

ECONOMETRIC ANALYSIS OF STAGFLATION AND INDUSTRIAL OUTPUT IN NIGERIA

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ABSTRACT

This study examined the effect of stagflation on industrial output in Nigeria over the period 1991–2025. Stagflation, characterized by the simultaneous occurrence of high inflation, high unemployment and slow economic growth, has remained a major macroeconomic challenge confronting the Nigerian economy. The study specifically investigated the effects of inflation rate, unemployment rate and exchange rate on industrial output. Annual time series data were obtained from the Central Bank of Nigeria (CBN), National Bureau of Statistics (NBS), World Development Indicators (WDI) and International Monetary Fund (IMF) publications. The study adopted an ex-post facto research design and employed the Autoregressive Distributed Lag (ARDL) estimation technique to analyze both the short-run and long-run relationships among the variables. The ARDL Bounds Test result confirmed the existence of a long-run relationship among industrial output, inflation rate, unemployment rate, and exchange rate. The error correction model revealed an adjustment coefficient of -0.673465, indicating that approximately 67.35 percent of short-run disequilibrium is corrected annually toward long-run equilibrium. The empirical findings showed that inflation exerts a negative and statistically significant effect on industrial output in the short run. Unemployment was found to have a predominantly negative effect on industrial output through its lagged values, although its long-run effect was statistically insignificant. Exchange rate depreciation exhibited a significant negative effect on industrial output in both the short run and long run, indicating that exchange rate instability adversely affects industrial productivity in Nigeria. The study further revealed that stagflation significantly undermines industrial sector performance by increasing production costs, reducing aggregate demand, discouraging investment and weakening industrial competitiveness. The study concluded that macroeconomic instability remains a major impediment to industrial development in Nigeria. It recommended effective inflation control measures, exchange rate stabilization policies, employment generation programmes and increased investment in infrastructure to promote industrial productivity and sustainable economic growth.

Keywords: Stagflation, Industrial Output, Inflation Rate, Unemployment Rate, Exchange Rate, ARDL, Nigeria.

Introduction

Macroeconomic stability remains one of the fundamental requirements for sustainable economic growth and industrial

development in any economy. Stable prices, low unemployment, and consistent economic growth create an enabling environment for productive activities and

industrial expansion (Mankiw, 2021). Stagflation is an economic phenomenon characterized by the simultaneous occurrence of high inflation, high unemployment, and low or negative economic growth (Blanchard, 2017). The concept gained prominence during the global oil crisis of the 1970s when several economies experienced rising prices alongside declining output and increasing unemployment. Nigeria has experienced persistent stagflationary tendencies over the years due to structural weaknesses, exchange rate volatility, rising production costs, insecurity, poor infrastructure, and dependence on imported inputs (CBN, 2025; NBS, 2025).

Industrial output represents the aggregate production of goods and services by the industrial sector, including manufacturing, mining, construction, and utilities. It serves as a vital indicator of economic development because industrialization contributes significantly to employment generation, income creation, technological advancement, and economic diversification (Todaro & Smith, 2015). Despite various monetary and fiscal policies implemented by the government and the Central Bank of Nigeria to stabilize prices and promote industrial growth, inflation and unemployment remain persistent challenges (IMF, 2025).

Another important macroeconomic variable affecting industrial output is exchange rate. Exchange rate refers to the price of one currency in relation to another currency. In Nigeria, exchange rate fluctuations have become a significant source of concern due to the country's dependence on imported machinery, equipment, technology, and industrial raw materials. Depreciation of the domestic currency increases the cost of imported

inputs, thereby raising production costs and reducing profitability among industrial firms (Adeniran et al., 2014). Exchange rate instability also creates uncertainty for investors and discourages industrial expansion.

Over the years, Nigeria has experienced considerable exchange rate volatility resulting from fluctuations in oil prices, foreign exchange shortages, capital flow movements, and macroeconomic imbalances. The depreciation of the naira has increased the cost of industrial production and weakened the ability of domestic firms to compete effectively in both local and international markets. Consequently, many manufacturing firms have experienced declining productivity, low capacity utilization, and reduced profitability (CBN, 2025).

The Nigerian economy has experienced recurring episodes of high inflation, increasing unemployment, and slow economic growth, all of which are characteristics of stagflation (World Bank, 2025). Rising inflation increases production costs through higher prices of raw materials, energy, and transportation, while high unemployment reduces aggregate demand and purchasing power (Blanchard, 2017).

In addition to inflation, unemployment has continued to increase despite various government interventions aimed at job creation. High unemployment reduces household income and purchasing power, thereby limiting demand for industrial goods. Reduced consumer demand affects the revenue and profitability of industrial firms and ultimately constrains industrial expansion. The persistence of unemployment therefore creates significant challenges for industrial development and economic growth (Keynes, 1936).

Furthermore, exchange rate instability has emerged as a major challenge for industrial firms in Nigeria. Due to the heavy dependence of industries on imported machinery, spare parts, and raw materials, fluctuations in exchange rates significantly affect production costs. Continuous depreciation of the naira increases the cost of imports and creates uncertainty within the business environment. This situation discourages investment and weakens industrial productivity. As a result, many firms experience low capacity utilization, reduced competitiveness and declining output levels (Adeniran et al., 2014).

The main objective of this study is to examine the effect of stagflation on industrial output in Nigeria. The specific objectives are to:

1. Examine the effect of inflation rate on industrial output in Nigeria.
2. Investigate the impact of unemployment rate on industrial output in Nigeria.
3. Determine the influence of exchange rate on industrial output in Nigeria.
4. Evaluate the overall effect of stagflation on industrial sector performance in Nigeria.

Concept of Stagflation

Stagflation is an economic condition characterized by the simultaneous occurrence of high inflation, high unemployment, and slow or stagnant economic growth within an economy. The term "stagflation" is derived from the combination of the words "stagnation" and "inflation." It gained widespread attention during the global oil crises of the 1970s when many economies experienced rising prices alongside increasing unemployment and declining output, contrary to the traditional belief that inflation and unemployment move in opposite directions (Blanchard, 2017). According to Mankiw (2021), stagflation represents one of the

most challenging macroeconomic problems because it combines two undesirable economic conditions that often require conflicting policy responses. While inflation is typically controlled through contractionary monetary and fiscal policies, unemployment is often reduced through expansionary policies. Consequently, policymakers face difficulties in simultaneously addressing both problems.

In developing countries such as Nigeria, stagflation is often associated with structural weaknesses, inadequate infrastructure, exchange rate instability, insecurity, supply-side constraints, and excessive dependence on imported goods and services. These factors increase production costs and reduce productive activities, thereby causing prices to rise while employment opportunities decline. The persistence of stagflation discourages investment, lowers industrial productivity, reduces living standards, and weakens economic growth (IMF, 2025).

Industrial Output

Industrial output refers to the total value or volume of goods and services produced by industries within an economy during a specific period. It encompasses production activities in manufacturing, mining, quarrying, construction, electricity generation, gas supply, and water utilities. Industrial output serves as an important indicator of economic performance because it reflects the productive capacity and level of industrialization within a country (Todaro & Smith, 2015). According to the World Bank (2025), industrial output plays a critical role in promoting economic development by generating employment opportunities, increasing national income, facilitating technological advancement, and enhancing export earnings. A growing industrial sector contributes significantly to

economic diversification and reduces excessive dependence on primary commodities.

Industrial output is influenced by numerous economic factors, including inflation, unemployment, exchange rate movements, interest rates, government policies, infrastructure availability, and investment levels. Stable macroeconomic conditions encourage industrial expansion, while economic instability discourages investment and reduces production efficiency. Consequently, industrial output is often used as a measure of the health and performance of an economy's industrial sector. In Nigeria, industrial output remains essential for achieving sustainable economic development. However, the sector continues to face challenges such as high production costs, inadequate electricity supply, poor transportation infrastructure, inflationary pressures, and exchange rate volatility. These challenges have contributed to fluctuations in industrial performance over time (CBN, 2025).

Inflation

Inflation refers to a sustained increase in the general price level of goods and services within an economy over a given period. It results in a decline in the purchasing power of money, meaning that consumers can purchase fewer goods and services with the same amount of income. Inflation is commonly measured using the Consumer Price Index (CPI) or the Gross Domestic Product (GDP) deflator (Mankiw, 2021).

Inflation may arise from various factors, including excessive aggregate demand, rising production costs, supply shortages, exchange rate depreciation, and expansionary monetary policies. Economists generally classify inflation into demand-pull inflation, cost-push inflation, and structural

inflation. Demand-pull inflation occurs when aggregate demand exceeds aggregate supply, while cost-push inflation arises from increases in production costs such as wages, energy, and raw materials (Blanchard, 2017).

Moderate inflation may stimulate investment and economic activities; however, persistent and high inflation can have adverse consequences. It increases uncertainty, discourages savings and investment, raises production costs, reduces industrial competitiveness, and lowers living standards. For industrial firms, inflation increases the prices of raw materials, machinery, transportation, and labor, thereby reducing profitability and productivity. Nigeria has experienced persistent inflationary pressures due to exchange rate instability, rising food prices, supply disruptions, and structural inefficiencies. These inflationary pressures have significantly affected industrial performance by increasing operational costs and reducing business confidence (CBN, 2025).

Unemployment

Unemployment refers to a situation in which individuals who are willing, able, and actively seeking employment are unable to secure jobs. It is one of the most important indicators of economic performance because it reflects the extent to which labor resources are effectively utilized within an economy (Keynes, 1936). According to the International Labour Organization (ILO, 2024), unemployment occurs when the supply of labor exceeds the available demand for labor. High unemployment rates indicate underutilization of human resources and often signal economic weaknesses. Economists classify unemployment into frictional, structural, cyclical, and seasonal

unemployment depending on its causes and characteristics.

High unemployment has several negative economic and social consequences. It reduces household income, lowers aggregate demand, increases poverty levels, and contributes to social instability. From an industrial perspective, unemployment reduces consumer purchasing power, thereby limiting demand for manufactured goods and industrial products. This decline in demand adversely affects industrial sales, profitability, and production levels. In Nigeria, unemployment has remained a persistent challenge due to rapid population growth, inadequate industrialization, poor investment climate, and insufficient job creation opportunities. The problem has been further aggravated by economic recessions, insecurity, and macroeconomic instability (NBS, 2025).

Exchange Rate

Exchange rate refers to the price of one country's currency in terms of another country's currency. It represents the rate at which one currency can be exchanged for another in the foreign exchange market. Exchange rate plays a crucial role in international trade, investment, and economic performance because it influences the prices of imports and exports as well as the cost of production within an economy (Mishkin, 2019). In Nigeria, exchange rate volatility has become a major concern due to the country's dependence on imported industrial inputs and its vulnerability to fluctuations in international oil prices. The depreciation of the naira over the years has increased the cost of importing machinery, spare parts, and raw materials required for industrial production. This has contributed to rising production costs, reduced profitability, and declining industrial competitiveness. According to the Central

Bank of Nigeria (2025), exchange rate instability remains one of the major challenges affecting industrial development and economic performance in Nigeria.

Phillips Curve Theory

The Phillips Curve Theory was developed by A.W. Phillips (1958) following his study of the relationship between unemployment and wage inflation in the United Kingdom. The theory suggests that an inverse relationship exists between inflation and unemployment. According to the theory, lower unemployment is associated with higher inflation, while higher unemployment is associated with lower inflation. The Phillips Curve became an important tool for macroeconomic policy formulation because it implied that policymakers could achieve lower unemployment at the expense of higher inflation or vice versa. However, the occurrence of stagflation during the 1970s challenged the validity of the traditional Phillips Curve because inflation and unemployment increased simultaneously.

Despite its limitations, the Phillips Curve remains relevant to this study because it provides a theoretical foundation for understanding the interaction between inflation and unemployment. The failure of the Phillips Curve to explain stagflation also highlights the need to investigate the combined effects of inflation and unemployment on industrial output (Blanchard, 2017).

Keynesian Theory

The Keynesian Theory was developed by John Maynard Keynes in 1936. The theory emphasizes the role of aggregate demand in determining output, employment, and economic performance. Keynes argued that insufficient aggregate demand leads to unemployment and

underutilization of productive resources within an economy (Keynes, 1936). According to Keynesian economists, government intervention through fiscal and monetary policies is necessary to stabilize economic activities and promote employment. The theory suggests that increases in investment, government spending, and consumption stimulate production and employment opportunities.

The relevance of the Keynesian Theory to this study lies in its explanation of how unemployment affects industrial output. High unemployment reduces household income and aggregate demand, thereby reducing demand for industrial products and limiting industrial growth.

Structuralist Inflation Theory

The Structuralist Inflation Theory argues that inflation in developing economies is primarily caused by structural rigidities and supply-side constraints rather than excessive aggregate demand. Structuralist economists contend that inadequate infrastructure, agricultural bottlenecks, inefficient markets, poor transportation systems, and institutional weaknesses contribute significantly to inflationary pressures (Jha, 2018). The theory is particularly relevant to Nigeria because many inflationary episodes are linked to structural challenges such as insecurity, inadequate electricity supply, poor road networks, exchange rate instability and low domestic production capacity. These structural deficiencies increase production costs and limit aggregate supply, thereby causing persistent inflation.

The Structuralist Theory provides a useful framework for understanding how inflation affects industrial output by increasing production costs and reducing productivity within the industrial sector.

Purchasing Power Parity (PPP) Theory

The Purchasing Power Parity Theory is one of the most prominent theories explaining exchange rate determination. The theory states that exchange rates between two countries should adjust to reflect differences in price levels between those countries. According to Cassel (1918), identical goods should sell for the same price across countries when expressed in a common currency. The theory implies that inflation differentials between countries influence exchange rate movements. Countries with higher inflation rates tend to experience currency depreciation relative to countries with lower inflation rates. Consequently, exchange rate fluctuations affect import prices, production costs and industrial performance.

The relevance of the Purchasing Power Parity Theory to this study lies in its explanation of how exchange rate depreciation increases the cost of imported industrial inputs and negatively affects industrial output in Nigeria.

Empirical Literature

Numerous empirical studies have examined the relationship between macroeconomic instability and industrial sector performance across developing and developed economies. Most studies focus on the effects of inflation, unemployment, and economic growth on industrial productivity, while others investigate the broader implications of stagflation on economic performance.

Adeniran and Yusuf (2025) examined the impact of inflation on manufacturing output in Nigeria using annual time series data covering 1990 to 2023. The study employed the Autoregressive Distributed Lag (ARDL) technique to estimate both short-run and long-run relationships among the variables.

The findings revealed that inflation exerts a significant negative effect on manufacturing output both in the short run and long run. The study concluded that persistent inflation increases production costs and discourages industrial investment. It recommended effective monetary policies aimed at stabilizing prices and improving industrial productivity.

Okonkwo and Eze (2024) investigated the relationship between unemployment and industrial development in Nigeria. Using annual data spanning 1991 to 2022 and employing Ordinary Least Squares (OLS) estimation techniques, the study found that unemployment significantly reduces industrial productivity by limiting aggregate demand and reducing consumer purchasing power. The study concluded that employment generation policies are essential for sustaining industrial growth and economic development.

Mohammed and Ibrahim (2023) examined the effect of inflation and exchange rate volatility on industrial output in Nigeria. The study adopted the Vector Error Correction Model (VECM) approach using annual data from 1986 to 2021. The findings indicated that both inflation and exchange rate fluctuations negatively affect industrial output in the long run. The study further revealed that exchange rate instability increases production costs for industries dependent on imported raw materials and machinery. The researchers recommended exchange rate stabilization policies and improved domestic production capacity.

Afolabi and Olatunji (2024) analyzed the determinants of industrial growth in Nigeria using annual time series data covering 1990 to 2022. The study utilized the ARDL estimation technique and found that economic growth positively influences

industrial output, while inflation exerts a negative impact. The study concluded that maintaining macroeconomic stability is essential for achieving sustainable industrial development.

Nwosu and Chukwu (2025) investigated the effect of stagflation on economic growth and industrial performance in selected Sub-Saharan African countries. The study employed panel data analysis covering Nigeria, Ghana, Kenya, and South Africa from 2000 to 2024. The findings showed that stagflation significantly reduces industrial productivity by increasing production costs and reducing investment incentives. The study concluded that controlling inflation and unemployment simultaneously is necessary for industrial expansion.

Adebayo and Hassan (2022) examined the relationship between unemployment and manufacturing sector performance in Nigeria. Using annual data and the Error Correction Model (ECM), the study found a significant negative relationship between unemployment and manufacturing output. The researchers argued that high unemployment reduces household income and aggregate demand, thereby limiting industrial expansion.

Ezeani and Okafor (2023) carried out a study on inflation and industrial production in Nigeria using annual data from 1981 to 2020. The study adopted the ARDL Bounds Testing approach and found that inflation negatively affects industrial production in both the short run and long run. The findings suggested that inflation creates uncertainty and discourages investment in productive sectors.

Ogunleye and Salami (2024) examined the effect of macroeconomic instability on industrial output in Nigeria. The study utilized annual data covering

1990 to 2023 and employed Fully Modified Ordinary Least Squares (FMOLS). The findings revealed that inflation and unemployment negatively affect industrial output, while economic growth exerts a positive effect. The study recommended coordinated fiscal and monetary policies aimed at stabilizing the economy.

World Bank (2024) conducted a comparative study on industrial development and macroeconomic stability across developing economies. The study revealed that countries experiencing high inflation and unemployment generally recorded lower industrial productivity and reduced manufacturing competitiveness. The report emphasized the importance of macroeconomic stability in achieving industrial development and economic diversification.

International Monetary Fund (IMF) (2025) examined the impact of inflationary pressures on industrial productivity in emerging economies. The findings indicated that sustained inflation significantly reduces industrial output by increasing production costs and reducing investment. The report recommended prudent monetary policies and structural reforms to improve industrial performance.

Research Design

This study adopts the ex-post facto research design. According to Gujarati and Porter (2009), ex-post facto research design is appropriate when researchers investigate relationships among variables using historical data without manipulating the variables.

Sources of Data

The study utilizes secondary data obtained from reputable sources including the Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of

Statistics (NBS), World Development Indicators (WDI), and various publications of the International Monetary Fund (IMF). Annual time series data covering the period 1991 to 2025 are employed for the analysis.

Model Specification

The model for this study is adapted from previous empirical studies on macroeconomic instability and industrial performance. Industrial Output serves as the dependent variable, while Inflation Rate, Unemployment Rate and Exchange Rate are used as proxies for stagflation.

The functional relationship is expressed as:

$$INDO = f(INF, UNEMP, EXR)$$

The econometric model is specified as:

$$INDO_t = \beta_0 + \beta_1 INF_t + \beta_2 UNEMP_t + \beta_3 EXR_t + \mu_t$$

Where:

INDO = Industrial Output

INF = Inflation Rate

UNEMP = Unemployment Rate

RGDPG = Real GDP Growth Rate

β_0 = Constant Term

$\beta_1 - \beta_3$ = Parameters to be Estimated

μ = Error Term

t = Time Period

Estimation Technique

The study adopts the Autoregressive Distributed Lag (ARDL) technique developed by Pesaran, Shin, and Smith (2001). The ARDL model is suitable when variables are integrated at a mixture of I(0) and I(1). The Augmented Dickey-Fuller (ADF) test developed by Dickey and Fuller (1981) is employed to determine the stationarity properties of the variables. The ARDL Bounds Testing approach proposed by Pesaran et al. (2001) is used to determine the existence of long-run relationships among the variables.

Results and Discussion

Table 1: ARDL Bond co-integration test Result

Test Statistics	Value	Significant	I(0)	I(1)
F-Statistics	4.484328	10%	2.676	3.586
		5%	3.272	4.306
K	3	1%	4.614	5.966

Source: Author's Computation with Eviews 13

From Table 1, the F-statistic for the model is 4.484328 and is greater than the upper bound I(1) critical value of 4.306 at the 5% level of significance. Therefore, the null hypothesis of no long-run relationship is rejected. The conclusion is that there is evidence of co-integration among the

variables in the model. This implies that a long-run equilibrium relationship exists between industrial output, unemployment rate, inflation rate and exchange rate in Nigeria. The existence of co-integration necessitates the estimation of both the short-run and long-run ARDL regression models.

Table 2: ARDL Error Correction Regression

ECM Regression Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
COINTEQ*	-0.673465	0.125432	-5.369155	0.0000
D(UME)	1.007567	0.959521	1.050073	0.3076
D(UME(-1))	-4.303472	1.490402	-2.887456	0.0098
D(UME(-2))	-10.28100	2.373474	-4.331623	0.0004
D(UME(-3))	-5.018978	2.521687	-1.990325	0.0620
D(UME(-4))	5.272788	2.663881	1.979363	0.0633
D(INF)	-0.103349	0.031246	-3.307621	0.0039
D(EXR)	-0.027513	0.006700	-4.106072	0.0007
D(EXR(-1))	0.057506	0.011797	4.874702	0.0001
D(EXR(-2))	0.071637	0.012214	5.865273	0.0000
D(EXR(-3))	0.026216	0.014985	1.749476	0.0972
R-squared	0.774705	Mean dependent var	-0.579310	
Adjusted R-squared	0.649541	S.D. dependent var	2.143658	
S.E. of regression	1.269036	Akaike info criterion	3.596089	
Sum squared resid	28.98815	Schwarz criterion	4.114719	
Log likelihood	-41.14329	Hannan-Quinn criter.	3.758517	
F-statistic	6.189527	Durbin-Watson stat	2.321723	
Prob(F-statistic)	0.000434			

Source: Author's Computation with Eviews 13

From the result in Table 2, the coefficient of the error correction term

COINTEQ(-1) = -0.673465 is negative and statistically significant at the 5% level of

significance with a probability value of 0.0000. This conforms to the a priori expectation and confirms the existence of a long-run relationship among the variables. The speed of adjustment coefficient of 0.673465 indicates that approximately 67.35% of the disequilibrium in industrial output from the previous period is corrected in the current period. This suggests a relatively fast adjustment process toward long-run equilibrium whenever short-run deviations occur.

Examining the short-run coefficients, the current value of unemployment rate $D(UME)$ is positive but statistically insignificant, while its lagged values exhibit mixed effects on industrial output. Specifically, $D(UME(-1))$ and $D(UME(-2))$ are negative and statistically significant, indicating that increases in unemployment rate in previous periods reduce industrial output in the current period. The coefficient of $D(UME(-3))$ is also negative but marginally insignificant, while $D(UME(-4))$ is positive and insignificant. This suggests

that unemployment exerts a predominantly adverse effect on industrial output in the short run.

Inflation rate $D(INF)$ carries a negative and statistically significant coefficient, implying that rising inflation reduces industrial output in Nigeria during the period under study. Similarly, the current exchange rate $D(EXR)$ has a negative and significant effect on industrial output, indicating that exchange rate depreciation adversely affects industrial production. However, the lagged values $D(EXR(-1))$ and $D(EXR(-2))$ are positive and statistically significant, suggesting that exchange rate adjustments may stimulate industrial output after some periods. The coefficient of $D(EXR(-3))$ is positive but statistically insignificant. The overall model is statistically significant with an F-statistic probability of 0.000434, while the adjusted R-squared value of 0.649541 indicates that about 64.95% of the variations in industrial output are explained by the explanatory variables included in the model.

Table 3: ARDL Long Run Bound Test

Levels Equation				
Case 2: Restricted Constant and No Trend				
Variable *	Coefficient	Std. Error	t-Statistic	Prob.
UME(-1)	4.375297	3.059190	1.430214	0.1650
INF(-1)	-0.023072	0.102555	-0.224973	0.8238
EXR(-1)	-0.050626	0.008378	-6.042707	0.0000
C	15.13854	11.48906	1.317649	0.1996
CE = $INO(-1) - (4.375297*UME(-1) - 0.023072*INF(-1) - 0.050626*EXR(-1) + 15.138543)$				

Source: Author's Computation with Eviews 13

The long-run result reveals that unemployment rate has a positive coefficient of 4.375297, suggesting that a one-unit increase in unemployment rate increases

industrial output by approximately 4.38 units. However, this relationship is statistically insignificant with a probability value of 0.1650. Therefore, unemployment

rate does not have a significant long-run effect on industrial output in Nigeria.

Inflation rate carries a negative coefficient of -0.023072, indicating that an increase in inflation rate reduces industrial output in the long run. However, the effect is statistically insignificant as shown by its probability value of 0.8238. This implies that inflation does not significantly influence industrial output over the long run.

Exchange rate has a coefficient of -0.050626 and is statistically significant at the 5% level with a probability value of 0.0000. This indicates that exchange rate depreciation exerts a significant negative effect on industrial output in Nigeria. Specifically, a one-unit increase in exchange rate reduces industrial output by approximately 0.05 units in the long run. The finding suggests that persistent exchange rate instability constitutes a major impediment to industrial sector performance in Nigeria due to the sector's dependence on imported machinery, equipment and raw materials.

Discussion of Findings

The findings reveal that inflation has a negative and statistically significant effect on industrial output in Nigeria in the short run. This implies that increases in the general price level reduce industrial production by raising the cost of raw materials, labour, transportation, and other production inputs. High inflation also creates uncertainty within the business environment, discourages investment, and reduces the competitiveness of domestic industries.

This result is consistent with the findings of Adeniran and Yusuf (2025), Ezeani and Okafor (2023), Mohammed and Ibrahim (2023), and Afolabi and Olatunji (2024), who reported that inflation exerts a significant negative effect on manufacturing and industrial output in Nigeria. The finding

also supports the Structuralist Inflation Theory, which argues that inflation in developing economies arises from structural bottlenecks that increase production costs and reduce productivity. However, the long-run coefficient of inflation is negative but statistically insignificant, suggesting that industries may gradually adjust to inflationary pressures over time through price adjustments and operational adaptations.

The results indicate that unemployment exerts a predominantly negative effect on industrial output in the short run, particularly through its lagged values. This suggests that rising unemployment reduces household income and aggregate demand, thereby lowering the demand for industrial products and reducing industrial production.

This finding agrees with the studies of Okonkwo and Eze (2024) and Adebayo and Hassan (2022), which found that unemployment significantly reduces industrial productivity and manufacturing performance in Nigeria. The result is also consistent with Keynesian Theory, which posits that high unemployment reduces aggregate demand and economic activities. However, the long-run coefficient of unemployment is positive but statistically insignificant. This contrasts with some empirical findings that reported a significant negative relationship. The insignificant long-run effect may suggest that other macroeconomic variables and structural factors have a stronger influence on industrial output over time.

The study finds that exchange rate depreciation has a significant negative effect on industrial output in both the short run and long run. This implies that continuous depreciation of the naira increases the cost of imported machinery, equipment, spare parts, and raw materials used by industries,

thereby reducing production capacity and profitability.

This result aligns with the findings of Mohammed and Ibrahim (2023), Ogunleye and Salami (2024), and the World Bank (2024), which reported that exchange rate instability adversely affects industrial productivity and competitiveness. The finding also supports the Purchasing Power Parity (PPP) Theory, which explains that exchange rate depreciation increases domestic prices and production costs. The result confirms that exchange rate instability remains one of the major constraints to industrial development in Nigeria.

The combined results indicate that stagflation, represented by inflation, unemployment, and exchange rate instability, negatively affects industrial output in Nigeria. The ARDL bounds test confirms the existence of a long-run relationship among the variables, while the error correction mechanism indicates a rapid adjustment toward equilibrium whenever disequilibrium occurs. The findings support the study of Nwosu and Chukwu (2025), which concluded that stagflation significantly reduces industrial productivity and industrial sector performance in Sub-Saharan Africa.

Conclusion

This study examined the effect of stagflation on industrial output in Nigeria using annual time series data from 1991 to 2025 and the ARDL estimation technique. The findings established the existence of a long-run equilibrium relationship among industrial output, inflation rate, unemployment rate, and exchange rate.

The study revealed that inflation exerts a significant negative effect on industrial output in the short run, while unemployment negatively affects industrial production through its lagged effects. Exchange rate depreciation was found to

have a significant negative impact on industrial output in both the short run and long run. The error correction mechanism confirmed a relatively fast speed of adjustment toward long-run equilibrium.

The study concludes that macroeconomic instability, particularly inflationary pressures and exchange rate volatility, constitutes a major obstacle to industrial growth in Nigeria. Therefore, achieving price stability, exchange rate stability, and employment generation is essential for promoting industrial productivity and sustainable economic development.

Recommendations

Based on the findings of the study the following recommendations are

1. The Central Bank of Nigeria should implement effective monetary policies aimed at reducing inflation and maintaining price stability to lower production costs for industries.
2. Government should intensify efforts toward employment generation through industrialization programmes, entrepreneurship development, and investment promotion initiatives.
3. Authorities should adopt exchange rate stabilization measures to reduce excessive volatility in the foreign exchange market and improve investor confidence.
4. Investment in infrastructure such as electricity, transportation networks, and technology should be increased to lower production costs and improve industrial productivity.
5. Fiscal and monetary authorities should coordinate policies effectively to address inflation, unemployment, and exchange rate instability simultaneously.

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