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MONETARY POLICY AND INFLATION TARGETING IN THE NIGERIAN ECONOMY

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ABSTRACT
This research examined the aspect of monetary policy versus inflation targeting in the Nigerian economy between 1986 and 2024. The nagging inability of Nigeria to get to achieve a sustained price stability despite the active intervention in monetary policies constitutes the backbone of motivation that motivates this study. The general aim is to look into the effects of chosen monetary policy instruments, such as the monetary policy rate, cash reserve ratio, and liquidity ratio, on inflation targeting that is measured as inflation rate. The foundations of the study is based on the Quantity Theory of Money, Keynesian Theory of Monetary Policy and Monetarist Theory of Inflation. An ex post facto research design was adopted to steer the research work under the positivist research philosophy. Data were taken from Central Bank of Nigeria Statistical Bulletin, World Development Indicators. Descriptive statistics, Augmented Dickey-Fuller unit root tests, Johansen co-integration and parsimonious error correction model were used for the analyses at 5 percent level of significance. The results show a positive and significant relationship between the monetary policy rate and inflation and other financial variables, cash reserve ratio and liquidity ratio were found to have no effect. The study concluded that monetary policy effectiveness in the area of inflation targeting is limited by structural and transmission issues. It recommended for an increased policy coordination and a move towards fixing the supply side drivers of inflation. The contribution of the study to knowledge is that it has updated empirical evidence regarding inflation targeting and the effectiveness of monetary policy in Nigeria.

Keywords: Monetary policy, Inflation, Reserve, Liquidity ratio, Nigeria

1.0 Introduction

Monetary policy is an important macroeconomic stabilisation policy used by central banks to attain price stability and sustainable economic growth. In Nigeria, the Central Bank of Nigeria (CBN), uses a combination of policy instruments to control money supply, credit situation and general liquidity in the economy with the ultimate aim to control inflation. Persistent inflationary pressures have continued to pose significant challenges to the stability of the macro economy in Nigeria, thereby making the issue of interaction between monetary policy and inflation targeting an important topic of empirical and policy-oriented investigation (Akinbobola, 2012; Iyoha & Oriakhi, 2019; Odi & Olulu-Briggs, 2016; Olulu-Briggs, 2020).

Monetary policy in Nigeria is operationalized majorly via instruments including Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR) and Liquidity Ratio (LR). The MPR is the benchmark interest rate that influences the lending and borrowing rates in the financial system and thus has an impact on aggregate demand and inflationary expectations. Changes in the CRR have an impact on the amount of funds available for bank lending by governing the percentage of deposit liabilities that banks must maintain with the central bank. Similarly, the liquidity ratio forces the deposit money banks to hold a certain percentage of the liquid assets required for solvency but affects the production of credit and money supply (Bernanke & Blinder, 1992; Mishkin, 2018). Through these instruments the CBN strives to control inflationary pressures through the manipulation of excess liquidity and the moderations of increases in demand and prices.

Inflation targeting, measured in terms of inflation rate, is the expression of the central bank's resolve to sustain its price stability by having inflation

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expectations within acceptable limits. Although there is no formal inflation targeting regime in Nigeria, the policy stance of the CBN displays elements of implicit inflation targets whereby the policy response in most cases is influenced by the observed and expected inflation trends (Odusola & Akinlo, 2001; Olulu-Briggs & Sunday, 2021). Empirical evidence indicates that high and volatile inflation in Nigeria is affected not only by the expansion of money but also by structural rigidities and exchange rate instability and supply side constraints, which make the conventional monetary policy tools difficult to use for effectiveness (Adebayo & Ighodaro, 2012).

Existing empirical study on Monetary policy and inflation in Nigeria reveals a lot; but, there are notable gaps. First, much of the literature considers the monetary policy analysis based on the single indicator, such as money supply or interest rate, without adequately taking into account a set of the monetary policy tools, namely CRR, MPR, and liquidity ratio, within a unified analytical framework (Akinbobola, 2012; Chimobi & Igwe, 2010). This approach restricts an understanding on how these instruments influence inflation targeting jointly, though they are used at the same time by the central bank. Second, several studies use linear econometric models which do not capture dynamic and lagged effects of monetary policy actions on inflation. Given the existence of structural bottlenecks and weak transmission mechanism in Nigeria, the effective of policy instruments on inflation could be non-linear and time dependent which is largely underexplored in existing research (Iyoha & Oriakhi, 2019). Additionally, many previous studies are based on outdated datasets which do not capture monetary policy reforms strengthening taking place as well as the periods of heightened inflation in the Nigerian economy in recent times. Furthermore, comparatively little attention has been paid to a concept of inflation targeting as the outcome variable, especially concerning the assessment of how well monetary policy instruments are linked with policy expectations. Most of the studies are on determining factors of inflation rather than effectiveness of monetary policy in the context of an implicit inflation-targeting framework. This gap highlights the need for modern empirical studies which combine several different policy instruments and focus specifically on the outcome of inflation targeting in Nigeria.

2.0 Literature Review

2.1 Conceptual Framework

2.1.1 Inflation Targeting

Inflation targeting is the name given to a monetary policy framework where the central bank makes an explicit or implicit commitment to achieving a given inflation rate over a given period of time. The overriding goal of inflation targeting is price stability, which is achieved by the systematic use of monetary policy tools that help to anchor inflation expectations and decrease uncertainty in the economy (Bernanke et al., 1999). Under this framework, inflation (typically the CPI) is used as the nominal anchor as a trigger for conducting policy.

A key feature of inflation targeting is transparency and accountability, where central banks regularly communicate policy intentions and forecasts of inflation to the public. This approach to communications boosts the credibility of policy, and to bring private sector expectations into line with policy objectives. While some advanced economies follow explicit inflation targeting regimes, in developing economies, such as Nigeria, implicit inflation targeting regimes are frequently observed where policy takes place without an explicit inflation target range being officially announced, but is informed by outcomes of inflation (Mishkin, 2018).

In Nigeria, the persistent pressures on inflation due to structural bottlenecks, exchange rate volatility and other shocks on the supply side of the economy make the implementation of strict inflation targeting difficult. Nevertheless, the use of instruments such as MPR, CRR, liquidity ratio and others by the CBN shows an inherent commitment to control inflation. Inflation targeting is still relevant in Nigeria because it offers a framework within which to assess the effectiveness of monetary policy in price stabilisation even though Nigeria does not have a formally declared target.

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2.1.2 Monetary Policy

Monetary policy is defined as the actions taken by a central bank in order to control money supply, credit condition and liquidity in the economy to achieve their macroeconomic goals i.e. price stability, economic growth and financial stability. Various instruments used by central banks to manage inflation are policy interest rates, reserve requirements, and liquidity ratios (Mishkin, 2018). In Nigeria, monetary policy formulation and implementation is the responsibility of Central Bank of Nigeria through the use of instruments such as Monetary Policy Rate, Cash Reserve Ratio, and Liquidity Ratio. The MPR is the benchmark interest rate that affects rates of lending and aggregate demand and the CRR and liquidity ratio control the lending capacity of banks as well as liquidity condition. These instruments altogether influence the condition of inflation by managing excess liquidity and completing credit expansion (Iyoha & Oriakhi, 2019). Monetary policy may be of two types - expansionary and contractionary - depending upon the prevailing economic conditions. Expansionary policy is used to boost economic activity in periods of recessions, whereas contractionary policy aims at controlling inflation during periods of overheating. In inflation prone economies such as Nigeria, monetary policy is mainly price stabilisation oriented, thus emphasising the need for focusing while managing the economy in general.

2.2 Theoretical Framework

2.2.1 Quantity Theory of Money

The Quantity Theory of Money, QTM, offers one of the earliest, and certainly one of the most influential, theoretical explanations of the link between monetary policy and inflation. Rooted in the classical literature of Fisher (1911), the theory assumes that there is a direct and proportional arsen between money supply and the general price level and this is expressed by an expression known as the equation of exchange: MV = PT. where M stands for money supply, V for the velocity of money, P for the price level, and T for the volume of transactions. Under the presumption that both velocity and output are more or less stable in the short run, a given increase of money supply will alter the level of prices by equal amounts. This framework allows the central role played by monetary authorities in controlling inflation by the proper regulation of the money supply.

In the context of Nigeria, the Quantity Theory of Money is a theoretical foundation on which to examine the role of monetary policy tools, such as Cash Reserve Ratio (CRR), Monetary Policy Rate (MPR) and Liquidity Ratio in the dynamics of inflation. By raising or constricting CRR or by raising MPR, the Central Bank of Nigeria (CBN) can give the economy less money to spend, and this will reduce inflationary pressures. Empirical studies on developing economies have established the validity of QTM especially where inflation is primarily caused by excessive liquidity and weak financial discipline (Chimobi & Igwe, 2010). Given the monetarist history of monetary expansion and fiscal dominance in Nigeria, the Quantity Theory is therefore a relevant theoretical anchor to understanding a trend of inflation.

2.2.2 Keynesian Monetary Theory

The Keynesian Theory focuses more on the role of interest rates and the aggregate demand in the transmission of the monetary policy to the real economy. Unlike the classical assumption of the flexibility of prices, Keynesian economics assumes that prices and wages are sticky in the short term, thereby making monetary policy a useful stabilisation policy (Keynes, 1936). According to this theory, the level of interest rates controlled by policy, e.g., MPR, influences investment and consumption decisions which, in turn, affects output and inflation. Expansionary monetary policy means that it lowers interest rates, aggregate demand and may create pressure for inflation, and contractionary policy restrains aggregate demand, keeps prices under control.

This theory is especially pertinent to Nigeria, where the channel of monetary transmission: interest rate is still strong. Adjustments in the MPR affect lending rates, credit expansion and investment behaviour in the economy. In addition, liquidity management through the liquidity ratio has implications for the

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ability of banks to extend credit to others, which helps to support the Keynesian idea that monetary policy is conducted through financial intermediation channels. However, structural rigidities, underdeveloped financial markets and inefficient transmission of credit generally limit the effectiveness of this mechanism in Nigeria (Adebayo & Ighodaro, 2012). Nonetheless, the Keynesian framework offers a way of thinking about the effects of monetary policy tools on inflation in terms of demand-side effects.

2.2.3 Monetarist Theory and Inflation Targeting Model

The Monetarist Theory, promoted forcefully by Friedman (1968) builds on the Quantity Theory of Money but focuses on the long-run neutrality of money and price stability as the key objective of monetary policy. Monetarists hold that inflation is "always and everywhere a monetary phenomenon" which occurs due to the excessive growth of money supply as compared to real output. Consequently, demand management of central banks should be oriented not towards implementing and maintaining discretionary monetary policies, but rather to controlling monetary growth and anchoring inflation expectations.

This theory provides the direct basis for the modern inflation targeting approach that highlights the need for transparency, credibility, and rule-based monetary policy. Inflation targeting demands that central banks use their policy instruments (including interest rates and reserve requirements) to keep inflation within a specified range. Even though Nigeria does not have a proper inflation targeting regime, the policy decisions taken by CBN show monetarist principles implicit in the aim to stabilise prices and manage inflation expectations (Mishkin, 2018. The relevance of Monetarist Theory to this study is on the approach of disciplined monetary control and use of policy instruments to achieve the objectives of inflation especially inflation prone economy like Nigeria.

2.3 Empirical Review

Oyadeyi (2025) examined the determinants and variability in the velocity of income approach to the stability of the income velocity of money after have made for structural breaks in its formation from the Q1 1981 to Q4 2023 in the Nigerian context. The study used the quantile ARDL method to establish the determinants of income velocity of money in Nigeria, whereas, it used the CUSUM tests to establish the stability of money velocity in Nigeria. The results of this study showed that velocity of money determinants are per capita income, exchange rate, level of financial development, inflation and interest rate in the four models. Furthermore, using the cumulative sum and cumulative sum of squares tests, the four velocities of money functions were unstable for Nigeria.

Olise and Ejedegba (2025) use vector Auto-Regression (VAR) model to examine the relationship between key monetary policy instruments such as Monetary Policy Rate (MPR), Money Supply, Information Rate, Liquidity Ratio and inflation in Nigeria from 1986 to 2023. Their empirical results show that MPR and money supply have positive effects on inflation whereas interest rate and liquidity ratio have negative effects, with the last hypothesis statistically significant. The study highlights the importance of having a stable monetary policy rate and prudent liquidity management regimes to neutralise inflationary pressures in Nigeria.

Ogbonnaya, Maduka, and Okafor (2025) used the ARDL technique to examine the effect of several monetary policy tools on the inflation rate, the period covered is from 1981 to 2023. Their results indicate that money supply, petrol prices and prices of import commodities have positive and significant effect on inflation, and the effects of MPR and lending rate were statistically insignificant. The research indicates that simply implementing monetary policy may not be effective in restraining inflation without highlighting structural reforms, viz., stability of exchange rate and economic diversification, to improve the effectiveness of monetary policy.

Bulus and Umeokwobi (2025) examined the relationship between inflation expectations and the Nigeria economy using with VAR and Structural

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VAR Models. Their results suggest that shocks to MPR have a relatively small direct contribution to inflation reflecting weak monetary transmission in Nigeria. The authors suggest increasing monetary policy credibility and communication in order to better anchor expectations.

Nzeh (2025) uses VAR model to determine the response of food inflation to changes in monetary policy tools (food sector). The research indicates that there is a differential response to changes in monetary policy and total food price inflation, which is considered one of the most significant drivers of headline inflation in Nigeria, indicating that there are structural elements of food inflation responses beyond the influences of monetary instruments (e.g. supply bottlenecks, exchange rate volatility). This implies that monetary policy may have different effects on the components of inflation.

Joseph et al. (2025) study the short and long term impact of an Inflation Targeting regime on Inflation control in Nigeria using the Average Difference Level (ADL) model using data from 1981 - 2023. They report the MPR and the central bank communication is significant in reducing inflation in the short and long run. At the same time, there are structural issues like insecurity and volatility of money supply that pose permanent inflationary challenges. The potentials of, and limitations of, inflation targeting in Nigeria's structural setting are brought to the fore by the study.

Abdullahi et al. (2025) Eluria and Huang Time series data (1981-2024) were used to assess the efficiency of monetary policy tools in the control of inflation in Nigeria. The results found out that money supply, monetary policy rate, liquidity ratio and GDP have a significant effect on inflation whereby money supply has a positive effect on inflation while monetary policy rate and GDP have positive effect on decreasing inflation in a long term. However, structural constraints reduce the impact of monetary policy, which calls for wide-ranging economic reforms.

Ekong and Effiong (2020) discussed the issue relating to the effectiveness of a monetary-fiscal coordination in inflation targeting in Nigeria over the period 1985 to 2019. The Error Correction Mechanism showed that 55.4% of the short run disequilibrium is corrected in the year round. Meanwhile, the study showed that both the monetary policy channels and the fiscal policy have a substantial impact on inflation in the long run as well as in the short run.

3.0 Methodology

This study uses the ex post facto research design, which is suitable for investigation to study the relationship between variables where the researcher has no control over the variables and where data were occurred previously. Ex post facto designs are widely used in macro-economic research if historical the relationship between policy instruments and the economic outcome is conducted (Creswell & Creswell, 2018). By using already existing data collected from 1986 to 2024, this design allows the researcher to determine the past relationship between monetary policy instruments (i.e., Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR) and Liquidity Ratio (LR) and the inflation rate in Nigeria). Since the study is about establishing trends and causal relationship that run through time without any form of experimentation, the ex post facto design is well-suited for time series analysis in econometric study due to its nature in the field of economic policy, as manipulation experimental design is not very feasible or ethical (Adeleke et al., 2020).

The study uses secondary data from reliable sources from the year 1986 to 2024. Secondary data is beneficial in econometrics research because it offers long time-series that helps in increasing the robustness of statistical inferences (Sekaran & Bougie, 2019). Specifically, data on inflation rate (using the Consumer Price Index), Monetary Policy Rate (MPR), Cash Reserve Ratio (CRR) and Liquidity Ratio (LR) are obtained from data sets published by the Central Bank of Nigeria (CBN) statistical bulletins and annual reports. Where required, additional information is taken from The World Bank's World Development Indicators and the International Monetary Fund's International Financial Statistics to provide completeness and consistency. The nature of the information is quantative and continuous over the timeframe of

examination, which enables serious analysis in time series and examines dynamic relationships over the course of several decades.

The research utilises a series of econometric methods which are appropriate for time series research. Initial analysis is conducted with descriptive statistics that serve to summarise and understand some of the basic features of the data. Measures like mean, standard deviation, minimum and maximum values are calculated to give some information about central tendency and spread of each variable over the study period. Descriptive analysis is the basis for later inferential modelling and to expose patterns and potential anomalies (Gujarati & Porter, 2009). Since the time series in economics tend to be non-stationary, the research tests the stationarity properties of each variable by using the Augmented Dickey-Fuller test (ADF). Stationarity is important to avoid spurious regression results because this allows performing valid long-run inference (Dickey & Fuller, 1979; Phillips & Perron, 1988). Variables which are integral of order one, I(1) are needed for the cointegration analysis. On proof of the variables being integrated of the same order, the Johansen cointegration test is used to determine whether there is a long-run equilibrium relationship between inflation and monetary policy instruments (Johansen, 1988). The Johansen procedure is especially suitable for multiple time series because of the possibility of multiple cointegrating vectors and the fact that it rests on a vector autoregressive framework. Upon establishment of the co-integration, the parsimonious Error Correction Model (ECM) is estimated to capture both short Run dynamics and Adjustments towards the Long Run equilibrium. The ECM specifies the way the deviations from the long-run relationship tend to correct themselves with time: the error correction term follows how the speed of adjustment is. A parsimonious specification is useful to avoid overfitting by keeping only statistically significant terms of lagged order, allowing to enhance the interpretability of the model and to improve the forecasting performance (Enders, 2014).

The model used in this study is stated below:

$$INF = f(MPR, CRR, LDR) \quad 3.1$$

$$INF_t = \beta_0 + \beta_1 MPR_t + \beta_2 CRR_t + \beta_3 LDR_t \quad 3.2$$

$$INF_t = \beta_0 + \beta_1 MPR_t + \beta_2 CRR_t + \beta_3 LDR_t + \mu_t \quad 3.3$$

$\beta_1 < 0$, $\beta_2 < 0$, and $\beta_3 < 0$

Where, INF = Inflation rate, MPR = Monetary policy rate, CRR = Cash reserve ratio, LDR = Liquidity ratio, β_o = Intercept, β_1, β_2, and β_3, = Constant parameters, μ_t = Error term.

4.0 Results and Discussion

4.1 Results

Table 4.1: Descriptive Statistics Result

	INF	MPR	CRR	LDR
Mean	16.12169	14.13462	20.64487	49.05117
Median	16.54839	13.50000	22.50000	46.50000
Maximum	24.85000	26.00000	32.50000	104.2024
Minimum	11.48313	6.000000	1.000000	26.39276
Std. Dev.	2.981167	3.832361	9.807213	14.49677
Skewness	0.558976	0.482427	-0.570562	1.549780
Kurtosis	3.235942	4.197665	2.161260	6.990177
Jarque-Bera	2.121410	3.843689	3.259176	41.48428
Probability	0.346212	0.146337	0.196010	0.000000

Source: E-view Output 10

The average inflation rate of about 16.12 percent is consistent with Nigeria's long-lived struggles with relatively high rates, which once again, is consistent with the country's macroeconomic history of structural rigidities, fiscal dominance, and exchange rate pressures. The median value (16.55 percent) is not far off the mean, the signs of which would indicate that inflation has been stubbornly high rather than the result of extreme outliers. The maximum inflation rate of about 24.85 percent indicates some instances of severe inflationary pressures, while the minimum of 11.48 percent reveals that there has been a limited level of moderation in inflation.

The monetary policy rate has an average level of 14.13 percent that reflects the generally tight monetary monetary policy stance of the Central Bank of Nigeria (CBN) in an attempt to curb inflationary pressures. The relatively wide range between the minimum (6 percent) and maximum (26

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percent) values creates the impression that the MPR is actively used as a policy signal to affect credit conditions and inflation. The mean of the cash reserve ratio is 20.64 percent, showing the level of liquidity management, it is restrictive, given the maximum value of 32.5 percent, which explains the high tendency of the CBN to use the CRR adjustment to manage excess liquidity in the banking system. The liquidity ratio (LDR) has a mean of 49.05 percent but shows a very high maximum value of over 104 percent implying periods of strain of aggressive expansion of liquidity or changes regulated affecting the balance of the banking system.

The skewness and the kurtosis statistics give information on the properties of distribution of the variables. INF and MPR are positively skewed, indicating that there are longer right tails and that high episodes of inflation and interest rates are ubiquitous. CRR is negatively skewed, which shows more observations towards a higher value, in line with and consistent with sustained tight regulation. LDR has a high positive skewness and excess kurtosis, indicating some volatility and extreme values. The Jarque-Bera test indicates that INF, MPR and CRR are normally distributed, whereas LDR deviates significantly from normality suggesting possible instability in liquidity conditions over time.

Table 4.2: Augmented Dickey Fuller (ADF) Stationarity Test Variables

Variables	Level Data			First differenced data			Conclusion
	ADF Test Statistics	T-Critical at 5%	P-value	ADF Test Statistics	T-Critical at 5%	P-value	
INF	-2.676565	-2.941145	0.0874	-8.248164	-2.943427	0.0000	I(1)
MPR	-1.198118	-2.941145	0.1979	-8.455734	-2.943427	0.0007	I(1)
LDR	-1.389033	-2.941145	0.2608	-7.662888	-2.943427	0.0000	I(1)
CRR	-2.322900	-2.941145	0.1703	-5.692801	-2.943427	0.0000	I(1)

Source: E-view Output 10

Table 4.2 presents the results of the tests of the stationarity of the time series for INF, MPR, LDR and CRR using the ADF test. At levels, none of the variables are stationary as their ADF test statistics are greater than the 5 percent critical values and their p-values are greater than 0.05. This implies unit roots, i.e. potential shocks to these variables have persistent effects, and do not quickly return to their long-run means. Such behaviour is common in more macroeconomic time series, specifically inflation and monetary policy variables in developing economies.

However, as one will see after first differencing, all variables are now stationary, as they have an extremely significant ADF statistics and p-value of 0.0000 or nearly zero. This confirms that INF, MPR, LDR and CRR are integrated of order one, I (1). The implication is that the variables are non-stationary in levels but some linear combinations of these variables are potentially stationary justifying the use of co-integration techniques. Economically, the implication of this is that inflation targeting and monetary policy instruments in Nigeria have attached to long-run trends driven by structural and policy factors but short-run attribute around these trends.

Table 4.3: Result of Johansen Co-integration Test

Trend assumption: Linear deterministic trend

Series: INF MPR CRR LDR

Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.676974	62.03488	47.85613	0.0014

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At most 1	0.297462	22.48411	29.79707	0.2723
At most 2	0.169943	10.12714	15.49471	0.2711
At most 3	0.097951	3.608023	3.841466	0.0575

No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.676974	39.55077	27.58434	0.0009
At most 1	0.297462	12.35697	21.13162	0.5128
At most 2	0.169943	6.519119	14.26460	0.5475
At most 3	0.097951	3.608023	3.841466	0.0575

Source: E-view Output 10

The trace statistic represents the rejection of the null hypothesis of no equation of cointegration at the 5 percent level since the trace statistic (62.03) is greater than the critical value (47.86) at a probability level of 0.0014. Similarly, the maximum eigenvalue statistic confirms at least one co-integrating relationship between INF, MPR, CRR and LDR. These results taken together point to the existence of a stable long-run equilibrium relation between inflation targeting and the choice of the monetary policy instruments.

The existence of co-integration suggests that although there may be short-run movements, the steps in the direction of inflation and monetary policy are together in the long-run. This finding confirms the expectations of Joselyne K. Potter hereby as a statement of the theoretical expectation that monetary policy instruments (interest rates, reserve requirements and liquidity controls) are systematically connected to outcomes of inflation. For Nigeria, this implies that the monetary policy framework of the CBN has long term implications on the dynamics of inflation, even if sometimes the short-term effectiveness of monetary policy is undermined by structural problems and pressure of fiscal deficit.

Table 4.4: Parsimonious Error Correction Results

Dependent Variable: INF

Method: Least Squares

Sample (adjusted): 1987 2024

Included observations: 38 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MPR(-1))	0.270095	0.103999	2.597080	0.0139
D(CRR(-1))	0.010367	0.041793	0.248046	0.8056
D(LDR(-1))	-0.030041	0.026818	-1.120154	0.2707
ECM(-1)	-0.560719	0.150136	-3.734736	0.0007
C	13.40393	2.216749	6.046664	0.0000

R-squared	0.764868	Mean dependent var	16.02660
Adjusted R-squared	0.700004	S.D. dependent var	2.960643
S.E. of regression	2.293296	Akaike info criterion	4.619937
Sum squared resid	173.5539	Schwarz criterion	4.835409
Log likelihood	-82.77880	Hannan-Quinn criter.	4.696600
F-statistic	7.166769	Durbin-Watson stat	1.954056
Prob(F-statistic)	0.000287		

Source: E-view Output 10

The coefficient of lagged change of monetary policy rate D(MPR(-1)) is positive (0.270095) and statistically significant (0.0139) at the 5 per cent level. This suggests that the MPR changes have an important short run impact on inflation. D(CRR(-1)) has positive (0.010367) and statistically insignificant (0.8056) coefficients for explaining inflation targeting. This shows that changes in CRR have an insignificant short run effect on inflation. D(LDR(-1)) is negative (-0.030041) and statistically insignificant (0.2707) in explaining inflation targeting. This implies that the changes in CRR have an unimportant effect on inflation on the short run.

The error correction term (ECM(-1)) is negative (-0.560719) and statistically significant (0.0007), which means the existence of a long-run adjustment dynamics. The negative sign indicates that the deviations from short-run equilibrium are corrected in the long-run with the speed of 56.1%. The adjusted R-squared of 0.70 tells us that approximately 70 percent of the variations of inflation are described by the model. The F-statistic is significant and indicates the overall correctness of the model, whereas the Durbin-Watson statistic of about 1.95 indicates the absence of serious autocorrelation. Overall, the results of the ECM support the presence of both short-term and long-

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term relationships between monetary policy instruments and inflation targeting in Nigeria.

4.2 Discussion of Findings

The positive and significant relationship between the monetary policy rate (MPR) and inflation (INF) in Nigeria, however, implies that the escalation of the monetary policy rate is associated with an increase in inflation, instead of immediate containment of inflation. This result shows the reactivity of the monetary policy in Nigeria with the Central Bank of Nigeria (CBN) often expanding the MPR because of the prevailing inflationary pressure and more so as a pre-emptively stabilisation tool. Empirically, this is consistent with the argument that the interest rate regime in developing economies may be endogenous to the inflation rate, particularly in environments where there are supply-side shocks, fiscal dominance and structural rigidities (Mishkin, 2018). In Nigeria, the main drivers of inflation are cost push factors including the devaluation of the exchange rates, energy price shocks, insecurity and censorship of food chains. Consequently, the MPR increases might make the cost of credit waves, make the cost of production expensive, and make the supply problematic, with the tendency to reinforce the inflationary pressures in the short-run (Akinbobola, 2019). Furthermore, weak transmission mechanisms in the monetary sphere make the adjustment of MPR little effective in moderating AD. Empirical studies such as the works of Asaleye et al. (2022) and Nwoko, Ihemeje and Anumadu (2016) share in the view that the tightening of monetary policy through higher interest rates has not always brought down inflation in Nigeria. Thus the positive and significant relationship points to the structural limitations of using MPR on its own as a tool of inflation target in the Nigerian economy.

The positive, but statistically insignificant relationship between the cash reserve ratio (CRR) and inflation (INF) implies that any fluctuation in reserve requirements has not had a significant impact on the dynamics of inflation in Nigeria. Although CRR is designed to regulate excess liquidity by limiting the loanable funds of the banking system its inflationary effect seems weak and inconsistent. This insignificance is suggestive that the change in CRR may not be an effective cause in translation of reduced money supply or lower aggregate demand due to primarily structural inefficiencies of the financial system. In Nigeria therefore, the response of banks to higher CRR is not usually significant reduction of credit creation but changes in lending rates or reallocation of portfolios. This unfortunate weak pass-through makes CRR less effective as an inflation control instrument (Iyoha & Oriakhi, 2020). Moreover, the positive sign is suggestive that CRR adjustments might be reactive: during periods of increasing inflation reserves requirements are often increased. Studies like Adekunle et al. (2020) and Ojonugwa and Omotor (2021) have similar results - that the impact of reserve requirement policies on inflation in Nigeria is negligible in the short run. The fiscal deficit and monetization advantages prevail further reduced the effectiveness of CRR due to align the liquidity injections that arise from the fiscal operations that usually counterbalance the tightness in the money stock. Hence, although CRR is a very important prudential tool, in Nigeria, its role in inflation targeting is very indirect and statistically unimportant.

The negative but insignificant link between the liquidity ratio (LDR) and inflation (INF) implies that an increase in the liquidity situation in the banking sector has a weak correlation with a reduction in inflation, although the effect is not statistically significant. The negative sign suggests higher liquidity management might facilitate productive loans and output expansion to be possible and ease supply side constraints and moderate inflationary pressures. However, the insignificance goes to show that this channel is not strong enough to affect the inflation outcome with a decisive margin. In the Nigerian economy, the liquidity ratios are mostly regulatory tools to ensure banking sector stability and not a direct way to manage inflation. As a result, changes in LDR may not have a large impact on money supply or patterns of consumption. Additionally, there are issues of credit allocation inefficiencies wherein the effect of increased liquidity does not necessarily result in productive investment but may be used in speculating activities

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thereby cancelling the disinflationary effects that it may bring about (Udoh & Ogbuagu, 2021). Empirical evidence by Ogunmuyiwa and Ekone (2019) show that liquidity monetary instruments are weak at explaining inflation in Nigeria. Therefore, although sufficient liquidity contributes to the resilience of the financial system, the liquidity role as a proper inflation targeting tool is weak and statistically insignificant.

5.0 Conclusion and Recommendations

5.1 Conclusion

This research examined the relationship between monetary policy instruments and inflation targeting in Nigeria between the year 1986-2024. The results show that the monetary policy rate has a positive and significant effect on inflation which will imply that the adjustment of the policy rates in Nigeria is mainly reactive (in response) to inflationary pressures. In contrast, the cash reserve ratio can be seen to have a positive but insignificant relationship with inflation whereas the liquidity ratio has been found to have a negative but insignificant impact. The presence of a long-run equilibrium relationship provides evidence that monetary policy is important to inflation dynamics although it is limited in its effectiveness by the presence of structural rigidities and weak transmission mechanisms. The study concluded that inflation targeting in Nigeria needs a more coordinated and supportive monetary policy structure.

5.2 Limitations of the Study

Despite its contribution, there are some limitations in this study. First, it uses secondary time series data, which is susceptible to errors in measurement or revision of data. Second, inflation is also affected by a number of non-monetary factors like exchange rate volatility, fiscal deficits, insecurity and supply side shocks, which were not explicitly modelled. Third, this study uses aggregate national data and thus ignores sectoral differences in the transmission of monetary policy. Lastly, structural breaks resulting from major policy reforms were not fully integrated which may well impact the robustness of the results. These limitations indicate a degree of caution in the generalisation of the findings.

5.3 Recommendations

First, it should complement adjustments in MPR with strong supply side and structural coordination, Central Bank of Nigeria. Since inflation is positively respondent to increase in MPR, monetary tightening also does not suffice. Coordinated policies with the fiscal authorities to deal with food security, energy costs and exchange rate stability is required to enhance the effectiveness of inflation targeting.

Second, the CRR policy should be redesigned to improve its transmission effectiveness. Rather than CRR hikes which are uniform and high frequency, the CBN should consider a more targeted transparent reserve requirement framework that would provide incentives for lending to productive sectors like manufacturing and agriculture. Differentiated CRR regimes linked with sectoral credit performance could enhance the relation between the liquidity control and inflation results.

Third, liquidity management should be tied to credit quality and productivity and vice versa. Regulatory focus should be on more than liquidity ratios and should assure liquidity is maintained to support growth of real sector output. Strengthening of credit monitoring, efficiency in financial intermediation and financial deepening would allow liquidity to translate into output expansion and not speculative demand, easing long-run inflation.

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