Monetary Policy Toolkit and Inflation in Nigeria: Empirical Evidence in a Period of Exchange Rate Depreciation

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Abstract		Original Research Article

The potency of monetary policy in contending inflation in Nigeria between 1981 and 2023 was examined in this paper. It used time series data from publications from the Central Bank of Nigeria and the World Development Indicators. The autoregressive distributed lag (ARDL) econometric procedure was used to analyze the study. The findings demonstrated that, consistent with presumptive predictions, the broad money supply, interest rate, openness, and real gross domestic product dynamics as monetary policy variables all positively correlate with Nigeria's inflation rate. In particular, the study found a statistically insignificant negative correlation between the fiscal deficit, population, and exchange rate at the current and lagged periods (first and second lags). The study recommended: the Federal government should consciously direct policy actions towards considering monetary policy adjustments to reduce lending rates, especially for SMEs, or small and medium-sized businesses. This intervention should commence within the next six months and should maintain a tight monetary policy stance to control inflation, with a target inflation rate below 10% within 12–18 months and adopt steps to stabilize the Naira, like better management of foreign exchange reserves management and promoting exports. The CBN should aim for significant exchange rate stabilization within 18 months.

Keywords: Inflation Rate, Broad Money Supply, Real Gross Domestic Product, Fiscal Deficit.

1. INTRODUCTION

The pursuit of price stability, which is defined as keeping inflation low and steady, is increasingly acknowledged by economists and policymakers as the primary medium- to long-term objective of monetary policy (Odior, 2013). One approach to economic control that countries have used is monetary policy which intends to promote development and economic growth that is sustainable. Adam Smith being the first to officially explain how money and economic aggregates are related, and monetary theorists later supported this idea (Ogunmuyiwa and Banatunde, 2017). Monetary authorities carry the duty of employing monetary policy to boost their economies since it influences macroeconomic outcomes like" price stability, economic growth, BOP equilibrium, employment promotion, and a number of other objectives" (Adigwe, Echekoba and Onyeagba, 2015). Since monetary policy affects macroeconomic goals, monetary authorities have a responsibility to use it to strengthen their economies (Iyiola and Adetunji, 2014).

The Central Bank Act of 1958 gave the Central Bank of Nigeria (CBN) the mandate to develop and carry out monetary policy. Treasury bills, a financial device exploited for *Open Market Operations* (OMO) and snowballing government debt, have swelled in size and worth as a result of this function, making them an important source of market liquidity balance and a prominent earning asset for investors. The CBN also uses the issuance of instructions for credit rationing as a monetary policy tool. (Apere and Karimo, 2014). However, Nigeria has had a number of monetary policy regimes. Although the goal is to stabilize prices, it may be tight at times or loose at others. Since its founding, the CBN has advocated two primary monetary policy measures: exchange rate targeting (1959 through 1973) and monetary targeting (1974 till date). Both direct and indirect monetary regulating methods were used to carry out the previously described policy tactics. However, when inflation is high, the chances of holding onto money increases, resulting in activities that use real resources inefficiently.

Accordingly, inflation lowers the standard of life for citizens and diminishes money's purchasing value (Gbadebo and Mohammed, 2015). During inflationary times, policymakers intend to contend inflation and preserve price stability. The amount of inflation in an economy is mostly determined by two key factors: "the money supply and the stock of goods and services" (Gbadebo and Mohammed, 2015). The duo attains the position of being the principal targets of policymakers when inflation starts to persist. In a developing economy like Nigeria, inflation has persisted as a conundrum for the monetary authorities despite the deployment monetary policy toolkits.

The CBN has employed a number of quantitative tools including OMO, the Required Reserve Ratio (RRR), the Bank Rate, and the Liquidity Ratio along with qualitative tools, to achieve its stated goals. However, there are a number of studies in the field on the effectiveness of monetary policy in addressing Nigeria's inflation issue, including Danjuma, Jbrin and Blessing (2012), Nenbee and Madume (2011), Gbadebo and Mohammed (2015), Ekong and Effiong (2020), and Okon *et al*., (2021).

In order to determine if Nigeria's inflation problem is a monetary phenomenon or not, earlier research either used monthly data or inappropriate set of financial factors. In order to ascertain if variables like interest rates, exchange rates, Population, Real gross domestic product, Fiscal deficit, Trade Openness and broad money supply may truly be utilized to counteract inflation in Nigeria, this study employs a suitable combination of monetary variables.

The Nigerian economy has undergone inflationary pressure throughout the years, which has slowed its growth. According to Gbadebo and Muhammed (2015), this can be linked to the 1970s, when inflation reached double digits. According to economic inflation trends, the inflation rate gyrated from 63.6 per cent to 72.8 per cent in the 1990s. Due to economic reform ingenuities, the economy stabilized in 2003. This was followed by gyrated inflation from 12.9 per cent in 2000 and 14 per cent to 2001. Between 2002 and 2005, the headline inflation retained the double digits, recording 15.0 per cent and 17.9 per cent, respectively. Though it slightly diminished to 11.8 per cent and 12.3 per cent in 2010 and 2013, respectively, it had a sharp decline to 8.24 per cent and 5.38 per cent in 2006 and 2007 before skyrocketing to 11.60% and 12.00% in 2008 and 2009, respectively. There was a dwindling trend to 8.1 per cent in 2014 but upsurged to 9.1 per cent in 2015 with an accelerated upsurge in 2016 to 15.7 per cent, then it further increased to 16.52% and 12.09% in 2017 and 2018 respectively. Recently, the rate has gyrated from 16.95 per cent in 2021 to 33.24 per cent in 2024.

Very little has been done to reduce the nuisance of inflation in the Nigerian economy recently, despite the policymakers' best efforts. In fact, in less developed nations such as Nigeria, inflation is the primary source of social and political instability as well as economic stagnation (Philip *et al.*, 2014). Furthermore, persistent reductions in the 'value of money', unequal income spread amid earners, a decline in investments and savings, and a reduction in social services due to price rises are all consequences of inflation (Philip *et al*., 2014). Too much

relative price volatility and improper allocation of resource are caused by inflation. In cases when nominal wages lack escalator clauses, it decreased the real income of labor. Given the long-term impact of the inflation rate in Nigeria, it is necessary to assess how well monetary policy is working to reduce it.

The primary aim of the study is to investigate the efficacy of monetary policy in controlling inflation in Nigeria from 1981 to 2023. The explicit objectives are: (i) to examine the efficacy of money supply in combating inflation in Nigeria; (ii) determine if interest rate is effective in managing inflation in Nigeria; and (iii) examine the efficacy of exchange rate in managing inflation in Nigeria.

There are five (5) sections in this study. The introduction is covered in Section 1, the literature review (including conceptual, theoretical, and empirical literature) is covered in Section 2, research methodology is covered in Section 3, and data analysis and a discussion of the findings are covered in Section 4. Finally, the study's conclusion and recommendations are presented in Section 5.

2. LITERATURE REVIEW

2.1 Conceptual Literature Review

Most central banks' main responsibility is to establish the monetary policy of their individual countries to support the purposes of stable prices, highest employment, and reasonable long-term interest rates. The Federal Executive Council has ultimate authority over monetary policy, but the CBN is primarily responsible for creating it and has had considerable autonomy in doing so (Akujuobi, 2010).

The credit control mechanisms implemented by a nation's central bank are known as monetary policy (Jhingan, 2000). It is a collection of actions meant to adjust the cost, supply, and value of money in line with the predictable volume of economic endeavor" (Folawewo and Osinubi, 2006). Such policy uses a central bank's ability to regulate the money supply — primarily through deposit money banks — as a tool to accomplish specific economic objectives.

Using monetary policy tools to achieve price stability always entails indirectly pursuing other goals, which are only possible when price stability and financial market allocative efficiency are present (Chipote andkhetha-Kosi, 2014). Since inflation targeting is considered to be a crucial instrument for attaining macroeconomic stability, it has notably taken center stage in monetary policy discussions in almost every economy. Inflation, characterized as a consistent and discernible upsurge in the overall price situation, is one of the principal economic factors that can alter economic endeavors (Bello and Saulawa, 2013).

In the fiscal side, inflation is mostly brought on by continuous operation deficit budgeting, which show that the economy is spending in excess of what it is generating as revenue. In the monetary sphere, inflation is thought to be generated by a disproportionate escalation in the money supply. The main reason the exchange rate is stressed in the BOP component is that a breakdown in the exchange rate raises inflationary

forecasts in the local economy and causes higher import prices (imported inflation).

Scholars have ascribed inflation, particularly in developing and emerging economies, to either "an expansion of the excess money supply, a structural imbalance in the economy (structural inflation), international motivation (imported inflation), or a combination of these factors" (Akinbobola, 2012; Bello and Saulawa, 2013). According to Akinbobola (2012), the main reasons of economic slowdown in many developing economies are inflation, social and political upheaval. Decisions regarding spending, saving, and investing are impacted by inflation since it leads to resource misallocation and price uncertainty.

Based on the viewpoint of policymakers, it impedes economic growth and development since it deters savings and investment; as a result, policymakers work hard to lower inflation, and a number of authors draw attention to the problem (Danjuma *et al.*, 2012; Folawewo and Osinubi, 2006) interestingly, structuralists, maintain that inflation can be caused by a variety of unique issues rather than merely excessive money creation. They contend that supply bottlenecks caused by structural rigidities in the system result in shortages and a persistent budget deficit, which in turn cause inflationary pressures.

2.2 Theoretical Literature Review

Structuralists Theory

The method of the structuralists was primarily expounded in Latin America (Harberger, 1963). According to this view, the money supply may rise in tandem with price levels, but it is purely a feedback to inflation and not its cause. They believed that economic growth's strain on an undeveloped social and economic structure, such as that of Nigeria, was the root cause of price increases. Among other things, they focus their analysis on the money supply and import substitution (exchange rate) as sources of inflation.

The Monetary Inflation Theory

According to modern quantity theorists, "inflation is a monetary phenomenon" that happens when the amount of money grows more quickly than the total amount of output (Friedman, 1956). It is believed that the primary driver of global inflation is a upshoot in demand for commodities, as evidenced by people's desire to do away with their cash balances (Jhingan, 2003).

They used Fisher's equation, $MV = PQ$, to conclude that inflation is always a monetary event. Where "Q is the real output level, P is the price level, V is the money velocity, and M is the money supply V and Q are assumed to be constant while the price level (P) varies proportionately to the money supply (M)" (Jhingan, 2003). According to Sanni and Folarin (2010), Nigeria has primarily used a monetarist strategy rather than a structuralist one in its attempts to lower the country's inflation rate. Any country' central bank is solely answerable for the aforementioned task. Through its monetary policy framework, the CBN has been doing this. Since excess liquidity has an impact on the mechanism via which monetary policy is transmitted, Saxegaard (2006) concluded that the capacity of CBN to impact demand circumstances in the economy is indispensable for the realization of monetary policy. Since excess liquidity has an impact on the mechanism via which monetary policy is transmitted, "the ability of monetary authorities to influence demand circumstances in the economy is essential for the success of monetary policy" (Saxegaard, 2006).

2.3 Empirical Literature Review

Philip *et al.* (2014) used cointegration and error correction techniques from econometric research to investigate how well monetary policy worked to lower inflation in Nigeria between 1970 and 2012. While the Granger Causality test showed a unidirectional association amid monetary policy and inflation, the co-integration tests showed a cointegrating nexus. On the other hand, the VECM test showed that M_2 and credit have a positive relationship with GDP, inflation, and the exchange rate, whereas the latter two had a negative link.

The efficacy of policy as a counter-inflationary device in Nigeria was examined by Gbadebo and Mohammed (2015) using co-integration and ECM on quarterly data hovering from 1980 to 2012. They observed a long-term nexus amid inflation cum the regressors. From outcomes, "the focal catalysts of inflation in Nigeria are the money supply, interest rates, and oil prices".

In the study by Opeyemi (2018), they investigated the monetary policy as a regulatory weapon for inflation in Nigeria. With the ECM being deployed, the results disclosed that while there was no noteworthy inflation-exchange rate nexus, the rate of interest and the money supply were both statistically momentous in the amplification of the variation in the rate of inflation. The study therefore disclosed that price level in Nigeria has magnificently stabilized via the CBN's policy toolset.

With the Smooth Transition Regression model being deployed by Bello and Sanusi (2019), a monetary-inflation nexus was estimated using data for the years 1995Q1–2018Q2. In a regime of low inflation, the chunk of discrepancies in the prices were driven by variations in the prices of food, energy, companies' marginal costs, and imported goods. However, in a high inflation, the exchange rate is the only factor that can account for price fluctuations.

Ebipre and Amaegberi (2020) in their study scrutinized how money supply, inflation, and monetary policy all affected the Nigerian economy from 1990 to 2019. To attain long-term equilibrium, the study used the ECM to epitomize the convergence of the inflation-defining components. It was noted that the money supply and expected inflation had a substantial impact on inflation.

Darma and Abdulsalami (2020) also explored the monetary policy-inflation nexus in Nigeria between 1970 and 2018. With the ARDL put to use, the findings confirmed that the inflation rate in Nigeria and monetary policy indicators were cointegrated. At first difference, the fallouts portrayed that the MPR was statistically substantial in the short term.

With the ARDL Cointegration Bound test, Marafa (2021) considered inflation and the effectiveness of monetary policy in Nigeria. The empirical inquiry employed quarterly time series

data from 2006 to 2020. The ARDL estimation portrayed that all of the chosen monetary policy toolkits have a predicted bearing on the inflation rate with different lags. However, the CRR and the MPR were the only factors variables that posed a substantial bearing on the long run inflation.

Abdulhamid *et al*. (2022) examined the nexus between Nigeria's inflation and exchange rate using the ARDL technique on yearly data from 1980 to 2021. While there is a strong and negative bearing amid inflation and exchange rates through the long term, in the short term, the exchange rate displayed a positive and statistically momentous influence on inflation.

Okotori and Eze (2022) explored the impact of monetary policy on Nigerian inflation for the years 2009–2018, with the data being analysed using the ECM. The outcomes exhibited that the exchange rate, reserve requirement, liquidity ratio, monetary policy rate, rate of treasury bills, and reserve requirement all had a substantial and meaningful effect on the inflation rate.

The empirical study by Ekong and Effiong (2020) as well as that explored by Effiong, Udonwa and Udofia (2025) further portrayed the role of monetary policy in tackling inflation problem in Nigeria. In their studies, monetary policy was observed to exert an insignificant effect on inflation, thereby blaming such outcome on the lack of coordination amid monetary cum fiscal policies.

This study therefore incorporates diverse factors (monetary, fiscal, and structural) that are believed to influence inflation within the Nigerian economy by utilizing the diverse estimation technique on recent data from Nigeria from 1981 to 2023.

3. METHODOLOGY

3.1 Our Model

The model itemized below is comparable to the model adopted by Gbadebo and Mohammed, (2015), and Akarara, and Azebi (2018) in their various works. The functional nexus amid the regressand and the regressors is provided in Equation 3.1 below:

$$INFL = f(M_2, INTR, EXR, OPEN, POP, FDEF) \qquad (3.1)$$

The Econometric form of this relationship can be stated as:

$$INFL = \beta_0 + \beta_1 M_2 + \beta_2 INTR + \beta_3 EXR + \beta_4 OPEN + \beta_5 POP + \beta_6 FDEF + \mu \qquad (3.2)$$

Where:

INFL = Inflation rate, M_2 = Broad Money Supply, INTR = Interest Rate, EXR = Exchange Rate, POP = Population, RGDP = Real gross domestic product, FIDEF = Fiscal deficit, Open = Trade Openness.

$\beta_1 - \beta_6$ = coefficient parameters while β_0 is the intercept and μ = error term.

The following are the anticipated signs of the regression parameters:

$\beta_1 > 0; \beta_2 < 0$ and; $\beta_3 > 0; \beta_4 < 0; \beta_5 > 0;$ and $\beta_6 > 0$

This implies that M_2 and EXR are expected to have a positive relationship on INFL while INTR is expected to have a negative relationship on INFL.

3.2 Data Sources

Secondary sources provided the data used in this investigation. To accomplish the study's goals, annual data from 1981 to 2022 was gathered from the World Development Indicators (WDI) and publications of the CBN, including the Statistical Bulletin.

3.4 Estimation Techniques

This paper deployed diverse estimation techniques in scrutinizing the interaction between monetary policy and inflation in Nigeria. Such techniques are the unit root test to ascertain the order of integration, the cointegration test to determine the existence of long run interaction in the mode, and the autoregressive distributed lag (ARDL) procedure to estimate both the short run and long run interactions in the model.

4. FINDINGS AND DISCUSSIONS

4.1 Unit Root Test

The stationarity condition of the variables was investigated using the Augmented Dickey Fuller test. INFLA, INTR, and OPEN were stationary following first differencing, but FINDEF, EXR, M2, POP, and RGDP were stationary at level, as shown in Table 1 below. Stated otherwise, the variables are integrated of order zero and one, or I(0) and I(I) respectively.

Table 1: ADF Unit Root Test Results

Variables	ADF		
	Level	1st Difference	Order of integration
INFLA	-2.5229	-6.5295	I(1)
FINDEF	-3.0064	-	I(0)
OPEN	-2.4231	-7.8176**	I(1)
EXR	-4.1286	-	I(0)
M2	-3.0455	-	I(0)

INTR	-2.8324	-	I(1)
RGDP	-3.2446	-	I(0)
POP	-3.8424	-	I(0)

When some of the variables are I(0) and others are I (1), the unit root problem in the equations is indicated. Co-integration tests must be performed to determine whether the variables in each equation have an equilibrium connection. The study uses the ARDL bound testing technique for co-integration because the variables are integrated of different orders (i.e., order zero and order one).

4.2 Lag Length Selection

Table 2: Optimal lag length

Endogenous variables: INFLA, OPEN, FINDEF, RGDP, POP, M2, INTR, EXR						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-2086.18	NA	4.12e+35	104.7088	105.0465	104.8309
1	-1882.34	315.9427	4.03e+32	97.71705	100.7570*	98.81621
2	-1807.24	86.36618	3.44e+32	97.16200	102.9042	99.23819
3	-1685.44	91.34777*	6.82e+31*	94.27215*	102.7165	97.32538*

The lag structure determines an error correction model's validity and effectiveness. To ascertain the laglengths, the study employed VAR lag order selection criteria. In the study, "the Akaike Information (AIC) and Schwarz Criterion (SC)" are used as indicated in Table 2. The study set the maximum lag lengths at three based on the AIC technique, to minimize the chance of underestimating and increase the chance of retrieving the genuine lag (Venus, 2004).

4.3 Co-integration Test Results

The bound testing result displayed in Table 3 below suggests that there is a long-term nexus amid the variables in all of the estimated equations since the F-statistic values are higher than the critical range at the five percent level in both the low and high bounds.

Table 3: Bounds cointegration test result

Equation: PCGDP (INFLA, OPEN, FINDEF, RGDP, POP, M2, INTR, EXR)				
	K	F-statistic	I(0)	I(1)
5% critical value	7	4.96	2.32	3.50

With the F-statistic (4.96) lying beyond the 5 per cent lower (2.32) and upper bounds (3.50), then we thus discard the null hypothesis and settle that cointegration exists. After rejecting the null hypothesis, the analysis proceeds to estimate the long-run coefficient of each of the equations.

4.4 Long Run Result

With correction of short run distortions in the model, we present the long run estimates of the model in Table 4. Based on the ARDL long-run estimates, the findings reveal the following insights: one-unit increase in openness results in a 0.6315 unit increase in INFLA, based on the statistically significant and positive coefficient for OPEN. The a priori expectation is supported by this finding. It indicates that economic growth is facilitated by openness to international trade, however, the findings of this investigation show that during the period under review, factors like import dependency, currency fluctuations, or macroeconomic imbalances may be outweighing or offsetting the dynamics of openness and its advantages, such as efficiency and competition. The coefficient of fiscal deficit (FINDEF) is negative and insignificantly related

to INFLA while that of RGDP is positive and insignificant. The long run error corrected estimate of the model is presented as follows:

Table 4: Long run error corrected estimates

Dependent Variable: INFLA				
Variable	Coefficient	Std. Error	t-Statistic	Probability
OPEN	0.6315	0.1388	4.5511	0.0007
FINDEF	-0.7562	0.8960	-0.8439	0.4152
RGDP	0.4506	0.4002	1.1261	0.2822
POP	-57.2492	10.7893	-5.3061	0.0002
M_2	0.0000	0.0001	2.2382	0.0449
INTR	0.1498	0.3639	0.4117	0.6878
EXR	-0.2301	0.0304	-7.5728	0.0000
C	161.9028	31.0658	5.2116	0.0002

Source: Researcher's computation (2025)

There is a statistically noteworthy negative correlation between POP and INFLA. A one unit increase in population growth is associated with 57.2492 units decline in INFLA. This finding deviates from theoretical expectations, undermining the fact that population growth can boost labour force participation and productivity. It also suggests that inflation control can coexist with demographic expansion, especially if employment and productivity are growing too. A one-unit increase in M2 is associated with a 0.00011 unit increase in INFLA, according to the coefficient for M2, which shows a positive but statistically significant link with INFLA. This result is consistent with a priori assumptions, indicating that the economy will suffer from the increased money supply due to a number of factors, including decreased monetary discipline, the hazards of over-liquidity, too much money chasing too few products, and monetary growth as a driver of inflation.

Interest rate and INFLA have a positive, statistically insignificant association, whereas exchange rate interacted negatively with inflation. A unit upsurge in EXR causes a 0.2301-unit drop in INFLA, due to the statistically significant negative coefficient for EXR. This result is consistent with the expectation that exchange rates and economic development would be negatively correlated. According to the negative relationship, a stronger currency lessens the impact of global price increases on domestic inflation, an appreciating domestic currency lowers the cost of imports, and exchange rate management can be an indirect tool for controlling inflation, and stronger capital flows and confidence.

4.5 Short Run Error Correction Model (ECM)

To ascertain the speed of adjustment of the model, the ECM is estimated with the result obtainable in Table 5.

Table 5: Short run error correction model

Dependent Variable: D(INFLA)				
Variable	Coefficient	Std. Error	t-Statistic	Probability
D(INFLA(-1))	1.9559	0.4556	4.2926	0.0010
D(INFLA(-2))	1.0768	0.3400	3.1670	0.0081
D(OPEN)	1.5964	0.4805	3.3221	0.0061
D(OPEN(-1))	-0.7477	0.3546	-2.1087	0.0567
D(FINDEF)	-4.2899	2.7397	-1.5658	0.1434
D(FINDEF(-1))	-0.7836	2.0562	-0.3811	0.7098
D(FINDEF(-2))	3.6502	1.3759	2.6530	0.0211
D(RGDP)	-0.0097	0.7879	-0.0124	0.9903
D(RGDP(-1))	-3.4038	1.0131	-3.3599	0.0057
D(POP)	-43.2592	53.8602	-0.8032	0.4375
D(POP(-1))	81.9048	44.5101	1.8401	0.0906

D(POP(-2))	-49.1165	37.6031	-1.3062	0.2160
D(M$_2$)	-0.0001	0.0000	-0.8925	0.3897
D(M$_2$(-1))	0.0001	0.0000	1.0787	0.3019
D(INTR)	-2.1446	1.6391	-1.3084	0.2152
D(INTR(-1))	0.7333	1.1784	0.6223	0.5454
D(INTR(-2))	-4.5797	1.3679	-3.3480	0.0058
D(EXR)	0.0193	0.0170	1.1321	0.2797
D(EXR(-1))	0.1360	0.0813	1.6741	0.1200
CointEq(-1)	-2.7690	0.5433	-5.0962	0.0003
R^2	0.9202	Mean INFL		18.9300
Adjusted R^2	0.7407	S.D. INFL		16.8255
F-statistic	5.1259	D-W statistic		2.3294
P(F-statistic)	0.0024			

Source: Researcher's Computation (2025)

The short-term correlation between monetary policy variables and the inflation rate (INFLA) are presented in Table 8 above. Based on the ARDL short run estimates, the findings reveal the following insights: The coefficient for OPEN is positive and statistically substantial at current period and negative after a period lag, demonstrating that a one-unit upsurge in openness contributes to a 1.5964 unit rise in INFLA in current period and 0.7476 unit decreases after a period lag. The finding of the current period is in line a priori expectation, suggesting that openness to international trade fosters economic growth, but the result of these findings suggest that the dynamics of openness and it benefits like competition and efficiency are being offset or outweighed by factors such as import dependency, currency fluctuations, or macroeconomic imbalances during the time frame being examined. The outcome of the first period lag deviates from theoretical expectation showing that as an economy becomes more open to international trade and capital flows, its inflation rate tends to decrease, therefore policymakers may use trade liberalization and capital account openness as a tool to help contend inflation, although this strategy must be balanced against risks like exposure to global shocks.

The coefficient of fiscal deficit (FINDEF) is negative and insignificantly related to INFLA in current and first period lag, but became positive and significant at second period lag, indicating that a one unit rise in FINDEF, will lead to 4.2898 units and 0.7836 unit decreases in INFLA at current and first period lag but will lead to 3.6501 units increase at second period lag in the short run. The result of the current and first period lag is in line with a priori expectation while the result of the second period lag deviates from theoretical expectation and therefore underscores the fact that when the fiscal deficit increases, inflation tends to decrease slightly cause by weak policy link, other drivers of inflation like supply shocks, monetary policy, fiscal space stimulus and possible data or other structural factors.

At the moment, there is a negligible inverse link between RGDP and INFLA. and negative but significant relationship after a period lag in the short run. A one-unit rise in RGDP leads to a 0.0097 unit and 3.4038 units decrease in INFLA. This result deviates from a priori expectations in the short run. The POP and INFLA currently have a negative but statistically insignificant association, and after a period lag, the relationship turns positive.

The coefficient for M$_2$ shows a statistically insignificant negative association with INFLA that turns positive after a period lag. The rapport amid INTR and INFLA is also negative and statistically inconsequential in current and second period lag but became positive after a period lag. The coefficient for EXR is positive and statistically irrelevant rapport with INFLA in both current and a period lag.

According to the appropriately signed and statistically significant ECM coefficient (-2.769022), the model is explosive in nature. At the 5% level, the ECM's significance is confirmed by the t-statistic (-5.096220). The included variables (both current and lagged) account for about 92% of the variation in INFLA, with 8% coming from factors outside the model, according to the R-squared value (0.920212) and adjusted R-squared (0.740690). A strong overall fit is ensured by the F-statistic (5.12), which validates the joint importance of the model's variables. Furthermore, the results' dependability for predicting and policymaking is confirmed by the Durbin-Watson statistic (2.32), which shows no autocorrelation.

4.6 Discussion of Findings

The four primary monetary policy variables—interest rate, openness, real gross domestic product, and broad money supply—interacted with the dependent variable INFLA in a positive and significant way, according to the regression's findings. This offers a fascinating perspective on the dynamics of ARDL over the short and long terms. The results show that during the period under review, factors such as import dependency, currency fluctuations, or macroeconomic imbalances are offsetting or outweighing increases in the variables listed below. This will essentially lead to an increase in the money supply and have a negative impact on the economy through: weakened monetary discipline and risks of over liquidity; increased competition and efficiency; and monetary expansion as a driver of inflation.

However, fiscal deficit, population and exchange rate showed negative relationship with inflation rate in both long and short run period under review, reflecting the detrimental effect of

variations of these variables on inflation rate such as negative effect of fiscal deficit increases inflation and tends to decrease slightly cause by weak policy link, other drivers of inflation like supply shocks, monetary policy, fiscal space stimulus and possible data or other structural factors.

More so, population and real gross domestic product exhibited varied proportion of relationship with INFLA in both long and short run period as evidence by their estimate in the regression analysis. This is expected because in the period under review, although there has been increase in RGDP rate as evidence by the long run, but was not statistically significant meaning that it did not contribute to reduction in inflation. Also, population rate showed a negative relationship in both long and short run. This result is unexpected because it undermines the fact that population growth can boost labour force participation and productivity. It also suggests that inflation control can coexist with demographic expansion, especially if employment and productivity are growing too in Nigeria.

5. CONCLUSION AND POLICY OPTIONS

The study used the autoregressive distributive lag model to analyze how well CBN monetary policy worked to control inflation between 1981 and 2023. Accordingly, adjustments to the ratios of the openness, interest rate, broad money supply, and real GDP variables can be used to regulate Nigeria's inflation. Furthermore, the study found a negative correlation between the population, exchange rate, and fiscal deficit, suggesting that these ratios are primarily beyond the threshold levels. It implies that a persistent financial and exchange rate deficit will result in high inflation and a rise in Nigeria's poverty rate as the country's low-income population gets worse.

Therefore, we recommend that:

a) The study recommended a strong adherence to central bank autonomy and a policy pf inflation targeting should be duly followed.

b) In order to lower loan rates, the government should think about changing monetary policy, especially for small and medium-sized businesses (SMEs). This intervention should begin in the next six months.

c) The CBN should adopt steps to stabilize the Naira, like improved management of foreign exchange reserves and strict monetary policy to limit inflation, with a target inflation rate below 10% within 12 to 18 months.

d) The Ministry of Industry, Trade, and Investment should promote export diversification and reduce dependency on imports. These measures should target significant improvements in trade surplus within two years.

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