Monetary Policy Transmission Channels and Inflation in Nigeria

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ABSTRACT

Despite active use of monetary policy, Nigeria continues to face significant inflationary challenges, suggesting weaknesses in how policy signals are transmitted to the economy. A precise understanding of these transmission channels is critical for effective policymaking. This study investigates the impact of key monetary transmission channels—interest rate, credit, and money supply—on inflation in Nigeria from 1986 to 2023. Using Autoregressive Distributed Lag (ARDL) regression techniques, it analyzes the short-run and long-run dynamics of the monetary policy rate, bank lending rate, treasury bill rate, and broad money supply. The analysis reveals a complex and often counterintuitive transmission process. Notably, an increase in the monetary policy rate is inflationary in both the short and long run. Similarly, the bank lending rate exhibits a positive relationship with inflation. However, a one-period lag of both rates shows a significant negative effect on inflation, indicating potent but delayed disinflationary impacts. Treasury bill rates were found to be ineffective, while growth in broad money supply was consistently inflationary. The findings suggest that the Central Bank of Nigeria (CBN) must account for significant time lags and perverse short-term effects. Key recommendations include: (1) adopting a forward guidance framework to manage expectations and improve policy credibility; (2) implementing interest rate corridors and closer oversight of commercial bank lending practices; (3) expanding long-tenor treasury bill issuance to anchor long-term expectations; and (4) enforcing tighter control over monetary aggregates.

Keywords: Transmission Channels; Monetary Policy; Policy Designs; ARDL; and Nigeria

JEL Codes: E44, E5, E61, F34 and N47

INTRODUCTION

Globally, the effectiveness of monetary policy transmission channels in influencing inflation varies widely. However, the literature identifies various monetary policy transmission channels, including the interest rate channel, money supply channel, exchange rate channel, credit channel, asset price channel, and expectations channel. These channels serve as mechanisms through which adjustments in consumption and investment occur, ultimately influencing aggregate demand and inflation. For example, interest rate and expectations channels with strong and timely impact on inflation is observed in the United States of America and European Union. While, credit and exchange rate channels with moderate and delayed impact on inflation dominated Asia. Also, exchange rate, and expectations channels with mixed impact, due to fiscal dominance in some cases is associated with countries in Latin America. For Sub Saharan Africa, it is majorly credit and exchange rate channels with persistence inflation commonly noticed (Mishra et al., 2012).

In Nigeria, inflation remains a central issue for policy makers and analysts, as the country has experienced high and erratic inflation rates since the 1970s, which poses a serious danger to the country's economy. Since the 1970s, the nation has seen periods of significant inflation, which have been primarily caused by the expansion of the money supply and certain elements that reflect the structural features of the economy.

These elements include climatic conditions, wage increases, the structure of production, currency devaluation and changes in terms of trade (Masha, 2000). Inflation averaged 12.17 percent from 1996 to 2016, peaking at 72.8 percent in 1995 and falling to a record low of 5.4 percent in 2007. Inflation fell to 9% in 2015, but it was at its highest level since 2007 in 2012, when it was 12.2%. Inflation did, however, rise slightly, reaching a record high of 24.7% in 2023 (National Bureau of Statistics, 2024).

To combat inflation, central banks and monetary authorities around the world have the vital duty of developing and enforcing monetary policies that are conducive to macroeconomic stability, which includes the attainment of price stability, economic expansion, balance of payments equilibrium, and achieving full employment. But in order to achieve these goals, central banks must have a thorough understanding of the monetary transmission mechanism that is at work in their respective economies. As a result, central banks must identify and understand the main channels through which their policy actions impact economic activity and, ultimately, help them achieve their policy goals. Therefore, monetary policy transmission channels are critical in understanding how monetary policy actions impact price stability in Nigeria.

Monetary policy transmits its effect on the economy through various channels. These channels are the money supply, exchange rate, interest rate, asset price and credit channels. For example, the interest rate channel posits that economic agents hold only money and bonds. A monetary expansion leads to an excess supply of money, causing economic agents to hold more money and fewer bonds. A fall in short-term interest rates leads to increased investment spending, aggregate demand, and output. While, the money supply channel operates by increasing the supply of money, thereby augmenting the reserves of banks, and enabling them to extend more credit.

The credit channel involves two versions: bank lending and balance sheet channels. The bank lending channel focuses on the role of banks in the economy by issuing liabilities and holding assets, with bank deposits being the primary source of funds for lending and bank loans being the primary source for investment. Variations in monetary policy stance affect the external finance premium through the supply of intermediated credits. The balance sheet channel operates through the net worth of business firms, highlighting the role of collateral in reducing moral hazards. Low net worth signals to lenders that there is less collateral for loans, leading to decreased lending and investment spending. Further, under the asset price channel, monetary policy affects asset prices like bonds, equity, and real estate, affecting firms' stock market values and household wealth. This affects aggregate demand through Tobin's Q-theory of investment and Ando-Modigliani's life cycle theory of consumption. Expansionary monetary policy increases demand for equities, raising equity prices, boosting market value and investment.

However, the most effective channel for controlling inflationary pressure remains unclear and a topic of debate. For instance, in Nigeria, the uncertain nature of the transmission mechanism remains a persistent issue for the effective implementation of monetary policy. Despite the Central Bank's (CB) adoption of various monetary policy tools and strategies, the economy's poor performance in recent years suggests, among other things, a lack of understanding of the most efficient channel via which monetary actions flow to the real economy. As a result, numerous research on Nigeria have discovered evidence of one or more channels—albeit with differing degrees and intensities—through which monetary policy is transmitted. Thus, this paper investigated how Nigerian inflation levels are affected by the transmission channels of monetary policy. Specifically, the four main channels of the monetary transmission mechanism (MPTM) in Nigeria—interest rate (MPR), credit (BLR), equity (TBR) and money supply (BMS) channels (TBR) were examined from 1986 to 2023. The following research questions guided the research:

1. How does interest rate channel impact on inflation in Nigeria?
2. To what extent does credit channel affect inflation in Nigeria?
3. What impact does equity channel have on inflation in Nigeria?
4. What is the impact of money supply channel on inflation in Nigeria?

LITERATURE REVIEW

Various studies on the link between monetary policy transmission channels and inflation levels have been conducted across both developed and developing economies with varying outcomes and conclusion. However, to avoid repetitive description and improve flow, this study streamlines the literature review by synthesizing studies into thematic clusters (e.g., interest rate channel, credit, exchange rate, and money supply channels)., starting with the interest rate channel as follows:

Akande et al. (2024) using a FAVAR model, found a "high impact of monetary policy rate on inflation," in Nigeria. Specifically, the study identified short-term interest rates as a key transmission mechanism. Similarly, Igweze et al. (2020) with the help of a mediation analysis confirmed the significance of the interest rate path, finding that maximum lending rates, interbank rates, and treasury bill rates effectively transmit Monetary Policy Rate (MPR) shocks to private sector credit (a partial mediation effect) in Nigeria. While, Yusuf and Zunaidah (2017) using ARDL model identified the interest rate channel as the dominant short-run mechanism for explaining inflation conditions in Nigeria. Okotori (2019) employing an ECM model concluded that MPR and treasury bill rates have a "significant and effective impact on the inflation rate in Nigeria. In contrast, Kallon (2024) found that interest rate channel has only a "delayed and transitory impact," suggesting weak and slow pass-through in Sierra Leone. In Pakistan, Saghir et al. (2022) suggested that a significant negative relationship existed, the overall effectiveness was limited. In a similar vein, Alfa et al. (2021) study quantified a significant transmission lag, finding it takes about 20 months for a change in MPR to fully impact inflation in Nigeria. Further, Okwori and Abu (2017) found that MPR itself was statistically insignificant, indicating a broken transmission mechanism to commercial bank rates in Nigeria.

Under the credit channel, Kallon (2024) highlighted a major constraint: private sector credit expansion is stifled by "substantial government borrowing," crowding out private investment in Sierra Leone. While, Chileshe and Olusegun (2017) found credit to be one of the "effective channels" of transmission in their VAR analysis in Zambia. Using a NARDL model, Yahia (2023) found that positive changes in credit volume were the most effective long-term transmission mechanism for impacting real GDP in Algeria. Additionally, Igweze et al. (2020) reported that endpoint was the successful transmission to private sector credit, implying this credit is a crucial step toward affecting ultimate targets like output and inflation in Nigeria.

Wadood (2025) identified the exchange rate channel as the "main mechanism of action," through which interest rate shocks are best transmitted to affect trade balances and inflation in Bangladesh. However, Ezeanyeji et al. (2021) surprisingly found the exchange rate had a "negative and insignificant effect" on inflation control in Nigeria, contradicting other studies and highlighting potential model or period-specific issues. Similarly, Yahia (2023) found that negative changes (depreciation) in the exchange rate were the most efficient short-term channel for transmitting policy to inflation in Algeria.

Alfa et al. (2021) found an even longer transmission lag for money supply (M2) than for interest rates, taking about 25 months to influence inflation in Nigeria. While, Otolorin and Akpan (2017) using a VAR model showed money supply had "no significant impact" on RGDP, aligning with post-Keynesian critiques in Nigeria. Ezeanyeji et al. (2021) also found that money supply has a "negative and insignificant impact on inflation control in Nigeria. Titus et al. (2015) found that monetary policy to be significant, the specific mechanism via pure money supply aggregates is less emphasized compared to other channels in the literature in Nigeria. The impact of monetary policy communication on inflation expectations in Africa was investigated by Odu et al. (2024). Employing text-mining techniques to analyse the monetary policy statements of six African central banks, the study computed a novel index of monetary policy communication (MPCI) using the extracted word counts, readability, sentiment and tone indicators. The study provided new evidence of a positive and statistically significant impact of sentiments, tone and the MPCI on inflation expectations in Africa. In their (2022) study, Oyadeyi and Akinbobola examined how Nigeria's various monetary policy channels responded to various macroeconomic factors. The study adopted

the structural break and structural VAR methods in achieving the objectives and found a significant standard deviation real effect on each monetary policy channel in the short term, while it also found that innovations arising from a channel itself caused the greatest shock on its future values.

METHODS

This paper relied on Time series data on inflation rate., exchange rate., lending rate., broad money supply., and treasury bill rate obtained from the Central Bank of Nigeria and World Development Indicators online databases. The theoretical background of this paper is the is rooted in the quantity theory of money developed by Irving fisher in the inter-war years, and is a basic theoretical explanation for the link between money and the general price level (Geoff, 2012). Fisher (1932), in his quantity theory of money, opine that like other classical writers the short-run monetary control was dictated by interest rates which were sticky but in the long-run the demand of influence was real cash balance. Fisher further assumed that the rise in commodity prices would precedes the increased in interest rate which was regarded as main channel of the firms' operation cost (Jelilov, 2016).

The quantity theory of money gives the relation between money, prices, and output:

$$M \times V = P \times Y \quad (1)$$

Equation (1) is the quantity equation, linking the price level and the level of output to the money stock. The quantity equation transformed to classical quantity theory of money when it was argued that both *V*, the income velocity of money, and *Y*, the level of output, were fixed. Real output was taken to be fixed because the economy was at full employment, and changes in velocity were assumed to be negligible. If both *V* and *Y*are fixed, it follows that the price level is proportional to the money stock. Thus, the classical quantity theory was the theory of inflation. The classical quantity theory is the proposition that the price level is proportional to the money stock. It can be viewed as a theory of price determination suggesting that the equilibrium price level is strictly proportional to the quantity of money.

However, equation (1) was modified by focusing on the four prominent channels of Monetary Policy Transmission (MPTM) in Nigeria – Interest rate(MPR), credit (BLR), equity (TBR) and money supply channels(BMS) over the period 1986 to 2023. Thus, the modified model is presented as follows:

$$INFR_t = \beta_0 + \beta_1 MPR_t + \beta_2 BLR_t + \beta_3 TBR_t + \beta_4 BMS_t + \varepsilon_t \quad (2)$$

Where,

INFR = Inflation rate; MPR = Monetary policy rate; BLR = Bank lending rate., TBR = Treasury bills rate; BMS = Broad money supply. β_0= The intercept or autonomous parameter estimate, $\beta_1 to \beta_4$= Parameter estimate representing the coefficient of MPR, BLR, TBR and BMS respectively, and ε_t- other variables not explicitly included in the model.

Further, this research apriori expectations of the parameters to be estimated are as expressed below:

$\beta_1 < 0$; The coefficient of monetary policy rate is expected to have a negative impact on inflation;

$\beta_2 < 0$; The coefficient of bank lending rate is expected to have a negative impact on inflation;

$\beta_3 < 0$; The coefficient of treasury bills rate is expected to have a negative impact on inflation.,

$\beta_4 < 0$; The coefficient of broad money supply is expected to have a negative impact on inflation.

Thus, this paper investigated the impact of monetary policy transmission channels on inflation levels in Nigeria from 1986 to 2023, using the Autoregressive Distributed Lag (ARDL) framework introduced by Pesaran *et al.* (2001). The ARDL model is specified as follows to run the bound test for cointegration:

$$\Delta Y_t = \beta_0 + \sum_{i=1}^{p} \beta_i \, \Delta y_{t-1} + \sum_{j=0}^{q} \partial_j \, \Delta X_{t-J} + \phi_1 y_{t-1} + \phi_2 X_{t-1} + \mu_t \quad (4)$$

Where Δ denotes the first difference operator, β_i, ∂_jstand for the short-run coefficients, ϕ_1, ϕ_2 are for the long-run coefficients and μ_t is the disturbance(white noise) term. Transforming equation (4) into an ARDL Model results as follows:

$$\Delta INFR_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} \, INFR_{t-i} + \sum_{j=0}^{n} \alpha_{2i} \, \Delta MPR_{t-j} + \sum_{k=0}^{o} \alpha_{3i} \, \Delta BLR_{t-k} + \sum_{l=0}^{p} \alpha_{4i} \, \Delta TBR_{t-l}$$
$$+ \sum_{l=0}^{r} \alpha_{5i} \, \Delta BMS_{t-l} + \alpha_6 INFR_{t-1} + \alpha_7 MPR_{t-1} + \alpha_8 BLR_{t-1} + \alpha_9 TBR_{t-1} + \alpha_{10} BMS_{t-1} + \varepsilon_t ----$$
$$-(5)$$

The bounds test is conducted by testing the null hypothesis (H_0) against the alternative hypothesis (H_1) using the following equations:

$H_0: \alpha_1 = \alpha_2 = \alpha_3 = \alpha_4 = \alpha_5 = 0$ and $H_1: \alpha_1 \neq \alpha_2 \neq \alpha_3 \neq \alpha_4 \neq \alpha_5 \neq 0$

The results of the bounds test derived from the computed F-Statistic are comparable to those of Pesaran *et al*. (2001), who concluded that cointegration between the series is present if the F-Statistic is greater than the upper bound I (1) in each case, rejecting the null hypothesis of no cointegration.

Mathematically, the series Error Correction Model with the ARDL framework is as follows:

$$\Delta INFR_t = \alpha_0 + \sum_{i=1}^{m} \alpha_{1i} \, \Delta INFR_{t-i} + \sum_{j=0}^{n} \alpha_{2i} \, \Delta MPR_{t-j} + \sum_{k=0}^{o} \alpha_{3i} \, \Delta BLR_{t-k} + \sum_{l=0}^{p} \alpha_{4i} \, \Delta TBR_{t-l}$$
$$+ \sum_{l=0}^{q} \alpha_{5i} \, \Delta BMS_{t-l}$$
$$+ ECT_{t-1} + \varepsilon_t ----------$$
$$----------(6)$$

Where,

ECT_{t-1} = lagged Error correction term. The output evolution process that agents use to react to the prior period of prediction errors is captured by the ECT.

The Autoregressive Distributed Lag (ARDL) technique has an added advantage in the sense that it can be applied for any order of integration due to its dynamic nature. The ARDL method as suggested by Pesaran et al. (2001) can be adopted regardless of the integration order of the independent variables whether they are purely I (0), purely I (1) or mutually co-integrated (Gökmenoğlu & Taspinar, 2016; Katircioglu, 2009, 2010). The ARDL framework gives efficient results because it is free from serial correlation and endogeneity problems and can be estimated in the presence of endogenous explanatory variables (Pesaran et al., 2001). The ARDL technique give more robust results for a small sample size than other conventional co-integration models.

Variables Description and Measurements

Table 1: Variables Description and Measurements

Variable	Acronym	Description	Measurement	Source
Inflation rate	INFR	This is a continuous and general increase in the cost of goods and services	Annual (%)	Central Bank of Nigeria (CBN, 2024)
Monetary policy rate	MPR	This is a practical signaling device that permits banks to borrow and lend with a corridor of +100 bp to –700 bp	Annual (%)	Central Bank of Nigeria (CBN, 2024)
Bank lending rate	BLR	This is the commercial bank lending rate to private investors	Annual (%)	Central Bank of Nigeria (CBN, 2024)
Treasury bills rate	TBR	These are short-term government securities issued at a discount from face value and redeemed at par upon maturity, typically used to measure risk-free interest rates	Annual (%)	Central Bank of Nigeria (CBN, 2024)
Broad money supply	BMS	This includes narrow money plus savings and time deposits, as well as foreign denominated deposits	Annual (%)	World Development Indicators (World Bank, 2024)

Source: Researchers' Compilation, 2025

RESULTS

Descriptive Statistics

Table 2 presents the descriptive statistics for the paper.

Table 2: Descriptive Statistics

	INFR	MPR	BLR	TBR	BMS
Mean	19.55000	13.84868	18.42658	13.74263	17.68952
Median	12.95000	13.50000	17.77000	13.77500	15.43983
Maximum	72.80000	26.00000	29.80000	26.90000	27.37879
Minimum	5.400000	6.000000	10.50000	4.500000	9.063329
Std. Dev.	17.11427	3.777395	4.254540	4.635223	6.220933
Skewness	1.756591	0.667260	0.746670	0.207505	0.180287
Kurtosis	4.879873	4.666767	3.748443	3.358178	1.338288
Jarque-Bera	25.13758	7.218504	4.417866	0.475831	4.577891
Probability	0.000003	0.027072	0.109818	0.788269	0.101373
Observations	38	38	38	38	38

Source: Author's Computation, 2025 (Eviews-12)

From Table 2, Inflation rate (INFR) has an approximate average of 19.55% and it ranges from -5.400000 (minimum) to 72.80000 (maximum), with a standard deviation of 17.114%. While, Monetary policy rate

(MPR) has a mean value of 13.848 percent, with the standard deviation of 3.777%, minimum and maximum values of 6.000000 and 26.00000 respectively. Similarly, Bank lending rate (BLR) has an approximate average of 18.426% and it ranges from 10.50000 (minimum) to 29.80000 (maximum), with a standard deviation of 4.254 percent. Also, Treasury bills rate (TBR) has an approximate average of 13.742 % and it ranges from 4.500000 (minimum) to 26.90000 (maximum), with a standard deviation of 4.635%. Further, Broad money supply (BMS), has an approximate average of 17.689 percent and it ranges from 9.063329 (minimum) to 27.37879 (maximum), with a standard deviation of 6.220 percent.

Furthermore, Table 2 displayed the skewness coefficient, a measure of how far a distribution deviates from symmetry, with all the variables having skewness values less than one, except MPR variable with skewness value greater than one. The entire data series are not platykurtic (not having negative values), as confirmed by the kurtosis result, which measures a distribution's degree of peakedness in relation to a normal distribution. Additionally, as evidenced by the probability values of each variable's corresponding Jarque-Bera statistics, except for INFR & MPR variables, the variables are nominally distributed. Since the accompanying Jarque-Bera probability values of these variables have a significance level greater than 5%, it may be concluded that they have a normal distribution.

Correlation Analysis

Correlation analysis provides the valuable insights into how each of the independent variables relates to the dependent variable. The correlation coefficients in this analysis help to identify whether these variables move together in a positive or negative direction and the strength of these relationships.

Table 3: Correlation Matrix Result

	INFR	MPR	BLR	TBR	BMS
INFR	1				
MPR	0.378462	1			
BLR	0.352591	0.479728	1		
TBR	0.285222	0.751634	0.495408	1	
BMS	-0.288636	-0.265883	-0.306888	0.009284	1

Source: Researcher’s Computation Using EViews-12 (2025)

The correlation coefficients presented in Table 3 are considerably below 0.8, indicating that there is no serious multi-collinearity in the model. By implications, all the variables are free from the problem of multicollinearity. Additionally, the correlation coefficients presented in Table 4.2 indicated a negative association amongst Inflation rate (INFR) and sectoral FDI in monetary policy transmission channels such as Monetary policy rate (MPR); Bank lending rate (BLR)., Treasury bills rate (TBR) in Nigeria. While, the correlation between Inflation rate (INFR) and Broad money supply (BMS) was positive. Further, the correlation between Inflation rate (INFR) and Monetary policy rate (MPR) was found to be the strongest at 38%.

Unit Root Results

A unit root test, such as the Augmented Dickey-Fuller (ADF) test, is a common statistical method used to determine whether a time series data set is stationary. The ADF test checks for a unit root in a time series by testing the null hypothesis that the series has a unit root (non-stationary) against the alternative hypothesis

that the series is stationary. The Augmented Dickey-Fuller (ADF) unit root test results are displayed in Table 4 as follows:

Table 4 Traditional Unit Root Test Results

Variable	Method	Level	First Diff.	Order of Integration
		Stat. (Prob.)	Stat. (Prob.)	
INFR	ADF	-4.408980* (0.0065)	-4.145253**(0.0135)	I(0)
MPR	ADF	-3.250917** (0.0248)	-8.053978*(0.0000)	I(0)
BLR	ADF	-4.053362**(0.0156)	-7.402337*(0.0000)	I(0)
TBR	ADF	-3.287172**(0.0228)	-6.583958*(0.0000)	I(0)
BMS	ADF	-3.068313 (0.1290)	-4.892155*(0.0019)	I(1)

Note: *, ** Indicates stationary at the 1% and 5% level.

Source: Researcher's Computations using E-Views 12

From Table 4 Inflation rate (INFR); Monetary policy rate (MPR); Bank lending rate (BLR)., and Treasury bills rate (TBR) variables tends to be stationary at level according to the conventional test of the Augmented Dickey-Fuller (ADF). However, Broad money supply (BMS) variable is likely to be stationary in first difference.

Co-integration Results

The variables were all found to be integrated at different orders; hence, they all satisfied the ARDL-bound testing approach which necessitates every variable in the equation to be static either at level or at first difference or modification. The Augmented Dickey-Fuller (ADF) unit root results presented in Table 4, implies that the bounds testing approach is applicable in this investigation, as all the variables are a mixture of I(1) and I(0). The co-integration test helps to establish the existence of long run equilibrium relationships among variables of interest. If co-integration is found among variables, ARDL error correction model becomes applicable. The result of the cointegration test is presented in Table 5:

Table 5: Result of ARDL Bounds Test for Cointegration

Null Hypothesis: No Long-run Relationships Exist		
Test Statistic	Value	K
F-Statistic	9.343158	4
Critical Value Bounds		
Significance	Lower Bound	Upper Bound
5%	2.56	3.49

Source: Researcher's Computations based on E-Views 12

From Table 5, the bounds test value of the F-statistics which is 9.343158 is higher than the values of the upper and lower bound limit which are 2.56 and 3.49 at 5% critical level of significance. This means that there is a long run equilibrium relationship between the dependent variable and the explanatory variables of the model. In light of the cointregration of the dependent variable with the regressors, the paper proceeded to estimates the error correction and the long-term models. Table 6 presented the outcomes of the estimates as follows:

ARDL Regression Results

Table 6 shows the results summary of the ARDL estimates.

Table 6: ARDL Regression Results

Dependent Variable: D(INFR)

Co-integrating Estimates (ECM Estimates)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
D(MPR)	1.035045	0.448152	2.309586	0.0356
D(MPR(-1))	-2.163941	0.423938	-5.104378	0.0001
D(BLR)	0.251294	0.281037	0.894169	0.3854
D(BLR(-1))	-3.698567	0.412078	-8.975412	0.0000
D(BLR(-2))	-2.673290	0.434693	-6.149839	0.0000
D(BLR(-3))	-0.631581	0.291280	-2.168291	0.0466
D(TBR)	0.091767	0.382371	0.239993	0.8136
D(TBR(-1))	1.028081	0.366245	2.807083	0.0133
D(TBR(-2))	0.485829	0.274117	1.772342	0.0966
D(BMS)	0.624503	0.466095	1.339863	0.2002
D(BMS(-1))	1.118261	0.476667	2.345999	0.0331
D(BMS(-2))	0.332864	0.440088	0.756357	0.4612
D(BMS(-3))	1.203851	0.482582	2.494602	0.0248
CointEq(-1)*	-0.483617	0.055938	-8.645534	0.0000
R-squared	0.915232			
Adjusted R-squared	0.860132			
Durbin-Watson stat	2.177648			
Long Run				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
MPR	4.526616	1.797217	2.518681	0.0236
BLR	5.685956	2.264659	2.510733	0.0240
TBR	-0.205034	1.692815	-0.121120	0.9052
BMS	2.225213	1.000378	2.224372	0.0419
C	-191.7704	52.07652	-3.682472	0.0022

Source: Researcher's Computation Using EViews-12 (2025)

Based on Table 6, monetary policy rate; bank lending rate., treasury bills rate; and broad money supply variables employed in this investigation has a statistically significant impact on inflation rate either at level or one period lagged in the short-run. While, monetary policy rate; bank lending rate., and broad money variables has a statistically significant long-run impact on inflation rate. Furthermore, one period lagged monetary policy rate and bank lending rate in agreement with this study apriori expectation in the short-run. While, treasury bills rate variable conform to this study apriori expectations in the long run. Thus, the estimated ARDL regression result indicated that monetary policy rate and bank lending rate are the main short-run drivers of inflation in Nigeria during this study period. While only Treasury bills rate appears to drive inflation in the long-run in Nigeria.

At the one percent level, the Error Correction Model is highly statistically significant, negatively signed, and as expected. This provides more proof that the dependent variable and the regressors have a long-run

relationship. The coefficient's absolute value, which falls between 0 and 1, shows that, in order to keep the equilibrium, yearly corrections are made to the short-run divergence from the equilibrium (long-run) position, which is roughly 48%. Since the explanatory variables account for more than 92% of the variation in inflation rate, the model appears to be well-fitting, as indicated by the R-squared value of 0.915232. On the other hand, the DW figure of 2.177648 indicated that there is no problem with serial correlation. As such, the conclusions of this study can be trusted for developing policy recommendations.

Post-Estimation Test Results

The paper conducted a few diagnostic tests to assess the model's stability and applicability as well as the validity of the results. Results is as presented in Table 7 as follows:

Table 7: Diagnostic Test Results

Test	Null Hypothesis	T-Statistic	Prob
Jarque-Bera	There is a normal distribution	4.68	0.09
Heteroskedasticity: LM	No conditional heteroscedasticity	0.72	0.50
Heteroskedasticity: Breusch-Pagan-Godfrey	No conditional heteroscedasticity	0.61	0.84

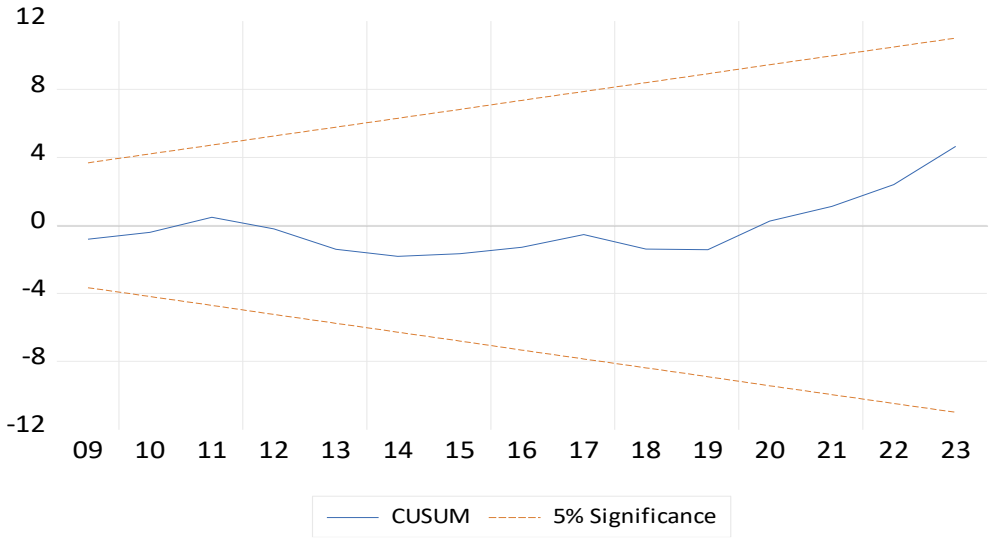
Source: Researcher's Computations based on E-Views 12

From Table 7, the model did not display serial correlation or heteroskedasticity during the study period. The heteroscedasticity tests indicated that the residuals are homoscedastic. The results of the diagnostic tests for serial correlation and heteroscedasticity suggested that the data is reasonably well behaved. Furthermore, the p-value for the normality test for the research period is greater than 0.05, indicating that the residues are distributed normally. This results in a uniform distribution of the residuals. As a result, the normal distribution null hypothesis was not rejected.

Stability Test Result

The stability test in Figure 1 also revealed that the inflation model is stable during the study period as the plots of the charts lie within the critical bounds at 5% significant level. Bahmani-Oskooee and Rehman, (2005) noted that the null hypothesis that states the regression equation is correctly specified cannot be rejected when the plot of these statistics are within the critical boundaries at 5% significant level.

Figure 1: Stability Tests Result



Source: Researcher's Plot using E-Views 12

DISCUSSION

From the estimated ARDL regression results in Table 6, monetary policy rate; bank lending rate., treasury bills rate; and broad money supply variables has a statistically significant impact on inflation rate either at level or one period lagged in the short-run. While, monetary policy rate; bank lending rate., and broad money variables has a statistically significant long-run impact on inflation rate. Furthermore, one period lagged monetary policy rate and bank lending rate in agreement with this study apriori expectation in the short-run. While, treasury bills rate variable conform to this study apriori expectations in the long run. Thus, the estimated ARDL regression result indicated that monetary policy rate and bank lending rate are the main short-run drivers of inflation in Nigeria during this study period. While only Treasury bills rate appears to drive inflation in the long-run in Nigeria.

Additionally, and upon variable-by-variable analysis, the research found that from the estimated ARDL regression in Table 4.5, this study found that monetary policy rate at level is positively and significantly related to inflation levels in the short-run. Consequently, one percentage increase in monetary policy rate, will lead to an increase in inflation levels in Nigeria by 1.04 percent in the short run. This outcome is inconsistent with the a priori expectations of this investigation and studies such as Alfa et al. (2021)., and Ezeanyeji et al. (2021). However, one period lagged monetary policy rate is negatively and significantly related to inflation levels in the short-run. Consequently, one percentage increase in one period lagged monetary policy rate will lead to a decrease in inflation levels in Nigeria by -2.16 percent in the short run. This outcome is consistent with the a priori expectations of this investigation and prior studies such as Okwori and Abu (2017)., Yusuf and Zunaidah (2017)., and Titus et al. (2015) who all reported that monetary policy rate has significant influence on inflation. Similarly, monetary policy rate appears to affect inflation significantly and positively in the long run. Specifically, one percentage increase in monetary policy rate will lead to an increase in inflation levels by approximately 4.53% in the long-run.

On the other hand, the findings indicated that bank lending rate appears to affect inflation positively in the short-run. Controlling for other factors, for instance, a 1 percent increase in bank lending rate will lead to an increase in inflation by 0.25% in the short run. This outcome is inconsistent with the apriori expectations of the research and an indication that bank lending rate is not a significant drive of inflation in the short-run. However, one period lagged bank lending rate is negatively and significantly related to inflation levels in the short-run. Consequently, one percentage increase in one period lagged bank lending rate will lead to a decrease in inflation levels in Nigeria by -3.69 percent in the short run. This outcome is consistent with the a priori expectations of this investigation and prior studies such as Chileshe and Olusegun (2017)., Otolorin and Akpan (2017)., and Igweze et al. (2020) who all reported that bank lending rate has significant impact on inflation. Similarly, bank lending rate appears to affect inflation significantly and positively in the long run. Specifically, one percentage increase in bank lending rate will lead to an increase in inflation levels by approximately 5.69% in the long-run. This outcome is inconsistent with the investigation of Igweze et al. (2020) that lay credence to effective and significant transmission of effects of monetary policy rates through maximum lending rate, interbank lending rate and treasury bill rate. These variables were found to be partial mediators in the transmission channel of interest rate.

Furthermore, the estimated impact of treasury bills rate at level on inflation levels is positive and insignificant in the short run. By implication, one percentage change or increase in treasury bills rate at level will lead to 0.09% increase in inflation levels in the short-run. This outcome is inconsistent with the apriori expectations of this investigation, as treasury bills rate is expected to be indirectly related inflation levels. However, treasury bills rate is insignificant but negatively related to inflation levels in the long run. Specifically, one percentage increase in treasury bills rate will lead to an increase in inflation levels by approximately -0.21% in the long-run. This outcome is consistent with the apriori expectations of this investigation and studies like Akande et al. (2024), Ezeanyeji et al. (2021), and Igweze et al. (2020) that concluded that treasury bill rate had negative impact on inflation levels.

The coefficient of broad money supply is positive both in the short run and long run. Consequently, if there is a 1% increase in broad money supply, it is predicted that there may be an increase of 0.62% and 2.23% in inflation levels in Nigeria both in the short run and long run. This outcome is inconsistent with the a priori expectations of this study. Further, this outcome is inconsistent with Okotori (2019) who evaluated the dynamics of monetary policy and inflation in Nigeria and concluded that treasury bills rate has significant and effective impact on the inflation rate.

CONCLUSION

This paper investigated the impact of monetary policy transmission channels on inflation levels in Nigeria from 1986 to 2023 using the Autoregressive Distributed Lag (ARDL) Regression technique. Results revealed that monetary policy rate; bank lending rate., treasury bills rate; and broad money supply variables has a statistically significant impact on inflation rate either at level or one period lagged in the short-run. While, monetary policy rate; bank lending rate., and broad money variables has a statistically significant long-run impact on inflation rate.

On a basis of variable-by-variable analysis, this study found that monetary policy rate at level is positively and significantly related to inflation levels in the short-run. Similarly, monetary policy rate appears to affect inflation significantly and positively in the long run. However, one period lagged monetary policy rate is negatively and significantly related to inflation levels in the short-run. On the other hand, the findings indicated that bank lending rate appears to affect inflation positively in the short-run. However, one period lagged bank lending rate is negatively and significantly related to inflation levels in the short-run. Similarly, bank lending rate appears to affect inflation significantly and positively in the long run. Furthermore, the estimated impact of treasury bills rate at level on inflation levels is positive and insignificant in the short run. However, treasury bills rate is insignificant but negatively related to inflation levels in the long run. While, the coefficient of broad money supply is positive both in the short run and long run. Therefore, the following recommendations were raised from the research findings.

1. The Central Bank of Nigeria should adopt a forward guidance policy framework to improve the credibility and predictability of MPR changes, minimizing unexpected inflationary shocks., since monetary policy rate has both short- and long-run impacts on inflation, including delayed (lagged) effects that support better policy anticipation.
2. Since bank lending rate is a significant inflation driver in both the short and long run, Monetary Authorities should implement interest rate corridors and monitor commercial lending practices to curb inflationary lending behavior, especially during high-inflation periods.
3. The Central Bank of Nigeria should expand the issuance of long-tenor treasury bills and use them strategically to manage long-term inflation expectations. This recommendation underscores the fact that treasury bills rate has a dampening impact on inflation in the long run, even if its short-run effect is weak.
4. Broad money supply shows positive significant inflationary impact both in the short and long run, contrary to a priori expectations. Therefore, the Central Bank of Nigeria should enforce tighter monetary aggregates targeting and improve oversight of money creation by financial institutions.

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