# MONETARY POLICY IN DEVELOPING NATION: IMPLICATIONS ON SMALL AND MEDIUM ENTERPRISES IN NIGERIA: 1990-2023

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**Abstract**
In Nigeria, Small and Medium Enterprises (SMEs) are significant players in employment, output and income generation but they continue to suffer from limited access to finance which is a result of volatile monetary conditions and an imbalanced realisation of monetary policy. This study, accordingly, investigates the relationship between the selected monetary-policy variables and the aggregate SME performance in Nigeria for the period 1990 to 2023.Specifically, it assesses the roles of broad money supply (MS2), interest rate (INRT), credit to the private sector (CPS), and the loan-to-deposit/liquidity indicator (LLR) in explaining SME contribution to gross domestic product (SMEGDP) with Autoregressive Distributed Lag (ARDL) approach due to stationary status of the variables that are stationary at I(0) and I(1), with no evidence of I(2) integration. The bounds test produced an F-statistic of 7.8679, exceeding the 1% upper-bound critical value of 4.37, implying a long-run relationship among the variables. The long-run estimates show that CPS is positive and statistically significant (0.3317, $p < 0.01$), while MS2 is negative and significant (-0.0089, $p < 0.05$). INRT (0.0062, $p = 0.6191$) and LLR (-0.0002, $p = 0.9439$) are statistically insignificant in the long run. In the short run, CPS is positive and significant, INRT is negative and significant, LLR is positive and marginally significant at 10%, while MS2 is insignificant. The error-correction coefficient of -0.5011 indicates that about 50.1% of short-run disequilibrium is corrected annually. The evidence suggests that the most consistent monetary-policy channel for SME performance in the sample is private-sector credit, while the effects of broad money, interest rate and the liquidity/loan-to-deposit indicator are more conditional. The study recommends strengthening SME credit transmission while maintaining macroeconomic and financial stability.

**Keywords**: ARDL, broad money supply, interest rate, loan-to-deposit ratio, monetary policy, private-sector credit, small and medium enterprises.

## 1.0 Introduction

There is no doubt that Small and medium enterprises (SMEs) constitute an important part of productive activity in Nigeria and provide employment, income and entrepreneurial opportunities across manufacturing, agriculture, trade, services and information and communication activities (Bamidele & Yusuf 2023, World Bank, 2022; Kolawole, 2019, El-Yaqub, Akintade, Akomolafe, & Ismail 2025). Thus, SME is vital tool for employment generation and creation of innovation in developing nations.The importance of SMEs, however, does not imply that monetary policy automatically translates into improved SME performance. Nigerian SMEs operate in an environment characterised by financing constraints, high operating costs, inflationary pressures and changing credit conditions (Adebisi & Gbegi, 2021, Akomolafe, Wafure, & Gombe, 2024).

One of the most direct impacts monetary policy has on SMEs is through the effect on interest rates and credit availability, made by the Central Bank of Nigeria. To influence inflation and stabilise the economy, the CBN introduces monetary policies; these include the Open Market Operations (OMO), Monetary Policy Rate (MPR), and Cash Reserve Ratio (CRR) (CBN, 2022). The high rate of interest (due to contractionary monetary policy) makes it difficult for SMEs to borrow.

In Nigeria, most SMEs depend on the financial facilities of the bank for capital, though the high rate of interest makes it difficult for them to borrow so as to expand their businesses (Ogunleye & Ayeni, 2019). The CBN, on the other hand, implements an expansionary monetary policy by cutting the MPR, thereby incentivizing commercial banks to offer lower interest rates to their customers to access credit, which would make credit readily available to SMEs. SMEs are also affected by the CRR that sets aside a proportion of customer deposits as reserves. If the CRR is high, then banks don't have as many funds to lend and credit availability for SMEs is reduced. On the other hand, a lower CRR will create more liquidity in the banking system, which will favor the financing of SMEs (Eze & Okoye, 2021). The key empirical question is, therefore, not just what is the importance of SMEs, but how are monetary-policy conditions passed on into SME activity via finance accessibility and credit cost and availability channels.

The empirical literature, however, does not provide a uniform conclusion. Some Nigerian studies report significant relationships between interest rates, credit conditions and SME performance, whereas others find weak or insignificant effects. For example, Udoh, Gbande and Acha (2018) report a relationship between interest rate and SME growth but insignificant effects for inflation and exchange rate. Nto Philips, Mbanasor and Osuala (2012) show that monetary-policy variables can influence bank credit supplied to SMEs, although the significance and direction vary across instruments. These differences suggest that the monetary-policy/SME relationship is channel-specific and may differ in the different periods.

Against this background, the present study focuses on four monetary-policy transmission indicators broad money supply, interest rate, credit to the private sector, and the loan-to-deposit/liquidity indicator and examines their relationship with aggregate SME contribution to GDP over 1990-2023. The study contributes by separating short-run dynamics from long-run relationships and by explicitly distinguishing SME performance from general economic growth.

## 2.0 Literature Review

Three theories have been identified in this paper that explain the relationship between monetary policy and SMEs, namely the Monetarist Theory, Financial Growth Theory and Pecking Order

Theory. The main features of monetarism are the importance of money supply and interest rates in determining the level of liquidity, credit terms and economic activities (Bamidele, 2023). Financial Growth Theory suggests that as the firms grow, their access to finance becomes better due to their experience, age, transparency and information, however, small firms are likely to be constrained by credit availability because of information asymmetry and limited collateral (Berger & Udell, 1998; Bahajide, 2011; Akande, 2012). The Pecking Order Theory (Myers & Majluf, 1984) proposes that firms will seek to use internal funds before debt and lastly external equity due to the problem of information asymmetry. This study is based on Financial Growth Theory as it directly relates to the access of SMEs to external finance, which includes financial institutions' credit.

**Empirical Review**

The study on the monetary policy and performance of SMEs in Nigeria (1981-2020) by Bamidele and Yusuf (2023) on ARDL model indicates that the monetary policy should not be influenced by any other economic activities. The study revealed that money supply (as a proxy of monetary policy) has positive effect on the output of SMEs, but it is not significant. Also, the effect of loans to SMEs has also been found to be very low despite the negative effect in the short run, it has a positive effect on SMEs output in the 1-year lag. In fact, the effect of monetary policy on SME output has been counterproductive; factors such as loan to SMEs have negative effect on SME output while interest rate has positive effect on output of SMEs.

Udoh, Gbande, Cephas & Ikechukwu (2018) carried out a research on Monetary Policy and Growth of Small and Medium Enterprises in Nigeria from 1986 to 2016. Non-experimental (ex post facto) and error correction model were used as the research method, while Johansen co-integration approach was used as the approach to test the long run relationship between the series. The results show that, there is slight significant effect between interest rate (INR) and the growth of SMEs in Nigeria while there is no significant effect between both Exchange rate (XR) and inflation and the growth of SMEs in Nigeria. The study called for the adjustment of monetary policy in such a way that the target it aims at is clearly visible in the economic development of the country both at the local and international economic fronts for the growth and development of SMEs in Nigeria.

Also, John & Nurudeen (2023) did a research on monetary policy and the productivity of Small and Medium Scale Enterprises in Nigeria for the period of 2013-2023 as a time series data. The research method applied in this research is an ex-post-facto research, Vector Error Correction Model (VECM), and Granger Causality Test. This showed that there was a significant difference between interest rate (INTR), exchange rate (EXRT) and performance of SMEs in Nigeria during the period of study.

Recently, Robert, Lite and Sri (2024) did a study on the impact of monetary policy on small and medium enterprises, using the literature review method. The results show that the provision of low interest rates and controlled inflation create favourable conditions that facilitate MSMEs to expand their businesses and make investments. A stable price due to appropriate monetary policy contributes to maintain or improve the purchasing power of consumers and aids in the sale and service side of the MSMEs. Despite these, monetary policy can be challenged by variable currency exchange rates and limited credit sources which will hinder the effective effect of monetary policy on MSMEs, especially in the case of any sudden monetary policy changes that can cause MSME operations to go haywire.

Again in the same vein, Anigbogu, Okoli and Nwakoby (2015) examined the impact of financial intermediation on the performance of SMEs in Nigeria from 1980-2013.Econometrics were used in the form of a model of the Ordinary Least Square (OLS) type. The results showed that all the variables such as bank interest rate to SMEs, bank lending rate to SMEs, exchange rate and monetary policy had a positive and significant impact on the performance of small and medium enterprises in Nigeria except for bank interest rate to SMEs.

The existing evidence is mixed rather than uniformly supportive of a single monetary-policy channel. Udoh et al. (2018) examined Nigerian SME growth from 1986–2016 using an ex post facto design, ECM and Johansen cointegration and found a significant relationship involving interest rate, while inflation and exchange rate were not significant. Nto Philips et al. (2012), using quarterly Nigerian data and FMOLS, found that interest-rate and liquidity-policy variables influenced bank credit supplied to SMEs, demonstrating that monetary policy may affect SMEs indirectly through credit supply. Ilo, Soyebo and Olowofela (2023), using ARDL for 1981-2020, concluded that tools used by monetary policy has not address SME performance substantially, reinforcing the possibility of weak or uneven transmission. Anigbogu, Okoli and Nwakoby (2015) also found that financial intermediation and several banking variables were associated with SME performance, while bank interest rate to SMEs was not significant.

These studies reveal three gaps addressed by the present study. First, evidence differs across monetary-policy indicators, making it necessary to examine several channels jointly rather than relying on a single policy instrument. Second, studies differ in whether they focus on SME output, SME growth, credit supply to SMEs or general economic growth; these outcomes are not interchangeable. Third, the distinction between short-run adjustment and long-run relationships is important because a monetary-policy variable may have an immediate effect that disappears or changes direction over time. The present study therefore uses SME contribution to GDP as the operational proxy for aggregate SME performance and applies ARDL to separate short-run and long-run dynamics.

## 3.0 Methodology

The study adopts a quantitative ex post facto time-series design. The design is appropriate because the study uses historical annual observations on monetary-policy and SME-performance indicators and does not manipulate the variables. The analysis is concerned with statistical relationships and dynamic adjustment over time rather than experimental causal identification.

### Model Specification

This study specifies the model to be tested with a view to determine the impact of monetary policy on small and medium enterprises in Nigeria. This study adapted the work of Bamidela and Yusuf (2023) with modification as follows:

SME output = f (Broad money supply, interest rate, bank credit to private sector, Liquidity ratio)

$SME_{gdp}$ = f (MS2, INTR, CPS, LLR)

In linear equation form;

$$\mathbf{SME_{gdp} = \alpha_0 + \alpha_1 MS2 + \alpha_2\ INTR + \alpha_3 CPS + a_4\ LLR + u}$$

Where

$SME_{gdp}$= small and medium enterprises gross domestic product

MS2= broad money supply

INTR= rate of interest
CPS= credit to private sector
LLR= Liquidity ratio
u= stochastic term

**ARDL long run form**

$$\Delta lnSMEgdp_t = \alpha_0 + \alpha_1 lnSMEgdp_{t-1} + \beta_1 ln\mathrm{MS2}_{t-1} + \beta_2 ln\mathrm{INTR}_{t-1} + \beta_3 ln\mathrm{CPS}_{t-1} + \beta_4 lnLLR_{t-1} \sum_{i=1}^{b} \varphi_1 lnSMEgdp_{t-1} + \sum_{i=1}^{z} \rho_1 \Delta ln\mathrm{MS2}_{t-1} + \sum_{i=1}^{c} \theta_2 \Delta ln\mathrm{INTR}t_{-1} + \sum_{i=1}^{k} \gamma_{3\Delta} ln\mathrm{CPS}_{t-1} + \sum_{i=1}^{x} \omega_4 \Delta lnLLR_{t-1} + \varepsilon_t$$

The first part of the equation without Δ indicates long-run dynamics while the second part with Δ indicates the short-run dynamics.

**A Priori Expectations**

CPS is expected to have a positive relationship with SME performance because increased credit availability can relax financing constraints. Interest rate is expected to be negative because higher borrowing costs can discourage investment and working-capital finance. Broad money supply is expected to be positive where monetary expansion improves liquidity and demand, although the realised sign may be negative if monetary expansion is accompanied by inflationary or allocative distortions. The expected sign of LLR depends on whether improved liquidity translates into greater bank lending to productive SME activities.

**Table 1:**
***Variable Measurement, Definition and Source***

| Variable | Operational Definition | Expected channel | Source |
|---|---|---|---|
| SMEGDP | SME contribution to GDP; proxy for aggregate SME performance/output | Dependent variable | CBN Statistical Bulletin |
| CPS | Credit to the private sector | Direct financing/credit channel | CBN Statistical Bulletin |
| MS2 | Broad money supply | Liquidity and monetary conditions | CBN Statistical Bulletin |
| INRT | Interest rate | Cost of borrowing/credit demand | CBN Statistical Bulletin |
| LLR | Loan-to-deposit/liquidity indicator as used in the estimated series | Bank lending capacity and liquidity conditions | CBN Statistical Bulletin |

**Source:** Author Computation, 2026.

**Estimation Procedure**

The empirical procedure comprises descriptive statistics, correlation analysis, Augmented Dickey-Fuller (ADF) stationarity testing, ARDL bounds testing for cointegration, estimation of long-run and short-run coefficients, the error-correction model, and diagnostic and stability tests. The ARDL approach is suitable because the reported variables are a mixture of I(0) and I(1) and the study does not identify any variable as I(2).

## 4.0 Results and Discussion

**Table 2:**
***Summary Statistics***

| | CPS | INRT | LLR | MS2 | SMEGDP |
|---|---|---|---|---|---|
| Mean | 10621.97 | 24.71235 | 50.25323 | 24.96882 | 6642.328 |
| Median | 2979.640 | 23.55500 | 47.65000 | 20.48000 | 5941.135 |
| Maximum | 52884.78 | 36.09000 | 104.2024 | 60.84000 | 12141.37 |
| Minimum | 33.55000 | 18.36000 | 26.39276 | -2.010000 | 2221.450 |
| Std. Dev. | 13404.24 | 4.355574 | 15.61185 | 16.70461 | 3984.694 |
| Skewness | 1.364596 | 0.494374 | 1.272903 | 0.551547 | 0.150510 |
| Kurtosis | 4.336488 | 2.541302 | 5.613576 | 2.399736 | 1.267145 |
| Jarque-Bera | 13.08247 | 1.683038 | 18.85854 | 2.234271 | 4.382318 |
| Probability | 0.001443 | 0.431055 | 0.000080 | 0.327216 | 0.111787 |
| Sum | 361147.0 | 840.2200 | 1708.610 | 848.9400 | 225839.2 |
| Sum Sq. Dev. | 5.93E+09 | 626.0438 | 8043.088 | 9208.451 | 5.24E+08 |
| Observations | 34 | 34 | 34 | 34 | 34 |

**Source**: E-view Output, 2026.

Descriptive statistics in Table 2 give important information on the nature of the variables over the study period. Credit to the Private Sector (CPS) has an average value of 10,621.97 with a wide dispersion (Std. This shows very significant differences between the years in terms of the private sector credit (Dev. = 13,404.24). The series is positively skewed (1.36) and leptokurtic (kurtosis = 4.34) and the Jarque-Bera probability (0.0014) indicates non-normal distribution.

The mean of Interest Rate (INRT) is 24.71 and it is relatively stable (Std.). Dev. = 4.36). It is moderately skewed to the right (0.49) with near-normal kurtosis (2.54). The Jarque Bera probability (0.431) indicates that the series is normally distributed. There is a wide range in Loan to Deposit Ratio (LLR), from a low of 26.39 to a high of 104.20 with an average of 50.25. It is strongly leptokurtic (5.61) and positively skewed (1.27) and Jarque-Bera test (p = 0.00008) shows that it is not normally distributed.

The average of Broad Money Supply (MS2) is 24.97, but there are significant fluctuations (Std.). Dev. = 16.70). It is moderately skewed (0.55) and slightly platykurtic (2.40). The Jarque-Bera probability value (0.327) indicates the data are approximately normally distributed.

The mean of SME contribution to GDP (SMEGDP) is 6,642.33 with a moderate spread (Std.). Dev. = 3,984.69). It is almost symmetric (Skewness = 0.15) and platykurtic (1.27). The Jarque-Bera probability value (0.112) shows that the series is normally distributed.

In summary, CPS and LLR shows highest variability and have large deviation from normality, implying high volatility in credit flow and loan allocation efficiency in Nigeria. In contrast, the INRT, MS2, and SMEGDP are stable and are roughly normally distributed.However, there are significant differences across the study period in the values of CPS and LLR, and some less dispersion in INRT. The descriptive statistics do not imply any direction or significance of the monetary-policy/SME relationship but are only used to provide context for the dynamic estimation.

## Lag length selection criteria

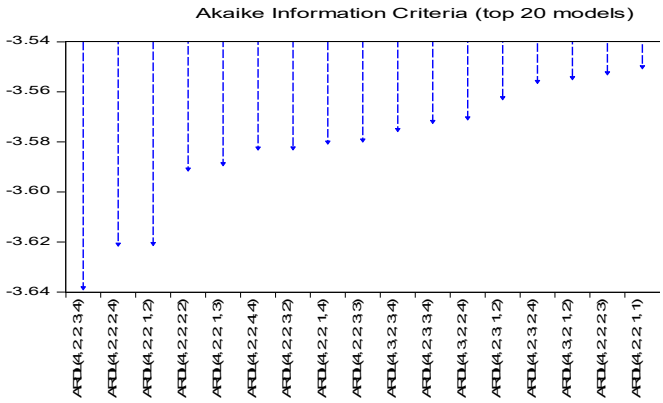



Figure 1 shows the Akaike Information Criterion (AIC) values for the top 20 ARDL model specifications. The optimal lag structure corresponds to the model with the lowest AIC value, as it minimizes information loss while ensuring the best model fit. From the graph, the lowest AIC is observed at ARDL(2,2,4,3,4) (you can replace with the exact lag order at the lowest point in your chart), which the study adopts as the optimal lag length. This selected lag ensures that the model captures the short-run dynamics without over-parameterization, making it the most suitable specification for subsequent long-run and short-run estimations.

**Table 3:**

***Correlation Matrix***

| | SMEGDP | MS2 | LLR | CPS | INRT |
|---|---|---|---|---|---|
| SMEGDP | 1.000000 | | | | |
| MS2 | -0.414372 | 1.000000 | | | |
| LLR | 0.284851 | 0.033467 | 1.000000 | | |
| CPS | 0.944177 | -0.389023 | 0.340302 | 1.000000 | |
| INRT | 0.299731 | -0.034534 | 0.235082 | 0.162530 | 1.000000 |

**Source**: E-view Output, 2026.

The matrix contains each value, which represents the correlation coefficient between pairs of variables, how closely their values associate with one another. There is a negative correlation of approximately -0.414372 between the small and medium enterprises gross domestic product (SMEGDP) and money supply. This indicates that increase in money supply reduces SME output. There is also a weak positive correlation of 0.284851 between SMEGDP and liquidity ratio, which implies that the higher the SME output the higher the liquidity ratio. Furthermore, a strong positive correlation of 0.944177 exist between small and medium enterprises gross domestic product (SMEGDP) and credit to private sector which indicates that increased credit to private sector increases SME output in Nigeria. This result does not implies evidence of multicollinearity because there is high correlation between SMEGDP and CPS (0.9442), it should be noted SMEGDP is the dependent variable. Multicollinearity is principally a problem arising from strong linear association among explanatory variables. In the explanatory-variable block, the largest absolute pairwise correlation is approximately 0.389 between CPS and MS2, while the other correlations are lower. Therefore, this paper treats the high SMEGDP-CPS correlation as evidence of a strong bivariate association with the dependent variable, not as proof

of multicollinearity.Lastly, a weak positive correlation of 0.299731 exist between SMEGDP and interest rate in Nigeria. Implying that increase in liquidity ratio leads to increase in SME output.

**Stationarity Test Result**

**Table 4**:

***Unit Root Tests Result***

Table showing the results of the unit root tests for stationarity using augmented dickey fuller. The table gives the values of the unit root tests for stationarity of the variables in the model.

| Variables | t-value | p-value | Degree of stationarity |
|---|---|---|---|
| SMEGDP | -2.665212 | 0.0094 | I(1) |
| CPS | -4.694755 | 0.0036 | I(1) |
| Liquidity ratio (LR) | -2.966949 | 0.0486 | I(0) |
| INRT | -3.625708 | 0.0428 | I(0) |
| MS2 | -5.497948 | 0.0005 | I(1) |

**Source**: E-view Output, 2026.

Table 4. Presents the summary of unit root test for stationarity.The result above shows that interest rate (INRT), and liquidity ratio (LLR) are stationary at level (I0) at 5% level of significance, while the variables SMEGDP, CPS and MS2 become stationary only after first difference, implying that they are integrated of order I(1). Thus, the variables are integrated of mixed order I(0) and I(1), justifying that the Autoregressive Distributed Lag Model technique would be most appropriate.

**ARDL Bound Test Estimation Results**

**Table 5:**

***ARDL Bound Test Estimation Results***

| Test Statistics | Value | K |
|---|---|---|
| F-statistic | 7.867869 | 4 |
| Critical Value Bounds | | |
| **Significance** | **I(0) Bound** | **I(1) Bound** |
| 10% | 2.2 | 3.09 |
| 5% | 2.56 | 3.49 |
| 2.5% | 2.88 | 3.87 |
| 1% | 3.29 | 4.37 |

**Source**: E-view Output, 2026.

The F-statistic of 7.8679 is above the upper bound at the 1% level. The null hypothesis of no long-run relationship is therefore rejected, indicating evidence of cointegration among SMEGDP, CPS, INRT, LLR and MS2. This result supports estimation of the long-run relationship and the associated error-correction representation.

## Long Run Results

**Table 6:**
***Long Run Results***

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| LOG(CPS) | 0.331747 | 0.017626 | 18.82161 | 0.0000 |
| INRT | 0.006154 | 0.011995 | 0.513050 | 0.6191 |
| LLR | -0.000162 | 0.002250 | -0.072113 | 0.9439 |
| MS2 | -0.008865 | 0.002967 | -2.987722 | 0.0136 |

**Source**: E-view Output, 2026.

In Table 6, credit to the private sector has a positive and statistically significant long-run association with SME contribution to GDP. Because the specification is log-linear in SMEGDP and CPS, the coefficient of 0.331747 is interpreted as an elasticity: a 1% increase in CPS is associated with approximately a 0.332% increase in SMEGDP in the long run, ceteris paribus.

Interest rate has a positive but statistically insignificant long-run coefficient (p = 0.6191). Thus, the study does not provide sufficient evidence that long-run changes in interest rate are systematically associated with SMEGDP over the sample. LLR is also statistically insignificant (p = 0.9439), indicating that its long-run association with SMEGDP is not distinguishable from zero in the estimated model. Broad money supply has a negative and statistically significant coefficient (p = 0.0136), implying that increases in broad money supply are associated with lower SMEGDP in the long-run equilibrium relationship. This counterintuitive sign may reflect weak monetary transmission, inflationary pressures or the possibility that monetary expansion was not translated proportionately into productive SME credit.

## Short Run Results

**Table 7:**
***Short Run coefficient***

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| DLOG(CPS) | 0.148011 | 0.048245 | 3.067890 | 0.0119 |
| D(INRT) | -0.007871 | 0.001690 | -4.655886 | 0.0009 |
| D(LLR) | 0.000857 | 0.000441 | 1.946172 | 0.0803 |
| D(MS2) | -0.000182 | 0.000607 | -0.299028 | 0.7710 |
| CointEq(-1)* | -0.501122 | 0.059552 | -8.414917 | 0.0000 |

**Source**: E-view Output, 2026.

In the short run, CPS is positive and significant (p = 0.0119), indicating that increases in private-sector credit are associated with improvements in SMEGDP growth within the short-run dynamics of the model. The coefficient on interest rate is negative and statistically significant (p = 0.0009), indicating that higher interest rates are associated with lower short-run SMEGDP growth. LLR is positive and marginally significant at the 10% level (p = 0.0803), while MS2 is negative but statistically insignificant (p = 0.7710). The results therefore show that the short-run monetary-policy transmission pattern differs from the long-run pattern. The error-correction coefficient is −0.501122 and statistically significant. Its magnitude implies that approximately 50.1% of the previous period's disequilibrium is corrected within one year, indicating relatively rapid adjustment toward the long-run equilibrium after a short-run disturbance.

## Diagnostic Check

**Table 8:**
***Diagnostic Check***

| Test | Statistic / probability | Decision |
|---|---|---|
| Breusch-Godfrey LM | F = 0.8911; p = 0.4473 | No evidence of serial correlation |
| Breusch-Pagan-Godfrey | F = 0.4748; p = 0.9221 | No evidence of heteroskedasticity |
| Jarque-Bera | 0.3720; p = 0.8303 | Residuals approximately normal |
| Ramsey RESET | F = 0.1349; p = 0.7219 | No evidence of functional-form misspecification |
| CUSUM/CUSUMSQ | Within 5% bounds (as reported) | Model stability supported |

**Source**: E-view Output, 2026.

The reported diagnostic tests do not indicate serial correlation, heteroskedasticity or functional-form misspecification. The residual normality test also does not reject normality because none of the p-values is less than 0.05.

## Stability Tests

Figure 2: Showing the results of the CUSUM test and CUSUMsq test. The results of the CUSUM test and CUSUMsq test are shown below.The CUSUM test for stability shows that the model is stable, this is because the blue line lays between the two red lines.

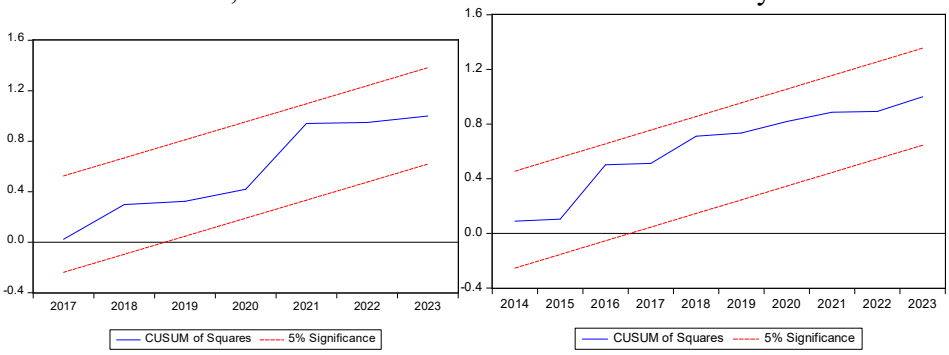



Fig 2: CUSUM test and CUSUMSQ test

From the figure 2, the CUSUMSQ test of stability shows the model to be stable. This is evidenced by the fact that the blue line lies between the two red lines, the need for the CUSUMSQ is because of its sensitive nature to changes in structural breaks and other changes.

## Discussion of Results

The result is that private-sector credit is the most consistent monetary-policy channel associated with SME performance. Its coefficient is positive and significant in both the long run and short run. This finding is consistent with the financing logic of Financial Growth Theory: when financing constraints are relaxed, SMEs can obtain working capital and investment resources needed for production and expansion. The result is also consistent with evidence that banking and credit conditions are relevant to SME performance in Nigeria. Nto Philips et al. (2012) found that monetary-policy variables affected bank credit supplied to SMEs, while Anigbogu et al. (2015) documented significant relationships between financial intermediation variables and SME performance. The negative long-run association between broad money supply and SMEGDP contrasts with the conventional expectation that monetary expansion should support activity. The result should not be read as evidence that money supply mechanically reduces SME performance.

A more cautious interpretation is that increases in aggregate money may not have been transmitted efficiently into productive SME finance during the period.

An important difference over time is that in the short run, interest rate is negative and significant, while it is positive and insignificant in the long run. The pattern would indicate that short-run shifts in the cost of borrowing could be relevant to the activity of SMEs, but that the long-run relationship is not stable enough to draw a general conclusion. This is in line with the inconclusive results from Nigerian literature, and further emphasizes the importance of distinguishing between short run and long run transmission and equilibrium relationships. For instance, Udoh et al (2018) observed that there is significant relationship between interest rate and growth of SMEs, whereas other studies showed less significance.

The long run LLR is negligible and the short run LLR appears only at a 10% level. Therefore, banking liquidity conditions, as isolated variables, might not be enough to account for SME performance. The message here is not that liquidity policy is unimportant, but rather that liquidity needs to be turned into productive lending, if it is to have an impact on SME activity. This is in line with the literature, which indicates that policy measures that impact liquidity can have an impact that varies from that of direct credit supply.

## 5.0 Conclusion and Recommendations

The study derives the conclusion that monetary policy has differential impacts on the performance of SMEs in Nigeria. Credit to the private sector is the most effective monetary policy variable for promoting growth of SMEs among the monetary policy variables that were considered. Broad money supply, on the other hand, has had unforeseen adverse effects; interest rate and the liquidity ratio have failed to make a significant impact. This highlights the need for improving policy transmission mechanisms, and complementary reforms to further tighten the link between monetary policy and SME development.

The following are the recommendations based on the findings:

i. As CPS is positive and statistically significant in both the short-run and long-run, monetary and financial-sector policies put in place by Central Bank of Nigeria (CBN) should emphasize on measures to facilitate credit availability, affordability and allocation to viable SMEs. Credit guarantees, credit information and proportionate collateral can help alleviate financing constraints.

ii. The negative long-run association between MS2 and SMEGDP suggests that increases in aggregate liquidity do not automatically translate into stronger SME performance. Policy should therefore focus on the transmission of liquidity into productive lending rather than relying on monetary expansion alone and Interest-rate policy by CBN should therefore be implemented with attention to credit-market transmission and the financing conditions faced by smaller firms.

iii. Because LLR is not significant in the long run, liquidity regulation should not be treated as a direct determinant of SME performance. The emphasis should be on ensuring that adequate banking liquidity is effectively transformed into productive credit while preserving financial stability and Policy should instead focus on the channels for which the evidence is strongest, especially private-sector credit.

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