran and Shin, 2001). Based on the fact that the variables considered for the analysis are I(1) and I(0). The study considered this estimation technique to be appropriate for the analysis of data. The model specification in the ARDL model is as follows:

INFR= F(EXCHR, GDP, BMS, INTR, GTE)

$$\Delta INFR_t = \alpha_0 + \sum_{i=1}^{n} \alpha_{1i}\, INF_{t-i} + \sum_{i=1}^{n} \alpha_{2i}\, \Delta EXCHR_{t-i} + \sum_{i=0}^{n} \alpha_{3i}\, \Delta GDP_{t-i} + \sum_{i=0}^{n} \alpha_{4i}\, \Delta INTR_{t-i} + \sum_{i=0}^{n} \alpha_{5i}\, \Delta GEXP_{t-i} + \beta_1 INF_{t-i} + \beta_2 EXCHR_{t-i} + \beta_3 GDP_{t-i} + \beta_4 BMS_{t-i} + \beta_{5_i} INTR_{t-i} + \beta_{6_i} GEXP_{t-i} + \varepsilon_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

Where: INFR=Inflation Rate, EXCHR= Exchange, GDP=Gross Domestic Product, BMS = Broad Money supply, INTR = Interest Rate and GEXP= Government Expenditure α_1-α_5= Short-Run Coefficients, β_1-β=Long-Run Coefficients, Δ=Difference, ε=Error Term, t=time trend

4. Results and Discussion

Before running the regression analysis, the unit root test results which determine the stationarity of the data was first analyzed.

Table 1 Unit Root Test

Variables	Levels/First differences					
		T-stat.	1%	5%	10%	PROB.
GEXP	I(1)	-6.480225	-3.653730	-2.957110	-2.617434	0.0000
EXCHR	I(1)	-4.978750	-3.653730	-2.957110	-2.617434	0.0003
GDP	I(1)	-4.475421	-3.653730	-2.957110	-2.617434	0.0012
INFR	I(1)	-4.827251	-3.661661	-2.960411	-2.619160	0.0000
INTR	I(0)	-4.306140	-3.646342	-2.954021	-2.615817	0.0018
BMS	I(0)	-3.632379	-4.273277	-3.557759	-3.212361	0.0427

Source: Author's Computation (2025) Eviews 9.

The test was based on two statements of hypothesis, the null which states that there is unit root, implying that variables are not stationary. The alternative hypothesis states that there is no unit root, implying that variables are stationary. However, the review of table two above showed stationarity of variables used for this study with focus on 5% level of significance. From empirical evidence above, the null hypothesis is rejected while alternative hypothesis is accepted, thus concluding that the variables Inflation Rate (INFR), Broad Money Supply (BMS) Exchange Rate (EXCHR), Gross Domestic Product (GDP), Government expenditure (GEXP) and Interest Rate (INTR) are stationary series.

4.1 Estimation Results of ARDL Bound Test

As it can be seen in table 1 the variables are integrated at different order. This means that the Autoregressive distributive lag ARDL bound test for co integration can be applied to test the various relationships among the variables. The dependent variable is inflation rate (INFR) while the independent variables are Gross Domestic Product, Exchange Rate, Inflation Rate, Interest Rate and Broad Money supply (BMS).

Null hypothesis states that there is no cointegration between the coefficients of stock prices proxy by All Share Price Index and independent variables coefficient, while the alternative hypothesis states that there is significant long run relationship between the stock prices proxy by All Share Price Index and independent variables.

Table 2 Results of bounds test using F-statistic

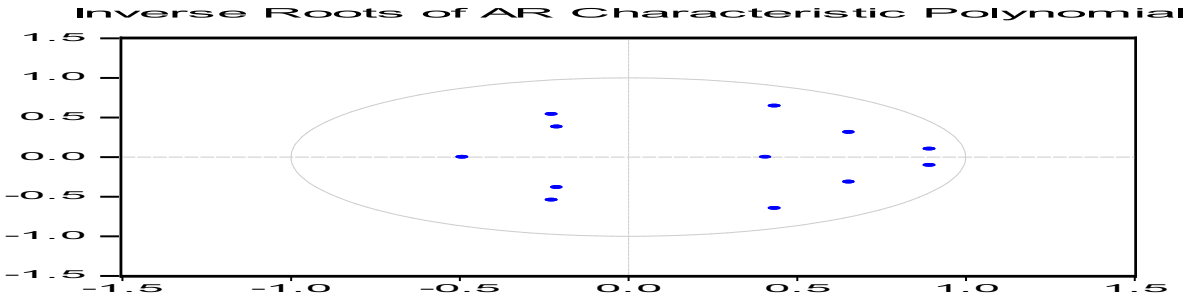
F STATISTIC	4.977684		
PERCENT	LOWER BOUND	UPPER BOUND	OUTCOME
10%	2.26	3.35	Cointegration
5%	2.62	3.79	Cointegration
2.5%	2.96	4.18	Cointegration
1%	3.41	4.68	Cointegration

F Statistics = 11.44674, K= 5, Actual Sample size = 31

Source: Author's computation (2024) Eviews Version 9.

Bound testing approach is based on F-statistics and two critical values which are called lower and upper bound. If the F-statistics is greater than lower and upper bound, the vectors are said to be cointegrated. On the other hand, if they are less than the lower and upper bound, they are not cointegrated. If it falls in between the two it is said to be inconclusive. As it is shown in the table 2 above, the F-statistics from the result above is greater than both the lower and upper bound for sample size of 31. Thus, the study concludes that the variables are co integrated. This implies there is a long run relationship between the variables against the null hypothesis which states that there is no long run relationship. Hence, the null hypothesis is rejected, while the alternative hypothesis is accepted.

Figure 1 Inverse root of AR characteristic of polynomial test in figure



The result of inverse root of AR characteristic of polynomial test in figure 1 could be observed from the graph that none of inverse roots lies outside the unit circle this implies the VAR stable condition.

4.2 ARDL Short-Run Estimate

The study estimates the short-run model using Akaike Information Criterion for an optimal lag selection and automatically selects ARDL (3, 2, 3, 3, 3, 3). The variables were logged so as to minimize the effect of outliers in the data. The result of the short-run ARDL estimate is presented in Table **4 below.**

Table 3 ARDL Short-Run Estimate

Dependent variable= D(log(INFR))				
D(LOGINFR(-1))	0.426966	0.212848	2.005968	0.0579
D(LOGEXCHR)	-1.489831	0.705379	-2.112100	0.0468
D(LOGGDP)	-0.931585	0.307108	-3.033418	0.0063
D(LOGGEXP)	1.106039	0.680342	1.625711	0.1189
D(LOGBMS)	0.305274	0.575164	0.530760	0.6012
D(LOGINTR)	-1.015179	0.754716	-1.345114	0.1929
D(LOGINTR(-1))	-1.465282	0.577837	-2.535805	0.0192
CointEq(-1)	-0.872320	0.190439	-4.580581	0.0002
R-squared=0.829644, Prob (F-statistic)=0.000005				

Source: Author's Computation, 2025 using EVIEWS 9. **Where:** D=Difference, Log=Logarithms, GDP= Gross Domestic Product, EXCHR= Exchange Rate, GEXP = Government Expenditure, INTR = Interest Rate, BMS = Broad Money Supply, INFR= Inflation Rate.

4.3 ARDL Long-Run Estimate

The ARDL long-run estimate is presented in Table 5 below.

Table 4 ARDL Long-Run Estimate

Dependent Variable=log(INFR)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
LOGEXCHR	-1.707895	0.639136	-2.672193	0.0143
LOGGDP	-1.067940	0.335399	-3.184084	0.0045
LOGGEXP	1.267928	0.714157	1.775418	0.0903
LOGBMS	1.272627	0.552882	2.301807	0.0317
LOGINTR	0.339237	0.834877	0.406332	0.6886
C	-25.391357	17.317585	-1.466218	0.1574

Source: Author's Computation, 2025 using EVIEWS 9. **Where:** D=Difference, Log=Logarithms, GDP= Gross Domestic Product, EXCHR=Exchange Rate, GEXP = Government Expenditure, INTR = Interest Rate, BMS = Broad Money Supply, INFR= Inflation Rate.

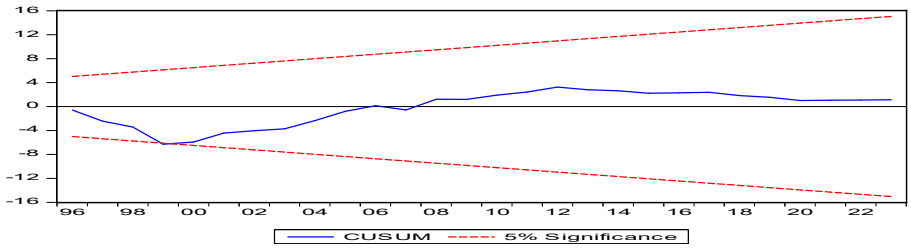
Table 5Diagnostic Check

The study conducts diagnostic test to ascertain the reliability of the above ARDL estimates and presents the result in Table 5 below.

Test	**Statistic**	**P-Values**
Heteroskedasticity: Breusch-Pagan-Godfrey	19.57145	0.6098
Ramsey RESET Test	2.302382	0.1408
Breusch-Godfrey Serial Correlation LM	6.199683	0.0451
Heteroskedasticity Test Arch	0.816176	0.3663

Source: Author's Computation, 2025 using EVIEWS 9.

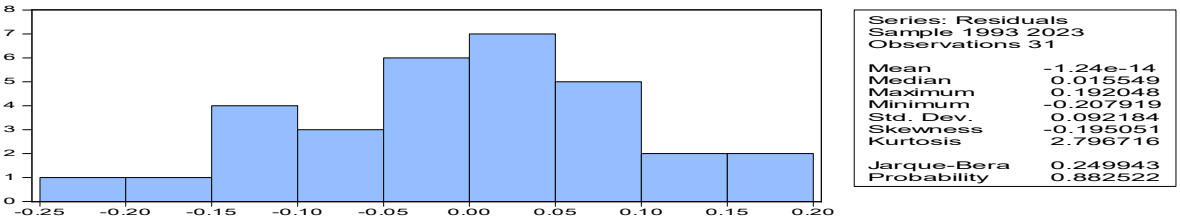
Figure 2 CUSUM plot



Source: Author's Computation, 2025 using EVIEWS 9.

From the above diagnostic test results, the probability value of the JarqueBera statistic is more than 5 percent which implied that the model has residual that is normally distributed. Similarly, the probability values of the observed R squares for both Breusch-Godfrey Serial Correlation LM test and Breusch-Pagan-Godfrey heteroscedasticity test are more than 5 percent which implied that the model is free from serial autocorrelation and heteroscedasticity problem. In addition, the parameters of the model are stable because the CUSUM plot in Figure 1 above falls within the 5 percent critical bound.

Figure 3 Normality Test



Source: Author's Computation, 2025 using EVIEWS 9.

4.4 Discussion of Results

The variables Inflation Rate (INFR), Gross Domestic Product (GDP), Exchange Rate (EXCHR) Interest Rate (INTR) Government Expenditure (GEXP)and Broad Money supply (BMS) were logged to minimize the effect of outliers in the data. Thus, the result of the short-run ARDL model is presented in Table 3. The rule of thumb states that if p-value is less that 5 percent or 0.05 it shows a positive significance otherwise, it is insignificant.

The short run results shows that Gross Domestic Product (GDP)has negative and significant impact on Inflation rate (INFR). The coefficient explained that a unit increase in Gross Domestic Product (GDP) will result in about 0.931585 percent significant decrease in Inflation rate (INFR) in Nigeria. Similarly, the long run results shows that Gross Domestic Product (GDP) has negative and significant impact on Inflation rate (INFR) in Nigeria. The coefficient explained that a unit increase in Gross Domestic Product (GDP) will result in about 1.067940 percent significant decrease in Inflation rate (INFR) in Nigeria. This implies that the Gross Domestic Product (GDP) has a negative and significant impact on Inflation rate (INFR) in Nigeria.

The results further revealed that exchange rate (EXCHR) has a negative and significant impact on Inflation rate (INFR)in the short-run. Precisely, the coefficient revealed that a unit increase in exchange rate (EXCHR) will result in about 1.489831 percent significant decrease in Inflation rate (INFR) in Nigeria. Similarly, results revealed that exchange rate (EXCHR) has a significant negative impact on Inflation rate (INFR)in the long-run. The coefficient revealed that a unit increase in Exchange Rate (EXCHR) will result in about 1.707895 percent significant decrease in Inflation rate (INFR)in Nigeria.

Government Expenditure (GEXP) has a positive and insignificant impact on Inflation rate (INFR) in Nigeria in the short-run. Thereby, indicating that, a unit increase in

Government Expenditure (GEXP) will lead to a 1.106039 percent insignificant increase in Inflation rate (INFR). The results similarly shows that Government Expenditure (GEXP) has insignificant positive impact on Inflation rate (INFR) in the long-run. The coefficient explained that a unit increase in Government Expenditure (GEXP) will result in about 1.267928 percent insignificant increase in Inflation rate (INFR).

Interest rate (INTR) has a negative and insignificant impact in the current year but however negative and significant at lag 1 on Inflation rate (INFR) in Nigeria in the short-run. Thereby, indicating that, a unit increase in interest rate will lead to a 1.015179 percent insignificant decrease in Inflation rate (INFR) and 1.465282 significant decrease in the short run. The results also showed that interest rate (INTR) has insignificant positive impact on Inflation rate (INFR) in the long-run. The coefficient explained that a unit increase in interest rate (INTR) will result in about 0.339237 percent insignificant increaseon Inflation rate (INFR). This implies that an increase in interest rate increases inflation both at long and short run. This finding is consistent with the findings of Isiaq Olasunkanmi Oseni (2023) but contrary with that of with that of Udochukwu (2021) on the influence of monetary policy in Nigeria.This is also consistent with the monetary theory which opines that an increase in MPR brings about a reduction in inflation. The implication of this could be related to the fact that an increase in MPR affects the amount of money by way of reducing credit which reduces demand-pull inflation.

Additionally, the coefficient of Broad Money Supply (BMS) has a positive and insignificant values at 5 percent level in the short-run. Thereby, indicating that, a unit change in Broad Money Supply will lead to an insignificant increase on Inflation rate (INFR) 0.305274 percent. The result also shows a positive and significant impact on Inflation rate (INFR) in the long-run. Precisely, the coefficient revealed that a unit increase in Broad Money Supply (BMS) will result to about 1.272627 percent significant increase in Inflation rate (INFR) in Nigeria. This is consistent with the findings of Udochukwu (2021) on the influence of monetary policy in Nigeria but inconsistent with the findings of Simon et al (2020) on **impact of monetary policy on core inflation in Nigeria.**

Broad money supply influence inflation inboth the short and long run. The rise in money supply lead to a rise in the general inflation rate; this implies that the expansionary monetary policy in Nigeria could bring about price volatilities and caution has to be taken when pumping money into the economy as it can lead to persistent rise in the price level.

In term of the goodness of fit, the value of R-Square and adjusted R-squared reveals a very high goodness of fit because R-Square with a value of 0.829644 is close to 1. The value showed that about 82 percent of total variation in Inflation Rate (INFR)is explained by Gross Domestic Product (GDP), Interest Rate (INTR), Exchange Rate (EXCHR) Broad Money supply (BMS) and Government expenditure (GEXP) while only less than 28 percent is explained by the error term. The implication of this is that the model is of a best fit. Additionally, the probability value of F-statistic shows a very small probability value (0.000005) suggesting a jointly high significance impact of all the independent variables on Inflation Rate (INFR) in Nigeria which is below 0.05 percent.

For the Error Correction Term (ECT), the coefficient showed significant negative value (-0.872320) at 5 percent level which implied that there is a long run relationship among the variables; Gross Domestic Product (GDP), Exchange Rate (EXCHR) Interest Rate (INTR), Broad Money Supply (BMS) and Government expenditure (GEXP). The significant negative coefficient of the ECT term implied that there is an adjustment in the system if any disequilibrium occurs. The coefficient of the ECT Term explained that about 76 percent of the disequilibrium in the long run will be adjusted annually.

5. Conclusion and Recommendations

This paper empirically examined the effectiveness of monetary policy in controlling inflation in Nigeria. These variables include Gross Domestic Product (GDP), Interest Rate (INTR), Exchange Rate (EXCHR) Broad Money supply (BMS) and Government Expenditure (GEXP) as independent variables, and Inflation Rate (INFR)as a dependent variable.

a. Conclusion

The study concludes that inflation in Nigeria are significantly influenced by macroeconomic variables both in the short and long run. Economic growth (GDP) and exchange rate exhibit a significant inverse relationship with inflation, indicating that improved output performance and exchange rate stability help reduce inflationary pressures. Government expenditure, however, shows no significant effect, suggesting inefficiencies in fiscal spending. Interest rate demonstrates delayed effectiveness, being significant only at lag, while its long-run impact remains insignificant. In contrast, broad money supply emerges as a key driver of inflation in the long run. Overall, the findings highlight the importance of output expansion, exchange rate management, and prudent monetary control in achieving price stability in Nigeria.

5.2 Recommendations

Based on the findings, the following recommendations are put forward;

i. GDP shows negative and significant impact on inflation in short long run. Therefore, Government should prioritize sustained economic growth through increased production, especially in manufacturing and agriculture, as higher output helps reduce inflationary pressures.

ii. Exchange Rate exhibit negative and significant short and long run. CBN should pursue exchange rate stability and policies that strengthen the naira (e.g., boosting exports, reducing import dependence), since a stronger and more stable exchange rate helps lower inflation.

iii. Government Expenditure shows positive but insignificant in the short and long run. Government should improve the efficiency and targeting of public spending toward productive sectors (infrastructure, industry), rather than merely increasing expenditure, since current spending has no meaningful impact on inflation.

iv. Interest Rate shows negative and insignificant at current, negative significant at lag, positive insignificant long run. The CBN should adopt a consistent and forward looking monetary policy, as interest rate effects on inflation are delayed. Policy actions should be proactive rather than reactive.

v. Broad Money Supply shows positive and insignificant in the short run while positive significant long run. The CBN should closely regulate money supply growth, as excessive expansion leads to inflation in the long run. Emphasis should be on monetary discipline and controlled liquidity expansion.

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