AN EVALUATION OF THE IMPACT OF EXCHANGE RATE MANAGEMENT ON MANUFACTURING SECTOR PERFORMANCE IN NIGERIA

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ABSTRACT

This study investigates the impact of exchange rate management on the performance of the manufacturing sector in Nigeria from 1970 to 2023, employing the Autoregressive Distributed Lag (ARDL) model. The primary objective is to measure the relationships between manufacturing value-added (MVA), exchange rate (EXR), inflation rate (INF), interest rate (INT), balance of payment (BOP), and crude oil revenue (COR). The results reveal that the exchange rate has a significant negative impact on manufacturing sector performance in both the short run and long run, with coefficients of -0.0894 (p = 0.0436) and -0.0284 (p = 0.0168) respectively. Inflation rate also shows a significant negative short run impact with a coefficient of -0.0989 (p = 0.0421). Conversely, crude oil revenue positively influences the manufacturing sector, with short run and long run coefficients of 0.0413 (p = 0.0030) and 1.885 (p = 0.000) respectively. The error correction term (ECT) is significant at 5% level of significance (p = 0.0000), indicating a high speed of adjustment (66%) towards long run equilibrium. These findings underscore the critical role of exchange rate stability, inflation control, and effective utilization of crude oil revenue in enhancing the performance of Nigeria's manufacturing sector. The study recommends implementing policies to stabilize the exchange rate, such as maintaining adequate foreign exchange reserves and adopting a more flexible exchange rate regime to reduce exchange rate volatility in order to enhance the performance of Nigeria's manufacturing sector.

Keywords: Exchange rate; Manufacturing sector; ARDL; Inflation rate; Crude oil revenue
JEL Classification: E31, E32, E62, F31, L60

INTRODUCTION

In 1986, Nigeria embraced the Structural Adjustment Programme (SAP), a World Bank Programme that led to the deregulation of exchange rates and introduction of

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various reforms and policies as measures to save the then ailing manufacturing sector. For example, the exchange rate policy introduced first and second tier foreign exchange market for official and parallel exchange rates respectively in 1986 which was unified a year later in 1987 as foreign exchange market before it was later re-modified to accommodate Bureau De Change (BDC) as an Autonomous Foreign Exchange Market (AFEM) in 1988. Speculative activities ridiculed AFEM objectives, so it was transformed into Interbank Foreign Exchange Market in 1989. Just a year later it was modified by Dutch Auction System (DAS) as Inter-Bank Foreign Exchange Market (IFEM) in 1990, a policy status that lasted for at least two years before absolute deregulation was adopted to replace it in 1992. The Central Bank of Nigeria re-introduced peg exchange rate of ₦21/ $1 in 1994.

Exchange rate policy is important for the growth of manufacturing sector. For instance, China's control over its currency contributes to the nation's balance of payment (BOP) surpluses. Similarly, Germany's high balance of trade (BOT) surpluses since the introduction of the Euro are attributed to the Euro's weaknesses relative to the Dutch Mark (IMF, 2011, Morgau, 2014). On the other hand, the persistent United States deficits were caused by dollar's status as reserve currency globally. According to the World Bank (2020) World Development Indicators, the United Kingdom floated its currency and overvalued it at GBP1/ $1.39 with 17.4% of Manufacturing Value Added (MVA) of Gross Domestic Product (GDP) which is close to Germany that adopted Euro under fixed and overvalued exchange rate policy at EUR1/ $1.18 and still records 17.8% Manufacturing Value Added. China adopted a fixed exchange rate policy, and the Chinese Yuan (CNY) is pegged and devalued at CNY 6.48/$1 and achieved almost 30% of MVA in 2020.

In Nigeria, the exchange rate depreciated sharply from ₦2.02/$1 in 1986 to ₦17.30/$1 by 1992 and further to ₦1561/$1 in 2023 (CBN, 2025). Exchange rate policy in Nigeria has undergone several transformations, reflecting the country's efforts to stabilize its currency and foster economic growth. However, the volatility and frequent devaluations of the Nigerian Naira have posed substantial challenges to the manufacturing sector. These challenges include increased costs of imported raw materials and machinery, reduced competitiveness of locally produced goods, and heightened uncertainty in business planning and investment (Akinlo & Lawal, 2015).

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Conceptual Framework

The conceptual framework for this study is based on the relationship between exchange rate policy and manufacturing sector performance, mediated by several key variables such as import costs, investment levels, and production efficiency.

Exchange Rate Policy

This includes both the level and volatility of the exchange rate. Exchange rate devaluation and fluctuations are the primary focus, as they directly impact the cost of imported inputs and capital goods essential for manufacturing (Akinlo & Lawal, 2015).

Import Costs

Exchange rate devaluation increases the cost of imported raw materials and machinery, which are critical for the manufacturing sector. Higher import costs can lead to increased production costs, thereby reducing the competitiveness of locally manufactured goods (Ogunleye, 2009).

Investment Levels

Exchange rate volatility creates uncertainty, which can deter both domestic and foreign investment in the manufacturing sector. Uncertainty in exchange rates makes it difficult for manufacturers to plan and budget effectively, leading to reduced investment and slower growth (Eme & Johnson, 2012).

Production Efficiency

The efficiency of production processes in the manufacturing sector can be affected by exchange rate policies. Stable exchange rates can enhance production efficiency by providing a predictable environment for sourcing inputs and planning production schedules (Aliyu, 2009).

Manufacturing Sector Performance

The overall performance of the manufacturing sector is measured by output levels, contribution to GDP, and employment rates. The impact of exchange rate policy on these performance indicators is analyzed to understand the broader economic implications (Akinlo & Lawal, 2015).

Theoretical Framework

The theoretical framework for evaluating the impact of exchange rate policy on the manufacturing value-added performance in Nigeria is grounded in several economic theories and models that explain the relationship between exchange rates, trade, and industrial performance. The following theories are considered relevant for this study.

Purchasing Power Parity (PPP) Theory

The purchasing power parity (PPP) theory posits that, in the long run, exchange rates should adjust to equalize the price levels of identical goods and services in different countries. This theory is relevant as it suggests that exchange rate movements can affect the cost of imported inputs and capital goods, which are crucial for the manufacturing sector (Rogoff, 1996).

Exchange Rate Pass-Through (ERPT) Theory

The exchange rate pass-through (ERPT) theory examines the extent to which changes in the exchange rate are reflected in domestic prices. High pass-through rates mean that exchange rate fluctuations significantly affect domestic prices, including the cost of imported goods. This theory is crucial for understanding how exchange rate volatility can lead to increased production costs and reduced competitiveness in the manufacturing sector (Goldberg & Knetter, 1997).

This study is anchored on the purchasing power parity (PPP) theory and Keynesian absorption approach theory. The choice of these theories is based on the fact that purchasing power parity (PPP) Theory made relevant clarification on dynamics of bilateral exchange rate fluctuations with adequate analysis of real exchange rate and the exchange rate pass-through (ERPT) theory described how exportation of domestic product contributes to economic growth and also relieves an economy from external pressure that can cause shock and burden on the manufacturing sector in particular.

Empirical Review

Empirical studies using econometric models have provided robust evidence on the relationship between exchange rate policy and manufacturing performance. For example, the Autoregressive Distributed Lag (ARDL) model has been employed to assess the long-term and short-term impacts of exchange rate changes on manufacturing output. These studies generally find that while short-term effects may be mixed, the long-term impacts of stable exchange rate policies are positive for the manufacturing sector (Aliyu, 2009; Eme & Johnson, 2012).

In Nigeria, Akinlo and Lawal (2015) conducted a study on the impact of exchange rate devaluation on industrial production in Nigeria from 1986 to 2010. Using an Ordinary Least Squares (OLS) regression model, they found that exchange rate devaluation significantly increases the cost of imported inputs and capital goods, which are essential for manufacturing, leading to a decline in manufacturing output and competitiveness. Their findings suggest that devaluation, while intended to boost exports, can have adverse effects on sectors reliant on imported materials. Ogunleye (2009) examined the effect of exchange rate volatility on foreign direct investment (FDI) in Nigeria and South Africa. The study employed a Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model to measure volatility and its impact on FDI inflows. The results indicated that high exchange rate volatility deters FDI in the manufacturing sector, as investors are wary of the risks associated with unpredictable exchange rates. This is because unpredictable exchange rates create uncertainty, making it difficult for manufacturers to plan and budget effectively. This finding underscores the importance of stable exchange rate policies to attract and retain investment in the manufacturing sector. In another study, Eme and Johnson (2012) analysed the effect of exchange rate movements on economic growth in Nigeria, focusing on the manufacturing sector. Using a Vector Error Correction Model (VECM), they found that exchange rate volatility and high inflation rates negatively impact manufacturing output as exchange rate volatility disrupts production schedules and investment flows. Their study highlighted that macroeconomic instability, characterized by fluctuating exchange rates and high inflation, poses significant challenges to the manufacturing sector's growth and sustainability.

In addition, Aliyu (2009) investigated the relationship between exchange rate volatility, oil price shocks, and economic growth in Nigeria. The study used an Autoregressive Distributed Lag (ARDL) model to assess the long-term and short-term impacts of these variables on manufacturing output. The findings revealed that stable exchange rates and increased FDI positively influence manufacturing performance, while exchange rate volatility and oil price shocks have detrimental effects. Aliyu (2009) noted that devaluation often results in higher production costs, which can stifle the growth of the manufacturing sector. Similarly, Tams-Alasia, Olokoyo, Okoye and Ejemeyovwi (2018) examined the impact of exchange rate deregulation on manufacturing output performance in Nigeria over the period 1980 to 2016. Using a Canonical Cointegrating Regression (CCR) framework, the empirical findings revealed that exchange rate deregulation has a non-significant positive long run effect on manufacturing industry output (Tams-Alasia et al., 2018).

METHODOLOGY

This study evaluates the impact of exchange rate policy on the performance of the Nigerian manufacturing sector using secondary data from Central Bank Statistical Bulletin. The data covered a period from 1970 to 2023, encompassing variables such as manufacturing value-added (MVA), exchange rate (EXR), inflation (INF), interest rate (INT), balance of payment (BOP) and crude oil revenue (COR). The Autoregressive Distributed Lag (ARDL) model was used to analyse the relationship between exchange rate policy and manufacturing sector performance. The study used the Augmented Dickey-Fuller (ADF) test to assess stationarity of the variables and the Bounds Testing approach to cointegration within the ARDL framework to test for a long-term relationship between the variables. The ARDL model was estimated using EViews 12 and diagnostic tests were conducted to ensure the robustness of the results.

The Error Correction Model (ECM) is a useful econometric tool for analysing short-term and long-term dynamics between cointegrated variables. The ECM results will provide insights into how quickly the manufacturing sector adjusts to changes in exchange rate policy, which is crucial for policymakers to design interventions that minimize short-term disruptions while promoting long-term stability and growth in the manufacturing sector.

Model Specification

The study model is specified as follows:

$$MVA = f(EXR, INF, INT, BOP, COR) \quad (1)$$

Where: MVA = manufacturing value-added; EXR = exchange rate; INF = inflation; INT = interest rate; BOP = balance of payment; and COR = crude oil revenue.

Equation 1 is transformed into its econometric form as follows:

$$\Delta MVA = \alpha_0 + \alpha_1 EXR + INF + \alpha_3 INT + \alpha_4 BOP + \alpha_5 COR + \varepsilon_t \quad (2)$$

The model in equation 2 is transformed into ARDL model as follows:

$$\begin{aligned} \Delta MVA = \alpha_0 &+ \alpha_1 MVA_{t-1} + \alpha_2 EXR_{t-1} + \alpha_3 INF_{t-1} + \alpha_4 INT_{t-1} + \alpha_5 BOP_{t-1} \\ &+ \alpha_6 COR_{t-1} + \alpha_{1i} \Delta MVA_{t-i} + \alpha_{2i} \Delta EXR_{t-i} + \alpha_{3i} \Delta INF_{t-i} \\ &+ \alpha_{4i} \Delta INT_{t-i} + \alpha_{5i} \Delta BOP_{t-i} + \alpha_{6i} \Delta COR_{t-i} + \varepsilon_t \end{aligned} \quad (3)$$

The ARDL, as described by Pesaran, Shin and Smith (2001), is an autoregressive model that describes the short run dynamic link among the specified variables in the model was adopted to evaluate the effects of exchange rate policy on the performance of Nigeria's manufacturing sector from 1970 to 2023. It is distinguished by a distributed lag component and a symmetric adjustment process that seeks long run equilibrium. The Akaike Information Criteria (AIC) are used to turn the model into an ARDL model, with penalties for loss of degree of freedom and additional coefficients. The F-statistic or Wald statistic is used to test for cointegration, and the hypothesis is accepted or rejected based on a comparison of the calculated F-statistic to the F-statistic given by Pesaran, Shin and Smith (2001) and Narayan (2005) for small samples. If cointegration is demonstrated, the ARDL model can be converted into an error correction model (ECM) specification for this study, which will include first lag short run coefficients, long run coefficients, and convergence coefficients. The study then evaluates the long run effect and short run dynamics using the error correction term (ECT) equation, which describes the output evolution process by which agents adjust for prediction errors committed during the previous period.

RESULTS

Descriptive Analysis

Table 1: Descriptive Statistics

Variables	MVA	EXR	INF	INT	BOP	COR
Mean	10.69444	103.5036	18.70732	-0.112574	3.03E+10	21.95185
Median	10.90000	21.94563	13.76010	2.683386	1.95E+09	13.75000
Maximum	15.80000	638.7000	72.83550	18.18000	5.00E+11	60.00000
Minimum	5.200000	0.546781	5.388008	-65.85715	-1.70E+10	0.500000
Std. Dev.	3.106865	139.6220	14.90055	12.79021	1.09E+11	18.69327
Skewness	-0.137846	1.746704	2.012291	-2.742392	3.836835	0.740510
Kurtosis	1.870184	6.052913	6.381345	14.50600	15.94576	2.199015
Jarque-Bera	3.043101	48.42940	62.16919	365.5597	509.5754	6.378737
Probability	0.218373	0.000000	0.000000	0.000000	0.000000	0.041198
Sum	577.5000	5589.248	1010.195	-6.079016	1.63E+12	1185.400
Sum Sq. Dev.	511.5883	1033187.	11767.40	8670.245	6.25E+23	18520.23
Observations	54	54	54	54	54	54

Source: Researcher's Computation using EViews 12 Software, 2024

Keynotes: MVA = manufacturing value-added; EXR = exchange rate; INF = inflation; INT = interest rate; BOP = balance of payment; COR = crude oil revenue

The results demonstrated the fundamental statistical characteristics of the variables employed in the study, such as manufacturing value-added (MVA), exchange rate (EXR), inflation (INF), interest rate (INT), balance of payment (BOP) and crude oil revenue (COR) for the sample period (1970–2023), which must be ascertained. It can be seen from Table 1 that the MVA exhibits an average of 10.69% during the period of study. This shows that over the fifty-four years under examination, Nigeria's manufacturing value added has increased by about 10.69% of GDP per year on average. On the other hand, while the exchange rate (EXR) has a mean of ₦103.50, inflation rate (INF) has a mean of 18.71% during the study period. The mean scores for interest rate (INT), balance of payment (BOP) and crude oil revenue (COR) are respectively -0.11%, \$3.03 billion and \$21.95. When the data are organized in ascending or descending order, the median is the value that falls in the middle of the series. In accordance with Table 1, the median for MVA is about 11% while the medians for EXR, INF, INT, BOP and COR are, respectively, ₦22, 14%, 3%, \$2 and \$14 billion. The series' maximum and minimum values for the time period under consideration are known as Maximum and Minimum. The maximum value for MVA, according to Table 1, is 15.80% while those for EXR, INF, INT, BOP and COR are, respectively, ₦639, 73%, 18%, \$5 and \$60 billion. The minimal value, on the other hand, for MVA is 5% while the minimum values for EXR, INF, INT, BOP and COR are, respectively, ₦0.55, 5%, -66%, -\$1.70 and \$0.50 billion. A measure of the spread or dispersion in the series is the standard deviation. Table 1 shows that the standard deviation (SD) for MVA is 3%, while the

SD for EXR, INF, INT, BOP and COR are, respectively, ₦140, 15%, 13%, $1.09 and $19 billion. This demonstrates that whereas balance of payment has a relatively small spread over time, exchange rate has the biggest spread across the research period.

A real-valued random variable's probability distribution around its mean is measured by skewness. At point 0, a normal distribution is symmetrical. Positively skewed values are those that are more than zero, whereas negatively skewed values are those that are less than zero. All the variables (except manufacturing value-added and interest rate) show positive skewness.

The Jarque-Bera test statistic is used to determine whether the series' normal distribution is present or not. According to Table 1, the Jarque-Bera (JB) for MVA is 3.04 while the JB values for EXR, INF, INT, BOP and COR are, respectively, 48.43, 62.17, 365.56, 509.58 and 6.38. The probability values of the Jarque-Bera statistic show that all the variables were found to be lesser than 5% level of significance (except MVA), thus supporting the null hypothesis that the residual of the variables has a normal distribution with zero means and constant variance.

Correlations Analysis

Table 2 is the correlation analysis result for this study. None of the independent variables (except COR) are substantially correlated with one another, according to the correlation coefficients in Table 2.

Table 2: Correlation Analysis Results

	MVA	EXR	INF	INT	BOP	COR
MVA	1	0.7374	-0.1133	0.2879	0.2695	0.8312
EXR	0.7374	1	-0.1201	0.1710	0.0556	0.6960
INF	-0.1133	-0.1201	1	-0.5119	-0.1873	-0.2401
INT	0.2879	0.1710	-0.5119	1	0.1651	0.2457
BOP	0.2695	0.0556	-0.1873	0.1651	1	0.4884
COR	0.8311	0.6960	-0.2401	0.2457	0.4884	1

Source: Researcher’s Computation using EViews 12 Software, 2024

Unit Root Test

To check for the series' stationarity properties and avoid false results, the study computed the *Augmented Dickey-Fuller* (ADF) unit root test. The estimated result of the ADF is summarized and presented in Table 3.

Table 3: ADF Unit Root Test Results

Variables	ADF Test Statistic	Critical Value at 5%	Probability Value at 5%	Order of Integration
MVA	-7.568711	-3.498692	0.0000	I(1)
EXR	-5.954292	-3.508508	0.0001	I(1)
INF	-3.917090	-2.925169	0.0039	I(0)
INT	-5.660246	-3.506374	0.0001	I(0)
BOP	-7.042408	-3.498692	0.0000	I(1)
COR	-8.246848	-2.918778	0.0000	I(1)

Source: Author's computations using EViews, 2024

Table 3 shows the results of the ADF unit root test for analysing the stationarity qualities of the variables used in the study. In ADF, a variable is said to be stationary if the test statistic is smaller than the critical value at the 5% level of significance. Thus, according to the ADF results, variables EXR, BOP and COR were not stationary at levels but became stationary at the first difference; however, variables $INF$and INT were stationary at levels. The ADF unit root test resulted in a mixed order of integration, with some variables integrating at I(1) and others at I(0). The mixed order of integration among the variables employed in this study meant that the non-stationary variables could behave erratically, resulting in misleading results, necessitating the employment of a more robust methodology to account for the unique characteristics of a mixture of stationary and non-stationary data. The results of mixed order integration in ADF justified the use of ARDL models in this investigation.

Co-integration Test
Table 4: ARDL Bound Test for Cointegration
Dependent Variable: MVA

F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	Value	Significance	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	31.51334	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15
Actual Sample Size	53		Finite Sample: n = 55	

Source: Author's computation using EViews, 2024

In order to confirm the existence of cointegration among the variables, the study made use of ARDL bound cointegration test. The bound test is the test to determine if there is a long run relationship among the variables of interest. The Bound testing approach is based on F-statistics and two critical values which are called I(0) and I(1) bound. If the F-statistics is greater than I(1) bound, the variables are cointegrated. On the hand, if they are less than I(0), they are not cointegrated, and if it falls in between the two it is said to be inconclusive.

The bound test result with MVA as the dependent variable rejected the null hypothesis. The decision is to reject the null hypothesis of no levels relationship if the F-statistic is greater than the critical values of I(0) and I(1) at either 1% or 5% significance levels. The F-statistic value of 31.51 is greater than critical values of I(0) and I(1) at both 5% level of significance, the outcome implied that the variables had cointegration, which means that there exist a long run relationship between MVA and the explanatory variables (EXR, INF, INT, BOP and COR), which suggest that manufacturing value-added had a long run relationship between exchange rate, inflation, interest rate, balance of payment and crude oil revenue.

ARDL Error Correction Regression
Table 5: ARDL Error Correction Regression Result
Dependent Variable: MVA

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(EXR)	-0.089420	0.070878	10.18071	0.0436
D(EXR(-1))	-1.89E-12	4.81E-13	-3.937484	0.0203
D(LnCOR)	0.041345	0.051385	-14.19234	0.0030
D(BOP)	-1.89E-12	4.81E-13	-3.937484	0.0403
CointEq(-1)*	-0.663981	0.010357	-15.83270	0.0000

Source: Authors' computation using EViews

The main objective was to measure the relationship between manufacturing value-added (MVA), exchange rate (EXR), inflation (INF), interest rate (INT), balance of payment (BOP) and crude oil revenue (COR) in Nigeria. The lagged error correction term (ECT) is, as was predicted, negative, smaller than unity, and statistically significant at 5% (0.0000). The coefficient showed that once the system is out of equilibrium, it takes an average (high) speed of about 66% for it to return to a state of long run equilibrium. According to Banerjee, Dolado, and Mestre (1998), a highly significant lagged error correction term indicates the presence of a long-term relationship between the variables and their ability to shift from a state of disequilibrium to one of equilibrium.

The estimated coefficient of exchange rate (EXR) from the ARDL short run estimates was -0.0894 with the probability value of 0.0436. Thus, the study found from the short run estimation that exchange rate had a negative impact on the manufacturing sector performance in the short run and that the short run negative impact of exchange rate on manufacturing value-added performance was also statistically significant. Similarly, the coefficients of exchange rate regime (EXR) at lag 1 were negative and significant: -1.89 (0.0403).

This finding is in conformity with Orji and Ezeanyaeji (2022) who examined the impact of exchange rates on the performance of the manufacturing sector in Nigeria between 1990 and 2020 and found that exchange rate devaluation constrains manufacturing sector while exchange rate fluctuation hampers manufacturing output.

In the long run analysis, the estimated coefficient and the probability values of exchange rate (EXR) were -0.0284 and 0.0168 respectively, and the study found that exchange rate had a significant negative impact on manufacturing value-added performance in Nigeria. This finding is in conformity with Adebanjo et al. (2019).

The short run negative and significant impact of the exchange rate on Nigeria's manufacturing sector performance could be attributable to the naira's continued depreciation. Nigeria's weak naira currency is deteriorating as a result of recurrent exchange rate volatility caused by its import-dependent and monocultural economy. The low demand for naira and high demand for foreign currencies have a detrimental impact on economic growth, raising the price of naira in exchange for foreign currencies.

On the other hand, the long-term positive and significant impact of the exchange rate itself on manufacturing sector performance in Nigeria could be based on the assumption that the effect of exchange rate fluctuations is immediate and often direct because they pass through channels of transmission that take a shorter period of time for the impact to manifest, thereby making the long-term impact significant. Furthermore, the long-term favourable impact of the exchange rate on Nigerian manufacturing sector performance is related to the notion that the exchange rate is the primary source of Nigerian exports, on which the manufacturing sector relies to make money through the sale of commodities. These findings on both the short-term and long-term inverse relationships between exchange rate and manufacturing sector performance in Nigeria are in tandem with the findings by Adegboye and Alimi (2020), Oladipo and Akinbobola (2019), and Eze and Okpala (2021). The long run impact of manufacturing value-added (MVA), exchange rate (EXR), inflation (INF), interest rate (INT), balance of payment (BOP) and crude oil revenue (COR) are summarized in Table 6.

Table 6: ARDL Long Run Form Estimates
Dependent Variable: MVA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EXR	-0.028395	0.003376	2.486641	0.0168
INF	-0.018377	0.014684	1.251454	0.0214
INT	0.022053	0.017904	1.231785	0.0226
BOP	-3.65E-11	7.43E-12	-4.916604	0.0000
LNCOR	1.884947	0.248010	7.600277	0.0000
C	5.662055	0.627863	9.017976	0.0000

Source: Authors' computation using EViews

The manufacturing sector in Nigeria faces negative impacts from exchange rate fluctuations due to factors such as increased import costs, inflationary pressures, uncertainty and investment, competitiveness, and access to foreign exchange. The Naira depreciation increases the cost of imported goods, erodes consumer purchasing power, and increases operational costs. Additionally, the uncertainty and difficulty in accessing foreign exchange can hinder manufacturers' ability to import necessary inputs, negatively impacting production and performance (Adegboye & Alimi, 2020; Okorontah & Ede, 2021; Okpala, 2021; Ezeanyaeji, 2022). In an Error Correction Model (ECM) and its treatment of inflation, it is a fact that inflation is often considered a long-term phenomenon, which might explain why it was not included in the short run dynamics of our ECM (Morron Salmeron, 2016).

In the long run analysis, the estimated coefficient and the probability values of inflation rate (INF) were -0.0184 and 0.0214 respectively. This finding is similar to Ugwoke (2022), Akinbobola (2012), Adeniyi and Omisakin (2012) and Mordi and Adebiyi (2010) who found that inflation had a negative effect on manufacturing sector output in Nigeria. This finding was, however, contrary to Ogunleye and Ogunleye (2019), who studied inflation and manufacturing sector performance in Nigeria and found that the long-term impact of inflation on the manufacturing sector is insignificant.

The long-term positive and significant impact of the inflation rate on the manufacturing sector's performance in Nigeria found in this study could be because manufacturing could be influenced by factors like monetary policy, structural challenges, and government interventions. While inflation's impact on the manufacturing sector in Nigeria may not always be straightforward, the manufacturing sector's response to inflation may depend on factors such as supply chain dynamics, input costs, and consumer demand. Inflation does not significantly affect manufacturing output or employment. The study, however, found that inflation volatility negatively impacts manufacturing performance.

CONCLUSION AND POLICY RECOMMENDATIONS

This study examined the impact of key economic indicators on the performance of Nigeria's manufacturing sector from 1970 to 2023 using the ARDL model. The findings revealed that both short run and long run analyses indicated a significant negative impact of the exchange rate on manufacturing sector performance. This suggests that exchange rate volatility and devaluation constrain the sector's growth. The short run analysis showed a significant negative impact of inflation, indicating that higher inflation rates adversely affect manufacturing output. Both short run and long run analyses demonstrated a significant positive impact of crude oil revenue, highlighting the crucial role of crude oil revenue in supporting the manufacturing sector. The significant error correction term indicates a high speed of adjustment towards long run equilibrium, confirming the presence of a long-term relationship between the variables.

Based on the findings, the following policy recommendations are proposed to enhance the performance of Nigeria's manufacturing sector: Implement policies to stabilize the exchange rate, such as maintaining adequate foreign exchange reserves and adopting a more flexible exchange rate regime to reduce volatility; encourage export diversification to reduce dependency on oil exports and mitigate the adverse effects of exchange rate fluctuations; strengthen monetary policies to control inflation, such as tightening the money supply and using interest rate adjustments to manage inflationary pressures; enhance fiscal discipline to avoid excessive government spending that could lead to inflation; invest crude oil revenues in infrastructure development, particularly in the manufacturing sector, to boost productivity and competitiveness; establish a sovereign wealth fund to manage oil revenues more effectively and ensure long-term economic stability.

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