



13

Monetary Policy and the Growth of Small and Medium-Sized Enterprises (SMEs) in Nigeria: 1986-2021

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Abstract

This study looked at how monetary policies affected the expansion of SMEs in Nigeria between 1986 and 2021. The data were taken from the World Bank's development indicators and the CBN statistical bulletin, and an ex post facto research design was utilized. The Augmented Dickey Fuller (ADF) unit root test was used for pre-estimation tests on each variable to help prevent erroneous regression effects, while the ARDL error correction model method was used for empirical analysis. The analysis revealed that the level of output for SMEs in Nigeria has not been significantly impacted by lending rates for SME loans. Furthermore, the data revealed that, between 1986 and 2021, currency rates had

no discernible impact on the productivity of SMEs. It demonstrated how frequently fluctuating exchange rates have an adverse effect on SMEs. However, it was found that between 1986 and 2021, the level of output for SMEs in Nigeria was significantly impacted by SMEs' loans and advances. Finally, the study found that between 1986 and 2021, Nigeria's SMEs' output levels were significantly impacted by an increase in the money supply. It demonstrates how an expansionary monetary policy, which raises the amount of money in circulation, makes loans and advances from deposit money institutions more readily available for the expansion of SMEs. According to the report, the government must implement beneficial economic changes that will improve the performance of SMEs throughout the nation in order to influence the foreign exchange rate. The adoption of policy measures by the monetary authorities to maintain a favourable low commercial bank lending rate (which will lower the cost of capital) is crucial; doing so will encourage investors in SMEs by accelerating high business investment in small, medium, and even large-scale businesses, which will ultimately have a significant long-term impact on economic growth.

I. Introduction

It is commonly known that the Nigerian economy's small business sector contributes significantly to that country's economic growth. It has been shown that small and medium-sized enterprises generate more direct employment per dollar of investment than giant corporations. The industry typically serves as a training ground for increasing self-reliance skills, establishing cross-sectoral links, notably in the sphere of agriculture, and boosting the economy's competitiveness since it depends on the continual application of local technical know-how to grow. Political systems all over the world put a lot of stock in the power and progress of these controls and monitoring, since they can help a country's social and economic progress and have shown some proofs of this over time.

By effectively filling job shortages, generating wealth, and promoting quick urban and rural growth, small and medium-sized enterprises (SMEs) play a crucial role in economic progress in both developing and mature countries across the globe. Each developing country that wants to develop and prosper economically has to give the SME sector greater focus and attention, according to Awoniyi (2020). Using locally accessible resources, creating local technologies for local production and consumption, and participating in export commerce are all made feasible by the SME sector. One approach to creating more sustainable food production, improving job prospects, and solving the world food issue is the expansion of small and medium-sized agricultural companies.

Due to little finance and poor management, SMEs still have a limited impact on society despite their growth. Any leader with a good mind might be persuaded by these points to think about starting a financial institution to help small and medium-sized businesses.

Yet according to various business studies, money is one of the most significant factors affecting the survival and growth of small and medium-sized firms (SME) in both developing and developed nations (UNCTAD, 2021). Access to funding allows SMEs to grow their businesses and acquire cutting-edge technology, ensuring both their own and the nation's competitiveness. Poorly functioning financial systems may seriously harm a nation's economy. The rise in income and employment will be slowed as a result.

According to the Central Bank of Nigeria, one of the macroeconomic management strategies used to improve outcomes in the small company sector is monetary policy (CBN, 2021). The primary objectives of monetary policy are to promote stable prices, sustained production, and employment. Macroeconomic theory predicts that variations in interest rates will affect the real economy by altering the cost of capital and investment in the productive sector. Mishkin says in 2001 and 2021 that monetary policy affects the economy in many ways, including interest rates, credit and/or bank lending, asset values through currency rates, stock prices, and housing prices.

The reports from the CBN published in 2010 show that the proportion of total credit extended to SMEs still decreased from 48.8% in 1992 to 9.0%, 8.6%, and 2.7% in 2000, 2002, and 2005, respectively. It is disappointing to see that despite all of the special measures taken by the CBN to encourage banks to extend credit to SMEs, the opposite appears to be the case. A relevant contrast is also provided by the surveys done by Aremu and Adeyemi (2011), which found that more than 77% of SMEs in Nigeria lacked access to formal financial institutions' financing, whereas all the big enterprises assessed did.

Arogundade claims that SMEs have always had difficulty acquiring formal loans or equity despite their size and importance in the generation of employment (2020). This is due to the fact that commercial bank loans to SMEs usually have maturities that are too short to cover any sizeable investment and call for inadequate security. The main objective of the study is to assess the impact of monetary policies on the growth of SMEs in Nigeria. This research study was poised towards achieving the following objectives which are to:

- i. examine the relationship that exists between monetary policy rates and SMEs output in Nigeria
- ii. evaluate the extent to which exchange rates has significantly influenced SMEs output in Nigeria
- iii. assess the extent to which access to credits has significantly influenced SMEs output in Nigeria
- iv. investigate the extent to which broad money supply has significantly affected SMEs output in Nigeria

Hypotheses for this research are stated in a null form as shown below:

H₀₁: There is no significant relationship between monetary policy rates and SMEs output in Nigeria

H₀₂: CBN exchange rates has not significantly influenced SMEs output in Nigeria

H₀₃: Access to credits has no significant impact on SMEs output in Nigeria

H₀₄: Broad Money Supply (M2) has no significant effect on SMEs output in Nigeria

II. Literature Review

Conceptual Review

Small and Medium Enterprises (SMEs)

A vast body of literature has identified SMEs as the core of the majority of the world's economies and as the engine of their growth. In Nigeria, they are categorised as either urban (organized) or rural (unorganized) enterprises. The organised enterprises have paid employees and a registered office, whereas the unorganised enterprises are mostly made up of artisans who work in open spaces and rely on apprentices or family members, as well as low- or no-wage paid workers. They are made up of family groups, or women who are engaged in food production from local farm crops, and individual artisans. Major activities involved in this sector as listed by CBN (2021) include soap and detergents, textiles and leather, local blacksmithing and tinsmithing, ceramics, clothing and tailoring, bricks and cement, food processing, wood furniture, beverages, bakeries, agro-processing, chemical-based products, mechanics, and many more.

A typical small business, however, is defined by several criteria except for the fact that it is not dominant in its field. However, "small business" has been seen as an independently or privately owned company that is limited in size and revenue depending on the industry. It has a small turnover and staff and is usually classified as belonging to a specific commercial or economic sector. Common sense

indicates that a local bakery, for instance, that employs 10 people is an example of a small business, as is a manufacturing facility that employs about 50 people. However, Balunywa (2021) argued that the number of employees might not be sufficient or adequate enough for characterising enterprises as small or big because development strategies vary for different countries, and so suggested that "a capital base of between US\$5,000 and US\$50,000 would be reasonable for a typical SSE." The other criterion for defining SSEs relates to the volume of transactions per day. The rationale for this is that some companies might have small capital bases but command very large turnovers. This is particularly true for trading companies. A turnover of US\$50,000 or less per month is internationally viewed as depicting a small-scale enterprise. The small and medium-sized enterprises (SMEs) are forms of the SSEs. They are non-subsidiary independent firms that employ less than a given number of employees, and this number varies across countries (Ekpeyong & Nyang, 2022). Small and medium-sized enterprises (SMEs) are certainly not transnational companies, multinational cooperatives, publicly owned enterprises, or large facilities of any kind. Nonetheless, they can depend on business and ownership structure to become a large business unit (Macqueen, 2006). It is believed that about 80% of the financing of SMEs comes from owners, friends, and families, and that these businesses can also take different forms such as private ownership, limited partnerships, contracts and subcontracts, cooperatives, or associations (Kozak, 2019).

Monetary Policy

Monetary policy comprises measures employed by governments to influence economic activity, specifically by manipulating the supplies of money and credit and by altering rates of interest. The importance of money in economic life has led policy makers and other relevant stakeholders to accord special recognition to the conduct of monetary policy. The central bank has the primary responsibility of formulating monetary policy and exercises its main regulatory and supervisory role over the banking system (CBN, 2021). We may describe monetary policy as a deliberate action to influence the quantity, cost, and availability of money credit. The action is carried out by changing the money supply and/or interest rates in order to manage the amount of money in the economy. Monetary policy ensures that the supply of money is in consonance with the growth level of the economy without committing errors (Nzotta & Okereke, 2009). This action is to achieve desired macroeconomic objectives of price stability, maintenance of balance of payments equilibrium, promotion of employment, output growth, and sustainable development, as well as creating a general trust in the currency. In other words, monetary policy refers to the combination of measures designed to regulate the value, supply, and cost of money in an economy to match the level of economic

activity. Monetary objectives are necessary for the attainment of internal and external balance in the value of money and the promotion of long-run growth in real economic sectors such as the manufacturing sector (Imoughele & Ismaila, 2021). It is a government action or fiat created specifically to control the value, circulation, and movement of money in the economy while taking into account the current economic situation. Monetary policy can also be referred to as the regulation of money supply and interest rates by a nation's monetary authority so as to avoid currency depreciation and ensure inflationary pressure is not at an economy-threatening level. It's been long acknowledged that monetary objectives are necessary for the attainment of internal and external balance in the value of money and the promotion of long-run growth in real economic sectors such as the manufacturing sector (Imoughele & Ismaila, 2021).

Monetary policy can either be expansionary or contractionary, depending on the overall policy thrust of the monetary authorities. It is expansionary when the policy adopted by the CBN increases the supply of money in the system, and it is contractionary when the actions taken reduce the quantity of money supply available in the economy or constrain the growth or ability of the Deposit Money Banks (DMBs) to grant further credit.

Theoretical Review

Keynesian Theory

The Keynesian theory states that some microeconomic-level actions, if taken collectively by a large proportion of individuals and firms, can lead to inefficient aggregate macroeconomic outcomes, where the economy operates below its potential output and growth rate. Monetary policy, according to the Keynesian view of the mechanism, works by influencing interest rates, which influence investment decisions and, as a result, output and income via the multiplier process. Thus, the Keynesian theory is a rejection of Say's Law and the notion that the economy is self-regulating. The Keynesian model assumes a close economy and a perfect competitive market with a fairly low-interest aggregate supply function. The economy is also assumed to not exist at equilibrium employment and to function only in the short run because, as Keynes so aptly puts it, "in the long run, we will also be dead." The Keynesian theory is based on the concept of price rigidity and the possibility of an economy operating at a level of output, income, and employment that is less than full employment. The Keynesian macroeconomics focused on output rather than prices as the determinant of changing economic conditions. They were not interested in quantity theory in other records.

Most Keynesians advocate an activist stabilisation policy to reduce the amplitude of the business cycle, which they rank among the most serious of economic problems. Keynes argued that the solution to the Great Depression was to stimulate the economy ("inducement to invest") through some combination of two approaches: a reduction in interest rates and government investment in infrastructure. Investment by the government injects income, which results in more spending in the general economy, which in turn stimulates more production and investment, involving still more income and spending. The initial stimulation starts a cascade of events, whose total increase in economic activity is a multiple of the original investment. A central conclusion of Keynesian economics is that, in some situations, no strong automatic mechanism moves output and employment towards full employment levels. This conclusion conflicts with economic approaches that assume a strong general tendency towards equilibrium. In the "neoclassical synthesis," which combines Keynesian macro concepts with a microfoundation, the conditions of general equilibrium allow for price adjustment to eventually achieve this goal. More broadly, Keynes saw his theory as a general theory in which utilisation of resources could be high or low, whereas previous economics focused on the particular case of full utilization. Monetary policy transmission through the interest rate channel is based on the traditional Keynesian interpretation of the role of money in real interest rate movements. A change in interest rates affects a firm's investment spending, consumer spending on housing, and personal consumption of durable goods. A problematic observation noted by Mishkin (2001) and Bernanke and Gertler (1995) is that interest rates cannot be identified as the most quantitatively important cost-of-capital variable for aggregate spending. The shortcomings in the traditional interest rate channel are explained by financial market imperfections and the credit view of the transmission mechanism.

Mishkin (2001) spells out the differences in the manifestation of the credit channel. A monetary contraction leads to a reduction in bank lending due to a drop in bank deposits, a deterioration of borrowing firms' balance sheets, and a decline in collateral value. A decline in aggregate credit reduces output. Mishkin (2001) points out the reduction in firms' cash flow and a drop in equity prices following periods of tight money as putting downward pressure on aggregate lending. He mentions consumer liquidity preferences as well; for example, consumers would rather hold more liquid assets after a drop in the stock market following a monetary contraction, thus decreasing spending on illiquid assets such as real estate and durable goods.

Empirical Review

Kasidi and Mwakanemela (2020) investigated the impact of inflation on SME output in Tanzania as a case study. One of the central objectives of macroeconomic policies in Tanzania is to promote economic growth and keep inflation at a low level. However, there has been substantial debate on whether inflation promotes or harms SME output. Motivated by this controversy, this study examined the impact of inflation on economic growth and established the existence of an inflation-growth relationship. Time-series data for the period 1990–2011 were used to examine the impact of inflation on SME output. The correlation coefficient and co-integration technique established the relationship between inflation and SMEs' output and The coefficient of elasticity was applied to measure the degree of responsiveness of changes in SME output to changes in general price levels. Results suggest that inflation has a negative impact on SME output. The study also revealed that there was no co-integration between inflation and economic growth during the study period. In Tanzania, there is no long-run relationship between inflation and SME output. The study of Kasidi and Mwakanemela (2020) did not explain in depth how their results came about, but the scope and measures of both variables were clearly stated, as were the different econometric tools that were used for the study.

Fu and Liu (2015) investigated the effects of monetary policy on corporate investment adjustment using a sample of China's A-share listed firms between 2005 and 2012. The findings revealed that corporate investment adjusts faster during expansionary monetary policy periods than during contractionary monetary policy periods. The study showed that an increase in the growth rate of the money supply or credit accelerates adjustment. The monetary channel was also found to have significant asymmetry, whereas the CRDT had none.

Adebiyi (2020) explored financial sector reforms, interest rate policy, and the manufacturing subsector in Nigeria, using vector auto-regression and the ECM technique with quarterly time series spanning 1986:1 to 2002:4. Unit root and co-integration tests were also performed. The study revealed that the real deposit rate and inflation rate are significant for the growth of the manufacturing sector in Nigeria. In addition, the study revealed that the predominant sources of fluctuation in the index of manufacturing production are due largely to shocks of one's own making and, to a lesser extent, to changes in the real deposit rate. The study also showed that in the long run, the index of manufacturing production is insensitive to the inflation rate, commercial banks' credit to the manufacturing sector, interest rate spread, and exchange rate.

In another related study, Opaluwa, Umeh, and Abu (2020) assessed the impact of exchange rate fluctuations on the Nigerian SME sector during a twenty-year period (1986–2015). The argument is that fluctuations in the exchange rate adversely affect the output of the manufacturing sector. This is because Nigerian manufacturing is highly dependent on the importation of inputs and capital goods. These are paid for in foreign exchange, whose rate of exchange is unstable. Thus, this apparent fluctuation is bound to adversely affect activities in the sector that is dependent on external sources for its productive inputs. The econometric tool of regression was used for the analysis. In the model that was developed, SMEs' manufacturing output employment rate and foreign private investment were used as the explanatory variables. The result of the regression analysis shows that the coefficients of the variables carried both positive and negative signs. The study actually shows an adverse effect and is all statistically significant in the final analysis.

Ajayi and Atanda (2021) conducted research on Monetary Policy and SME Output Performance in Nigeria: The Engle-Granger two-step cointegration approach was adopted based on a regression model that regressed banks' total loan and advances on the minimum policy rate, cash reserve ratio, liquidity ratio, inflation, and exchange rate. They found that monetary policy instruments were not effective to stimulate credit for SMEs' output growth in the long run, while banks' total credit was more responsive to the cash reserve ratio.

Saibu and Nwosa (2021) investigated the growth of SMEs caused by monetary policy from 1986 to 2018 using the ARDL-ECM approach. The results indicated that the manufacturing sector was not receptive to monetary policy but that the agricultural sector was sensitive to changes in the exchange rate. In addition, it was discovered that improvements in the performance of the mining sector were largely determined by interest rates and exchange rates and that the exchange rate variability and total loan disbursed by banks were key factors in predicting the behaviour of the construction and building sectors. On the whole, the most influential monetary measurement variable was identified as the exchange rate.

An evaluation was made by Unaimikogbo and Enoma (2021) on the impact of monetary and fiscal policies on SMEs in Nigeria (1986–2017). Using the ordinary least square (OLS) estimation technique, it was found that both policies contributed significantly to the growth of the manufacturing industry; they concluded that the monetary variable is more effective and dependable than the fiscal variable in affecting changes in SMEs' economic activities.

Olweny and Chiluwe (2022) investigated the relationship between monetary policy and SMEs in Kenya by tracing monetary policy effects through the transmission mechanism to explain how investment responded to changes in monetary policy. The study used quarterly macroeconomic data from 1996 to 2019, and the vector error correction model was used to investigate the dynamic relationship of short run and long run effects of variables due to an exogenous shock. Based on the empirical results, the study suggested that tightening monetary policy by 1% had the effect of reducing investment by 2.63%, while the opposite, a loose monetary policy, tends to increase SME investment by 2.63%.

Nto Philips, Mbanasor, and Osuala (2022) examined the influence of monetary policy variables on banks' credit supply to SMEs in Nigeria. Time series data, which were collected on a quarterly basis, were elicited from the CBN Statistical Bulletin and financial statements for five commercial banks. The data covered a period of 1995–2020 and were analysed using Fully Modified Least Squares (FMOLS). Considering the time series properties of the variables, a unit root test was done with the Philips Perron test to establish stationarity prior to actual analysis. The result of the FMOLS indicated that policies on interest rate and liquidity ratio were negatively and positively significant at the 1% probability level, respectively. Based on the results, it was recommended that the government, through the CBN, should strengthen existing policies on the adjustment of interest rates and liquidity ratio so as to increase and stabilise the credit supply to SMEs. The study from Nto Philips, Mbanasor, and Osuala (2022) examined the influence of monetary policy variables on banks' credit supply to small and medium-sized enterprises (SMEs) in Nigeria. They did not state what was used to measure SMEs, and the names of the five banks were not mentioned.

III. Methodology

Research Design: A research design provides the framework to be used as a guide in collecting and analysing data. The study adopted a time-series experimental research design. Time-series experimental research design is a method of research that can truly test hypotheses concerning cause-and-effect relationships as well as combine theoretical consideration with empirical observation.

Sources of Data: Secondary data was used for the study. It was obtained from the CBN Annual Reports and the CBN Statistical Bulletin. The data comprised data on SME loans and advances, interest rates, and exchange rates published in seminars, journals, magazines, newspapers, and some information retrieved from websites in relation to the subject of this research between 1986 and 2021.

Method of Analysis: The study employed the auto-regressive distributed lags (ARDL) bounds test approach proposed by Pesaran, Shin, and Smith (2001), based on an unrestricted error correction model. The Augmented Dickey-Fuller unit root test was used to determine the stationarity of the time series data. The principle behind the pre-estimation diagnostic tests of stationarity and others is to ensure that the results of the regression analysis are not spurious.

After establishing their orders of integration, the study proceeded to an examination of the time series data for the presence of a long-run relationship among all variables in the model. The long run coefficients, on the other hand, are estimated using the associated cointegration model proposed by Pesaran Shin and Smith (2001). Decisions about the presence of cointegration were made using the bound testing approach. Once the cointegration is confirmed in the model, the ARDL error correction model is estimated to check the degree of adjustment of the model when there is a shock. This model was useful in establishing the long- and short-run impacts of monetary policy on SME performance.

Model Specification: The augmented ARDL model provided by Pesaran, Shin, and Smith (2001) is given as:

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 X_{t-1} + \sum_{i=1}^i \beta_{1i} \Delta Y_{t-i} + \sum_{i=0}^j \beta_{2i} \Delta X_{t-i} + \varepsilon_t \text{-----(1)}$$

Incorporating our monetary policy model into the ARDL model framework, we have;

$$\ln SMO_t = \beta_0 + \sum_{i=1}^m \beta_{1i} \Delta MPR_{t-i} + \sum_{j=0}^n \beta_{2j} \Delta EXR_{t-j} + \sum_{k=0}^o \beta_{3k} \Delta \ln SML_{t-k} + \sum_{k=0}^o \beta_{4k} \Delta \ln M2_{t-k} + \beta_5 SIR_{t-1} + \beta_6 EXR_{t-1} + \beta_7 \ln SML_{t-1} + \beta_8 \ln M2_{t-1} + \mu_t \text{-----(2)}$$

To determine the optimal lag length for the ARDL model in equation (2), lag selection criteria such as the Schwarz Information Criteria (SIC) and Akaike Information.

Criterion (AIC) were employed and the lag combination that minimises these criteria is the optimal lag for the model.

Investigating the presence of a long run relationship amongst the variables in equation (2) given the chosen lag requires the use of the Wald test (or F-test) in which the joint significance of the coefficients for lagged one variable was tested with F-statistics calculated under the null. The study performed a joint significance

test, where the null hypothesis ($H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = 0$) against the alternative, ($H_1: \beta_5 = \beta_6 = \beta_7 = \beta_8 \neq 0$ at least one of the parameters was not equal to zero).

Consequently, the computed F-statistic is then compared with the non-standard critical bounds values reported by the Pesaran *et al.* (2001). If the computed F-statistic exceeds the upper critical bounds value, then H_0 is rejected. If the F-statistic lies below both the upper and the lower critical bounds value, it implies that the null hypothesis of no cointegration is not rejected. However, when the computed F-statistic falls or lies between the critical lower and upper bounds values, then the test becomes inconclusive.

Once the cointegrating relationship is established, the short run dynamics shall be analyzed. The error correction model representation of the ARDL model is specified in equation (3) below:

$$\Delta \ln SMO_t = \alpha_0 + \sum_{i=1}^m \alpha_1^i \Delta \ln SMO_{t-i} + \sum_{j=0}^n \alpha_2^j \Delta MPR_{t-i} + \sum_{k=0}^o \alpha_3^k \Delta EXR_{t-i} + \sum_{l=0}^p \alpha_4^l \Delta \ln SML_{t-i} + \sum_{l=0}^p \alpha_5^l \Delta \ln M2_{t-i} + \lambda ECM_{t-1} + \varepsilon_t \text{------(3)}$$

Where:

ln = natural logarithms. It is used majorly to interpret the parameter estimates in terms of their elasticities.

SMO = Small and Medium Scale Production Output Index.

SML = Commercial Bank’s Credit and other loan advancements to the SMEs

EXR = Exchange rate variable represents the exchange value of the naira to 1 US dollars.

M2 = Broad money supply

ε_t = disturbance term.

λ = is the speed of adjustment parameter,

ECM = is the residual obtained from the long run estimation and is a white noise error term.

IV. Results and Discussion

Unit Root Test

It is worthwhile to note at this juncture that it has become fashionable in contemporary econometric analysis to, among other things, rigorously consider issues of stationarity, co-integration, and error correction mechanisms when dealing with models involving time series variables. Stationarity assures non-

spurious results; cointegration captures the long-run or equilibrium relationship between variables; and error correction mechanisms are a means of reconciling the short-run behaviour of economic variables with their long-run behaviour (Gujarati & Porter, 2009).

The variables tested are: SMO, EXR, M2, SIR and SML are presented in Table 1;

Table 1: Summary of Unit Root Test Results

Variables	PP Test Statistic(at first difference)	Order of Integration
SMO	-6.097434(-4.440739)*	I(1)
EXR	-3.965454(-3.673616)**	I(1)
M2	-3.653371(-3.622033)**	I(1)
SIR	-3.675455(-3.176540)***	I(1)
SML	-4.003974(-3.710482)***	I(0)

Source: Authors Computation, 2023 (Eviews-13) Note: MacKinnon critical values for the rejection of hypothesis of unit root are in parenthesis in Columns 2 and the tests include intercept with trend; * significant at 1%; ** significant at 5%;*** significant at 10; Mackinnon critical

From Table 1, it was discovered that EXR and M2 were found stationary at the first difference. That is, the PP test statistics of 3.965454 and -3.653371 are greater than the tabulated values of 3.673616 and -3.622033, respectively, at the 5% level of significance. However, SMO and SIR were also found stationary at the first difference but at the 1 and 10% level of significance, as seen in Table 3. It shows that their respective PP test statistics of -6.097434 and -4.003974 are greater than the critical values of -4.440739 and -3.710482, respectively. Finally, only SIR was found to be stationary at these levels. These stationary variables were subsequently used for further analysis in computing and analysing our results. The next specification test that was computed is the ARDL-bound co-integration test of these variables.

Co-integration Estimate

Variables are cointegrated if they have a long-term, or equilibrium, relationship between them. It is a pretest to avoid spurious regression situations. The outcome of the ARDL bound test approach to co-integration is shown in Table 2. The result revealed that there is co-integration among the variables. The f-statistics value of 7.297991 is greater than the lower and upper bound values at the 5% level of significance. Hence, there is sufficient proof of the existence of a long-run equilibrium relationship between monetary policy and SMEs' growth in Nigeria between 1986 and 2021. As a result, the results show that monetary policy has a long-term impact on the growth of SMEs during the study period.

Table 2: ARDL-Cointegration Test Results

Wald Test (ARDL Long-Run Equilibrium Condition)		
Test Statistic	Value	k
F-statistic	7.297991	4
Critical Value Bounds Values by Pesaran(2001)		
Significance	I0 Bound	I1 Bound
10%	2.72	2.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Notes: ***, ** and * significant at 10%, 5% and 1%, respectively.

Source: Authors Computation, 2023 (Eviews-13)

Model Evaluation and Test of Hypotheses

The four hypotheses formulated in this study were tested using Wald test (f-statistic) and *p*-value. The level of significance for the study is 10%, for a two tailed test. The Wald test computes a test statistic based on the unrestricted regression and tests for the joint significance of the coefficients. The Wald statistic measures how close the unrestricted estimates come to satisfying the restrictions under the null hypothesis. If the restrictions are in fact true, then the unrestricted estimates should come close to satisfying the restrictions. The study performed a joint significance test, where the null hypotheses ($H_0: \alpha_i = 0$) of no significance is tested against the alternative hypothesis ($H_1: \alpha_i \neq 0$)

Table 3: ARDL Regression Results

ARDL Cointegrating And Long Run Form

Dependent Variable: SMO

Selected Model: ARDL(3, 4, 3, 4, 4)

Date: 12/10/22 Time: 20:05

Sample: 1986 2021

Adjusted Included observations: 30

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(SMO(-1))	0.571376	0.585994	0.975054	0.4014
D(SMO(-2))	-0.475918	0.247484	-1.923025	0.1502
D(SML)	-0.289953	0.054898	-5.281629	0.0132
D(SML(-1))	0.055371	0.078901	0.701772	0.5334
D(SML(-2))	0.138947	0.064521	2.153530	0.1203
D(SML(-3))	-0.210745	0.073467	-2.868584	0.0641
D(SIR)	-182.359014	182.728386	-0.997979	0.3918
D(SIR(-1))	103.783460	102.213005	1.015365	0.3847
D(SIR(-2))	-198.362015	103.305284	-1.920154	0.1506
D(M2)	-2.855022	1.409338	-2.025790	0.1359
D(M2(-1))	-8.272473	1.643714	-5.032792	0.0151
D(M2(-2))	6.389885	2.773910	2.303566	0.1046
D(M2(-3))	-3.272519	1.895284	-1.726665	0.1827
D(EXR)	27.721038	29.876066	0.927868	0.4219
D(EXR(-1))	-16.134999	24.413487	-0.660905	0.5559
D(EXR(-2))	-116.737615	36.058519	-3.237449	0.0479
D(EXR(-3))	-21.613937	43.474985	-0.497158	0.6532
CointEq(-1)	-0.166444	0.0639469	-2.602849	0.0073
R-squared	0.879637	Mean dependent var		21223.10
Adjusted R-squared	0.786979	S.D. dependent var		16622.16
S.E. of regression	913.6058	Akaike info criterion		16.08242
Sum squared resid	2504026.	Schwarz criterion		17.19535
Log likelihood	-186.0715	Hannan-Quinn criter.		16.40291
F-statistic	376.0253	Durbin-Watson stat		2.090626
Prob(F-statistic)	0.000195			

*Note: p-values and any subsequent tests do not account for model selection.

Source: Authors Computation, 2023 (Eviews-13)

As expected, the lagged error correction term is negative, less than unity, and statistically significant at 5 percent. The coefficient revealed that once there is disequilibrium in the system, it takes an average speed of 16.64% to adjust itself back towards the long-run equilibrium level. This finding was collaborated on by Bannerjee, Dolado, and Mestre (1998), who asserted that a highly significant lagged error correction term proves the existence of a long-run relationship between the variables and its ability to adjust from a disequilibrium state towards an equilibrium level.

The F-statistics, which are used to examine the overall significance of the regression model, equally showed that the result is significant, as indicated by the high value of the *F*-statistic, 376.02, and that it is significant at the 5.0 percent level. That is, the *F*-statistic value of 0.000195 is less than 0.05.

The coefficient of determination (R-square), which is used to assess the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction, i.e., EXR, M2, SIR, and SML accounted for 87.96 percent of the change in SMO, while the white noise error term captured 22.04 percent of unaccounted variations. It showed that EXR, M2, SIR, and SML had a significant impact on the SMO within the review period.

Statistical Test of Hypotheses

H₀₁: There is no significant relationship between SIR and SMO in Nigeria

Table 4: Wald Test Results for SIR and SMO

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	1.348079	(4, 3)	0.4197
Chi-square	5.392317	4	0.2494

Source: Authors Computation, 2023 (Eviews-13)

From the Wald-test in Table 4 the calculated f-value for SMEs lending rates is 1.348 and its probability value is 0.4197. Since the probability value is greater than 0.05 at 5% level of significance, it thus falls in the acceptance region and hence, we may accept the first null hypothesis (**H₀₁**). The result thus shows that lending rates on SMEs loans have no significant effect on SMEs level of outputs in Nigeria.

H₀₂: CBN exchange rates has not significantly influenced SMO

Table 5: Wald Test Results for EXR and SMO

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	3.858741	(5, 3)	0.1478
Chi-square	19.29371	5	0.0017

Source: Authors Computation, 2023 (Eviews-13)

More so, from the Wald-test in Table 5, the calculated f-value for EXR was found to be 3.858 and its probability value is 0.1478. Since the probability value is greater than 0.05 or 5% level of significance, it thus fell in the acceptance region and hence, we may accept the second null hypothesis (**H₀₂**) and conclude that CBN exchange rates has no significant relationship with SMO between 1986 and 2021.

H₀₃: Access to credits has no significant impact on SMEs productivity in Nigeria

Table 6: Wald Test Results for SML and SMO

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	13.42729	(4, 3)	0.0295
Chi-square	53.70917	4	0.0000

Source: Authors Computation, 2023 (Eviews-13)

However, from the Wald-test in Table 6, the calculated f-value for SML was found to be 13.42 and its probability value is 0.029. Since the probability value is lower than 0.05 or 5% level of significance, it thus fell in the rejection region and hence, we may reject the third null hypothesis (**H₀₃**) and conclude that SMEs loans and advances has had a significant influence on SMO in Nigeria between 1986 and 2021.

H₀₄: Broad Money Supply (M2) has no significant effect on SMO

Table 7: Wald Test Results for M2 and SMO

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	8.202354	(5, 3)	0.0568
Chi-square	41.01177	5	0.0000

Source: Authors Computation, 2022 (Eviews-12)

Finally, from the Wald-test in Table 7, the calculated f-value for broad money supply was found to be 8.202 and its probability value is 0.056. It thus fell in the rejection region also and hence, the study may also reject the fourth null hypothesis (H₀₄) and conclude that increase in money supply also has a significant influence on SMEs level of outputs in Nigeria between 1986 and 2021.

Diagnostic Analysis Tests

The paper conducted various post estimation tests to ascertain the appropriateness and stability of the model as well as the robustness of the results. The results are as follows:

Table 8: Results of Residual Test

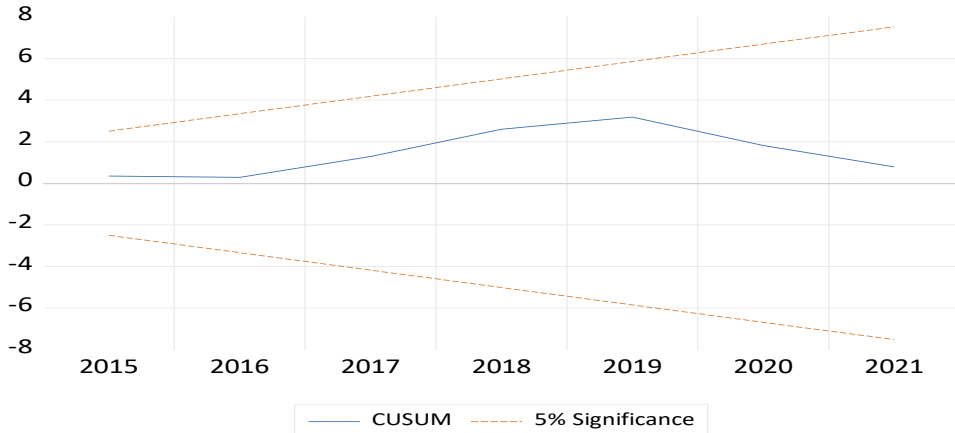
Tests	Outcomes		
		Coefficient	Probability
Breusch-Godfrey-Serial-Correlation Test	F-stat.	0.894370	0.4423
Heteroscedasticity-ARCH Test	F-stat.	0.443620	0.9359
Jaque-Bera Normality Test-	Jarque-Bera	0.309543	0.8566
Ramsey RESET Linearity Test	F-stat	1.731720	0.2176

Source: Authors Computation, 2022 (Eviews-12)

The model result as presented in Table 8 reveals that, there were no evidence of serial correlation and heteroskedasticity in the estimated model as the p-values of both (0.4423 and 0.9359) were found to be greater than 0.05 or 5%. Furthermore, Jarque-bera test for normal distribution shows that, the result attained a normal distribution with a bell-shaped symmetrical distribution at 5percent significance level. This was captured by the Jarque-bera probability value of 0.8566 and found to be greater than 0.05; and lastly, the model specification result showed that

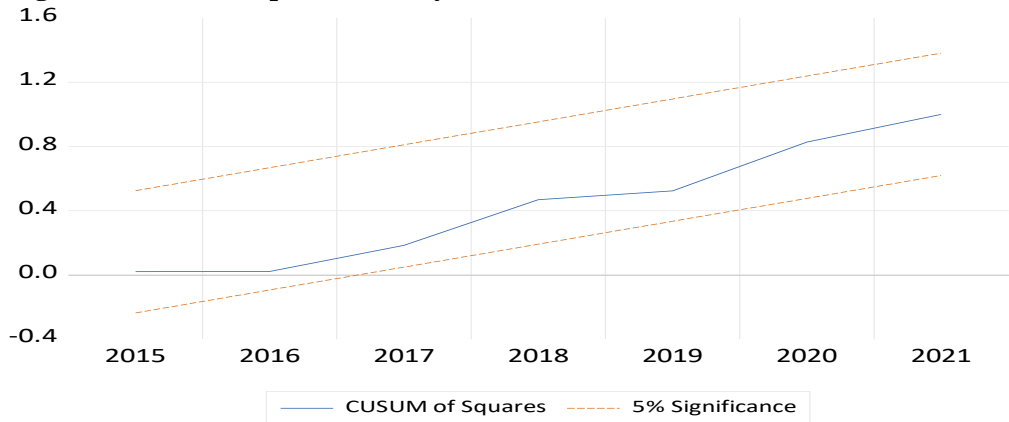
model was well specified as captured by the p-value of 0.2176, seen to be greater than 0.05 (at 5% level of significance). The cumulative sum (CUSUM) stability tests in figure 1 and 2 reveals that the model was stable, and the regression equation was correctly specified as the plot of the charts lies within the critical bounds at 5percent significant level.

Figure 1: CUSUM Stability Tests



Source: Authors Computation, 2022 (Eviews-12)

Figure 2: CUSUM Square Stability Tests



Source: Authors Computation, 2022 (Eviews-12)

Discussion of Findings

It was discovered from the analysis that lending rates on SME loans have had no significant effect on SME output in Nigeria. This is attributed to the prime lending rate, which has witnessed instability after the consolidation of 2005 and the post-consolidation period of 2007. The findings are in line with Olweny and Chiluwe (2022), who observed that negative monetary shocks posed a constraint on the banking system's capability to dispose of deposits due to the adjustability of price, which leads to a fall in real money balances, causing interest rates to rise and increasing the cost of capital.

More so, it was observed from the analysis that exchange rates have had no significant relationship with SMEs' levels of productivity between 1986 and 2021. It showed that frequent fluctuations in exchange rates had a negative influence on SMEs. This is in agreement with Imoughele and Ismaila (2021), whose study revealed that the exchange rate has had a negative impact on the performance of the manufacturing sector over the years.

SMEs loans and advances, on the other hand, were discovered to have had a significant impact on their level of output in Nigeria between 1986 and 2021. The findings here are contrary to those of Uniamikogbo and Enoma (2021), whose result shows that SMEEIS as a formal financing option for SMEs has not made any significant impact on SMEs' growth in Nigeria.

Finally, the study revealed that increases in money supply also had a significant influence on the level of output of SMEs in Nigeria between 1986 and 2021. It shows that expansionary monetary policy through an increased money supply creates more money in circulation, increasing the availability of loans and advances at deposit money banks for SMEs' output growth. This agrees with Saibu and Nwosa (2021), who found that monetary policy—the act of controlling the supply or price of money—had exerted a powerful influence over the economy.

V. Conclusion and Recommendations

Overall, the study revealed that increases in money supply (M2) had a significant influence on SMEs' level of output in Nigeria between 1986 and 2021. In other words, the expansionary monetary policy through an increase in the money supply creates more money in circulation that increases the availability of loans and advances at deposit money banks. In other words, the money supply has a positive and significant impact on SMEs' output and GDP contribution in Nigeria, and can thus be considered a critical variable of SMEs' productivity (or SMEs' output) in Nigeria.

In line with the findings of this study, the following are therefore recommended:

- i. It is therefore critical that monetary authorities implement policy measures to maintain a favourable low commercial bank lending rate (lowering the cost of capital); this will be an incentive to SMEs investors as it will accelerate high business investment in small, medium, and even large-scale businesses, thereby significantly contributing to economic growth in the long run.
- ii. A consistent monetary policy framework is required to achieve a realistic exchange rate, with an emphasis on its role in directly promoting the output and productivity of SMEs. Policy makers should consider exchange rate policies as a long-run fix to the problem of growth in foreign goods demand.
- iii. The Small and Medium Industries Equity Investment Scheme (SMIEIS), which requires all banks to save 10% of their profit before tax (PBT) for equity investment in SMEs, should be made to move to the next level of authority, such as the supervision of such equity investment input. In addition, extensive monitoring activities should be provided for clients who are granted loans.
- iv. The monetary authority (CBN) should implement policies that increase the flow of money and direct it to sectors like SMEs with a higher propensity to contribute to national economic productivity and should endeavour to make more use of the cash reserve ratio in regulating the operations of commercial banks. This policy action will result in lower interest yields on government securities, which will lower the interbank interest rate and thus encourage banks to lend to the real economy, benefiting SMEs.

References

- Adebiyi, O. (2020). Stationarity analysis of the impact of monetary policy on SMEs performance in Nigeria. *Pakistan Journal of Social Sciences* 5(6), 562-566.
- Ajayi, O., Felix, M., & Atanda, O., Akinwande, A. (2021) Monetary Policy and Bank Performance in Nigeria: A Two-Step Cointegration Approach. *African Journal of Accounting, Economics, Finance and Banking Research*, 5 (5), 112-129.
- Aremu, M. A. & Adeyemi, S. L. (2011). Small and Medium Scale Enterprises as A Survival Strategy for Employment Generation in Nigeria. *Journal of Sustainable Development*, 4(1), 200 – 206.

- Arogundade, P. (2020). An Assessment Of Monetary Policy Transmission Mechanisms in Nigeria. *IOSR Journal Of Humanities And Social Science*, 19(3), 54-59
- Awoniyi, H. (2020). The fiscal-monetary policy and economic growth in Nigeria: further empirical evidence. *Pakistan Journal of Social Sciences*, 7(2), 137-142
- Balunywa, W. (2021). What are Small Scale Enterprises? Entrepreneurship and Small Business Enterprise. Makerere: *University Business School*.
- CBN (2021). Modeling the Real Sector of the Nigerian Economy. Research Department, Central Bank of Nigeria Abuja. ISBN: 978-978-53289-2-9. www.cbn.gov.ng
- Ekpeyong, D.B.E. & Nyong, M.O. (2022). small and medium scale Enterprises Development in Nigeria”; Seminar Paper on Economic Policy Research for Policy Design and Management in Nigeria, NCEMA/AEPC; Nigeria, April.
- Fu, Q., & Liu, X. (2015). Monetary policy and dynamic adjustment of corporate investment: A policy transmission channel perspective. *China Journal of Accounting Research*, 8,91-109.
- Imoughale, L. E. & Ismaila, M. (2021). Empirical Investigation of the Impact of Monetary Policy on Manufacturing Sector Performance in Nigeria (1986-2020). *International Journal of Education and Research*, 2 (8), 1-20.
- Kasidi, F., & Mwanemela, K., (2020) Impact of inflation on economic growth: A case study of Tanzania. *Asian Journal of Empirical Research*, 3(4), 363-380
- Kozak, R (2019) Small and Medium Forest Enterprises: Instrument of change in the developing World. Vancouver. *British Columbia, University of British Columbia*.
- Mishkin, F. S. (2001). The Transmission Mechanism and the Role of Asset Prices in Monetary Policy’, National Bureau of Economic Research working paper no 8617. Retrieved on June 6, 2014 from <http://www.nber.org/papers/w8617>
- Mishkin, F. S. (2021). The Transmission Mechanism and the Role of Asset Prices in Monetary Policy. *National Bureau of Economic Research working paper, 8617*. Retrieved on June 6, 2022 from <http://www.nber.org/papers/w8617>
- NTO Philips, O. O., Mbanasor, J. A., & Osuala, A. E., (2022) Influence of monetary policy variables on loan supply to Small and Medium Scale Enterprises in Nigeria. *International Journal of Business Research*, 8(2), 102-116.

- Nzotta, S.M. & Okereke, E.J. (2009). Financial Deepening and Economic Development of Nigeria: An Empirical Investigation, *African Journal of Accounting, Economics, Finance and Banking*, 5(5), 52-66.
- Olweny, T and Chiluwe, M. (2022). The Effect of Monetary Policy on SMEs Sector Investment in Kenya. *Journal of Applied Finance & Banking*, 2 (2), 239-287
- Opaluwa, D., Umeh, J. C., & Abu, A. A., (2020) The effect of exchange rate fluctuations on the Nigerian manufacturing sector. *African Journal of Business Management*, 4(14), 2994 - 2998
- Saibu, M.O. & Nwosa, L.P. (2021). Effects of Monetary Policy on Sectorial Output Growth in Nigeria (1986-2008). *Journal of Economics and Behavioral Studies*, 2 (6), 245-254
- UNCTAD (2021). Reform of trade policy: Recent evidence from theory and practice. *The World Bank Research Observer* 6 (2), 219-240: Oxford University Press
- Uniamikogbo, S. O., & Enoma, A. I., (2021) The impact of monetary policy on SMEs sector in Nigeria. *The Nigeria Economic and Financial Review*, 3(2), 37-45

