INFLATION TARGETING AND INDUSTRIAL PERFORMANCE IN NIGERIA (1991 – 2023)

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ABSTRACT

The study investigates the impact of inflation targeting on industrial sector development in Nigeria covering periods from 1991 to 2023. The analytical methods employed include Augmented Dickey-Fuller unit root test, Johansen test for co-integration and Error Correction Mechanism. The study found that inflation target exerts significant inverse influence on industrial development in Nigeria after 24 months. Consequently, the Central Bank of Nigeria (CBN) should be more consistent in monetary policy and establish credit guarantee scheme for small scale entrepreneurs in the industrial sector similar to the agricultural credit guarantee scheme.

Keywords: Agricultural credit guarantee scheme, CBN, Inflation targeting, Monetary policy

JEL Classification: E31, E52

1.0   INTRODUCTION

The structure of an economy is constituted by the output shares of different sectors. Whereas, the main drivers of long-term growth in each sector are factor accumulation (labour and capital) and technological progress (efficiency), but the dynamics of each sector is different from the other. Industrial and services sectors are relatively urban-based, more capital intensive, and they build on a developed financial system. Therefore, output growth of these sectors is more sensitive to inflation variability, uncertainty, international factors and macroeconomic volatility (Ayyoub,2015). Also, production in industrial sector is organized within global value chains (vertical specialization). It leads to longer term contracts and price changes are transmitted slowly. In fact, the industrial sector is widely considered to be the

ideal sector to drive Africa's development. This is due to the labour-intensive, export focused nature of the industry. The sector possesses a direct correlation between exportation levels and the economic success of a country. By increasingly adding value to products before they are sold, revenues are boosted, thereby raising average earnings per input. Furthermore, the sector is also more sustainable and less vulnerable to external shocks than commodities (KPMG,2014). In 1981, Nigeria industrial sector contribution to Gross Domestic Product (GDP) was 27.62% but decline steadily to 25.2 in 1985, rose to 29.6% in 1990. By 1995, the share of industry in GDP stood at 29.8% but fell to 22.8% in 2005; 22% in 2010 and fell further to 16% in 2015. Currently, Nigeria's industrial sector shares in Gross Domestic Product (GDP) remains minuscule. As of recent data, the trend has been relatively modest. For instance, in 2021, the industrial sector's contribution to GDP was approximately 20-25%, with manufacturing and mining sectors contributing smaller proportions within this figure. The manufacturing sector has struggled with low capacity utilization, high production costs, and competition from imports. Similarly, economic diversification has undertaken various reforms to stimulate industrial growth, including infrastructure investments, power sector reforms, and initiatives to support small and medium-sized enterprises (SMEs). These recent policies aim to enhance local production, reduce import dependency, and promote industrial clusters. Meanwhile, ongoing issues with infrastructure, particularly in power and transportation, continue to impede industrial growth. (CBN Statistical Bulletin, 2023).

In Nigeria, industrialization has come to be regarded as a crucial and powerful engine in the overall development process, and stable output growth in the country. Notably, the ultimate goals of macroeconomic policy makers are to achieve stable production and curtail inflationary pressure. They are supposed to keep an eye on the disaggregated performance of output and complex behaviour of inflation. The recent global crisis brought about the renewed discussion on optimal inflation target, large structural shifts from agriculture towards industry and then, services. The answer obviously depends on the nature and structure of the economy which varies across countries (International Monetary Fund, 2005). In this regard, macroeconomists recently have adopted an econometric technique simply by looking at a nonlinear or structural break effect which states that the impact of inflation rate on the economy could be supportive up to a certain threshold level which invariably is the target level of inflation and beyond this level the effect turns to be inimical to economic growth (Li, 2006; Drukker et al., 2005; Sweidan, 2004). This translated into the use of different inflation targets advocate that when inflation surpasses the threshold/target, greater inflationary pressure becomes inimical to the

industrial performance, as a result there is need for immediate policy changes as soon as inflation rate surpasses the target.

Several countries around the world including Canada, United Kingdom and South Africa have adopted the inflation targeting regime for monetary policy. Despite the growing literature on the issue, it is not clear whether developing and emerging countries can improve their economic performance by adopting inflation targeting. In fact, the issues of inflation create a situation of uncertainty about the future profitability of investment projects (particularly when high inflation is also linked with improved price variability) (Gali & Gertler 1999). This leads to more conservative investment plans than would otherwise be the case, eventually leading to lesser levels of industrial investment and economic growth. Inflation may also reduce a country's international competitiveness, by making its exports relatively more expensive, thus impacting on the balance of payments (Vikesh & Subrina, 2004).

Although, a number of studies has been conducted on the relationship between inflation targeting and sectorial growth with some variations, this study aims at exploring how the short-term and long-term effects of inflation targeting policies differ in their impact on industrial sector development in Nigeria. Specifically, the study seeks to explore the effects of exchange rate, monetary policy rates, gross capital formation, labour and exports on industrial sector development in Nigeria. Findings from these topical issues shall be of tremendous benefits to existing literatures. Thus, there is a thrust in economic literature to examine the dynamics of sectorial growth with respect to control of inflationary pressure. In line with these, the study also seeks to investigate the impact of inflation targeting on industrial sector performance in Nigeria.

2.0 LITERATURE REVIEW

2.1   Conceptual Review

Inflation is defined as the persistent increase in the general price level within the economy which affects the purchasing capacity of the domestic currency (Fatukasi, 2012). Inflation is measured as the percentage change in the price index (consumer price index, wholesale price index, producer price index etc).

On inflation targeting, literature provides several definitions by different scholars. However, this study considered those suggested by Mishkin (2000) and Mishkin and Savastano (2002)

as representative of those found elsewhere in the literature. According to them, inflation targeting is a monetary policy strategy that encompasses five main elements: First, the public announcement of medium-term numerical targets for inflation; Second, an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated. Thirdly, an information-inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments; Fourth, increased transparency of the monetary policy strategy through communication with the public and the markets about the plans, objectives, and decisions of the monetary authorities; Lastly, increased accountability of the Central Bank for attaining its inflation objectives.

Industrial development is the application of modern technology, equipment, and machineries for the production of goods and services, alleviating human suffering and ensuring continuous improvement in their welfare (Bennett, Anyanwu & Kalu, 2015). Modern manufacturing processes are characterized by high technological innovations, the development of managerial and entrepreneurial talents and improvement in technical skills which normally promote productivity and better living conditions. In recognition of this, successive governments in Nigeria have continued to articulate policy measures and programme to achieve industrial growth and development.

2.2 Theoretical Review

2.2.1 Endogenous Theory

The economic theory of production provides the analytical framework for most empirical research on productivity. At the core of the theory is the production function, which postulates a well-defined relationship between a vector of maximum producible outputs and a vector of factors of production. Historical analyses of total factor productivity change conceptualize it as the change in output level controlling for input levels, i.e., the vertical shift of the production function. Consequently, factor productivity has been given such labels as the "residual" (Solow, 1957).

Therefore, the endogenous which was an extension of the Harrod-Domar (1946) model that included a new term called productivity growth. Unlike the fixed proportion production function of Harrod-Domar model of economic growth, endogenous growth model uses variable proportion production function, that is, it considers unlimited possibilities of substitution between capital and labour in the production process. The second important

departure made by neoclassical growth theory from Harrod-Domar growth model is that it assumes that planned investment and saving are always equal because of immediate adjustments in price (including interest).

With these assumptions, endogenous growth theory focuses its attention on supply-side factors such as capital and technology for determining the rate of economic growth of a country. Therefore, unlike Harrod-Domar growth model, it does not consider aggregate demand for goods limiting economic growth. Solow stresses the importance of the vintage of capital. The idea behind this type of capital is that new capital is more valuable than old (vintage) capital because capital is produced based on known technology since it is improving. Solow extended the Harrod-Domar (1946) model by:

➢ adding labour as a factor of production,
➢ requiring diminishing returns to labour and capital separately, and constant returns to scale for both factors combined;
➢ introducing a time-varying technology variable distinct from capital and labour.

A common prediction of this model is that an economy will always converge towards a steady state rate of growth, which depends only on the rate of technological progress and the rate of labour force growth. According to the endogenous theory, developing or underdeveloped countries with dilapidated and low levels of capital stock have lots of investment opportunities and face high inflation and interest rate, so consumers have a strong incentive to postpone consumption and save. This depresses industrial growth and development. This is why endogenous economic theory predicts that underdeveloped and developing countries have higher growth rate with crippling industrial growth resulting in increasing unemployment rate.

Thus, the monetary authority needs to control inflation and interest rate, in order to aid industrial progress in such economy. However, the limitation of this theory include its failure to take account of entrepreneurship (which is the catalyst for industrial growth) and strength of institutions (which facilitate economic growth)

2.2.2   New Keynesian Philips Curve

The New Keynesian literature posited that both prices and wages showed some rigidity due to slowness of the adjustment in a new market condition. The existence of price and wage contracts was among the main reasons to explain price and wage rigidities. Even in the absence of contracts, firms might face menu-costs or fear the distaste of customers for frequent changes in prices. Thus, one should expect slowness of price adjustment. On the theoretical basis of price rigidity, a commonly used framework was firstly proposed by Rotemberg (1982) and

Calvo (1983). In their framework, for each period, only a fraction of all firms were able to change prices under some probability, and this was independent of time and remaining firms. The framework of Calvo (1983) has become the point of origin for the derivation of the New Keynesian Phillips Curve (NKPC).

The standard version of the New Keynesian Philips Curve (NKPC) has been subject to controversy because it suggested the no trade-off between stabilizing inflation and the output (gap), when it was compared with the original Phillips Curve. However, one can think that a monetary authority that was able to commit itself to stabilizing the output gap also can simultaneously stabilize inflation. The proposition of the standard NKPC was clearly contrasted to the empirical evidence such as those found by Gali and Gertler (1999), Gali et al. (2001), and many others. Studies of the NKPC have found very different results as to the extent of forward-looking or backward-looking behaviour of the price adjustment process. The hybrid NKPC was an integral part of the standard model of monetary policy. This was due to its microeconomic foundation such as that examined by Clarida et al. (1999), but also the successful estimation of NKPC models on time series data. A hybrid model suggested that some firms adopted a backward-looking and others a forward-looking behaviour in the price adjustment process.

2.3　　Empirical Review

Oloyede & Ojo (2022) employs a quantitative research design using time-series data from 2000 to 2020. They applied econometric techniques, including Ordinary Least Squares (OLS) regression and Cointegration tests, to evaluate the relationship between inflation targeting and industrial sector performance. The study found that while inflation targeting helped moderate price volatility, its impact on the industrial sector was limited due to persistent structural challenges such as inadequate infrastructure and inconsistent policy implementation. The authors concluded that inflation targeting alone is insufficient to stimulate substantial industrial growth without additional supportive measures.

Adeleke & Folawewo (2021) research uses a panel data approach, covering industrial sector data across various states in Nigeria from 2010 to 2020. The methodology includes fixed effects models to account for state-specific variations and Generalized Method of Moments (GMM) to address potential endogeneity issues. The study revealed that inflation targeting had a modest positive impact on industrial productivity. However, the benefits were mitigated by

high interest rates and exchange rate volatility, which adversely affected industrial investment and output. The authors emphasize that effective inflation targeting requires a stable macroeconomic environment and improved infrastructure.

Ayyoub (2015) conducted a dis-aggregated analysis of output growth and inflation by considering inflation and value-added growth of industrial, services, and agriculture sectors of 113 developing (low and middle-income) economies for the period 1974-2013. Empirical investigation reveals that different sectors of the economy respond differently to various impulses of inflation. Specifically, inflation impacts the growth of industrial and services sectors negatively; whereas a growth-enhancing relationship has been found for the agriculture sector.

Olfa (2014) investigates the effect of inflation targeting (IT) on inflation, output growth, and interest rates using panel data of 53 developing countries, out of which 20 have adopted IT by the end of 2007. The study employed the differences-in-differences approach of Ball and Sheridan (2005) to analyze the relationship between IT and economic performance over the period 1980-2012. The results show that the empirical analysis confirms that the effect of inflation targeting in developing economies will contribute effectively to achieving improved economic performance.

Chaudhry et al (2013) analyze the effects of CPI inflation on the sector-wise growth of the economy of Pakistan. By employing OLS methodology and annual time-series data (1972-2010), they conclude that inflation affects the agriculture, manufacturing, and services sector's growth differently. They have obtained the negative relationship between CPI inflation and growth of the manufacturing sector, whereas, inflation encourages the growth of agriculture and services sectors. They suggest generally restricting inflation in the single-digit zone.

By contrast, Shuiab et al (2015) examined the impact of the inflation rate on the economic growth in Nigeria. The study employed ADF-Fisher unit root test, Engel Granger co-integration and Pairwise granger causality test of secondary data for the period of 1960 to 2012. They found that no co-integration between economic growth and inflation during the period. In similar vein, Anochiwa and Maduka (2015) examine the relationship between inflation and economic growth in Nigeria using time series data from 1970 to 2012. Their result of the test showed that there was a nonlinear relationship between economic growth and inflation and coefficient of inflation was negatively signed and statistically insignificant both in the current period and lag three periods and the result seem to suggest that inflation is averse

to growth. Osuala et al (2013) examine the impact of inflation on economic growth in Nigeria using ADF, Philip Perron and granger causality test on annual time series data from 1980 to 2009. Their results revealed that there exists a statistically significant positive relationship between inflation and economic growth in Nigeria. However, there is no leading variable in the relation between inflation and economic growth in Nigeria, hence, the study concluded that the effect is contemporaneous.

Also, Ball and Sheridan (2005) investigated whether inflation targeting improves economic performance, as measured by the behaviour of inflation, output and interest rates, for seven countries of the Organisation for Economic Cooperation and Development (OECD) that adopted inflation targeting in the early 1990s and 13 that did not. Their major finding suggests that, after controlling for regression to the mean, there is no evidence that inflation targeting improves economic performance. That is because, after the early 1990s, the economic performance of both groups of countries improved in many dimensions. Likewise, Fraga et al (2003) compare the relative performance of developed and emerging countries that had adopted inflation targeting by the end of 2002. They argue that the volatility of output, inflation, the interest rate, and the exchange rate was higher in emerging economies than in developed countries. Among the reasons given for this less favourable tradeoff is the process of building credibility, the need to lower inflation levels, dominance issues (fiscal, monetary or external), and the stronger effect of supply shocks in emerging targeting countries.

Indeed, this literature review shows the absence of a consensus on the issue of performance of the policy of inflation targeting. Thus, works are sometimes contradictory and represent empirical limits.

3.0   METHODOLOGY

3.1   Theoretical Framework

The endogenous growth theory is of the opinion that a sustained increase in capital investment only temporarily increases the growth rate because the ratio of capital to labour goes up. However, the marginal product of extra units of capital is assumed to decline due to rising inflation and thus an economy eventually moves back to a long-term growth path, with real GDP growing at the same rate as the growth of the workforce plus a factor to reflect improving productivity.

3.2   Model specification

The model adapted for this study is based on the endogenous growth theory used elsewhere by Stern (1991), Sala-i-martin and Ndiyo (2013) depart from Solow (1957) by assuming that the economy-wide capital stock, positively affects output at the industry level, so that there may be increasing return to scale at the economy-wide level. Romer's model endogenizes the reason why growth might depend on the rate of investment (as in the Harrod-Domar model). In the simplified version presented in this study, abstraction was drawn from the household sector, an important feature of the original endogenous growth model to concentrate on issues concerning industrialization and inflation.

The general endogenous production function presented in equation (1) represented in aggregate economy (Gross Domestic Product) while the industrial sector was extracted from it and assumption of symmetry across industries was applied for simplicity, so that each industry will use the same level of capital and labour. Thus, equation (2) presented the industrial production function;

$$Y = AK_i^\alpha \, L_i^{1-\alpha} K^\beta \tag{1}$$

$$IND = AK^\alpha L^\beta \tag{2}$$

Where IND represent the industrial production proxy by industrial production; A represent the autonomous industrial output due to total factor productivity assumed to be constant across industries. K is capital input proxy was gross capital formation (that is domestic investment) and L labour input. The rates relating to cost of domestic investment such as monetary policy rate (which is an interest rate in Nigeria) and inflation target were included with exchange rate and trade export which influence the productive capacity of the industries as evidenced in the empirical literature were also added to equation (2). Thus the equation (2) becomes;

$$INDP_t = f(GCF_t, , LB_t, MPR_t, INFT_t, \ EXC_t, TEXP, \varepsilon_t) \tag{3}$$

Therefore, the equation (3) was expressed in linear form and presented in equation (4). Equation (3) was transformed by taking log of both sides of equation and assuming linearity among the variables which gives equation (4). The usefulness of this transformation include minimization of the huge differences in the magnitude of different variables thereby brings out the coefficient of co-variation better and the explanation of the results is in the form of

elasticity with easily understandable interpretation devoid of complication from measurement unit.

$$InINDP_t = \alpha_0 + \alpha_1 InEXC_t + \alpha_2 MPR_t + \alpha_3 INFT_t + \alpha_4 InGCF_t + \alpha_5 InLB_t + \alpha_6 InTEXP + \varepsilon_t \quad (4)$$

Where $INDP_t$ = Industrial performance in period t (industrial GDP/population);

EXC_t = Exchange rate to US\$1 in period t;

MPR_t = Monetary Policy Rate in period t;

$INFT_t$ = Inflation target in period t;

GFC_t = Gross Fixed Capital formation in period t;

LB_t = Labour force in period t;

$TEXP_t$ = Total Export in period t;

In = Log

ε_t = error term in period t; α_0 = intercept; α_{1-6} = parameter estimates

A priori expectation

$\alpha_1 < 0; \alpha_3 < 0; \alpha_2 > 0; \alpha_4 > 0; \alpha_5 > 0; \alpha_6 > 0$

3.3   Techniques of Analysis

This study employed descriptive and econometric techniques of analyses of secondary data sourced from the Central Bank of Nigeria covering periods from 1991 to 2023. This scope was chosen because of the increasing inflationary pressure in Nigeria due to the excesses of the administration of Babangida between 1986 and 1993 and recently the Covid-19 pandemic which set the course for oscillating trends of inflation rate in the country. Also, the scope provides a long period for determining the effect of inflation targets on industrial sector performance in the country. The descriptive analysis includes graphs while the econometric test include; Unit root test, Co-integration test and Error Correction Mechanism (ECM).

3.4   Data Measurement

Variables	Definition	Measurement	Source

INDP	Industrial performance	Industrial Gross Domestic Product divided by population	WDI (2023)
MPR	Monetary Policy Rate	Cost of investment	CBN (2023)
EXC	Exchange rate	Exchange rate to US$1	WDI (2023)
INFT	Inflation targets	Inflation targets specified by CBN (2023)	CBN (2023)
GCF	Gross Capital Formation	Domestic Investment component	WDI (2023)
LB	Labour Force	Labour components	WDI (2023)
TEXP	Export	Effect of international trade on industrial development	WDI (2023)

Source: Researcher's Compilation (2024)

4.0   ANALYSIS AND DISCUSSION OF FINDINGS

4.1   Descriptive Analysis

Figure 1 present the graphical representation of inflation targets and industrial development in Nigeria from 1991 to 2023. The graph revealed that the highest inflation target in the country was 22 percent in 1991 while the lowest was 5 percent in 1995. The targets were two digits in many of the periods which signifies that even the monetary authority expects high inflationary pressure in the country.

Industrial development in Nigeria was sluggish from 1991 to 1999, showing steady improvement from 2000 to 2015, despite experiencing downturns in 2015 and 2021. The sector's contraction in 2015 resulted from a severe drop in crude oil prices, a weakening naira, and broader macroeconomic instability, which led to a recession by the end of that year. Similarly, the 2021 decline was influenced by the COVID-19 pandemic caused significant disruptions in global supply chains, leading to higher import costs and exacerbating inflation.

Since then, the industrial sector has continued to face challenges, with fluctuating growth rates and ongoing issues related to infrastructure, policy implementation, and global economic conditions. As of 2023, the sector's performance remains mixed, with recent economic policies aiming to stimulate growth but constrained by external shocks and domestic challenges.

Figure 1: Trends of Inflation Targets and Industrial Development in Nigeria from 1991 to 2023
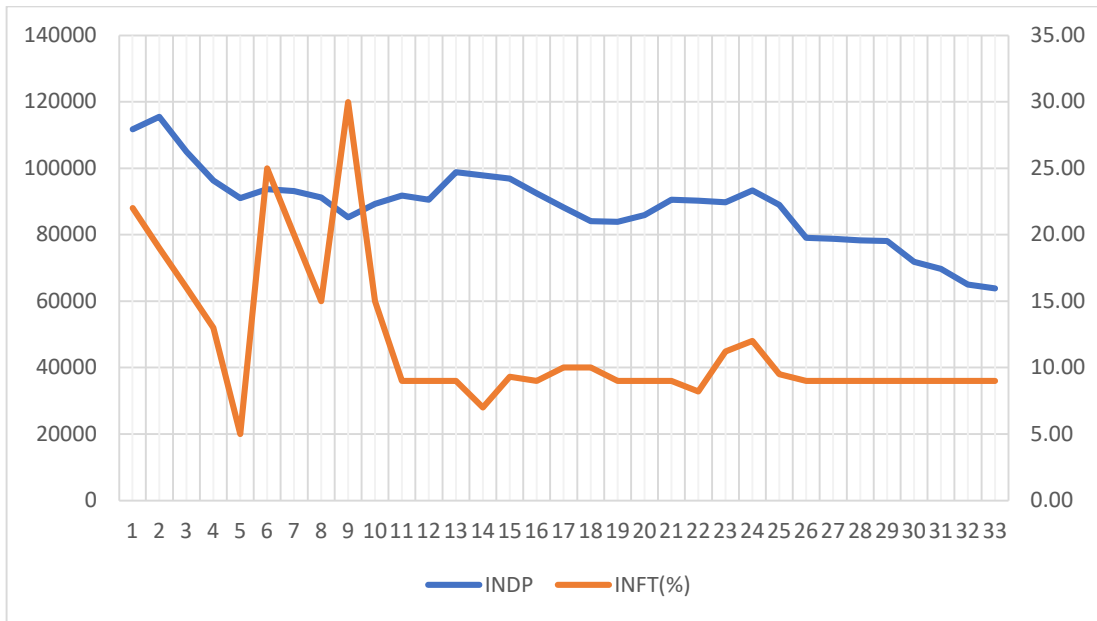
Source: Researcher's computation (2024) from Ms Excel

4.2   Augmented Dickey Fuller (ADF) Unit Root Test

The summary of results of the Philips-Perron (PP) unit root test presented in Table 1 shows that all the variables are stationary after first difference at 5% significance level.

Table 1:   Summary of Philips-Perron (PP) Unit Root Test Results

Variables	PP Test Statistics		Critical Value		Order of integration	Remarks
	Level	1ST diff	1%	5%		
InINDP	-1.0766	-3.8226	-4.2529	-3.5485	I(1)	First Difference
MPR	-3.0416	-7.9941	-4.2528	-3.5485	I(1)	First Difference
InEXC	-1.0128	-5.3988	-4.2528	-3.5485	I(1)	First Difference
INFT	-3.0762	-3.6067	-3.6998	-2.9762	I(1)	First Difference
InGCF	-3.5619	-4.8528	-4.2627	-3.5529	I(1)	First Difference
InLB	-1.7005	-5.2557	-3.5485	-2.9571	I(1)	First Difference

InTEXP	-0.9818	-4.8951	-4.2528	-3.5485	I(1)	First Difference

Source: Researcher's computation (2024) from E-view (9.0)

4.3   Co-integration Test

Table 2 present the summary of Johansen co-integration results. This table revealed that the unrestricted trace co-integrating rank test rejects the null hypothesis (H_0) of no co-integrating equation and suggests the presence of five co-integrating equations at 5 percent significance level. Likewise, the unrestricted max eigen co-integrating rank test rejects the null hypothesis (H_0) of no co-integrating equation and suggests the presence of three co-integrating equation at 5 percent significance level. Hence, conclude that both unrestricted trace co-integrating rank test and unrestricted max-eigen co-integrating rank test confirmed the presence of co-integrating equations. Therefore, there is a long run relationship between the dependent variable (industrial performance) and the independent variables (exchange rate, inflation target, gross capital formation, labour force, total exports and monetary policy rate).

Table 2:   Summary of Johansen Co-integration Rank Test Results

Ho	Ha	Eigen value	λ max test	λ max(0.05)	Trace test	Trace (0.05)
r = 0	r = 1	0.990817	121.9513	46.23142**	261.0886	125.6154**
r ≤ 1	r = 2	0.831644	46.32358	40.07757**	139.1373	95.75366**
r ≤ 2	r = 3	0.736204	34.64702	33.87687**	92.81370	69.81889**
r ≤ 3	r = 4	0.640855	26.62473	27.58434	58.16668	47.85613**
r ≤ 4	r = 5	0.563372	21.54551	21.13162	31.54195	29.79707**
r ≤ 5	r = 6	0.277385	8.446846	14.26460	9.996439	15.49471
r ≤ 6	r = 7	0.057858	1.549594	3.841466	1.549594	3.841466

Source: Researcher's computation (2024) from E-view (9.0) NOTE: (**) denotes rejection of hypothesis at 5% level of significance.

4.4   Error Correction Mechanism (ECM) and Short Run Model

Table 3 present the summary of ECM estimation results in the short run. The table revealed that the probability value of F statistics (0.043) is less than 0.05, therefore the overall dynamic model is statistically significant at 5 percent level and there exist linear relationship between the independent variables (exchange rate, inflation target, gross capital formation, labour force, total exports and monetary policy rate) and the dependent variable (industrial performance). Also, the adjusted R^2 of 0.69 indicates that the independent variables in the

dynamic model jointly explain 69 percent variations in the dependent variable whereas other variables not captured in this model explained 31 percent variations in the dependent variable.

The error correction parameter estimate [ECM(-1)] is both statistically significant and acceptable at 5 percent because its value is negative and lies between 0 and 1. Thus, the dynamic model of industrial performance possesses 35 percent speed of adjustment. This implies that 35 percent of the errors generated in industrial development are corrected within the short run. The short run effect also extends to other variables as they exert significant statistical influence on industrial performance in Nigeria; exchange rate and monetary policy rate within one year, inflation target and gross capital formation within two years while labour force and total export have statistical insignificant effect on industrial development in the country.

Specifically, a percentage decline in previous year exchange rate (i.e exchange rate appreciation) induces 0.46 percent improvement in industrial performance. This is in line with the expected inverse relationship between exchange rate and industrial performance. Notably that appreciation of the exchange rate will result in loss of competitiveness, but since the Nigerian economy fundamentally does not appropriate gains through competitiveness, it is therefore more rewarding when the currency appreciates than when it depreciates. Since its appreciation could reduce inflation rate, boost domestic investment, savings, enhance the standard of living and increase the value of external reserves.

Furthermore, 1 percent reduction in the inflation targets improves industrial performance by 0.02 percent after 2 years. Likewise, 1 percent increase in gross capital formation (investment) in the previous two periods induces 0.29 percent raise in industrial performance. Also,1 percent decline in monetary policy rate (that is cost of investment) of the previous period induces 0.03 percent raise in industrial performance. All of these going by the duration of one to tewo years involved points to short run adjustments.

The findings from this study revealed that decline in inflation targets and monetary policy rate by the Central Bank of Nigeria can induce improvement in industrial performance after 12 to 24 months and changes in investment takes up to 24 months (2 years) to significantly improve industrial performance in the country. Due to the fact that investors usually form rational expectation on the plausible decline in opportunity cost of capital when contractionary inflation target is announced which could subsequently raise investment and industrial

performance in the country. Therefore, a single digit inflation target supported with single digit monetary policy rate signal the commitment of the monetary authority to curtail inflationary pressure encourages investment in the economy.

Table 3: Summary of ECM Results

Variables Dependent Variable: D(InINDP)	Co-efficient	P-value
C	0.013279	0.8903
D(InEXC(-1))	0.467555	0.0132**
D(InEXC(-2))	-0.109527	0.5809
D(INFT(-1))	-0.011278	0.1769
D(INFT(-2))	-0.015496	0.0081**
D(InGCF(-1))	0.149643	0.2897
D(InGCF(-2))	0.291362	0.0436**
D(InLB(-1))	-2.992055	0.3742
D(InLB(-2))	1.233357	0.5830
D(InTEXP(-1))	0.041984	0.7464
D(InTEXP(-2))	0.023393	0.8301
D(MPR(-1))	-0.032306	0.0126**
D(MPR(-2))	0.007272	0.6619
D(ECM(-1))	-0.354529	0.0258**

Source: Researcher's computation (2024) from E-views (9.0) NOTE: (**) denotes rejection of hypothesis at 5% level of significance.

R^2 = 0.773; Adjusted R^2 = 0.69; F (P-value) = 0.043; DW = 1.92

5.0   CONCLUSION AND RECOMMENDATIONS

This study found that inflation target exerts significant inverse influence on industrial development in Nigeria after 24 months. In other words, the negative impact of the inflation target on industrial development is not immediate but manifests after a period of two years. This suggests that the effects of monetary policy adjustments take time to fully materialize in the industrial sector. For policymakers, this finding implies that adjustments to inflation targets might need to consider their long-term impact on industrial growth, as the effects become significant only after a considerable delay.

The inverse relationship suggests that more stringent or higher inflation targets might suppress industrial activity, potentially due to higher interest rates or reduced investment, which takes time to affect the industrial sector. Expansionary monetary policy rate also required the same lag period before it can significantly improve industrial development in the country. Therefore, the study concludes that efficient inflation targeting coupled with sustained expansionary monetary policy would foster industrial sector development in the country.

Consequently, the Central Bank of Nigeria (CBN) should be more consistent in the practice of monetary policy and show clear commitment to the development of real sector in the country. Specifically, the monetary authority should establish credit guarantee scheme for small scale entrepreneurs in the industrial sector similar to the agricultural credit guarantee scheme. Likewise, the Nigeria economic policies should be seriously focused on diversification of the economy to enhance the performance of industrial sector. Since diversification will be carried out mainly by the private sector; the federal government through the monetary authority should adopt improved regulations and measures that can expand the business environment which is essential for the implementation of the economic diversification strategy. One of such strategy is the reduction of monetary policy rate to single digit in order to drive down other bank rate which could foster growth and development of the real sector. However, CBN need to make short-term decisions on monetary policy more carefully because monetary policy fluctuations within a short interval could cause uncertainty in the economy which usually have irreversible impacts on investment spending and productive sector.

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