Impact of Monetary Policy on Inflation Targeting in Nigeria (1986 – 2022)

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ABSTRACT

The obstacles encountered in establishing inflation benchmarks alongside other monetary indicators have not been conducive to maintaining consistent price levels and broad economic stability in Nigeria. Consequently, this research delved into the effects of monetary strategy on inflation benchmarks in Nigeria. The research utilized the Autoregressive Distributed Lag (ARDL) approach to analyze time-bound data. The findings revealed that both the volume of currency in circulation and the monetary policy rate demonstrated a negative yet substantial influence in the immediate term. Conversely, over a prolonged period, these elements exhibited a negative but statistically inconsequential effect on achieving the set inflation benchmarks in Nigeria. In light of these findings, the study suggests that amplifying the circulation of currency in the short term will likely keep the targeted inflation rate largely unaffected. Furthermore, it is advised that the government should fully implement an inflation benchmarking policy. Additionally, it is recommended that the government should regulate the monetary policy rate to prevent a further increase in joblessness. Lastly, the study underscores the importance of fostering effective administration to establish a trustworthy and stable macroeconomic framework.

Keywords: Targeted Inflation, Money Supply, Monetary Policy Rate, Rational Expectation, ARDL

INTRODUCTION

The challenges of managing monetary policy tools in achieving macroeconomic stability in Nigeria has become a concern to policy makers, macroeconomist and stakeholders in the economy. During the period under review, inflation rate is estimated at 25.7%(NBS Report, 2023). The outcome of the Monetary Policy Committee (MPC) in hiking interest rate at about

18.7 percent for second quarter business review, 2023 was for the purpose of taming the surge in inflation rate in Nigeria. However, financial experts and economist have criticised this policy outcome given that unemployment rate under period of review is 33.3 percent and over one hundred and thirty million people (NBS Report, 2022). Nigerians are living under poverty (NBS Report, 2022). Nigeria under this study period is undergoing political transition, hence investors and other stakeholders are still studying the economy before investing foreign portfolios. Furthermore, the effect of exchange rate pass-through to inflation is food price movement capable of hiking household inflation especially through the movement of energy prices, Petroleum Motor Spirit (PMS) and the subsidy removal from petroleum prices in Nigeria. of 2023.

Setting inflation targets with other monetary aggregates has been one of the bane of the Nigerian monetary policy management, the framework of setting nominal anchor is such that the monetary authority must be seen to be transparent, accountable and credible (Abayomi, 2023). The challenges under the reviewed period is the perceived lack of credibility on the part of the monetary authority in Nigeria, the management of the

Central Bank of Nigeria in recent time is facing scandals owing to the suspension of the Governor of the bank by the elected President Ahmed Bola Tinubu of Nigeria, these among other things has affected the image and the credibility of the apex bank in Nigeria. Inflation targeting on the hand is the setting of

quantitative nominal anchor of inflation rate with which macroeconomic stability is achieved. Inflating targeting framework is monetary policy which owed its origin from New Zealand, Canada and Europe in 1991 and 1992 respectively (Stevenson & Miskon, 1999). Achieving macroeconomic stability in the context of moderate level entails the establishment and sustainable macroeconomic system where the monetary policy instruments will become effective in achieving the broad macroeconomic goals in Nigeria. This paper is motivated by the challenges of setting inflation target with other monetary aggregates which has not help in achieving macroeconomic stability in Nigeria. The broad objective of this paper is to examine the impact of monetary policy on inflation targeting in Nigeria**.** The specific objectives of this paper shall be the following;

1. Determine the significance of Money Supply on Inflation Targeting in Nigeria
2. Investigate the influence of Monetary Policy Rate in determining the outcome of Inflation Targeting in Nigeria.

The hypotheses of this paper is therefore stated as follows;

H01: Money Supply is not significant in determining Inflation Targeting in Nigeria

H02: Monetary Policy Rate has no significance influence on Inflation Targeting in Nigeria The remaining part of this paper consist of four sections, section two is literature review and this includes: conceptual, theoretical and empirical reviews. Section three will be the methodology of the paper while the section four is result and discussion and section five consist of conclusion and recommendation respectively.

LITERATURE REVIEW

Conceptual Review

Monetary Policy is a policy document which asserts that increasing money supply holding other variables constant interest rate will decrease while private investment in the economy will witness the tendency of growing along this policy path (Abayomi, 2022). Similarly, Balcilar and Glenn (2015) asserts monetary policy tools are effective instruments used in estabilising the macroeconomic environment especially when the economy is experiencing market failures. Also Ropheka, Ezie and David (2023) asserts in their work that monetary policy is an effective tool by the government in achieving output level in Nigeria. Monetary strategy stands as a crucial instrument for economic stabilization, encompassing actions aimed at managing or guiding the amount, expense, accessibility, and orientation of currency and credit within an economy to fulfill certain macroeconomic policy goals. Jhingan (2007) described fiscal strategy as an approach crafted to impact the accessibility, quantity, and trajectory of money and credit to accomplish a targeted economic aim.

Also, monetary policy is a stabilizing tools for achieving macroeconomic goals of the government, these monetary instruments includes; Monetary Policy Rate (MPR), Prime Lending Rate (PLR), Open Market Operations, Minimum Re-Discount Rate (MRR), Cash Reserve Ratio(CRR), Money Supply(M2) Etc. (Glenn, 2015). In Nigeria the control of monetary policy tools for macroeconomic management is under the purview of the Central Bank of Nigeria(CBN), the monetary authority in Nigeria under the enabling Acts of 2007 grants the autonomy to the institution to formulate useful monetary policies aimed at promoting macroeconomic stability (Sanusi, 2022). However, the outside Lags of monetary transmission in Nigeria is largely perceived by the public not be positively impacted by its targeted monetary objectives. Inflation

targeting on the other hand is said to be a monetary regime where nominal quantitative anchor is announced by the central bank for the purpose of moderating macroeconomic variables in the economy (Balcilar, 2014).

Numerous empirical studies have presented a variety of conclusions regarding the preparedness of diverse economies to embrace an Inflation Targeting (IT) policy framework. This is evident in the challenges faced by weak central bank governance and widespread financial system volatility. For instance, Chile's move towards inflation targeting was shaped by these factors, as noted by Mishkin (2000). Similarly, the need for independence of the Central Bank in South Africa was highlighted by Jonsson (1999), while Bakradze and Billmeir (2000) stressed the importance for Georgia's Central Bank to overcome institutional and operational shortcomings before implementing IT. According to Woglom (2000), South Africa is poised for inflation targeting, and Poland is ready for the same, as per Christofferson, Solk, and Wescott (2001). Following this pursuit for IT application, the primary goal of this research is to advocate for the adoption of this framework. It aims to analyze the interplay between inflation, monetary policy instruments, and inflation targeting in Nigeria.

THEORETICAL REVIEW THEORY OF RATIONAL EXPECTATIONS

This is an economic theory that was postulated by an Economist John F. Muth in 1961 by his publications titled Rational Expectations and the Theory of Price Movement in 1961. Other Economists called Robert Lucas and Thomas Sargent further developed this idea and eventually came up with an idea in Microeconomics in the 1970s and the 1980s. The theory therefore asserts that people take informed and sound decisions based on past trends and experiences. The theory further states that individuals are rational and are bound to use available symmetric information to make unbiased, informed predictions about the future and these predictions are not bound to failed. Hence in so doing individuals are not bound to systemic errors owing to available symmetric information in their possession. The theory therefore asserts that symmetry of information creates perfect optimisation of resources by economic agents.

Milton Freidman Quantity Theory of Money

In his updated understanding of the quantity theory of money, Milton Friedman underscores that the theory mainly concerns the demand for money instead of concentrating on aspects like output, money income, or price indices. He likens the demand for money among ultimate wealth holders to the demand for a consumer service. Friedman highlights the real cash balances (M/P) as a desirable commodity, valued for the advantageous services it offers to those who hold it. For instance, money functions as an asset or a form of capital good.

Friedman argues that when it comes to holding wealth, the real-term demand for money is chiefly influenced by several factors: Wealth, which refers to the total assets that are distributed among various types of assets, constrained by budgetary limits; the distribution of wealth between human and non-human resources; and the ratio of wealth or wealth to income. He also considers the expected returns on money and other assets, where these returns are analogous to the prices of commodities.

Furthermore, Friedman suggests that factors other than income can impact the utility derived from the monetary services, which in turn determine proper liquidity. Ultimately, these liquidity variables are shaped by the tastes and preferences of those holding wealth.

Empirical Review

David and Andrew (2023) formulated a novel approach for executing monetary policy within the context of inflation targeting, featuring explicit and measurable objectives. The core of their strategy involves setting a

permissible range of variances around a specific percentage point for the projected trajectory of inflation.

For instance, the United States has a 2 percent target of inflation. Also Silvana,, Mathew, Lauren, Nicolo, Lukas, and Dem, (2023) examined the effect macroeconomic stability in a volatile inflation environment., they investigated how inflation expectations affect monetary policy in the face of supply shocks and the paper raised the question of how monetary policy responds to supply shocks using the time series data and Tanks and Rank model using consumption quarters and CPI inflation quarters. Similarly, Klaus-Jürgen, Nils, and Sonnenberg (2023) investigated Inflation and the Effect of Monetary Policy Tightening in the Euro Area. Their analysis focused on the impact of monetary tightening on the real sector, particularly manufacturing, using descriptive statistics. The paper concluded that tightening monetary policy tends to have a more negative effect on the real sector, especially manufacturing.

Klaus-Jürgen, Daniel, and Charles (2023) explored the consequences of intense monetary tightening on real economy inflation. High inflation adversely impacts firms and households in various ways, including diminishing real incomes and exacerbating inequality. Central banks' response involved significantly tightening monetary policy, which naturally restricted demand through increased borrowing costs and reduced credit flow to the real economy.

Additionally, Yoosoon, Fabio, and Gee (2022) examined the impact of economic shocks on heterogeneous inflation expectations. Their study looked into how economic shocks influence the distribution of household inflation expectations, identifying three main factors: ambiguity, disagreement, and level shifts. When combined with government spending, personal income tax, and monetary policy rates, these factors led to an increase in average inflation expectations with an anchoring effect, a reduction in disagreement, and an increase in household expected future inflation. The study found that contractionary monetary policy rates raised average inflation expectations, with predictions typically ranging between 2 and 4 percent.

Moreover, Augustine, Saviour, and Ferdinand (2022) conducted an analysis of the influence of macroeconomic factors on the performance of the stock market in Nigeria. They utilized the All Share Index as the dependent variable and incorporated macroeconomic indicators such as broad money supply, exchange rate, savings interest rate, inflation rate, and economic growth. The data for their study was extracted from the Statistical Bulletin of the Central Bank of Nigeria and the World Development Indicators. Employing the Autoregressive Distributed Lags (ARDL) approach, they uncovered a long-term correlation among all the examined variables.

Rufus, Kehinde, and Solomon (2022) examined the impact of both expected and unexpected monetary policy on Nigeria's economic output, drawing upon annual secondary data from 1986 to 2020. Utilizing the ARDL methodology in their time series econometric analysis, they applied the Augmented Dicky Fuller (ADF) test to ensure the stationarity of the variables. A co-integration ARDL bound test was conducted to ascertain a long-term equilibrium between both anticipated and unanticipated monetary policies and economic output in Nigeria. Their findings revealed that while expected monetary policy had a neutral impact on output, unexpected monetary policy had a positive effect. This aligns with the rational expectation model, which posits that unanticipated shifts in monetary policy can significantly influence the real economy.

Additionally, Kehinde, Shelter, and Sekome (2022) explored the impact of inflation targeting on inflation uncertainty and economic growth in selected African and European nations. Comparing inflation targeting (IT) countries across both continents, they employed sophisticated econometric methods, including Generalized Autoregressive Conditional Heteroscedasticity (GARCH) and Panel Autoregressive Model (PVAR). Their research indicated that in South Africa, the IT regime did not significantly reduce inflation

uncertainty, whereas the results were inconclusive in Ghana. In contrast, European countries like Poland and the Czech Republic saw significant reductions in inflation volatility due to inflation targeting. The study also observed that while the IT regime adversely affected economic

growth in African countries, it had a positive effect on growth in European countries. Overall, the research concluded that inflation targeting policies are more effective in diminishing inflation uncertainties and bolstering economic growth and development in European countries compared to African nations such as South Africa and Ghana.

Moreover, Eric (2021) examined the inflation and uncertainties in ECOWAS member states using the storchastic volatility approach and generalized autoregressive conditional heteroskedasticity (GRACH). The paper also adopted transfer entropy to measure the extent of information flow within the member states. The result shows that there is an information flow which exist from inflation to the GARCH measuring inflation uncertainties in ECOWAS member states. On the contrary, there was no information flow exception of Burkina Faso and Gambia which asymmetric inflow between inflation and inflation uncertainties, on pairwise result information pattern are interconnected hence, shocks are transmitted to countries exception of Gambia, Cote d'Ivoire and Burkina Faso within the ECOWAS countries. In a similar vein, Callistar and Ossai (2020) explored the relevance of this theory to the Nigerian context. Employing annual time series data and using co-integration techniques along with an Error Correction Mechanism, they found a directly proportional relationship. Thus, in Nigeria, inflation is fundamentally a monetary phenomenon. They recommended that Nigeria's monetary authorities should reassess their expansionary monetary policy, which appears to have exacerbated inflation. Adjustments in the evaluation of anti-inflation measures were advised to help reduce the inflation rate.

Moreover, Okotorin and Eze (2020) examined the Central Bank of Nigeria's (CBN) monetary policy on inflation targeting, using monthly time series data from 2019 to 2018. The Vector Autoregressive Model (VAR) was the method of estimation. The findings indicated that liquidity ratio, cash reserve ratio, exchange rate, policy rate (MPR), and treasury bills significantly influenced inflation in Nigeria. The paper concluded that the government must use all available policy measures to maintain inflation within the 6-9 percent range.

A related study by Ikechuckwu and Olaniyi (2015) assessed inflation targeting as a potential monetary framework for Nigeria, using time series data from the CBN's Statistical Bulletin. They employed impulse response function and granger causality tests. The results showed that the inflation rate was highly responsive to exchange and interest rates, while economic growth was particularly sensitive to exchange rate and inflation in Nigeria.

Similarly, Aigbedion (2017) investigated the suitability of inflation targeting in the Nigerian economy using time series data from 1990Q1 to 2014Q4. The research employed unit root tests, co-integration tests, and an unrestricted VAR model. It found that the exchange rate in Nigeria suffered from exchange rate pass-through issues, implying that inflation from other countries is imported through high demand for imported goods and services.

Ewurum, Kalu, and Nwankwo (2017) examined the nexus between inflation targeting and economic growth in Nigeria, using descriptive statistics from the CBN's Statistical Bulletin. Their research revealed that countries adopting inflation targeting regimes experienced reduced inflation rates and improved economic growth. Among the surveyed countries, only South Africa and Ghana in Africa had adopted inflation targeting policies.

The investigation by Wolasa (2015) centered on the effects of inflation targeting monetary policy and the

variability of inflation on South Africa's economic growth. The study measured inflation volatility using conditional variance derived from a Generalized Autoregressive Conditional Heteroscedasticity (GARCH) model, applied to seasonally adjusted, annualized quarterly consumer price inflation data from the first quarter of 1960 to the third quarter of 2013. This era was characterized by a variety of monetary policy approaches and was notable for its high and fluctuating levels of inflation, which had a detrimental effect on economic growth.

Riti and Kamah (2015) conducted an analysis of inflation targeting and its impact on economic growth in Nigeria, utilizing annual time series data from the statistical bulletin of the Central Bank of Nigeria spanning 1981 to 2010. Employing a Vector Autoregressive Model (VAR), they focused on variables such as the Exchange Rate (EXR), US Consumer Price Index (USCPI), and Interest Rate (INT). Their findings suggested that the exchange rate had a significant and positive impact on inflation in Nigeria, leading them to advocate for an import- substitution strategy, bolstered by the development of small and medium-sized enterprises (SMEs).

In another study, Osuji and Akuojobi (2012) examined the role of inflation targeting and monetary policy instruments in Nigeria and Ghana. They used secondary data from the Central Bank of Nigeria and the Central Bank of Ghana, analyzing it with a VAR model. Their findings indicated that in both countries, inflation was a persistent issue, and monetary policy changes did not significantly affect price fluctuations. In the long term, neither exchange rates nor interest rates had a significant impact on prices, suggesting that both Ghana and Nigeria were not yet prepared for the full implementation of inflation targeting.

Furthermore, Gbadebo and Muhammed (2015) focused on the critical role of monetary policy and inflation control in Nigeria, using time series data from the Central Bank of Nigeria covering 1980 to 2012. They applied an Error Correction Model, incorporating Co-integration and Unit Root Tests. The study revealed that key factors driving inflation in Nigeria included the exchange rate, interest rate, money supply, and oil prices. Notably, the money supply was found to have a positive and significant effect on inflation in both the short and long term. The authors recommended a blend of monetary and fiscal policies to achieve structural-economic stabilization in Nigeria.

METHOD OF RESEARCH

Research Design

The research design used for the paper is *Expost-factor* research technique. This technique is associated with the statistical application to estimate the nexus between the dependent (Targeted Inflation in Nigeria) and explanatory variables (Monetary Policy Instruments), (Ezie and Progress,2022). This section also involves the theoretical and empirical literature which provides testable framework for validating underlying research hypothesis concerning causative association between the variables of interest (Ezie and Progress, 2022). Given the aforesaid the design was formulated to provide statistical estimation of the relationship between monetary policy indicators and inflation targeting as well as make predictions and forecasting of variables of interest (Balcilar, 2013).

Sources of Data

To determine the short-run and long-run equilibrium relationships between crucial variables, secondary data was collected from the Statistical Bulletin of the Central Bank of Nigeria (CBN), covering the period from 1986 to 2022. The data compiled encompassed details on Broad Money Supply (M2), the Monetary Policy Rate (MPR), and the practice of inflation targeting (Quantitative Anchor).

Method of Analysis

In this research, initial tests were performed using the Augmented Dicky Fuller Test (ADF) to detect any non-stationarity within the time series data. Conducting Unit Root tests is vital for addressing errors stemming from seasonal variations in time series data, a point highlighted by Ezie and Progress (2022). Once stationarity was confirmed in the dataset, a co-integration test was implemented to uncover the long-term associations between the variables under study. This co-integration test is crucial in identifying the long-run equilibrium in series that are non-

stationary in a stationary context (Ezie & Progress, 2022). For assessing the short-term equilibrium of the variables in quest ion, the Error Correction Mechanism (ECM) was utilized.

Model Specification

Based on the objective and hypothesis of this paper, the model was specified below;

$$tif = \alpha_0 + \beta_1 ms + \beta_2 mpr + \mu_t \qquad (1)$$

Where *tif* is targeted inflation in Nigeria, "MS", is money supply in Nigeria, "MPR" is monetary policy rate in Nigeria, a_0 is the intercept of the model, the $\beta1$ *to* $\beta2$ is the parameter estimate and Ut is the error term. The model of this paper was adapted from the work of Nonso, Mary and Hilary (2023) which was stated as follows;

$$\inf = \alpha_0 + \beta_{1crr} + \beta_{2mpr} + \beta_{3lr} + \beta_{4ms} + \mu_t \qquad (2)$$

In the given model, "inf" represents the inflation rate, "CRR" stands for the credit reserve ratio, "MPR" denotes the monetary policy rate, "LR" signifies the liquidity ratio, and "MS" refers to the broad money supply in Nigeria. The term β represents the intercept or the autonomous parameter estimate, while $\beta1$ to $\beta4$ are the parameter estimates corresponding to the coefficients of CRR, MPR, LR, and MS, respectively. Ut is the error term (or stochastic term) in the equation.

However, equation (1) underwent modifications and specifications tailored to the objectives and hypotheses of the paper. Consequently, the functional relationship between targeted inflation and monetary policy in Nigeria is expressed in equation 2:

$$tift = f(mpr_t, ms_t) \qquad (3)$$

Where *tift*

is targeted inflation in Nigeria; *mprt ,* is monetary policy rate in Nigeria and *mst* is money supply in Nigeria. The Autoregressive Distributed Lagged (ARDL) model was used to examine the impact of monetary policy on inflation targeting in Nigeria will be specified as follows:

$$\Delta tif_t = \alpha_0 + \sum_{i=1} \beta_1 \Delta tif_{t-i} + \sum_{i=1} \beta_2 mpr_{t-i} + \sum_{i=1} \beta_3 \Delta ms_{t-i} + \beta_4 \Delta tif_{t-i} + \beta_5 \Delta mpr_{t-i} + \beta_6 \Delta ms_{t-i} + \mu_t \qquad (4)$$

The Error Correction Model (ECM) was employed to analyze the rate at which adjustments occur within the model regarding the effects of monetary policy on inflation targeting in Nigeria. This model is specified as follows:

$$\Delta tif_t = \alpha_0 + \sum_{g=1}^{h} \beta_1 \Delta tif_{t-i} + \sum_{f=1}^{i} \beta_2 \Delta mpr_{t-i} + \sum_{g=1}^{k} \beta_3 \Delta ms_{t-i} + ecm_{t-i} + \mu_t \qquad (5)$$

Consequently, equation (5) served as the analytical tool to assess the short-term effects of monetary policy on inflation targeting within the Nigerian context.

This model, specifically equation (5), was iteratively adjusted in the estimation process until the Error Correction Mechanism (ECM) exhibited a negative value. The negative sign in the coefficient of the ECM (-1) indicates the statistical relevance o f the equation, as evidenced by its associated t-value and probability value.

DISCUSSION AND RESULT

Descriptive Statistics

Table 1 shows the descriptive statistics with 37 observations and the results of Jarque-Bera statistics indicating goodness of fit test of whether sample data shows the skewness and kurtosis matching a normal distribution.

Table 1: Showing Descriptive Statistical Distribution

	TIF	MS	MPR
Mean	11.71568	10253685	13.58270
Maximum	30.00000	51761778	26.00000
Minimum	5.000000	27389.80	6.000000
Kurtosis	9.714280	4.441284	5.202399
Jarque-Bera	102.9317	16.65988	11.95582
Probability	0.000000	0.000241	0.002534
Observations	37	37	37

Source: *Author's Computation, using E- views 12, 2023*

Table 1 shows the descriptive statistics of the targeted inflation, money supply in Nigeria, and monetary policy rate in Nigeria with 37 observations. The result indicated that the variables of interest have a normal distribution given that the Kurtosis values were distributed more than 3 in absolute values for the variables respectively. Also, there is no presence of serial correlation among the variables and these non-parametric properties show that the model may not exhibit spurious regression.
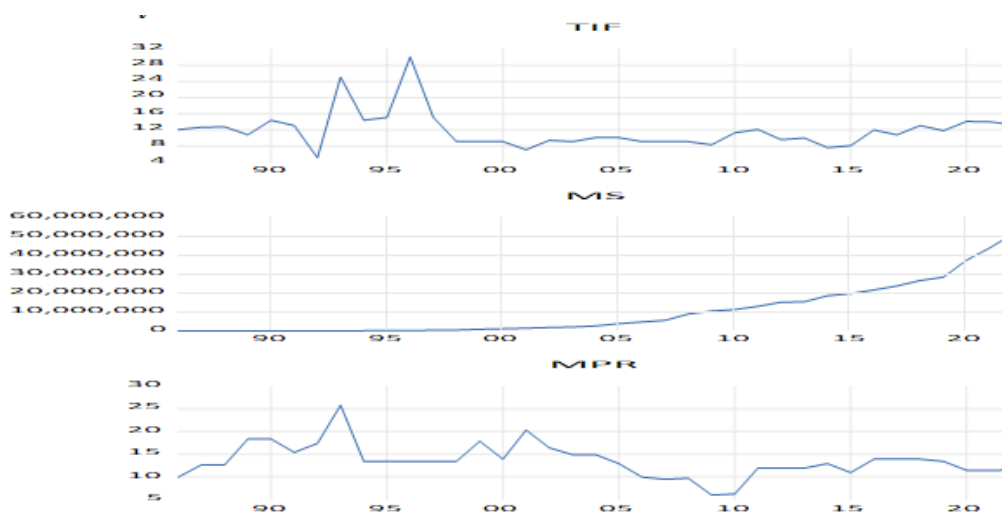
Trend Analysis

Figure 1 shows the trend associated with targeted inflation, money supply and monetary policy rate in

Nigeria. The trend analysis therefore provides an insight on the behavioral pattern among the variables either in an upward movement as evident in Money Supply but there is a structural break in Targeted Inflation and Monetary Policy Rate in Nigeria. However, this trend pattern has its policy implications in making far reaching recommendations.

Unit Root Test Result

Table 2 shows ADF unit root tests results shows money supply, monetary policy rate and targeted inflation in Nigeria.

Table 2: Unit Root Test Result

Variable	Augmented Dickey-Fuller (ADF) Test		
	@ Level	@ 1st Diff.	Status
TIF	–	–8.291666**	I(1)
MS	–	-6.47832**	I(1)
MPR	–	-3.94932**	I(1)
Asymptotic Critical Values			
1%		-3.639407	
5%		-3.544284	
10%		-3.202445	

* implies significance at 1% level, **implies significance at 5% level and *** implies significance at 10%

Source: *Author's Computation, using E- views 12, 2022*

Table 2 presents the outcomes of the Augmented Dicky Fuller (ADF) unit root tests. These results indicate that in Nigeria, targeted inflation, money supply, and the monetary policy rate all achieved stationarity at the first difference, signifying that they were integrated at order one, I(1), with a 5% level of significance. This suggests that the variables are integrated at order one I(1), in line with the theory proposed by Pesaran et al. (2001).

Bounds Co-Integration Test Result

Table 3 displays the results of the Autoregressive Distributed Lag (ARDL) – Bound Co- Integration Test. This test utilizes the ARDL Bound testing approach, referencing the critical values established by Pesaran, Shin, and Smith in 2001.

Table 3: Result of Bounds Co-Integration Test

F-statistic	5.917850	
K	2	
Significance levels	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38

1%	4.13	5

Source: *Author's Computation, using E- views 12, 2023*

Table 3 illustrates the findings from the Autoregressive Distributed Lag (ARDL) – Bound Co- Integration Test. Applying the ARDL Bound testing methodology with the critical value benchmarks set by Pesaran, Shin, and Smith (2001), it was determined that the variables were co-integrated at a 5% significance level. This conclusion was drawn because the Wald F- statistics, at 5.917, exceeded the critical lower and upper bounds of 3.1 and 3.87, respectively. The variables in question, namely targeted inflation, money supply, and monetary policy rate in Nigeria, are therefore co-integrated. Following this, the paper moved forward with using the Autoregressive Distributed Lag (ARDL) approach for further estimation and analysis.

The Regression Results & Hypotheses Testing

Table 4: ARDL Results

Independent variable (TIFt)				
Long Run				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
MS	-0.219506	0.699216	-0.313931	0.7561
MPR	0.877165	0.556177	1.577132	0.1269
C	5.434242	16.26593	0.334087	0.7410
Short Run				
ECT	-0.69.3940	0.170519	-4.069574	0.0004
D(TIF(-1))	-0.816784	0.185665	-4.399245	0.0002
D(MS)	-8.625857	3.091940	-2.789787	0.0097
D(MPR)	-0.423678	0.199809	2.120411	0.0437

Note: *, **, * indicate the statistical significance of coefficients at 1%, 5%, and 10% respectively, and the values in parentheses and block brackets are the probabilities**

Source: *Author's Computation, using E- views 12, 2023*

According to the data presented in Table 4, the parameter of the Error Correction Mechanism (ECM) is negative (-) and statistically significant, at -0.693940. This indicates that approximately 69 percent of the disequilibrium from the preceding period is adjusted to achieve equilibrium in the current period. Furthermore, in the short run, the analysis revealed that the money supply in Nigeria was statistically significant at the 5% level, with an associated probability value of 0.00297. This signifies that the money supply exerts a considerable yet negative influence on targeted inflation in Nigeria in the short term. Specifically, a 1 percent increase in money supply is likely to result in an 8.6 percent decrease in targeted inflation, aligning with the findings of Nonso, Mary, and Hilary (2023). Additionally, the monetary policy rate was found to have a negative but significant impact on inflation targeting in Nigeria.

Hypotheses Testing

H1: Money Supply is not significant in determining Inflation Targeting in Nigeria, the result from table4 indicated that money supply in Nigeria was statistically significant only in the short run and this was evident from the probability value of 0.0097 which was less than 1%,5% and 10% respectively hence the paper reject the null hypothesis indicating that money supply has an inverse and significant relationship with

targeted inflation in the short run period. Apparently the policy implication of this outcome suggest that a one percent increase in money supply, all things being equal; will cause 8.6 percent reduction targeted inflation in Nigeria.

H2: Monetary Policy Rate has no significance influence on Inflation Targeting in Nigeria, also empirical evidence has shown that monetary policy rate was also significant in determining the variation in targeted inflation in the short run but was not significant in the long run. This implies that a one- unit increase in monetary policy rate(MPR) will eventually lead to 0.4 percent reduction in targeted inflation in Nigeria

Post Estimation Test

Table 5: Heteroskedasticity and Serial Correlation Test: Breusch-Pagan-Godfrey

Null hypothesis: Homoskedasticity			
F-statistic	4.702503	Prob. F(7,26)	0.8616
Obs*R-squared	18.99597	Prob. Chi-Square(7)	0.1282
Scaled explained SS	14.15777	Prob. Chi-Square(7)	0.3484
Breusch-Godfrey Serial Correlation LM Test			
F-statistic	0.648901	Prob. F(2,24)	0.2680
Obs*R-squared	1.744234	Prob. Chi-Square(2)	0.4181

Source: *Author's Computation, using E- views 12, 2023*

Table 5 presents the results of the test for Heteroskedasticity. The findings indicate that the variables are not affected by the issue of Heteroskedasticity, as evidenced by the p-values of the F-statistic and Obs*R-squared, which are 0.8616 and 0.1282, respectively. These values exceed the 5% significance level. This conclusion is further supported by the p-value of 0.3484

for the Scaled explained SS, which also points to the absence of Heteroskedasticity in the model assessing the impact of monetary policy on targeted inflation in Nigeria. This suggests that the variance of the residuals of the explanatory variables remains constant.

In a similar context, the results from the Breusch-Godfrey Serial Correlation LM Test indicate that there is no serial correlation among the economic variables. This is corroborated by the probability level being above the 5% significance threshold.

Discussion of Results

The findings indicate that in the short term, money supply has a negative and significant effect on targeted inflation, but this impact diminishes in the long run. The practical implication of this observation is that an increase in money supply in the short term can lead to a decrease in targeted inflation. Therefore, inflation can be effectively managed by augmenting the money supply in the short term. Conversely, the monetary policy rate exhibits a negative yet significant effect on targeted inflation in the short term, but this influence is not significant over the long term. This implies that, all other factors being constant, an increase in the monetary policy rate will result in a decrease in targeted inflation. The implication of this finding also suggests that elevating the monetary policy rate in the short term will maintain low targeted inflation. This indicates the feasibility of full-scale inflation targeting in the short term in Nigeria, meaning inflation is likely to remain low even with an increased monetary policy rate as announced by the Monetary Policy Committee (MPC) of the Central Bank of Nigeria (CBN).

However, achieving macroeconomic stability in Nigeria currently seems unattainable, as the Central Bank

of Nigeria is attempting to target inflation in conjunction with other monetary aggregates without a credible macroeconomic environment. This approach represents a type of Eclectic Inflation Targeting (EIT) framework.

CONCLUSION AND RECOMMENDATIONS

The results show that both increasing money supply and raising the monetary policy rate have a negative and significant impact on inflation targeting in Nigeria, suggesting that in the short term, these monetary policies do not necessarily induce inflationary pressures on expected inflation in the country. In other words, steps such as increasing the money supply or hiking the monetary policy rate are not likely to exert significant upward pressure on price movements in Nigeria. From a policy perspective, this empirical evidence indicates that an increase in money supply in the short run will not substantially alter targeted inflation.

In light of these findings, the paper proposes several far-reaching recommendations:

1. Given the short-term influence of money supply on targeted inflation, the Monetary Policy Department of the Central Bank of Nigeria is advised to increase awareness about the benefits of adopting a Full-Fledged Inflation Targeting regime. This approach aims to achieve a stable macroeconomic environment, as opposed to the current practice of targeting inflation alongside other monetary aggregates, which has led to an increase in inflation rates in the country.
2. The Monetary Policy Committee (MPC) of the Central Bank of Nigeria should reconsider its strategy of continuously increasing the monetary policy rate. This practice has not been effective in curbing inflation in Nigeria. Persistent increases in the rate have adversely affected aggregate demand, leading to higher levels of unemployment and poverty, as observed during the period reviewed in this paper.

REFERENCES

1. Abayomi, O., (2022). Macroeconomic Setting in Nigeria; Post-Graduate Lecture Series, *Department of Economics, Bhingham University*, Karu, Nasarawa State.
2. Aigbedion, I.M., (2017). Inflation Targeting as A Monetary Policy in Nigeria: Application of Vector Autoregressive(VAR) Model. *Journal of Economics and Sustainable Development.8(7),59-68.*
3. Augustine, O.J., Saviour, S.U., & Ferdinand, I.O., (2022). Effect of Macroeconomic Variables on Stock Market Performance in Nigeria: *Malaysian E -Commerce Journal*,6(2), 54-58.
4. Bernanke, B.S., T. Laubach, F.S. Mishkin and A.S. Posen (1999). Inflation Targeting: *Lessons from the International Experience, Princeton University Press*, Princeton, New Jersey.
5. Bernanke, B. S. & F. Mishkin, (1997). Inflation Targeting: A New Framework for Monetary Policy? *Journal of Economic Perspectives11*, 97-116.
6. Bacilar, M., & Ismail, H. (2013). Effectiveness of Inflation Targeting in Turkey: *Journal of Emerging Market Finance and Trade,28(5)*, 35-47.
7. CBN Report (2023). Monetary Policy Committee Communique; Money Supply & Monetary Policy Rate Report, 1st Quarter Report of CBN, May 2023, Abuja-Nigeria.
8. Callistar, K. O & Ossai, O. E., (2022). Is Inflation A Monetary Phenomenon in Nigeria? *Journal of monetary policy*, June, 2022.
9. Christoffersen, P., T. Slok and R. Wescott. (2001) "Is Inflation Targeting Feasible in Poland?" Economics of Transition 1(9).
10. David, T, & Andrew, F., (2023) developed a new framework for conducting monetary policy under inflation targeting with clear and quantifiable goals. *Publications of Federal Reserve Bank of Francisco, Economic Research,* 21 February, 2023.
11. Ezie, O., & Progress, E., (2022). Times Series Econometric Approach; Applied Econometrics, 1st Edition, Lokoja Press Nigeria.

12. Eric, O.I., (2021). Inflation and Uncertainties in ECOWAS Member States using the Storchastic Volatility Approach and Generalized Autoregressive Conditional Heteroskedascity (GRACH*): CBN Journal of Applied Statistics,* 12(2), 87-124.

13. Ewurum, N.C., Kalu, C.U., & Nwankwo, D.J., (2017). Inflation Targeting and Economic Growth Nexus in Nigeria: Implications for Monetary Policy: *International Journal of Academic Research in Business and Social Sciences*, 7(1), 12-2.

14. Glenn J., (2015). Implications of Macroeconomic Environment of Project Analysis in West African Countries, *Department of Economics, Eastern Mediterranean University*, Cyprus.

15. Gbadebo, A.D., & Muhammed N., (2015). Imperatives of Monetary Policy and Inflation Control in Nigeria: *Journal of Economies and Sustainable Development, 6(8),* 2015. Ikechuckwu K., and Olaniyi, E., (2015). Inflation Targeting as a Possible Monetary Framework for Nigeria: *International Journal of Business and Finance and Finance Research, 9(5), 71-81.*

16. Bacilar, M., & Ismail,H. (2013). Effectiveness of Inflation Targeting in Turkey: *Journal of Emerging Market Finance and Trade,28(5)*, 35-47.

17. Jonsson, M., C. Nilsson and S. Palmqvist (2008), "Should monetary policy stabilise resource utilisation*?", Economic Commentaries, No. 1, 2008*, Sveriges Riksbank.

18. Jhingan M.L. (2007) Money, Banking, International Trade and Public Finance, Vrind a Publication (P) Ltd.

19. Klaus-Jurgen, G., Nils, J., & Sonnenberg, N., (2023). Inflation and the Effect of Monetary Tightening in the Euro Area. *Publication of Economic Governance and EMU Scrutiny, 9-132*

20. Klaus-Jurgen, G., Daniel, C., Christopher, A., and Charles, W., (2023). Effects of High Monetary Tightening on the Real Economy: *Monetary Dialogue Papers*, June 2023

21. Kehinde, D.I., Shelter, T.N., & Sekome, M.S., (2022). Effect of Inflation Targeting on the Inflation Uncertainty and Economic Growth in some Selected African and European countries: *Journal of Economies(MDPL), 10(37).*

22. Mahmud H, (2023). Monetary Policy Department Retreat on Taming inflation in Nigeria: Central Bank of Nigeria Headquarters, Central Business Centre, Abuja.

23. Nonso, J.K., Mary, N.O., Hilary, C.E., & Nnamdi, L.O., (2023). Effect of Monetary Policy on Selected Macroeconomic Variables in Nigeria: *International Journal of Advanced Economics,*5(3),.74-89, March 2023.

24. Ngozi, C.E., Chris, U.K., & Damian, J.N., (2017). Inflation Targeting Economic Growth Nexus in Nigeria: Implications for Monetary: *International Journal of Academic Research in Business and Social Sciences, 7(1), 12-27.*

25. Osuji, C.C., & Akuojobi, L.E.,(2012). Inflation Targeting and Monetary Policy Instruments in Nigeria: Kuwait Chapter of Arabian *Journal of Business and Management Review 1(11) July 2012.*

26. Okotori W.T & Eze, G (2020). CBN Monetary Policy on Inflation Targeting Policy in Nigeria: *Journal of Munich Personal RePEc Archives(MPRA), Paper No; 11052* February 2020 Department of Banking and Finance, University of Niger-Delta, Wilberforce Island, Yenagoa, Bayelsa State Augustine, Saviour and Ferdinand (2022) examined the effect of macroeconomic variables on stock market performance in Nigeria.

27. Rufus, A.A, Kehinde, A.E., & Solomon, O.O., (2022). Effect of Anticipated and Unanticipated Monetary Policy on Output in Nigeria. *African Journal of Economic Research,10.*

28. Ropheka,E.B., Ezie, O., & David ,O.,(2023). Analysis of Trade Policy Indicators on Manufacturing Sector Output in Nigeria. Research Paper Submitted to the department of Economics, Bingham University, Karu-Nasarawa.

29. Silvana, T., Mathew, C., Lauren B., Nicolo, B., Lukas, Von., & Dem, B.,(2023). Macroeconomic Stability in a Volatile Inflation Environment. *Publication of European Central Bank Forum on Central Banking,* 26-28 June, 2023.

30. Surjit, S.B., Karan, B., & Prakash, L., (2023) examined macro effect of formal adoption of inflation targeting using inflation, growth and anchoring of inflation expectations in advanced economies,

emerging markets and developing economies(EMDEs). *International Monetary Fund(IMF) Working Paper(WP/23/7).*

31. Sanusi, L.S., (2022). Assessing the Monetary Policy Outcome of the Central Bank of Nigeria: Paper delivered at Kaduna State, Investment Summit, Kaduna, November, 2022.

32. Riti, J.S, & Kamah, M., (20I5). Inflation Targeting and Economic Growth in Nigeria: A Vector Autoregressive Approach. *European Journal of Contemporary Economics and Management1(2), 42-63.*

33. Yoosoon, C., Fabio, G., & Gee, H. H., (2022). Effect of Economic Shocks on Heterogeneous Inflation Expectations: *International Monetary Funds Working Paper, 2022/132, 1-59.*

34. Woglom, G (2000): Inflation Targeting in South Africa: a VAR Approach," *Journal for Studies in Economics and Econometrics*, August, 2000.

35. Wolasa, L.K., (2015). Inflation Targeting Monetary Policy, Inflation Volatility and Economic in South Africa: *African Development Bank, Working Paper*, 216