

Currency Devaluation and Performance of Small and Medium Enterprises (SMEs) in Nigeria

by

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ABSTRACT

This study investigates the impact of Naira devaluation on the performance of Small and Medium Enterprises (SMEs) in Nigeria from 1991 to 2023 utilizing the Autoregressive Distributed Lag (ARDL) model. The analysis focuses on the relationship between SME performance and exchange rate as well as on other key macroeconomic. Findings reveal that Naira devaluation has a significant negative short-run effect on SMEs due to increased costs of imported inputs. The long run effect is however found to be positive which indicates that devaluation tends to enhance export competitiveness of SMEs in Nigeria. Moreover, while inflation and money supply negatively impact SME, interest rate has a positive effect. The study therefore underscores the dual nature of devaluation on businesses in Nigeria. While it offers opportunities for export-oriented SMEs, it also poses challenges for businesses reliant on imports. Policy recommendations include subsidies and import restrictions to mitigate adverse effects and promote sustainable SME growth in Nigeria.

Keywords: *Currency Devaluation, Performance, Small and Medium Enterprises (SMEs), Nigeria*

Introduction

Currency devaluation occurs when a country deliberately lowers the value of its currency in relation to others. According to Yioyio (2015), this process involves reducing the currency's value compared to goods, services, or other currencies. Typically, devaluation is driven by a country's adverse Balance of Payments (BOP) or Balance of Trade (BOT) crisis or deteriorating economic conditions that impact the domestic economy due to external market factors (World Bank, 2000). Devaluation can be used as a policy tool to address trade imbalances, aiming to strengthen a country's trade position by making its exports cheaper and more competitive (Aiya, 2014). This approach can help alleviate external imbalances, correct currency over-valuation, stabilize competitive pricing, and promote export growth.

In Nigeria, the economy has experienced significant devaluation of the currency since the introduction of the structural adjustment programme (SAP) in 1985. The devaluation of the Naira has been heavily driven by falling oil prices and rising inflation. This devaluation has also intensified in recent years and has affected all segments of the economies. Given that most of the businesses in the country are significantly linked to foreign resources (Uford, 2017), the devaluation has had effects on these businesses, especially the SMEs (Dada et al. 2022; Awa 2022). This devaluation has led to increased costs for imported raw materials, thereby affecting production costs and overall profitability. Additionally, SMEs are struggling with reduced

collateral values which impacts their ability to access credit and undermines their financial stability (Akpan & Uford, 2023).

The literature highlights the dual nature of currency devaluation. On one hand, devaluation can enhance export competitiveness and attract foreign investments (Udegbumam & Ezejiofor, 2020). Wolf (2014) argued that it can help achieve both internal and external balance, though it often brings about inflationary pressures. Devaluation can also serve as a fiscal policy tool to manage imports and balance payments (Nwagbala et al., 2023). Conversely, it presents significant challenges for SMEs, including higher production costs, inflationary pressures, and difficulties in securing financing (Adegboye & Aluko, 2017; Igbodika, 2016). These challenges have affected SME profitability and growth. Thus, there is a critical need for comprehensive policy measures to mitigate these issues and support SME sustainability amid currency devaluation (Umeora & Onyeaju, 2017; Udoikah & Ndaeyo, 2021). The question remains whether the government has done enough to create a conducive environment for local businesses to thrive and generate foreign exchange. According to Charles and Uford (2023), understanding this dynamic is crucial, as inadequate policy measures could hinder SME growth in Nigeria.

The primary aim of this study is therefore to examine the effect of naira devaluation on the performance of small and medium-sized enterprises (SMEs) in Nigeria. The focus is on how SME output in Nigeria responds to the frequent shocks to the naira exchange rate.

Literature Review

The J-Curve Theory, proposed by Krueger (1983), suggests that the initial negative impact of currency devaluation on the trade balance will eventually be offset by improved export competitiveness. In the short term, devaluation may worsen the trade balance due to higher import costs, but over time, as export demand increases and import demand decreases, the trade balance improves, forming a "J" shape on a graph. This theory is particularly relevant for SMEs engaged in international trade. While devaluation may initially increase production costs for SMEs reliant on imported inputs, it can lead to growth opportunities as they adjust their supply chains and find local suppliers (Krueger, 1983).

Research on the impact of currency devaluation on SMEs in Nigeria is limited, but several studies have examined currency devaluation's effects on economic growth and its implications for SMEs. For instance, Akinlo (1996) found that a substantial devaluation of the Naira during Nigeria's Structural Adjustment Program exacerbated economic difficulties and adversely affected the productive sector. Osundina and Osundina (2016) used ordinary least squares regression and identified inflation and unemployment as short-term consequences of devaluation, recommending policy measures to mitigate inflation.

Jonathan, et al. (2016) examined an empirical analysis of the link between exchange rate fluctuations and private domestic investment in Nigeria. The study employed Error Correction Model (ECM) technique within the Ordinary Least Square estimation, and the findings of the study revealed that the depreciation of the currency and interest rate does not stimulate private domestic investment activities in Nigeria. On the other hand, infrastructures, government size and inflation rate had a positive effect on private domestic investment in Nigeria. The study recommended that monetary authorities should adopt appropriate policy in appreciating the value of the naira as devaluation has been a mistake since 1986, reduce borrowing and lending

charges to boost the performance of private domestic investment through stable macroeconomic environment.

Momodu and Akanni (2016) found that, in the short term, currency devaluation improved output and the balance of payments, but long-term effects led to price increases that neutralized these benefits. Okoroafor and Adeniji (2017) noted a positive impact of devaluation on economic growth but a negative effect on non-oil exports. Loto (2018) concluded that devaluation had not resolved Nigeria's economic challenges, as indicated by coefficients below the critical value of 1.

Vior (2016) analyzed the impact of devaluation on small scale enterprises in Burkina Faso, using ordinary least square (OLS) multiple regression method. He also considered the effect of currency devaluation on cost of production and profitability of small-scale enterprises; and found that the rate of turnover in business activities reduced by 22%; while prices of imported inputs increased. It also revealed that a substantial profit was recorded in areas of building constructions; while other small-scale businesses such as restaurant, provincial retailing, blacksmiths, carpentry and auto-mechanics among others suffered the scourge of devaluation. The study however concluded that devaluation has weakened many small enterprises which are not producing export products because of the depression of urban markets, arising from the fall of the purchasing power of the households.

Ehinmowo, et al, (2017) examined the long run equilibrium relationship between naira devaluation and rice importation in Nigeria between 1980 and 2015. Using Co-integration and Vector Error Correction Techniques, the results confirmed a positive long-run equilibrium relationship between naira devaluation and rice importation, with a significant speed of adjustment and convergence to equilibrium in the long run. The study therefore concluded that naira devaluation with fluctuating exchange rate vis-à-vis other currencies positively determined rice importation during the period under review. That is, despite naira devaluation the quantity of rice imported into the country especially by the rich people who can afford it had tremendously increased.

Further studies such as those by Okoro and Charles (2019) and Caglar and Titiloye (2019) highlighted varying effects of currency devaluation on Nigeria's GDP, suggesting the need for stable exchange rate policies. Dada et al. (2022) and Awa (2022) found contractionary effects of devaluation on output, emphasizing the need for improved export volumes and careful policy measures.

Suleyman (2013) investigated monetary policies in Turkey, noting that increases in SME credit volumes inversely affected large enterprises. Ebire and Onmonya (2018) identified significant positive impacts of interest rates on SME financing, while inflation negatively affected it. Olujobi (2022) examined currency redesign policies, finding they led to increased inflation and excess money supply but could enhance liquidity and monetary policy effectiveness. Nwagbala et al. (2023) explored the effects of Naira devaluation and currency redesign on SMEs and found that the effects can be both positive and negative impacts. This outcome is similar to those of Ahmad et al. (2023). In this direction, Nwagbala et al, (2023) concluded that devaluation had significant effects on SME performance, while Ahmad et al, (2023) reported negative impacts on sales and performance, recommending robust policy frameworks.

Lawal and Akanbi, (2020) examined long run relationship between exchange rate and performance of small and medium enterprises in Nigeria spanning from 1981-2018. using Autoregressive Distributed Lag model (ARDL) approach, the findings reveal that inflation rate (INF) and interest rate (INTR) respectively have negatively and positively significant long run effects on performance of small and medium enterprises (PSME) while exchange rate (EXR) has positive but insignificant long run effects on PSME (performance contributions of wholesale and retail trades to GDP as a proxy). This implies that changes in exchange rate do not contribute significantly to the performance of SMEs in the long run. Based on the findings, the study recommends that there is need for the regulatory authorities to come up with strong policies that would maintain a favourable and stable exchange rate, and reduce borrowing and lending charges to enhance the performance of small and medium enterprises in Nigeria.

In summary, while many studies address currency devaluation's economic growth impact, research specifically focusing on its effects on SMEs in Nigeria is limited. This study aims to address this gap and contribute to the existing body of knowledge on the subject.

Methodology

Model Specification

Following the theoretical framework and adopting the recent literature on Naira devaluation impacts on SMEs performance, the study takes SMEs as dependent variable and exchange rate, inflation rate, money supply and interest rate as the main independent variables. The empirical model is given below.

$$\text{SMEs} = f(\text{exchange rate, inflation rate, interest rate, Money supply}) \quad (1)$$

The functional form of the model will be as:

$$\text{SMEs}_t = \beta_0 + \beta_1 \text{EXR}_t + \beta_2 \text{INF}_t + \beta_3 \text{MS}_t + \beta_4 \text{IR}_t + \varepsilon_t \quad (2)$$

Where;

SMEs is the Small and Medium Scale Enterprises performance,

EXR is the exchange rate, INF is the inflation rate, MS represent money supply, IR represent interest rate, while, t is the time trend and ε is the error term. +signifies intercept, while β_1 to β_4 represents the parameter estimate of explanatory variables.

Apriori Expectation:

The a-priori expectation of the model is that all the coefficients of the variables are negative except exchange rate, hence: $\beta_1 > 0$, $\beta_2 < 0$; $\beta_3 > 0$, and $\beta_4 < 0$

Measurement of Variables and Data Sources

The research utilizes annual time series data from secondary sources for the period 1991 to 2023. Data are sourced from the World Bank's World Development Indicators database and the Central Bank of Nigeria's statistical bulletins. The variables examined include the SMEs performance, exchange rate, inflation rate, money supply, and interest rate.

Table 1: Description, Measurement of Variables and Source of data

S/N	Variables	Description of Variable	Source of Data
1	SMEs performance	SMEs performance is measured as the total amount of commercial banks credits to SMEs in the country.	Central Bank of Nigeria Statistical Bulletin (2023).
2	Interest rate (IR)	Interest rate is measured by the prime lending rate. The prime lending rate adjusted for inflation as measured by the GDP deflator.	Central Bank of Nigeria Statistical Bulletin (2023).
3	Exchange Rate (EXR)	Exchange rate is a relative price which measures the value of a domestic currency in relations to another currency.	Central Bank of Nigeria Statistical Bulletin (2023).
4	Money Supply (MS)	Money Supply (MS) is the total amount of money cash, coins, and balances in bank accounts in circulation	Central Bank of Nigeria Statistical Bulletin (2023).
5	Inflation Rate (INF)	It measures the rate of change of the price level and the purchasing power of the host country currency	Central Bank of Nigeria Statistical Bulletin (2023).

Method of Data Analysis

Prior to the empirical analysis, pre-estimation diagnostic checks of the time series properties of the data, notably the descriptive statistics, correlation analysis and unit root test were conducted to confirm the reliability of the data. The study employs Augmented Dickey-Fuller (ADF) and Philip Peron (PP) unit root test to determine the stationarity of the chosen variables. This is to determine the time series properties of the variables and to avoid the problem of spurious regression. After the testing of the reliability of the time series data, the study employed the Autoregressive Distributed Lag (ARDL) bounds testing approach developed by Pesaran and Shin (1999) and Pesaran, Shin and Smith (2001) to ascertain the long-run relationship between dependent variable (SMEs), and independent variables (*EXR*, *INF*, *IR*, *MS*).

The ARDL approach has several advantages. First, The ARDL approach is that it can be used even in cases when different variables have different orders of integration. Second, when compared to the Johansen and Juselius cointegration test, the ARDL test ensures more consistent estimates in the case of small samples. Third, given that it is free of residual correlation, the ARDL test can handle the eventual phenomenon of endogeneity among variables (Marques et al., 2016). Fourth, short-run adjustments can be integrated with the long-run equilibrium in ARDL by deriving the error correction mechanism (ECM) via simple linear transformation without trailing the information about long-run (Ali et al., 2017).

The mathematical representation of the ARDL approach is as follows:

$$\Delta SMEs_t = \beta_0 + \sum_{j=1}^p \theta \Delta SMEs_{t-1} + \sum_{j=0}^p \beta_j \Delta EXR_{t-1} + \sum_{j=0}^p \beta_j \Delta INF_{t-1} + \sum_{j=0}^p \beta_j \Delta IR_{t-1} + \sum_{j=0}^p \beta_j \Delta MS_{t-1} + \lambda_1 SMEs_{t-1} + \lambda_2 EXR_{t-1} + \lambda_3 INF_{t-1} + \lambda_4 IR_{t-1} + \lambda_5 MS_{t-1} + \varepsilon_t \quad (3)$$

Where Δ represents change, p is the optimum lag lengths. The existence of cointegration relationship between variables from Eq.2 is examined by testing the significance of the lagged levels of variables using the F-statistic or Wald-coefficient test. Pesaran et al. (2001) propose testing which means that we cannot reject the absence of cointegration, against the alternative, which implies that the hypothesis of the existence of such a relationship cannot be rejected.

ARDL approach is based on two steps. First step, one is to determine the existence of a long run cointegrating relationship among the variables by using the Wald-coefficient test or F-statistics and by comparing them with critical values set out by Pesaran et al. (2001). Pesaran et al. (2001) reported two types of critical values: lower bounds and upper bounds. The critical values for the $I(0)$ variables are referred to as lower-bound critical values while the critical values for the $I(1)$ variables are referred to as upper-bound critical values. If the calculated F-Statistic is higher than the upper bounds, it means the null of hypothesis of no co-integration is rejected, indicating evidence of a long-run cointegration relationship between the variables, regardless of the order of integration of the variables. If calculated F-statistic is below the lower bound, we cannot reject the null hypothesis of cointegration, indicating the absence of a long-run equilibrium relationship. If calculated F-statistic is between lower and upper bounds, a conclusive inference could not be made without knowing the order of integration of the underlying regressors. The second step is estimation of long-run and short-run coefficient. According to the estimation results of ARDL calculate long term coefficients. In order to investigate the short-run relationship between the variables, the error correction model based on the ARDL approach is established as follows.

$$\Delta SMEs_t = \beta_0 + \sum_{j=1}^p \theta \Delta SMEs_{t-1} + \sum_{j=0}^p \beta_j \Delta EXR_{t-1} + \sum_{j=0}^p \beta_j \Delta INF_{t-1} + \sum_{j=0}^p \beta_j \Delta IR_{t-1} + \sum_{j=0}^p \beta_j \Delta MS_{t-1} + ECM_{t-1} \quad (4)$$

Where ECM (-1) term is a lagged value of the residual of model in which the long-term relationship is obtained. The coefficient of error correction term ECM (-1) should be negative and statistically significant. This coefficient indicates the speed of adjustment, how quickly the variables return to the long run equilibrium.

Empirical Analysis

This subheading presents the detailed trend analysis, presentation, and interpretation of results. It comprises five sections that cover the objectives of the study. The first section discusses the trend analysis of the core variables; the second section explores the descriptive statistics and correlation analysis of the variables over the period 1986 - 2023. The third section explores the unit root tests using Augmented Dickey-Fuller (ADF) together with Phillips-Perron (PP) tests to analyze the stationarity of the variables; section four discusses the short run and long run effect of selected macroeconomics variable on foreign direct investment inflows in Nigeria, and causal link that exist between the dependent and explanatory variables. Section five talks about the post-estimation stability test among the variables.

Empirical Analysis

Descriptive Analysis

Table 2 shows the descriptive statistics of the variables in the study. The mean growth rate of SMEs is approximately 47.15%. This shows that SMEs have grown at a high level over the years in Nigeria. the mean of exchange rate is approximately 167.10 Naira per USD over the research period. Average inflation rate is also 18.61% while average interest rate is approximately 15.55% and the mean of money supply is around 3.57%. Standard deviation for exchange rate is 119.33, indicating significant fluctuations, while SMEs, INF, IR and MS are close to the mean value. Also, SME, exchange rate, inflation rate, interest rate, show positive skewness, implying a tendency towards higher values, while money supply reveals negative skewness. The Jarque-Bera p-values for the variables suggest that most of the data follows a normal distribution.

Table 2: Descriptive Statistics

	SMEs	EXR	INF	IR	LMS
Mean	47.14517	167.0996	18.60919	15.55038	3.568960
Median	40.84430	131.1004	13.00697	14.00000	3.709897
Maximum	286.1003	462.3397	72.83550	29.80000	4.752461
Minimum	10.74789	9.909492	5.388008	6.000000	1.877378
Std. Dev.	51.59430	119.3332	16.02931	5.239494	0.878237
Skewness	3.211619	1.015044	2.143470	0.423702	-0.359804
Kurtosis	15.11020	3.160505	6.664268	3.153400	1.792197
Jarque-Bera	258.3832	5.702153	43.73149	1.019732	2.717858
Probability	0.000000	0.057782	0.000000	0.600576	0.256936
Observations	33	33	33	33	33

Source: Author's Computation, 2024

Correlation Analysis

Table 3 presents the correlation analysis table you provided reveals the relationships between five variables in the study. There is a moderate to strong positive correlation between SMEs and the exchange rate. This implies that as the exchange rate increases (suggesting devaluation of the local currency), SMEs might experience more challenges or possibly benefit in some cases, such as in export-oriented sectors. In Nigeria, where the exchange rate has been volatile, this relationship could reflect how fluctuations in currency values affect SME operations, particularly those involved in international trade or reliant on imported goods. There is a very

weak negative correlation between SMEs and inflation. This suggests that inflation does not have a significant linear relationship with SME performance in this dataset. However, in a broader context, high inflation can impact SMEs by increasing the cost of inputs and eroding purchasing power. In Nigeria, this weak correlation might not capture the full impact of inflation on SMEs, particularly if there are sector-specific effects.

Table 3: Correlation Analysis

	SMEs	EXR	INF	IR	LMS
SMES	1.000000				
EXR	0.593591	1.000000			
INF	-0.024008	-0.265597	1.000000		
IR	0.126207	-0.379533	0.470509	1.000000	
LMS	0.284745	0.846383	-0.483604	-0.676634	1.000000

There is also a weak positive correlation between SMEs and interest rates. This implies that changes in interest rates have a minor impact on SMEs. In Nigeria, this could suggest that while interest rates do influence SME borrowing costs and financial health, the effect is relatively small. However, given the broader economic environment, interest rates can still impact SME growth and investment decisions. There is a moderate positive correlation between SMEs and money supply. This suggests that increase in money supply conditions is associated with better SME performance. In Nigeria, this could indicate that SMEs benefit from a more stable money supply, which can provide a more favorable business environment.

There is a moderate negative correlation between the exchange rate and inflation. This suggests that as the exchange rate depreciates, inflation tends to increase, which is typical in economies where currency devaluation leads to higher import costs. In Nigeria, this relationship is significant as currency devaluation often exacerbates inflationary pressures, reflecting the challenges in managing monetary policy and economic stability. There is a moderate negative correlation between the exchange rate and interest rates. This indicates that as the exchange rate depreciates, interest rates tend to increase. This could be due to monetary policy responses aimed at controlling inflation or stabilizing the currency. In Nigeria, this relationship highlights how economic instability can lead to higher interest rates as the central bank attempts to manage currency devaluation and inflation. There is a moderate positive correlation between inflation and interest rates. This suggests that higher inflation is associated with higher interest rates, which is consistent with the typical monetary policy response where central banks increase interest rates to combat inflation. In Nigeria, this relationship reflects the common economic practice of using interest rate adjustments as a tool to control inflation. High inflation rates often lead to higher interest rates as the Central Bank attempts to stabilize prices. There is also a moderate negative correlation between inflation and money supply.

Unit Root Tests

Examining the properties of time series before analyzing the relationship between variables have become important owing to the challenges that non-stationary series present in regression

analysis. The unit roots tests on all variables is carried out using the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test and the results are presented on Table 4. From Table 4, it is observed that SMEs, EXR, INF, and IR are integrated at first difference level I(1), while MS is integrated at level I(0) under Augmented Dickey-Fuller(ADF) test and under Phillip Perron (PP) test. The results of the unit root tests produced by ADF, and PP are valid based on the assumption that the variables are either I (0) or I (1).

Table 4. Unit Root Tests

Variable	ADF			PP		
	Level	1 st diff	Status	Level	1 st diff	Status
SMEs	-0.7938 (0.8073)	-5.2022 (0.0002)***	I(1)	-0.8111 (0.8024)	-5.1961 (0.0002)***	I(1)
EXR	1.9368 (0.9997)	-3.7772 (0.0075)***	I(1)	2.3668 (0.9999)	-3.7343 (0.0084)***	I(1)
INF	-2.1035 (0.2446)	-5.4431 (0.0001)***	I(1)	-2.3628 (0.1598)	-5.8518 (0.0000)***	I(1)
IR	-2.4281 (0.1424)	-8.7338 (0.0000)***	I(1)	-2.2968 (0.1791)	-8.6887 (0.0000)***	I(1)
MS	-3.9050 (0.0053)***		I(0)	-3.5060 (0.0143)**		I(0)

Source: Author's Computation, 2024

*Note (a) “()” are the probability value, (b) ‘***. ***’ means significance at 10%,5% and 1% level, (c) ADF= Augmented Dickey-Fuller test, and PP= Phillip Perron test.*

ARDL Bound Testing/Cointegration Estimates

Under the null hypothesis that there is no long-term relationship, Table 5 presents the results of the ARDL bounds test cointegration. The ARDL bound testing cointegration estimate is primarily intend to investigate the existence of a long run relationship between explanatory variables and the dependent variable which is GDP growth rate in Nigeria. The results of the ARDL bound testing in Table 4.4 shows the evidence of a long-term nexus between the variables. The F- statistics value exceeds the upper bound critical value at a distinct 1% level of significance. This shows a long-term relationship between the variables. The evidence suggests that variables must eventually converge from the short run to the steady state. Therefore, the null hypothesis that there is no long-term relationship between the variables is rejected.

Table 5: ARDL Bound Testing/Cointegration Estimates.

Model	f (EXR, INF, IR, MS)	
Test Statistic	Value	K= 4; n= 30
F- statistic	10.9299***	3
Critical value Bound	Lower Bound	Upper Bound
10%	2.45	3.52
5%	2.86	4.01
1%	3.74	5.06

***, **, *, indicate significance at 1%, 5% and 10% respectively.

Estimating the effect of Naira Devaluation on Small and Medium Scale Enterprises in Nigeria.

Short-run Analysis

After it has been established that there is a long-run relationship between the variables, Table 6 present the results of the estimation of the short-run coefficients of error correction using the ARDL technique. As shown, the error-correction terms (ECM) in the ARDL model (1, 2, 0, 1, 3) is significant at the 1% level of significance (-0.8632). The negative and significant coefficient of the ECM term indicates that there is a strong short-term adjustment mechanism towards restoring equilibrium after a deviation from the long-run relationship. This means that if there is a short-term deviation from the long-run equilibrium, about 86% of that deviation will be corrected within one period. The significant ECM term underscores the presence of a mechanism that corrects short-term deviations from long-run equilibrium.

The results of the ARDL model short-run estimate version show that coefficient is -0.000724 with a p-value of 0.6609, indicating negative and that the change in the exchange rate does not significantly affect SMEs in the short run, while, the coefficient of lag 1 is -0.005806 with a p-value of 0.0048, which is negative and statistically significant at the 1% level. This suggests that a lagged change in the exchange rate negatively impacts SMEs in the short run in Nigeria. The negative impact of a lagged change in the exchange rate on SMEs suggests that past fluctuations in the exchange rate can negatively affect the current performance of SMEs. This is particularly relevant in Nigeria, where exchange rate volatility is a significant concern. A depreciating naira can increase the cost of imports, which SMEs that rely on imported goods or raw materials might struggle with. The result is contrary to the apriori expectation but the finding is consistent with the study by Ahmed et al, (2023) who found negative impact of naira devaluation on SEMs performance in Nigeria.

Table 6: ARDL Estimation of the short-run coefficients of error correction

ARDL Cointegrating And Long Run Form		
Dependent Variable: LSMES		
Selected Model: ARDL (1, 2, 0, 1, 3)		
Sample: 1991 2023		

Included observations: 30				
Cointegrating Form (<i>ECM Regression</i>)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXR)	-0.000724	0.001624	-0.446069	0.6609
D(EXR(-1))	-0.005806***	0.001804	-3.218309	0.0048
D(INF)	-0.004485	0.002848	-1.574985	0.1327
D(IR)	0.016472**	0.008512	1.935076	0.0689
D(LMS)	-1.008858	0.604213	-1.669707	0.1123
D(LMS(-1))	-1.001906	0.986996	-1.015107	0.3235
D(LMS(-2))	1.792130**	0.695609	2.576346	0.0190
ECM(-1)	-0.863207***	0.147597	-5.848396	0.0000
R-squared	0.928543			
Adjusted R-squared	0.884875			
F-statistic	21.26365			
Prob(F-statistic)	0.000000			

**, **, *, indicate significance at 1%, 5% and 10% respectively.

The coefficient of inflation rate (INF) is negative and insignificant -0.004485 with a p-value of 0.1327, indicating that the change in inflation rate does not have a statistically significant short-term effect on LSME in Nigeria. The insignificant impact of inflation on SMEs in the short run could be surprising, given the high inflation rates in Nigeria. It could indicate that SMEs are either able to pass on the costs to consumers or have adapted to the inflationary environment in some way. This is however, consistent with the apriori expectation, and it is in tandem with the study by Lawal and Akanbi, (2020) who found a negative relationship between INF and SMEs performance in Nigeria.

Interest rate (IR) coefficient exerts a positive significant (0.016472 with a p-value of 0.0689) on SMEs in the short run in Nigeria. This is significant at the 10% level, suggesting that the change in the interest rate has a positive short-run effect on LSME in the short run in Nigeria. The positive effect of interest rates on SMEs, though marginally significant, implies that changes in interest rates could have a short-term impact on SME performance. High-interest rates could increase borrowing costs, affecting the liquidity and expansion plans of SMEs. In Nigeria, where interest rates can be quite high, this could impact the financial health of SMEs. The finding is in tandem with the study by Ebire and Onmonya, (2018), who confirmed positive relationship between interest rate and SMEs performance in the short run.

The coefficient of money supply from the result shows a negative insignificant effect on SMEs at current stage, (-1.008858 with a p-value of 0.1123), and lag (-1), (-1.001906 with a p-value of 0.3235), while at lag (-2), the money supply shows a positive significant (1.792130 with a

p-value of 0.0190) effect on SMEs in the short run in Nigeria. This indicates that increase in money supply from two periods ago have a significant positive impact on the SMEs performance in the short run. This suggests that monetary policy decisions made several periods ago continue to influence SMEs performance in the country. The finding is contrary with the study by Ebire and Onmonya, (2018), who found negative related to SMEs performance.

The R^2 statistics and the adjusted R^2 results revealed that about 92.85% and 88.49% of the total variation in the small and medium scale enterprises (SMEs) performance in the short run is accounted for by changes in naira devaluation inflation rate, interest rate and money supply during the period. The implication of this is that the regression equation has a very good fit and could be relied upon for making appropriate judgment about the effect of devaluation of naira and other variables on SMEs performance in Nigeria.

Also, the results suggest that exchange rate fluctuations and interest rates have notable short-term effects on SMEs in Nigeria. Particularly, past changes in exchange rates negatively affect current SME performance, while interest rates have a marginally positive impact. Despite high inflation, its short-term effect is not significant in this model. The error correction term indicates that SMEs are likely to adjust quickly to long-term equilibrium, which is encouraging for their stability and growth.

Long-run Dynamics

Table 7 displays the long-run estimations of the variables from the ARDL Model. The long-run results show that the coefficient (0.006220) of exchange rate is positive and statistically significant, indicating that, in the long run, a 1-unit increase in the exchange rate is associated with an increase in SMEs by 0.006220 units. This suggests that a depreciation of the naira might be beneficial for SMEs in the long run, possibly due to increased competitiveness in export markets or improved profit margins on foreign sales. In Nigeria, a depreciating naira could have mixed effects. For SMEs engaged in export activities or those benefiting from cheaper foreign inputs, a weaker naira could enhance competitiveness and profitability. However, SMEs that rely heavily on imported goods or raw materials might face higher costs. The long-run positive effect suggests that the competitive advantage from a weaker naira can outweigh the cost increases associated with imports. This result is consistent with the study by Nwagbala et al, (2023), who found a positive relationship between naira devaluation and SMEs performance in Nigeria.

On the long-run coefficient estimate of inflation rate (INF) shows negative and statistically significant (-0.005196*). The negative coefficient for inflation indicates that higher inflation is associated with a decrease in SMEs performance in Nigeria in the long run. This result is significant at the 10% level, suggesting that high inflation can have a detrimental effect on SMEs. In the long run, rising prices can erode profit margins and increase operational costs, which negatively impacts the performance of SMEs. Nigeria has been experiencing high inflation rates, which can erode purchasing power and increase the cost of inputs for SMEs. The negative long-run effect of inflation on SMEs aligns with the challenges faced by Nigerian businesses dealing with high inflation, which negatively impacts their operational efficiency and profitability. This result is in tandem with the study by Lawal and Akanbi, (2020), who found negative significant effect of INF on SMEs performance in the long run in Nigeria.

Also, the long-run coefficient of interest rate (0.035672**) reveals a positive and statistically significant which implies that, in the long run, an increase in the interest rate is associated with an increase in SMEs in the long run in Nigeria. This may seem unreasonable, as higher interest rates usually increase the cost of borrowing. However, this could indicate that SMEs in Nigeria might benefit from higher interest rates if they are seen as a sign of economic stability or if they have strong liquidity positions that allow them to capitalize on high rates. In Nigeria, high interest rates have traditionally been seen as a burden due to higher borrowing costs. However, the long-run positive effect in this model could indicate that higher interest rates might be associated with macroeconomic stability or other factors that benefit SMEs. Alternatively, SMEs with significant cash reserves might benefit from higher returns on savings or investments. This result is consistent with the study by Lawal and Akanbi (2020) who found a positive impact of interest rate on SMEs in the long run.

The coefficient of the money supply (-0.478227***) is negative and statistically significant which suggests that an increase in the money supply is associated with a decrease in SMEs. In the long run, this could be due to inflationary pressures or misallocation of resources resulting from excessive liquidity. SMEs might struggle in an environment where money supply growth leads to inflation or financial instability. Excessive money supply growth in Nigeria could lead to inflationary pressures which negatively affect SMEs. The negative long-run coefficient for money supply suggests that excessive liquidity could disrupt economic stability and harm SME performance particularly if it leads to inflation or financial imbalances in the country. This result is consistent with the study by Ebire and Onmonya, (2018) who found a negative impact of money supply on SMEs in the long run.

Table 4.6: ARDL Estimation of the Long-run coefficients

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	0.006220***	0.000670	9.282588	0.0000
INF	-0.005196*	0.002917	-1.781417	0.0917
IR	0.035672**	0.010227	3.487874	0.0026
MS	-0.478227***	0.103562	-4.617788	0.0002
C	1.736420***	0.467595	3.713510	0.0016

***, **, *, indicate significance at 1%, 5% and 10% respectively.

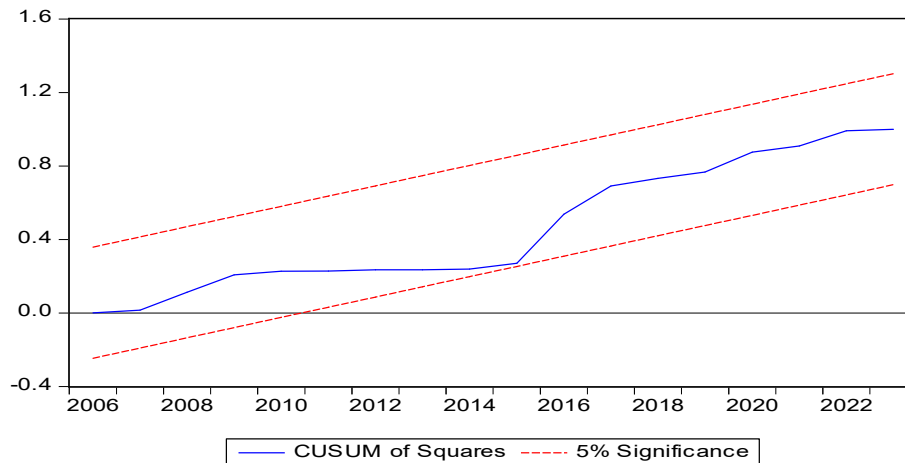
Source: Author's Computation, 2024

Model Stability Tests

Additionally, this study also conducted parameter stability tests of the model to validate the stability of the error-corrected ARDL parameter stability using the cumulative sum of squares (CUSUMQ) to the recursive residuals. This is to ensure that the estimated parameters of the model are not varying over time. The null hypothesis of these tests is that the regression equation is correctly specified. Figures 3 presents the cumulative sum of squares (CUSUMSQ) graphs. The pair of straight lines in each Figure indicates the 5 percent significance level and if the plotted CUSUMSQ graphs remain inside the straight lines, the null hypothesis of correct

specification of the model can be accepted, otherwise the null hypothesis is rejected and it can be concluded that the regression equation is mis specified. It was observed from the Figure that the CUSUMSQ plot stays within the lines. This, therefore, indicates the 5 percent level of significance which concludes that the equation has been correctly specified and there is the absence of instability of the coefficients.

Figure 3: Plot of Cumulative Sum of Square of Recursive Residuals



Conclusion

The broad objective of this study investigates the effects of Naira devaluation on SMEs performance in Nigeria for the period 1991 to 2023. The empirical model was estimated using the Autoregressive Distributed Lag (ARDL) Model method. Both the short run and long-run relationship between the dependent variable (SMEs performance) and independent variables (Naira devaluation, (proxy by exchange rate fluctuation), inflation rate, interest rate and money supply) were estimated. The study indicated that EXR has a negative significant short run effect on SMEs performance while, in the long run, it has positive significant influence in the SMEs in the economy of Nigeria. The positive and statistically significant coefficient suggests that a depreciation of the naira might be beneficial for SMEs in the long run, possibly due to increased competitiveness in export markets or improved profit margins on foreign sales. However, SMEs that rely heavily on imported goods or raw materials might face higher costs. The long-run positive effect suggests that the competitive advantage from a weaker naira can outweigh the cost increases associated with imports.

There is also evidence that inflation rate (INF) has negative insignificant impact on SMEs performance in the short while in the long run it has negative significant relationship with SMEs performance in Nigeria. Interest rate (IR) was shown to have positive and significant impact on SMEs performance (SMEs) both in the short and long run in Nigeria, while money supply (MS) has positive significant impact on SMEs in the short while it exerts negative significant impact on SMEs performance in the long run in Nigeria.

Based on the findings of this study, it is recommended that in order to promote the sustainable growth and financial health of the SMEs in the country, it is necessary for Nigeria government to establish policies and interventions aim at mitigating the effects of currency devaluation impact SME credit dynamics and promoting sustainable economic growth of SMEs in Nigeria. This can be achieved through appropriate subsidies and import restrictions in the economy over time.

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