



MACROECONOMIC VARIABLES AND MANUFACTURING SECTOR IN NIGERIA

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Abstract

This study investigates the influence of key macroeconomic variables on the productivity of Nigeria's manufacturing sector over a 34-year period (1990–2023). Specifically, it examines the effects of exchange rate, inflation rate, and lending rate on the manufacturing sector's contribution to Gross Domestic Product (GDP). The analysis is based on time series data obtained from the 2023 Statistical Bulletin of the Central Bank of Nigeria (CBN), utilizing secondary data sources. Analytical methods employed include descriptive statistics, correlation analysis, unit root tests, and the Ordinary Least Squares (OLS) regression technique. The empirical results indicate that the exchange rate significantly affects the manufacturing sector's share of GDP. However, no significant relationship was found between either inflation or lending rates and manufacturing output. Based on the F-statistic, the overall model suggests that macroeconomic variables collectively have a significant impact on manufacturing productivity in Nigeria. In light of these findings, the study recommends that the government adopt policies aimed at stabilizing the exchange rate to support manufacturing growth. Additionally, the Central Bank should implement inflation-targeting strategies to mitigate cost-push inflation, especially in relation to input costs for manufacturers.

Keyword: Gross Domestic Product, Exchange Rate, Inflation Rate, Lending Rate, Manufacturing Sector.

Introduction

Macroeconomic variables play a pivotal role in influencing the productivity of the manufacturing sector, which, in turn, significantly contributes to national development and economic well-being. As a vital component of the secondary sector, manufacturing has the potential to drive economic growth, especially in developing countries. A robust manufacturing sector is often seen as a catalyst for economic advancement, as it promotes the availability of goods, generates employment and income, enhances efficiency, and strengthens a nation's balance of payments (Paulo, Souza, & Souza, 2017). Among the key macroeconomic variables, the exchange rate stands out due to its notable influence on the manufacturing sector. It affects the value of domestic currency in relation to foreign revenues and expenditures. According to Zhang et al. (2019), fluctuations in exchange rates directly impact earnings in the local currency, even before interest and financing costs are considered.

Meier and Quaas (2021) highlight that macroeconomic variables affect economies at an aggregate level by influencing all sectors. In the context of portfolio risk analysis, they argue that these variables constitute components of systematic risk not tied to any single firm which means such risks cannot be mitigated simply through diversification. Mismanagement of these variables can disrupt economic stability and hinder firm performance. As Anochie, Okerefor, and Bashir (2023) note, macroeconomic variables can either bolster or impair the performance of the manufacturing sector. Government policies are often designed to ensure macroeconomic stability and foster economic growth. These policies are typically implemented through instruments such as exchange rates, inflation control, and interest rates collectively referred to as macroeconomic variables (David-Wayas et al., 2018). When effectively applied, these policies can enhance investment,

stimulate capital formation, and improve performance across households, organizations, institutions, and economic sectors (Tapsin, 2017).

In Nigeria, inflation has become a persistent challenge. The continuous rise in the prices of goods and services has severely impacted the cost of living and economic stability. Data from the National Bureau of Statistics (NBS, 2023) show that inflation surged to a 33-month high, reaching 21.82% in January 2023, up from 21.34% in December 2021 marking 17 consecutive months of price increases. As of April 2021, inflation was at its highest in four years, with food prices accounting for over 60% of the overall increase. This inflationary pressure has driven approximately seven million Nigerians into poverty (Nasir, 2021). Recent years have also witnessed a weakening of Nigeria's macroeconomic fundamentals. The combination of high inflation, sluggish real GDP growth, volatile exchange rates, low industrial capacity utilization, and elevated lending rates has stifled private sector investment. Among these issues, inflation remains particularly damaging as it affects not only economic performance but also financial markets dampening stock market returns and broader economic stability (Tarza, Iorember & Usar, 2017).

The manufacturing sector is a key pillar of economic development, playing a fundamental role in driving growth in many countries. As a sub-sector of the broader industrial sector, it is responsible for the production of goods and services through the integration of raw materials with essential production factors such as labor, land, capital, technology, and entrepreneurial skills. In Nigeria, the manufacturing sector has contributed meaningfully to economic advancement by transforming raw materials into finished goods, creating employment, supporting agricultural development, promoting economic diversification, and enhancing foreign exchange earnings. According to Gbadebo, Adekunle, Muritala, and Fadeyi (2017), the manufacturing sector serves as a catalyst for structural transformation and economic diversification, allowing nations to optimize their factor endowments for sustainable development. In many OECD countries, the manufacturing sector now surpasses the service sector in terms of its contribution to Gross Domestic Product (GDP) (Ademola & Afolabi, 2023).

Historically, the manufacturing sub-sector has been instrumental in the economic growth and social transformation of nations. However, in Nigeria, its full potential remains unrealized. The sector has yet to fully translate into increased productive output, substantial foreign exchange earnings, robust GDP contribution, job creation, and improved living standards. Efforts by the Nigerian government to reform the financial system and enhance funding access for the manufacturing sector have been widely discussed in literature (Nwabuisi et al., 2020). Nonetheless, the sector still struggles to access adequate financing. Persistent challenges such as high interest rates on loans, stringent deposit requirements from commercial banks, limited access to foreign exchange, and volatility in exchange rates have discouraged banks from extending credit to manufacturers (Oparah, Ugochukwu & Okoye, 2023). These obstacles have continued to hinder the sector's growth and productivity.

Other structural deficiencies in Nigeria's economy such as hyperinflation, deflation, soaring interest rates, and fluctuating exchange rates further impact firm-level productivity. Limited access to financial capital, whether through debt or equity, constrains firms' ability to meet investment and operational demands. Adedoyin et al. (2022) note that Nigeria's exchange rate regime significantly influences the sector's ability to leverage trade openness, especially in supporting the importation of machinery, raw materials, and technology transfers. Access to credit is positively

associated with firm productivity, as increases in money supply tend to enhance output. However, empirical studies have shown that key macroeconomic variables such as inflation, interest rates, and exchange rates often negatively affect the performance of small and medium-sized enterprises (SMEs) (Okeke et al., 2020). Similarly, Omengbeoji et al. (2021) report that inflation, interest rates, and corporate taxes adversely impact the agricultural sector, lowering its productivity. John (2019) found that while money supply, exchange rate, and inflation positively influence stock market performance, interest rates exert a significant negative effect. Additionally, Rasheed (2010) argue that high lending rates, by raising production costs, pose a major threat to the growth and competitiveness of Nigeria's manufacturing sector (Anochie, Okereafor & Bashir, 2023).

Objective of the Study

The broad objective of this study is to investigate the impact of macroeconomic variables on the growth of manufacturing output in Nigeria. However, the specific objectives are:

- i. To investigate the effect of inflation rate on the manufacturing output in Nigeria.
- ii. To examine the impact of lending rate on the manufacturing output in Nigeria.
- iii. To identify the influence of exchange rate on the manufacturing output in Nigeria.

Literature Review

Concept of Macroeconomics Variables

Macroeconomic variables are key indicators that influence and reflect the overall trends and performance of an economy. These variables often referred to as macroeconomic parameters include Gross Domestic Product (GDP), exchange rate, interest rate, inflation, and money supply. Among them, GDP is the most comprehensive quantitative measure of a nation's economic activity. It reflects the total monetary value of all goods and services produced within a country's borders over a specific period, typically one year (Obidike & Nuduka, 2022). The exchange rate refers to the value at which one country's currency is exchanged for another's. When one nation's currency has a weaker exchange rate compared to another, it affects purchasing power. For instance, if the Nigerian naira has a lower exchange rate relative to the U.S. dollar, Americans will have greater purchasing power than Nigerians when engaging in international trade or travel. Interest rate, on the other hand, represents the cost of borrowing money and is a critical determinant of investment and consumption decisions.

According to Iwedi (2016), macroeconomic stability is the foundation of sustainable economic development. It enhances national savings, encourages private investment, boosts export performance, and strengthens the balance of payments by improving competitiveness. Stability in macroeconomic indicators such as low inflation, minimal fiscal deficits, and a steady real exchange rate is essential for ensuring economic growth and improving the well-being of citizens. Furthermore, macroeconomics as a discipline encompasses various theories related to consumption, savings, and investment. It underscores the importance of national savings as a source of investment capital and explores the interconnected behavior of different economic agents. For example, analyzing the reasons behind rising costs in a particular firm or industry often requires understanding the broader economic environment and the average cost structures affecting the entire economy (Okorontah & John, 2022).

Concept of Manufacturing Sector

Manufacturing refers to the process of producing goods for use or sale through the application of labor, machinery, tools, chemical processes, or biological transformation. The term encompasses a wide range of human activities from artisanal craftsmanship to advanced technological

production but is most often associated with industrial-scale operations that convert raw materials into finished products. These products may either be sold to other manufacturers for use in creating more complex goods, such as automobiles, aircraft, or home appliances, or distributed through wholesalers and retailers to reach end consumers (Serope & Schmid, 2015). In essence, manufacturing involves the transformation of inputs whether raw materials or component parts into marketable goods using manual or mechanized processes. Typically, this takes place along production lines involving a combination of skilled labor and specialized machinery, and is carried out on a large scale to meet market demand.

Manufacturing plays a crucial role in the economic development of any nation. In developed economies, it contributes a significant share of overall economic activity. In the case of Nigeria, the manufacturing sub-sector accounts for approximately 10% of the country's annual Gross Domestic Product (GDP), and provides employment to around 17% of the formal labor force (NBS, 2018). Because of this, manufacturing indicators serve as key metrics in evaluating national economic performance. The sector encompasses a wide variety of industries, ranging from small-scale agro-based enterprises to large-scale heavy industries such as iron and steel manufacturing. It is essential that manufacturing data be collected and reported at all levels of government local, state, regional, and national to ensure comprehensive economic planning and policy formulation. According to the United Nations Industrial Development Organization (UNIDO, 2022), manufacturing also includes a range of associated services that are directly linked to manufacturing activities. These include wholesale and retail trade, logistics and transportation, as well as business services like equipment leasing, research and development, and ICT-related services. The demand for such services is often driven by industrial production, making them integral components of the broader manufacturing ecosystem.

Theoretical Review

International Fisher Effect (IFE) theory

The International Fisher Effect (IFE) theory originates from the broader work of economist Irving Fisher on the relationship between interest rates and inflation. His seminal book, *The Theory of Interest* (1930), laid the foundation for understanding how interest rates can influence currency movements, leading to the development of the IFE theory. The theory establishes a connection among three key macroeconomic variables: interest rate, inflation rate, and exchange rate. According to the International Fisher Effect, differences in nominal interest rates between countries are indicative of expected changes in exchange rates. Specifically, a currency associated with a higher nominal interest rate is expected to depreciate relative to a currency with a lower nominal interest rate. This depreciation offsets potential gains from interest rate differentials, thereby preventing arbitrage opportunities. For example, if the U.S. interest rate is higher than Nigeria's, the IFE suggests that the U.S. dollar should depreciate against the Nigerian naira by an amount roughly equal to the interest rate differential.

This relationship is typically reflected in the forward exchange rate. When the forward rate of a currency is lower than its current spot rate, the currency is said to be trading at a discount indicating expectations of depreciation. Conversely, a currency trading at a premium in the forward market is expected to appreciate. Therefore, under the IFE framework, countries with higher nominal interest rates often driven by inflationary pressures tend to experience depreciating currencies, while those with lower rates are expected to see currency appreciation (Madura, 2010). An example of the IFE's implications can be observed during Nigeria's exchange rate deregulation in 1988. At that time, the interest rate was 16.62%, the exchange rate stood at ₦4.53 to \$1 USD, and

inflation was exceptionally high at 34.24%. The high inflation and interest rates led to a significant depreciation of the naira. While exports became relatively cheaper, the cost of importing raw materials surged, making domestic production more expensive.

Endogenous Growth Theory

The Endogenous Growth Theory was proposed by Paul Romer in 1986. This theory emphasizes that interest in human resources, information, and technological advancement serves as the driving force behind accelerating economic growth. Improvements in productivity increase the pace of growth and encourage further investment in human capital. Romer highlighted the importance of government and private sector institutions in supporting growth by providing incentives for individuals and businesses to innovate. A central idea of the theory is that the accumulation of knowledge is a key determinant of economic growth. Industries focused on knowledge, such as telecommunications, electronics, software development, and biotechnology, are becoming increasingly important, especially in developing countries. Proponents of the theory believe that positive externalities from the high value-added knowledge economy can be leveraged to create and sustain competitive advantage and growth within the global economy.

The main principles of the endogenous growth theory include several important points. First, the rate of technological progress should not be considered fixed or constant in growth models. Second, government policies can permanently raise a country's growth rate by fostering more intense market competition and encouraging product and process innovations. Third, the theory challenges the assumption of diminishing returns by emphasizing the presence of increasing returns to scale from new capital investments. Endogenous growth theorists strongly support the idea that economies of scale apply to nearly all industries and markets. Private sector investment in research and development is a crucial source of technical progress. Additionally, the availability of a skilled workforce is essential for long-term growth. Government policies should encourage entrepreneurship and the creation of new businesses, which serve as important sources of employment, investment, and economic expansion.

Empirical Review

Anochie, Okereafor, and Bashir (2023) investigated the effects of macroeconomic variables namely exchange rate, interest rate, and inflation rate on the productivity of Nigeria's manufacturing sector. The study was guided by three research hypotheses and utilized secondary annual time series data spanning from 1980 to 2020, sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin. Employing ordinary least squares (OLS), cointegration, and regression analysis techniques, the findings indicated that both exchange rate and interest rate have a significant impact on manufacturing productivity, while inflation rate showed no significant effect. Consequently, the study concluded that stabilizing exchange and interest rates is critical for sustaining steady growth and enhancing the performance of manufacturing firms in Nigeria.

Similarly, Ariwa (2023) examined the influence of these macroeconomic variables on Nigeria's manufacturing sector performance over the period 1999 to 2022. Using the OLS method to analyze data from the CBN Statistical Bulletin and World Development Indicators, the study found that the exchange rate positively and significantly affects manufacturing performance. However, inflation and interest rates were found to have negative but statistically insignificant impacts. The author recommended that the Nigerian government strengthen its exchange rate policies to boost exports of finished goods, thereby improving manufacturing sector performance.

Adedoyin, Ezekiel Bose, Joseph, Asaleye, DickTonye, and Elizabeth (2022) assessed the impact of macroeconomic, socio-economic, and political factors on Nigeria's manufacturing subsector using the autoregressive distributed lag (ARDL) model on data from 1986 to 2019. The study was framed within the contexts of the Solow growth and endogenous growth theories. Results suggested that both theories are valid in the short run, but only the endogenous growth model holds in the long run. The authors emphasized that sustainable economic growth driven by a robust manufacturing sector requires alignment between macroeconomic variables and socio-political conditions.

Loretta (2021) explored the effects of macroeconomic variables on Nigeria's manufacturing sector during the liberalized economic period from 1986 to 2018, utilizing the ARDL approach. The findings revealed that macroeconomic variables exert a 93% significant influence on manufacturing output in the short run, but no significant long-run effects were detected. The study also highlighted that past manufacturing output significantly influenced the current year's macroeconomic relationships. Specifically, money supply (M2), interest rate, and credit to the private sector positively affected manufacturing output in the short term. The study concluded that macroeconomic variables impact Nigeria's manufacturing sector to varying degrees over different time horizons.

Ac-Ogbonna (2021) examined how fluctuations in exchange rate, lending rates, and inflation affect manufacturing output in Nigeria through descriptive analysis. The study found that macroeconomic instability adversely impacts manufacturing output. Based on this, the author recommended designing and implementing policies to stabilize volatile exchange rates, interest rates, and inflation, thereby enhancing predictability to aid planning and attract both domestic and foreign investment into the manufacturing sector.

Methodology

The paper adopts an ex post facto research design to collect relevant time series data related to the topic under study. The population of interest is the Nigerian economy, as the research examines macroeconomic dynamics at the national level. Due to the aggregated nature of the economic data, sampling was deemed impractical. Consequently, the study population consists of key economic indicators for Nigeria. The sample period spans 34 years, from 1990 to 2023. Secondary data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin to accurately represent the prevailing economic conditions. The study considers manufacturing output share of Gross Domestic Product (GDP) as the dependent variable, while exchange rate, lending rate, and inflation rate serve as the independent variables. The model is specified as follows:

$$MGDP = F (EXR, LER, INFR)..... (1)$$

Hence, the econometric form of the model is:

$$MGDP = \beta_0 + \beta_1 EXR + \beta_2 LER + \beta_3 INFR + \mu..... (2)$$

Where:

MGDP = Manufacturing Output Share of Gross Domestic Product

EXR = Exchange Rate

LER= Lending Rate

INFR= Inflation Rate

β_0 = Constant term;

β_1 - β_3 = Coefficient of explanatory variables

μ = Error term representing factors other than those specified in the model

A priori Expectation

Theoretical expectation suggested that the level of exchange rate, lending rate and inflation rate by any country are expected to have positive impact on manufacturing sector in Nigeria. Therefore, on this basis the mathematical expression for this study's a priori expectation are: $\beta_1 > 0$, $\beta_2 > 0$, $\beta_3 > 0$.

Data Analysis, Interpretations and Discussion of Findings

Descriptive Statistics

	MGDP	EXR	INFR	LER
Mean	6312.449	161.3143	18.56534	18.08611
Median	2801.167	130.7518	12.10000	17.76781
Maximum	28442.90	645.1941	76.75887	29.80000
Minimum	87.96048	8.037808	0.223606	11.48313
Std. Dev.	8168.260	143.1284	16.63585	3.719132
Skewness	1.617652	1.425228	2.138833	0.913973
Kurtosis	4.513267	5.187668	6.965416	4.760963
Jarque-Bera	18.07266	18.29057	48.19918	9.126708
Probability	0.000119	0.000107	0.000000	0.010427
Sum	214623.2	5484.685	631.2216	614.9279
Sum Sq. Dev.	2.20E+09	676029.4	9132.800	456.4540
Observations	34	34	34	34

Source: E-view Output, 2025

The summary statistics for the variables used in this study, highlighting key characteristics of the data series. The table shows measures such as mean, median, minimum, maximum, skewness, kurtosis, and the Jarque-Bera (JB) statistic to assess distribution properties. All variables exhibit consistency, as their means and medians fall within their observed minimum and maximum values. For instance, the manufacturing sector's output share of GDP (MGDP) has a mean of 6312.45, median of 2801.67, with a range from 87.96 to 28,442.90. Exchange rate (EXR) averages 161.31, inflation rate (INFR) averages 18.57, and lending rate (LER) averages 18.09, each with respective ranges. Notably, most variables show relatively high standard deviations, especially MGDP with 8168.26, indicating significant variability around the mean. Additionally, skewness suggests that the data are not strongly skewed, and the JB test supports the assumption of normal distribution for the variables.

Unit Root Test

UNIT ROOT TEST RESULTS TABLE (ADF)					
Null Hypothesis: the variable has a unit root					
	At Level				
		MGDP	LER	EXR	INFR
With Constant	t-Statistic	13.1965	-1.2091	3.4343	-2.1611
	Prob.	1.0000	0.6577	1.0000	0.2235
		n0	n0	n0	n0
With Constant & Trend	t-Statistic	4.8798	-1.2846	2.0973	-2.4358
	Prob.	1.0000	0.8731	1.0000	0.3557

		n0	n0	n0	n0
Without Constant & Trend	t-Statistic	18.8857	-1.2453	4.5825	-1.8103
	Prob.	1.0000	0.1911	1.0000	0.0673
		n0	n0	n0	*
	At First Difference				
		d(MGDP)	d(LER)	d(EXR)	d(INFR)
With Constant	t-Statistic	2.4004	-8.9527	-1.4240	-4.2159
	Prob.	0.9999	0.0000	0.5582	0.0024
		**	***	*	***
With Constant & Trend	t-Statistic	-2.2710	-5.5767	-2.2494	-4.2888
	Prob.	0.4368	0.0004	0.4479	0.0112
		***	***	**	**
Without Constant & Trend	t-Statistic	3.6227	-9.0902	-0.6911	-6.3686
	Prob.	0.9998	0.0000	0.4096	0.0000
		**	***	*	***

a: (*)Significant at the 10%; (**)Significant at the 5%; (***) Significant at the 1% and (no) Not Significant

Source: E-view Output, 2025

The top section of the results displays the type of test conducted, the exogenous variables included, and the test conditions applied. The lower section presents the main test outcomes, showing results for both the null hypothesis and the alternative hypothesis regarding the presence of a unit root. All tests including LLC, IPS, and the Fisher tests fail to reject the null hypothesis of a unit root at the level, indicating that the variables (inflation rate, manufacturing sector output relative to real GDP, exchange rate, and lending rate) are non-stationary in their levels. However, these variables become stationary after first differencing, meaning they are integrated of order one, I(1). This confirms that the results are free from spurious regression issues.

Regression Results

Dependent Variable: MGDP

Method: Least Squares

Date: 06/09/25 Time: 17:56

Sample: 1990 2023

Included observations: 34

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3207.013	3244.759	0.988367	0.3309
EXR	49.74220	4.003415	12.42494	0.0000
INFR	42.84584	28.55203	1.500623	0.1439
LER	-315.9407	156.8521	-2.014258	0.0530
R-squared	0.905132	Mean dependent var		6312.449
Adjusted R-squared	0.895645	S.D. dependent var		8168.260
S.E. of regression	2638.678	Akaike info criterion		18.70407
Sum squared resid	2.09E+08	Schwarz criterion		18.88365
Log likelihood	-313.9693	Hannan-Quinn criter.		18.76531
F-statistic	95.40931	Durbin-Watson stat		0.986268
Prob(F-statistic)	0.000000			

Source: E-view Output, 2025

The model's fit was evaluated using the coefficient of determination (R^2). A good model typically has an R^2 of at least 60%. In this case, the R^2 is 90%, indicating an excellent fit, meaning the model explains 90% of the variation in manufacturing sector output relative to real GDP. The remaining 10% is attributed to other factors not included in the model. The adjusted R^2 of 89% confirms that

after accounting for degrees of freedom, the predictors still explain a large portion of the variation. For individual variable significance, the t-test is used. If the p-value is less than 0.05, the variable is statistically significant. Here, the exchange rate is significant with a p-value of 0.0000, while inflation rate ($p = 0.1439$) and lending rate ($p = 0.0530$) are not statistically significant.

The manufacturing sector output to real GDP coefficient (3207.013) suggests that for every unit increase in a predictor, manufacturing output increases by about 3207 units, assuming other factors remain constant. The exchange rate coefficient (49.74220) shows a positive relationship: as the exchange rate increases (meaning the local currency weakens), the manufacturing sector's output as a share of GDP also rises. This could be because a weaker currency makes exports cheaper and more competitive internationally. Inflation rate has a positive coefficient (42.84584), indicating that increases in inflation are associated with higher manufacturing output relative to GDP, suggesting the sector may be responsive or adaptable to inflationary pressures. The lending rate has a negative coefficient (-315.9407), meaning that higher borrowing costs reduce manufacturing output. Increased lending rates raise the cost of capital, limiting firms' ability to invest and expand, which negatively impacts their contribution to GDP.

Discussion of Findings

The study analyzed the impact of key macroeconomic variables—lending rate, exchange rate, and inflation rate on Nigeria's manufacturing sector output share of GDP from 1990 to 2023. The findings revealed that inflation rate does not have a statistically significant effect on manufacturing output in Nigeria. This may be because inflation in Nigeria is often driven by external factors such as global oil price volatility and exchange rate fluctuations, rather than domestic demand. Additionally, persistent supply-side challenges like poor infrastructure, energy shortages, and high input costs tend to overshadow inflation's influence, weakening the relationship between inflation and manufacturing output. Supporting this, Adepoju and Oladipo (2018) found that while inflation affects manufacturing costs, its overall impact on the sector's GDP contribution is limited due to these structural constraints.

The study also found that exchange rate fluctuations significantly affect manufacturing output. According to exchange rate pass-through theory, currency depreciation increases the cost of imported raw materials, raising production costs and potentially reducing competitiveness. However, other studies (Ogundipe, Ijaiya, & Akinlo, 2015; Tarp, Asongu, & Nwachukwu, 2020) argue that structural bottlenecks such as import dependence, inadequate infrastructure, and low productivity play a larger role in shaping manufacturing performance than exchange rate movements alone.

Finally, the lending rate was found to have no significant impact on manufacturing output. This suggests that changes in borrowing costs do not strongly influence the sector's performance. Manufacturing firms in Nigeria may have limited access to credit or may not rely heavily on formal loans due to high interest rates and restrictive lending conditions. The Structuralist Theory of Development supports this view by highlighting that structural issues rather than financial factors like lending rates are the main barriers to growth in developing economies like Nigeria. Studies by Ogbuagu (2020) further emphasize that external constraints and high borrowing costs continue to limit manufacturing sector growth despite fluctuations in lending rates.

Conclusion

The study's findings highlight that macroeconomic indicators alone cannot fully explain the performance of the manufacturing sector in Nigeria. Conclusively, macroeconomics variables has a significant impact on manufacturing sector in Nigeria under the period of study\

Recommendations

Based on the findings made in the course of this study, the following recommendations are hereby provide below:

- i. The government should align educational and vocational training programs with the specific needs of the manufacturing sector to enhance labor productivity and develop a larger, more skilled workforce.
- ii. Exchange rate management should be improved through policies aimed at reducing currency volatility and increasing predictability to benefit manufacturing.
- iii. The Central Bank should implement inflation control measures focused on stabilizing the economy and mitigating cost-push pressures, particularly those affecting raw material prices.
- iv. The federal government should leverage GDP growth to promote industrialization by allocating a larger share of economic growth to the manufacturing sector through targeted policies and investments.
- v. Export-oriented manufacturing policies should be strengthened to enhance the global competitiveness of Nigerian manufacturers, especially amid exchange rate fluctuations.
- vi. Policymakers must ensure that a significant portion of GDP growth supports the development of the manufacturing sector.

References

- Ac-Ogbonna, C. (2021). Fluctuations of macroeconomic variables and manufacturing output: issues, challenges and prospects of the growth of manufacturing output in Nigeria. *Bullion*, 45(3), 30 - 43.
- Adedoyin, I. L., Eziekel, O., Bukola, B. L., Joseph I., Abiola J. A., Henry, I. M., Santanu, A. D., Opeyemi, O. & Elizabeth, O. (2022). Impact of macroeconomic variables on the Nigerian manufacturing sector. *Cogent Economics & Finance*, 10(1), 2090664.
- Ademola, A. O., & Afolabi, D. O. (2023). Determinants of deposit money bank credit to manufacturing sector in Nigeria. *Nigerian Journal of Management Sciences*, 24(1), 102-117.
- Anochie, U. C., Okereafor, G. & Bashir, M. O. (2023). Macroeconomic variables and productivity of Nigeria's manufacturing sector. *Nigerian Journal of Management Sciences*, 24(1), 1-15.
- David-Wayas, O. M., Ugwu, J. O., Chukwuma, Q. O., & Anyaegbuna, P. C. (2018). The impact of macroeconomic variables on manufacturing productivity in Nigeria. *International Journal of Recent Research in Social Sciences and Humanities*, 5(1), 246-258.
- Gbadebo A. D., Adekunle A. O., Muritala, T., & Fadeyi F. J. (2017). Banks credits and manufacturing growth in Nigeria. *Nigerian Journal of Management Sciences*, 6(1), 1-12.
- Iwedi, O. P. (2016). Macroeconomic impacts of oil price shocks on the Nigerian economy: *European Journal of Business and Management Research*, 5(5), 1-8.

- John, O. E. (2019). Examining rational bubbles in oil prices: Evidence from frequency domain estimates. *International Journal of Energy Economics and Policy*, 9(2), 166–173.
- Loretta, A. O. (2021). Macroeconomic variables and manufacturing sector output in Nigeria. *International Journal of Trend in Scientific Research and Development*, 5(5), 242-249.
- Meier, F. D., & Quaas, M. F. (2021). Booming gas: A theory of endogenous technological change in resource extraction. *Journal of Environmental Economics and Management*, 107, 102447.
- Nwabuisi, I. O., Olupeeka, O. & Adeyinka, A. J. (2020). Commercial banks credit and the performance of real sector in Nigeria: 1990-2017. *American International Journal of Supply Chain Management*, 1(1), 1-15.
- Okeke, A. I, Chani, M. L., Javed, S., Nacem, S., & Ijaz, M. S. (2020). Impact of micro economic variables on firm's performance. *International Journal of Economics and Empirical Research*, 2(2), 65-73.
- Okorontah, C. F. & John, O. A. (2020). Macroeconomic variables and the Nigerian exchange rate performance. *International Journal of Innovative Finance and Economic Research*, 8(2), 134-145.
- Omengbeoji, V., Madaleno, M., & Elheddad, M. (2021). Determinants of the environmental kuznets curve considering economic activity sector diversification in the OPEC countries. *Journal of Cleaner Production*, 271, 122642.
- Oparah, P. C., Ugochukwu M. N., & Okoye, N. J. (2023). Impact of bank credit on Nigeria's manufacturing sector. *Central Asian Journal of Innovations on Tourism Management and Finance*, 4(2), 160-173.
- Paulo, E., de Souza, K. B., & Souza, A. (2017). Decomposing Brazilian manufacturing industry dynamics in the mid-2000s: Macroeconomic factors and their sectoral impacts. *Economía*, 18(3), 411–432.
- Rasheed, A. O. (2010). Manufacturing sector performance and economic growth in Nigeria. *Journal of Physics: Conference Series*, 1378. 032067.
- Serpe, P., & Schmid, N. (2015). Determinants of bank credit in small open economies: The case of six Pacific Island Countries. Available at SSRN 2187772.
- Tapsin, G. (2017). The impact of selected macroeconomic variables on the balance sheets of manufacturing sector in Turkey. *Account and Financial Management Journal*, 2(5), 737-747.
- Tarza, J. S., Paul, T. L. & Terzungwe, U. (2017). Inflation and stock market returns volatility. Evidence from the Nigerian Stock Exchange. An E-GARCH Approach. *International Journal of Econometrics and Financial Management*, 5(2), 69-76.
- Zhang, Y., Chen, X., Wu, Y., Shuai, C., & Shen, L. (2019). The environmental Kuznets curve of CO₂ emissions in the manufacturing and construction industries: A global empirical analysis. *Environmental Impact Assessment Review*, 79, 106303.

APPENDIX

YEAR	LER (%)	INFR (%)	EXR (%)	MGDP (#'B)
1990	25.50	3.6	8.03781	87.96
1991	20.01	23.0	9.90949	115.03
1992	29.80	48.8	17.2984	159.95
1993	18.32	61.3	22.0511	231.02
1994	21.00	76.8	21.8861	370.16
1995	20.18	51.6	21.8861	619.85
1996	19.74	14.3	21.8861	780.48
1997	13.54	10.2	21.8861	848.33
1998	18.29	11.9	21.8861	838.53
1999	21.32	0.2	92.6934	891.29
2000	17.98	14.50	102.105	984.08
2001	18.29	16.50	111.943	1,146.68
2002	24.85	12.20	120.97	1,358.53
2003	20.71	23.80	129.357	1,635.05
2004	19.18	10.00	133.5	1,968.56
2005	17.95	11.60	132.147	2,326.31
2006	17.26	8.50	128.652	2,689.08
2007	16.94	6.60	125.833	2,913.26
2008	15.14	15.10	118.567	3,263.82
2009	18.99	12.00	148.88	3,406.69
2010	17.59	11.80	150.298	3,578.64
2011	16.02	10.30	153.862	4,527.45
2012	16.79	12.00	157.499	5,588.82
2013	16.72	8.00	157.311	7,233.32
2014	16.55	8.00	158.553	8,685.43
2015	16.85	9.60	193.279	8,973.77
2016	16.87	18.60	253.492	8,903.24
2017	17.56	15.40	305.79	10,044.48
2018	19.33	11.40	306.08	12,455.53
2019	15.53	11.98	306.921	16,781.06
2020	12.32	15.80	358.811	19,539.55
2021	11.48	15.63	400.239	25,725.87
2022	12.33	21.34	425.981	27,508.52
2023	14.01	28.92	645.194	28,442.90

Source: Central Bank of Nigeria Statistical Bulletin, 2023