



## Statistical Modeling of Industrial Policies and their Impact on the Manufacturing Sector in Nigeria

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### Abstract

Using annual time series data, this empirical study examines how industrial policies affected Nigeria's manufacturing industry between 1981 and 2021. Value addition of the manufacturing sector (MVA) represents the manufacturing sector performance (MAN), while trade openness (OPN), import substitution industrialization strategy (ISIS), export promotion strategy (EPS), and exchange rate of the dollar to the naira (EXR). We used error correction model (ECM) modelling approaches as its main estimation method. The results of the ECM indicate that the exchange rate of the dollar to the naira (EXR) has a favourable effect on MAN, and trade openness (OPN) increases manufacturing sector performance (MAN). In Nigeria, the Export Promotion Strategy (EPS) increases MAN whereas the Import Substitution Industrialization Strategy (ISIS) decreases MAN. As a result, the study period passed without any appreciable improvement in Nigeria's manufacturing sector performance (MAN) due to the implementation of the imports substitution industrialization strategy (ISIS) and trade openness (OPN). Thus, the study concludes that a thorough approach to trade promotion is needed, with the export of produced goods and services serving as the main goal. The study recommends that efforts should be made to reduce trade restrictions to increase manufacturing exports which tends to stimulate the economy in Nigeria.

**Keywords:** Industrial Policies, Manufacturing Sector, Nigeria, Statistical Analysis

### Introduction

It is impossible to overstate the crucial role that manufacturing plays in an economy, especially in developing nations. This is because the manufacturing sector employs people worldwide, particularly in tropical nations like Nigeria; it diversifies the economy and lessens reliance on a single product; it helps the nation earn foreign exchange; it promotes self-sufficiency, which lessens reliance on imported goods and may help stabilise the economy; it encourages the growth of other economic sectors such as trade, tourism, and agriculture; it lowers import costs because the majority of goods can be produced domestically; and it fosters the advancement of social services. Accordingly, Nigeria's successive governments have worked to improve the country's manufacturing sector over the years by enacting policies that have supported it, including the Import Substitution Industrialization Policy, which was in place from 1960 to 1985; The Nigerian economic and development strategy (NEEDS) of 2004; the National Integrated Industrial Development (NIID) of 2007; the Industrial Park Development, Inc. of 2000; the Bank of Industry (BOI) of 2000; the Small and Medium Industries Equity Investment Scheme of 2000/2001; the Nigerian Indigenization Policy, which was in effect from 1972 to 1977; the Structural Adjustment Programme (SAP) of 1986; the Trade and Financial Liberalisation Policy, which was implemented in 1989; the National Integration of Industrial.

The Nigerian government also provided several industrial policy incentives to boost the nation's manufacturing industry, according to UKEssays (2018). These included export incentives for industry, the export processing zone (EPZ), direct government participation, tariff protection, investment guarantees and effective protection, tax holidays, and the Raw Material Research and Development Council (RMRDC). In theory and practice, it is anticipated that the manufacturing sector will perform better and change the Nigerian economy as a whole by reducing rates of poverty, unemployment, and income inequality as a result of all the policies and programmes put in place by various governments to support it. However, a cursory examination of the Nigerian economy reveals that persistent challenges such as chronic underdevelopment, elevated corruption levels, poverty, unemployment, and income inequality persist.

Furthermore, the country grapples with an increasing debt burden and persistent infrastructure malfunctions. Moreover, the data that is now accessible shows that the manufacturing sector's value-added has decreased over time. For example, the average decline was 20.09 percent in 1981/1985, 19.39 percent in 1986/1990, 19.28 percent in 1991/1995, 17.19 percent in 1996/2000, 11.74 percent in 2001/2005, and 7.96 percent in 2006/2010. There was then a slight increase to 8.57 percent in 2011/2015 and 10.97 percent in 2016/2021 (CBN, 2021).

The inadequate performance of the manufacturing sector in Nigeria has been attributed to a multitude of factors, as stated by Matthew and Mordecai (2016) including the oil glut and its effects, mismanagement, neglect of the industry and other sectors, inconsistent and poorly thought out government policies, a lack of significant government incentives for farmers, a lack of basic infrastructure, and numerous bureaucratic roadblocks that prevent government agencies from carrying out industrial programmes and policies. However, insufficient funding to invest in the industry and inadequate infrastructure have been identified as major barriers to increased productivity in the manufacturing sector, according to Sanusi (2011), Inegbedion and Obadiaru (2019), and Enete and Onyenekwe (2021). Additionally, the impact of industrial policy on the manufacturing sector's performance in nations has been the subject of numerous studies employing a variety of metrics, with contradictory findings. Prominent scholars affiliated with the far right have discovered that industrial policies have a beneficial impact on the manufacturing sector or the economy of nations (Arogundade et al., 2015; Somé, 2018; Chen and Xie, 2019; Adebosina et al., 2019; Kida and Angahar, 2020), among others. An alternative viewpoint holds that industrial policies hurt the economic and manufacturing sectors of nations, as supported by the extreme left and individuals including Ekpo (2014), Nyor and Chinge (2014), Anyanwu et al. (1997), Akinwale and Adekunle (2019), and Effiong (2022), among others.

A scarcity of scholarly literature exists concerning the effects of industrial policy on the manufacturing industries of numerous countries, Nigeria being particularly prominent in this regard. Among the scholars who investigated the correlation between industrial policies and the manufacturing sector's performance in Nigeria were Akinwale and Adekunle (2019), Effiong (2022), and Ekpo (2014). Bawalla and Adenuga (2017) looked at the relationship between industrial policies in the manufacturing sector and sustainable development in modern Nigeria. Somé (2018) looked into the relationship between industrial policies, institutions, and the performance of the manufacturing sector in Africa. Chen and Xie (2019) looked at the relationship between industrial policy, structural transformation, and economic growth: evidence from China. Nyor and Chinge (2014) employed a descriptive technique to assess the effects of industrial policy on Nigeria's manufacturing sector. But the current study, which spans fifty-one (51) years from 1971 to 2021, examines how industrial policies affect the performance of Nigeria's manufacturing industry. by capturing industrial policies by using Import Substitution Industrialization Strategy (ISIS), Export Promotion Strategy (EPS), and Trade Openness (OPN) as the explanatory variables and Manufacturing Value Added as the dependent variable to replace manufacturing sector performance. The investigation's duration is expanded from 1971 to 2021, except for the selection of these variables. The study attempts to fill in this gap in the literature. The purpose of this study is to examine how industrial policies influence the performance of Nigeria's manufacturing sector in light of these circumstances.

Further sections of the paper are arranged as follows: Section 2 comprises a review of the literature right after the introduction. The third section covers the results' interpretation, estimation, and empirical analysis. The conclusion and summary are contained in section four. Industrial policy refers to the deliberate efforts of the government to promote economic transformation, or the shift from lower productivity to higher productivity activity within or across sectors. Particularly, according to Pack and Saggi (2006), industrial policy is defined as "any kind of selective government intervention or policy that tries to change the production structure in favour of industries [or activities] that are expected to offer better prospects for economic growth in a way that would not occur in the absence of such intervention in the market equilibrium." Traditional examples of industrial strategy include subsidies to the export industry and import-substitution-industrialization (ISI), which involves putting temporary trade restrictions in place for some essential industries, such as manufacturing (Krugman, 1987). Selective protection affords certain industries time to learn.

**Manufacturing Sector:** The manufacturing sector, or industries, are those that deal with the transformation of commodities; they are primarily manufacturing industries in their own right, but they also handle the installation and maintenance of industrial equipment as well as subcontracting work for other parties. The manufacturing sector includes any businesses that use machinery or human labour to produce things from raw materials; these operations are often carried out methodically with a division of labour. Manufacturing, to put it more precisely, is the relatively large-scale process of creating or combining components into finished things. Manufacturing includes all industries that are classified under ISIC divisions 15–37. Among the most significant are the manufacturing sectors that produce heavy machinery, refined petroleum products, automobiles, steel, chemicals, textiles, computers, consumer electronics, electrical equipment, furniture, heavy aircraft, ships, and tools and dies.

**Industrial Policies in Nigeria:** This original program, which was aimed at industrial strategy, was adopted by the Nigerian government shortly after independence (Oyedele, 2009). In addition to giving Nigerians the chance to buy locally made goods abroad, this policy was implemented to relieve pressure on the currency rate. One objective of the approach is to reduce excessive dependence on international trade. Other goals include empowering Nigerian women and business owners, accelerating Nigeria's industrialization by bringing foreign technology home, protecting foreign exchange by producing officially exported goods, hastening the country's development through higher GDP, and creating jobs in the industrial sector. When the policy was first implemented, it addressed the sector's significant importance. However, abruptly, internal and external factors such as political instability in policy, governmental changes, corruption, and the effects of globalisation, among others, made the policy unsustainable (Duru, 2012). He further argued that, both in terms of internal consumption and exports, agriculture constituted the majority of our productivity before 1960. Because of this, industrialization was focused on producing main raw materials for home industries rather than being a component of colonial economic policy. After gaining independence in 1960, the first task given to the native government was to turn the nation into a modern industrial economy.

**The 1972 Nigerian indigenization Policy:** Owing to various factors that hindered the import substitution program from fulfilling its objectives, the Nigerian government instituted the indigenization policy. This policy aimed to transfer ownership and control to Nigerians in businesses officially owned or controlled by foreigners, promote widespread enterprise ownership among Nigerian citizens, create opportunities for indigenous businesspeople in Nigeria, and encourage foreign investors and businessmen to shift from less sophisticated sectors of the economy to those where significant investment is more needed (Oyedele, 2009).

**Indigenization Policy 1977:** The Indigenization Act of 1972, which attempted to grant theoretical ownership rights to Nigerians, was updated, repealed, and replaced with the Nigeria Enterprises Promotion Act of 1977. This Act served as the basis for the 1977 Indigenization Policy. Schedules II and III were included in the 1972 and 1977 Acts, respectively. There were 40 businesses in Schedule I, 57 in Schedule II, and 39 in Schedule III of 1977. The exact year that each schedule's number of businesses was altered was 1981. Accordingly, there were 36 enterprises in schedule I, 576 in schedule II, and 456 in schedule III.

**Structural Adjustments Programme 1986:** To address the shortcomings of the previous industrial plans, Ibrahim Babangida, the military head of state at the time, implemented this one. The policy stated that its goals were to; encourage investment, stimulate non-oil exports and provide the foundation for private sector-led development, enhance the industrial sector's efficiency in Nigeria, privatise and commercialise the economy to promote industrial efficiency and develop and utilise local technology by promoting accelerated development and use of local raw materials and intermediate inputs rather than relying on imported ones.

**Financial Liberalization Policy 1989:** The Structural Adjustment Programme was followed by this policy. The financial sector was targeted for increased competition and efficiency through an industrial policy that included the following goals and objectives: (i) Increasing competition within domestic firms and between domestic import-competing firms and foreign firms to promote efficiency; (ii) Lowering tariff and non-tariff barriers; (iii) Discarding commodity marketing boards; and (iv) Deregulating interest rates and setting exchange rates to increase productivity (Adeoye, 2004).

**The Bank of Industry:** The Bank of Industry was put together in 2000 to accelerate industrial development by offering technical support, equity financing, and term loans to industrial businesses, following the failure of the aforementioned programmes. The following organisations are a part of the bank: Leasing Company of Nigeria (LECON), Industrial

and Insurance Brokers (IDIB), Nigerian Bank for Commerce and Industry (NBCI), and Nigeria Industrial Development Bank (NDB). The bank's other goals and purposes were to; significantly influence long-term lending, support the creation of jobs disperse industry and encourage indigenous entrepreneurship.

The 2000 Equity Investment Scheme for Small and Medium-Sized Industries: Our understanding of industrial policy's primary goal is to dramatically increase value-added along the value chain to hasten industrial development (Duru, 2012).

### Theoretical review

The early 19th century saw the development of the theory of infant industry promotion by Friedrich List and Alexander Hamilton. Protectionist trade policies are frequently justified by this theory. New industries in developing nations require shielding from competitive forces until they mature, according to the infant industry idea. Governments can respond to these arguments by enacting import charges, tariffs, quotas, and currency rate controls, which will keep foreign competitors from matching or exceeding the pricing of a developing industry and give it time to mature and stabilise. Critics of the infant industry argument include the following: Protectionism aimed at young industries could encourage ineffective ones. Protected developing industries might not have the motivation to adapt quickly and effectively. Retaliation from other nations could arise from infant industry protectionism. Since the new industries receiving protection under the baby industry argument do not face competition from overseas markets, they grow inefficient and are called into question.

A theory of industrialization by Hoffman: In his groundbreaking examination of industrial evolution, W. G. Hoffmann formulated this hypothesis in 1958. Per the hypothesis, the ratio of value added by capital goods to consumer products sectors falls as the process of industrial growth advances. Before the end of the 19th century, Hoffman claims, the more established industrialised nations completed the first phase of industrialization. By the century's end, these included Japan as well as Belgium, Great Britain, France, and Switzerland. According to Hoffmann's trend, consumer products will likely grow before capital goods if governments do not pursue any specific policies on industrialization. Long-term growth, however, will accelerate the industrial sector's capital goods outflow. If an industry sold at least 75% of its production for capital formation or consumption, respectively, it was classified into the consumer products category in that study. Hoffmann classified food, drink, and tobacco as well as textiles, clothing, furniture, and leather using the aforementioned classification criteria. Transportation equipment, machinery, chemicals, and metalworking industries were among the capital products. The theory of W. G. Hoffmann's industrialization then proposed four stages of industrialization based on the ratio of net outputs of the industries producing capital goods to consumer goods, ranging from a first stage where the ratio of 5 was dominated by consumer goods to a second stage where the ratio was lower than

### Empirical Literature

Obamuyi et al (2012) surveyed the influence of the manufacturing industry on economic growth using the vector error correction model (VECM) and co-integration approaches from 1973 to 2009. The study revealed that a decrease in capacity utilisation in the manufacturing sector was attributed to the sector's underperformance, which was blamed on the imports. Loto (2012) evaluated the primary factors that contributed to the economic growth in Nigeria's manufacturing sub-sector between 1980 and 2010. By employing the OLS technique, he was able to determine that the growth in manufacturing production in Nigeria over the sample period may be attributed mostly to the rate of inflation. The study discovered that real GDP and GDP per capita were directly correlated with output growth in the manufacturing sector, whereas GDP per capita, inflation, and gross domestic capital creation were negatively correlated with output growth. Eze and Ogiji (2013) investigated how fiscal policies affected the industrial sector's productivity in Nigeria. The findings showed a significant inverse relationship between government tax revenue and manufacturing sector output in Nigeria. The data additionally demonstrated a statistically significant positive association between government spending and the production of Nigeria's manufacturing sector. The results also showed a level correlation between fiscal policies and manufacturing production. The administration was advised to enact expansionary fiscal policies since they have been shown to increase manufacturing output in Nigeria.

Somé (2018) conducted an empirical study between 2003 and 2015, utilizing dynamic panel methodologies (system GMM) to investigate the impact of industrial policies and institutional quality on manufacturing value added per capita across 51 African states. The empirical results show that the manufacturing value added per capita is positively

impacted by the rule of law, government effectiveness, and regulatory quality, among other indicators of overall governance; only the effect of the regulatory quality indicator is found to be statistically significant.

A study on the influence of industrial policy on economic development was empirically done by Chen and Xie (2019). The analysis demonstrates that China's industrial policy has a hugely favourable influence on economic growth and that industry structure rationalization is a critical channel via which industrial policy supports economic growth. Extensive robustness tests and endogenous adjustments confirm the robustness of the findings. According to the findings of the heterogeneity test, the impacts of industrial policy on economic growth vary depending on administrative levels, stages of industrial development, subregional locations, and industrial policy categories. Bawalla and Adenuga (2017) looked at how manufacturing contributes to economic growth and makes up a sizable amount of all economic activities. Manufacturing companies in Nigeria are not keeping up with their Asian peers. Some of the issues facing the industry can be attributed to legislators' incapacity to create acceptable and advantageous policies for the country that need to be properly monitored and assessed. This essay is based on an understanding of Max Weber's theory of social action and how it connects to the ways that specific industrial strategies that have been selected function effectively in contemporary Nigeria. It concludes that efforts should be focused on reviving the barriers that affect sustainable development, such as inadequately designed manufacturing sector policies, inconsistent tariffs, unsuitable monetary and fiscal policies, and competition laws that encourage reliance on imports.

### Methodology

The study's methodology is based on the hypothesis of baby industry promotion by Alexander Hamilton. This is because of the fact that trade protectionism uses the neonatal industry argument as its economic justification. The primary thesis of the argument is that, in many cases, growing industries are not as large as their more established worldwide competitors, and as such, they need to be protected from harm until they reach equivalent economies of scale. The analysis's data comes from secondary sources covering the years 1981 through 2022. Descriptive statistics, cointegration, unit root testing, and error correction mechanism (ECM) models were used in this work. With additional changes, the model specification of this study closely resembles that of Akinwale and Adekunle (2019). Akinwale and Adekunle examined the influence of industrial policy on productivity in Nigeria. Their model was as follows:

$$INO = f(TOP, EXR, GCE, CPS) \quad (1)$$

However, the present study deviates from these studies by changing the dependent variable to manufacturing sector output. It added import substitution industrialisation strategy (ISIS), export promotion strategy (EPS), and trade openness (OPN) to proxy industrial policies as the main explanatory variables and exchange rate (EXR) as a check variable and used Manufacturing Value Added as the dependent variable.

Thus, the functional relationship of the model shall be stated as:

$$MAN = f(ISIS, EPS, OPN, EXR) \quad (2)$$

The mathematical equation is expressed as:

$$MAN_t = \beta_0 + \beta_1 ISIS_t + \beta_2 EPS_t + \beta_3 OPN_t + \beta_4 EXR_t \quad (3)$$

The linear econometric form of the model (3.3) takes the form of;

$$MAN_t = \beta_0 + \beta_1 ISIS_t + \beta_2 EPS_t + \beta_3 OPN_t + \beta_4 EXR_t + \mu_{t1} \quad (4)$$

Where;

MAN = Manufacturing Sector Performance proxied by Manufacturing Value Added

ISIS = Import Substitution industrialisations Strategy

EPS = Export Promotion Strategy

OPN = Trade Openness

EXR = Exchange Rate

$\beta_0$  is the intercept

$\beta_1 - \beta_4$  are the coefficients of independent variables

while  $\mu_1$  is the error term.

t = Time period

### Theoretical Expectations

On a priori ground, we expected the following signs of the coefficients of the explanatory variables

$\beta_1 > 0$ ,  $\beta_2 > 0$ ,  $\beta_3 > 0$ , and  $\beta_4 > 0$ .

We anticipate a positive association between each of the explanatory variables and the dependent variable, which is implied by the aforementioned signs of the parameter estimates.

**Table 1: Descriptive Statistics**

	MAN	ISIS	EPS	OPN	EXR
Mean	15.12625	0.294118	0.254902	33.00729	86.99407
Median	16.70452	0.000000	0.000000	34.18262	21.89526
Maximum	21.09825	1.000000	1.000000	53.28000	399.9600
Minimum	6.552817	0.000000	0.000000	9.135846	0.546781
Std. Dev.	4.906859	0.460179	0.440143	12.08528	107.3137
Skewness	-0.313234	0.903696	1.124803	-0.406373	1.236223
Kurtosis	1.538890	1.816667	2.265182	2.209481	3.730164
Jarque-Bera	5.370526	9.917257	11.90146	2.731638	14.12302
Probability	0.068203	0.007023	0.002604	0.255172	0.000857
Sum	771.4386	15.00000	13.00000	1683.372	4436.697
Sum Sq. Dev.	1203.863	10.58824	9.686275	7302.703	575811.6
Observations	51	51	51	51	51

**Source:** *Author's Computation (2023)*

Descriptive statistics in Table 2 above yield a mean value of 15.12625 for Manufacturing Sector Performance (MAN) and a standard deviation of 4.906859. Manufacturing Sector Performance (MAN) has a long-left tail according to its negative (-0.313234) skewness value, and a platykurtic kurtosis value of 1.538890 (i.e., less than 3).

The standard deviation of the Import Substitution industrialisation strategy (ISIS) is 0.460179, and the mean value is 0.294118. Import Substitution Industrializations Strategy (ISIS) has a long right tail, as indicated by its positive skewness value of 0.903696. It is platykurtic, with a kurtosis value of 1.816667 (i.e., less than 3). This indicates that the series has a flat distribution or surface since its value is lower than the sample mean.

The Export Promotion Strategy (EPS) has a standard deviation of 0.440143 and a mean value of 0.254902. With a skewness score of positive 1.124803, Export Promotion Strategy (EPS) is considered to have a long-right tail; on the other hand, its kurtosis value is 2.265182 (less than 3), indicating that it is platykurtic. This indicates that the series has a flat distribution or surface since its value is lower than the sample mean.

Trade Openness (OPN) is 33.00729, while the standard deviation is 12.08528. Trade Openness (OPN) has a long-right tail, as indicated by its negative (-0.406373) skewness value, and a platykurtic kurtosis value of 2.209481 (i.e., less than 3). The Exchange Rate (EXR) has a mean value of 86.99407 and a standard deviation of 107.3137. Exchange Rate (EXR) has a positive skewness value of 1.236223.

In light of these findings, tests for the long-term association and stationarity of the variables are required because utilising the variables at the level could produce an inaccurate result. To make the variables immobile, the unit root test is run. The Augmented Dickey-Fuller (ADF) unit root test approach is used in this investigation.

**Table 3: Unit Root Test Results**

Variables	ADF at Level	ADF at 1 <sup>st</sup> Difference	Status
MAN	-1.188776	-7.465468	I(1)
ISIS	-1.547864	-7.000001	I(1)
EPS	-1.691600	-6.855655	I(1)
OPN	-2.802918	-8.044087	I(1)
EXR	3.957064	-4.272274	I(1)
<i>Critical Values</i>			
1% level	-3.568308	-3.571310	
5% level	-2.921175	-2.922449	
10% level	-2.598551	-2.599224	

**Source:** Author's Compilation (2024)

The outcomes of the unit root test in Table 3 for the Model, reveal that all the series do not revert to their mean values and were subjected to stationary at the difference. Hence, this study concludes that the variables used in the model were integrated of order one, that is I(1). Since the ADF results indicate that the series is of the same order of integration, we proceed to conduct co-integration.

**Table 4: Co-integration Test Result for Model**

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	85.63757	69.81889	0.0016	39.48452	33.87687	0.0097
At most 1	46.15305	47.85613	0.0716	18.52293	27.58434	0.4522
At most 2	27.63012	29.79707	0.0871	17.79186	21.13162	0.1378
At most 3	9.838256	15.49471	0.2934	8.880650	14.26460	0.2962
At most 4	0.957606	3.841466	0.3278	0.957606	3.841466	0.3278

**Source:** Authors Compilation from EViews 10.

According to the co-integration results in Table 4 above, there is only one (1) co-integrating equation at the 5% significance level according to both the trace test statistics and the max-eigenvalue statistics. This implies that the variables in the model have a long-term relationship with one another. As a result, the study accepts the alternative hypothesis but rejects the null hypothesis, which states that there is no co-integration among the variables.

**Parsimonious ECM of the Model**

The result of the ECM estimation of the Model is obtainable in equation 4.6 below.

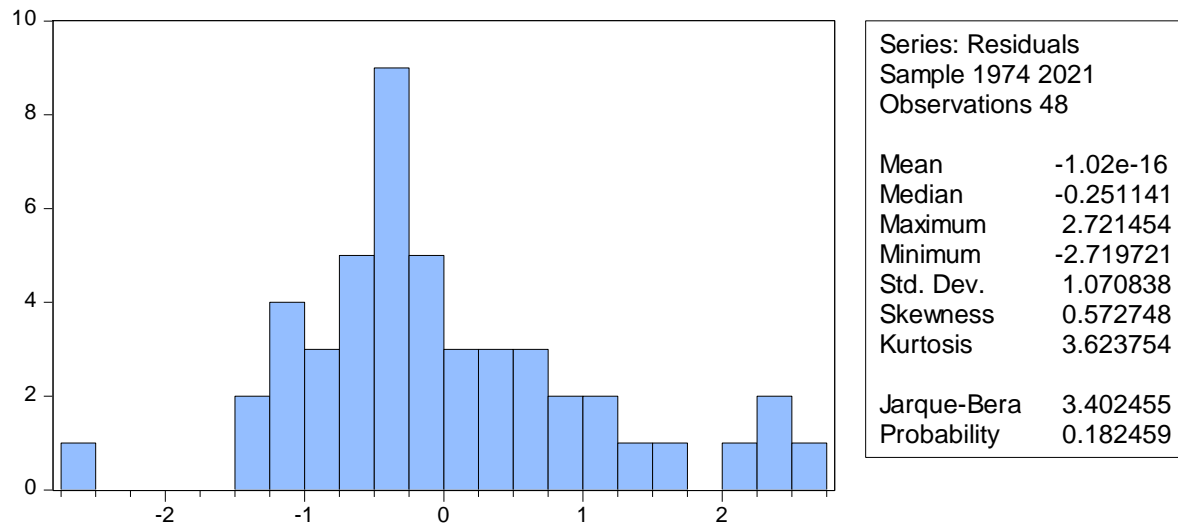
**Table 5: Parsimonious ECM Estimation Results for Model**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.141946	0.200627	-0.707511	0.4836
D(MAN(-2))	0.279545	0.144497	1.934608	0.0605
D(ISIS(-2))	-2.581332	1.227737	-2.102512	0.0422
D(EPS)	1.993858	0.913446	2.182787	0.0353
D(EPS(-1))	-1.954687	1.060680	-1.842861	0.0732
D(OPN)	-0.022619	0.019808	-1.141905	0.2606
D(OPN(-1))	0.048906	0.020933	-2.336307	0.0269
D(EXR(-1))	-0.014860	0.012729	-1.167415	0.2503
D(EXR(-2))	0.031830	0.012697	2.506969	0.0166
ECM(-1)	-0.598466	0.164333	-3.641789	0.0008
R-squared	0.739827			
Adjusted R-squared	0.656200			
Durbin-Watson stat	2.093160			

The R-Squares value is 0.739827 while the adjusted R-Squares is 0.656200. This means that the model's explanatory variables accounted for roughly 66% of the deviation in the dependent variable, while the error term accounts for the remaining 34% of the variation. The F-statistic of 8.846739 shows the robustness of the estimated result and the model appears to be well-fitting, and the Durbin-Watson Statistic of 2.093160 indicates the non-existence of serial autocorrelation between the models.

Furthermore, there is a statistically significant and suitably signed error correction coefficient (ECM). This indicates that Nigerian secondary school enrollment responds, on average, by 60% annually to changes in explanatory variables. Additionally, the Import Substitution Industrializations Strategy (ISIS) and Manufacturing Sector Performance (MAN) have a negative (-2.581332) relationship. This means that for every unit increase in ISIS, Manufacturing Sector Performance (MAN) in Nigeria is decreased by 2.581332 units. Economic theory is consistent with the Import Substitution Industrialization Strategy's (ISIS) negative sign on Manufacturing Sector Performance (MAN), which is confirmed a priori. The coefficient of Export Promotion Strategy (EPS) has a positive effect on Manufacturing Sector Performance (MAN), indicating that for every unit rise in EPS, Manufacturing Sector Performance (MAN) in Nigeria increases by 1.993858 units and this is consistent with economic theory. The coefficient of Trade Openness (OPN) has a positive effect on Manufacturing Sector Performance (MAN). This means that, for every unit increase in OPN, the Manufacturing Sector Performance (MAN) in Nigeria grows by 0.048906 units. This assertion supports the apriori expectation. The coefficient of the exchange rate has a positive effect on the manufacturing sector output. This means that the exchange rate increases manufacturing sector output in Nigeria.

**Post Estimation Test**

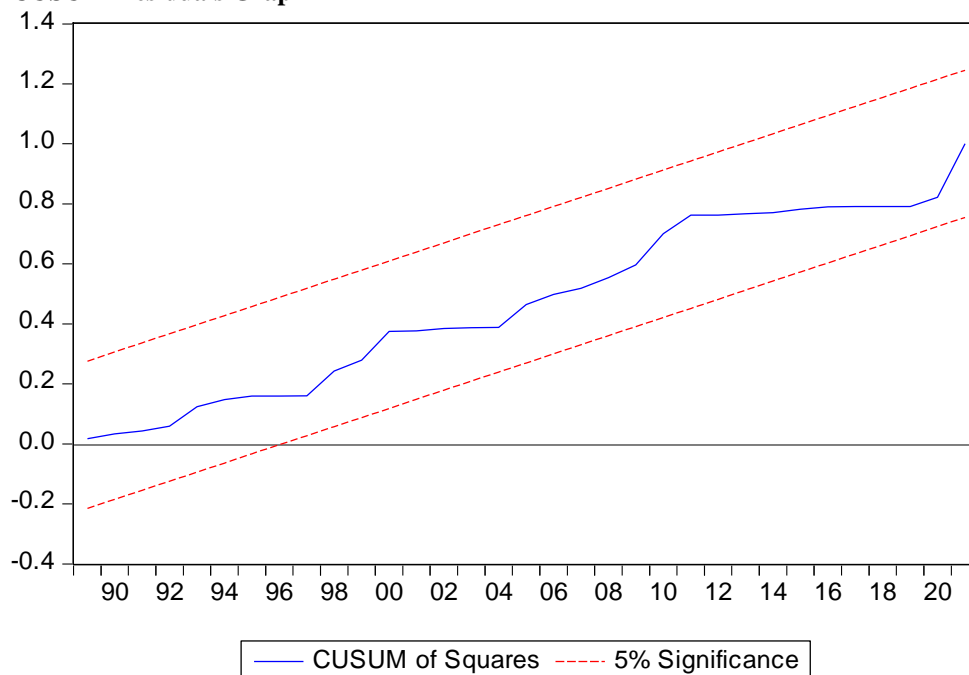


**Figure 1: Test of Parameter Stability for the Model**

The plots of the cumulative sum of squares of recursive residuals (CUSUMSQ) and cumulative sum of recursive residuals (CUSUM) are used to analyze the stability of the parameters, according to Adebisi and Dauda (2004). Parameter instability can be attributed to structural adjustments and the formation of different policy regimes within the sample period. When the regression coefficients suddenly and randomly depart from their constancy, the CUSUMSQ test becomes important. If any of the graph's straight lines are crossed, the null hypothesis—that the regression equation is accurately provided—is rejected at the five percent significance level.



**CUSUM Residuals Graph**



**Figure 2: CUSUMSQ Residuals Graph**

The study looked at how Nigeria's manufacturing industry was affected by industrial policy between 1971 and 2021. To accomplish our goals, we used annual time series data of the dependent variables, Manufacturing Sector Performance (MAN), while the independent variables, Trade Openness (OPN), Export Promotion Strategy (EPS), Import Substitution industrialisation strategy (ISIS), and Exchange Rate (EXR) were gathered from secondary sources and subjected to error correction mechanism (ECM) modelling technique analysis. The following is a summary of the study's findings, which served as the foundation for the relevant policy suggestions that were made:

- i. The Manufacturing Sector Performance (MAN) in Nigeria is decreased by the Import Substitution Industrializations Strategy (ISIS).
- ii. The Nigerian Manufacturing Sector Performance (MAN) is encouraged by the Export Promotion Strategy (EPS).
- iii. In Nigeria, Trade Openness (OPN) lowers Manufacturing Sector Performance (MAN).
- iv. In Nigeria, the Manufacturing Sector Performance (MAN) is enhanced by the Exchange Rate (EXR).

**Discussion**

The study determined that, although industrialization policies aimed at replacing imports have a negative impact on the manufacturing sector, trade liberalisation and export promotion initiatives foster expansion by utilising the dependent variable's feedback behaviour. This statement implies that trade liberalisation policies improve the health of Nigeria's manufacturing sector in line with apriori expectations, whereas trade restriction policies lead to a fall in the industry's performance. The null hypothesis, according to which there is no meaningful correlation between trade policies and the success of Nigeria's manufacturing sector, is rejected in light of the information shown above. Though it goes against the opinion of Loto (2012) but similar to the work of Eze and Ogiji (2013).

**Conclusion**

The study uses annual data series over 51 years, from 1971 to 2021, to empirically assess the impact of industrial policy on Nigeria's manufacturing industry. While Import Substitution industrialisation strategy (ISIS), Export Promotion Strategy (EPS), Trade Openness (OPN), and Exchange Rate (EXR) were used to proxy industrial policies as the independent variables, the study used Manufacturing value added to proxy Manufacturing Sector Performance (MAN) as the dependent variable. The independent variables were gathered from secondary sources and analysed using descriptive statistics, unit root tests, and ECM modelling techniques. The ECM's findings indicate that the Nigerian manufacturing sector performs worse under the Import Substitution Industrializations Strategy (ISIS), better

under the Export Promotion Strategy (EPS), worse under Trade Openness (OPN), and better under Exchange Rate (EXR) than under Import Substitution Industrializations Strategy (OPN). Therefore, the study asserts that Manufacturing Sector Performance (MAN) was not improved by the Import Substitution Industrialization Strategy (ISIS) or Trade Openness (OPN).

### Recommendations

- i. A strong trade promotion plan that emphasizes the export of manufactured goods and services is required.
- ii. To encourage the export of manufactured goods, a positive trade environment that lowers tariffs, quotas, and other trade barriers must be established.
- iii. More money needs to be invested in the ports, power plants, and other infrastructure related to manufacturing.
- iv. Manufacturing firms should be given incentives to grow their businesses and export capabilities.
- v. To promote knowledge transfer and technological advancements, domestic manufacturers and foreign companies must form collaborations.
- vi. Provide tax breaks, financial aid, and other forms of support to entice additional investment in the manufacturing sector.

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