# IMPACT OF INDUSTRIAL OUTPUT ON THE ECONOMY OF NIGERIA (1990-2014)

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## ABSTRACT

Impact of industrial output on the economy of Nigeria is a continuous discussion to every economy especially developing economies which will give rise to economic growth and the impact of industrial output on the economy of Nigeria, between the period of twenty-five years covered from 1990-2014. Secondary data sourced from Central Bank of Nigeria, Federal Office of Statistics and other related institutions were regressed and analysed using E-view 7.00 version. Findings of the study show that the three independent variables namely; industrial output, total savings and inflation had $R^2$ of 0.88544 adjusted to 0.84662 indicating that three variables have explained 85% of the variation in the independent variable, that is the GDP. As expected, industrial output and total savings had positive coefficients; while inflation displayed the expected negative sign. It was recommended among others that appropriate fiscal and monetary policies be put in place in order to attract prospective investors and as well provide enabling environment to the existing industries in Nigeria.

**Keywords:** economy, industrial output, nigeria, economy of nigeria

## INTRODUCTION

The oil boom of the 1970s made Nigeria neglected its agricultural and light manufacturing bases in favour of an unhealthy dependence on crude oil. In 2000, oil and gas export accounted for

more than 98% of export earning and about 83% of federal government revenue. New oil wealth, the concurrent decline of other economic model, fuelled massive migration to the cities and led to increasingly wide spread poverty especially in rural areas. A collapse of basic infrastructures and social service since the early 1980s accompanied this trend, (Adani, 2012).

By 2000, Nigeria's per capita income had plunged to about one quarter of its mid 1970s high, below the level at independence. Along with the endemic malaise of Nigeria's non-oil sector, the economy continues to witness massive growth of 'informal sector' economic activities estimated by some to be as high as 75% of the total economy. The U.S. United State remains Nigeria's customer for crude oil accounting for 40% of the country's total oil export, Nigeria provides about 10% of overall U. S. oil import and ranks as the fifth-largest source for U.S. imported oil and ranked 44th worldwide and third in Africa in factor output. (Owoeye, 2006).

Nigeria economy is struggling to leverage the country's vast wealth in fossil fuel in other to displace the crushing poverty that affects about 57% of its population. Economists refer to the consistence of vast wealth in national resources and extreme poverty in developing countries like Nigeria as a 'resource course'. 80% of Nigeria's revenue flow to the government, 16% covers operational cost and the remaining 4% goes to investors. World Bank has estimated that as a result of corruption, 80% of energy revenues, benefit only 1% of the population (Econspapers, hosted by Swedish Business School Orebro University).

Generally, the manufacturing sector which plays a catalytic role in a modern economy has many dynamic benefits crucial for economic transformation is a leading sector in many aspects (Aiyegbusi et. al 2008) says it creates investment capital at a faster rate than any other sector of the economy. Available evidence showed that the share of manufacturing value in the Gross Domestic Product (GDP) was 3.2% in 1960. In 1977, its share of GDP increased to 5.4% and in 1992 grew to 13%. The share of the manufacturing in GDP fell to 6.2 in 1993, while overall manufacturing capacity utilization rate fluctuated downwards to 2.4% in 1998.

In 2003, the manufacturing sector accounted for 4% of the Gross Domestic Product (GDP) (Bakare, 2006). A country is industrialized when at least one-quarter of this Gross Domestic Product (GDP) is produced in its industrial output arises in the manufacturing section of industrial sectors, and when at  least one percent of its total population is employed in the industrial sectors of the economy. The manufacturing sector is to be dominant in terms of contribution to the Gross Domestic Product of any economy especially that of Nigeria (Oladeji et al 2004).

**STATEMENT OF THE RESEARCH PROBLEM**

Industrialization is one of the indices for classifying economy as either developed or not. There are less controversy also on the fact that the role of industrialization in the growth and development of any economy cannot be overemphasized given the developmental record of the developed countries of the world. However, conflicting research results abound on the contributory impact of industrial output to the growth of Nigerian economy. While some researchers found a positive relationship between industrial output in Nigeria (Olukoshi 2009), others found a negative relationship (Ukeagbu, 1991, Enisan 1996). Nevertheless, it is pertinent to really know the impact of industrial output on Nigerian economy so that appropriate policies can be formulate. Hence, this study.

## OBJECTIVE OF THE STUDY

The broad objective of this study is to examine the impact of industrial output on economic growth in Nigeria between 1980-2014.

In doing this, the following specific objectives were raised for investigation.

The specific objective includes:

1. To appraise the origin and structure of Nigeria's manufacture sector.
2. To examine the impact of industrial output on the growth Nigerian economy.
3. To make appropriate recommendation for the improvement of the industrial output base on the findings of the study.

## SCOPE OF THE STUDY

The scope of this study on industrial output on the growth of the Nigerian economy will be from 1990-2014, meaning that the study will span for 25 years. This scope is wide enough to reveal the impact of industrial output on Economic growth as it cover different industrial policy phases in the economy.

## LIMITATION OF THE STUDY

The major limitation of the study is paucity of data. A primary data at firm or industry level would have been ideal. This would have given room to knowing the peculiarities of individual firm or industries.

## SIGNIFICANCE OF THE STUDY

There have been several researchers on the assessment of the impact of industrial output on Economic growth in Nigeria. However, most of the studies are inconclusive. This study becomes

significant in the sense that it will ascertain the direction of relationship existing between industrial output and economic growth in Nigeria. Thus, the outcome will also be useful for policy makers in order to make policy that will improve the contributory impact of industrial output to economic growth in Nigeria. The study will also serve as "eye opener" for further researcher in the area of study.

## LITERATURE REVIEW

An industrial sector that does not contribute at least one-quarter of the country's Gross Domestic Product (GDP) is widely viewed as a major challenge enhancing a country's economic growth. Nigeria industrial is faced with capacity under utilization and this has posed a threat to the economic growth and development of the country (Olapade 2012a).

The importance of industrial output can be examined from various angles. The Government of Nigeria has in recent years been pursuing several policy initiatives to facilitate the process of industrialization in the country. It is of considerable importance both for the policy makers as well as researchers to take stock of the impact of these policy measures on the performance of the industrial sector. The dynamics of industrial sector can be assessed in terms of its size, composition, contribution and growth. Olapade and Olapade (2012) stressed that investment; employment and value added are the three critical performance indicators of industrial sector of the economy.

Ogbu (2012) noted that changes in the economic environment would stimulate the successful transfer of Nigerian entrepreneurial talent into a large scale-manufacturing sector. Manufacturing industries have been growing slowly and the value added of Nigerian industries has increased slightly over the years. The contribution of the Nigerian industrial sector to gross domestic product is still very insignificant.

One of the main reasons for industrialization is the expansion and generation of employment. According to Olalokun et al (2011), the proportion of labour employed in manufacturing has slowed down greatly. This according to them may be due to the under-utilization of capacity. In the manufacturing industry, the capacity utilization in 1980 was 60.1% and by 2000, it was below 35% (CBN 2013).

Tamuno and Edoumiekumo (2014), observed that the industrial sector and in particular, the manufacturing sub-sector is the heart of the economy. He went further to confirm that faulty or poor industrial development policies have long been recognized as major factors that adversely affect the well being and socio-economic improvement of the people in developing countries. He stressed that such policies are the major contributing factors to low value added and low economic growth. Uzaoga (1981) threw more light on the low performance of the industrial

sector in Nigeria. He noted that Nigeria, being a colony of Britain, has to specialize on the production of raw materials while Britain serves as the main supplier of manufactured goods. According to him, this unfortunate pattern of investment promoted specialized manufacturing based on a static scheme of comparative advantage whereby diversifying the Nigerian economy into activities that offered little opportunity for technical progress. The few industries established depended on foreign inputs. All these distortions according to him affected the performance of the industrial sector in terms of its contribution to the gross domestic product, employment generation; capacity utilization and value added which are indices for measuring the performance of the manufacturing sub-sector.

Investment structure in the industrial sector also affected the performance of the sector from the point of view of aggregate investment behaviour in the sector. Value added is a crucial indicator in measuring the significance of manufacturing in an economy. Englama et. al (2010) made us to believe that if the share of manufacturing in total GDP of an economy is low, the value added will surely correspondingly be very low. Low share according to them is associated with low value added. Industrialization is essential if it is to achieve rapid economic and social development.

Industries in Nigeria, however is still at an infant stage. It accounted for only about 6.18% of the Gross Domestic Products in 1998. The industrial base is small, but there is great scope for expansion. Nigerian Industries are concentrated in light consumer goods. There is hardly any production of capital and intermediate goods. Another feature of the industrial sector is its over-dependence on imports for the supply of raw materials and spare parts. There is no single industrial product in which the country is entirely self-sufficient. Nigeria's import bill is dominated by the cost of raw materials and spare parts. This explains why in the 1980's the economic stabilization measures designed to conserve foreign exchange affected industries most adversely. As a result of this, many factories reduced their scale of operations significantly while some closed down completely leading to increase in unemployment rates.

Many literatures confirmed the insignificant nature of the Nigerian industries in terms of its contribution to economic development Akinlo (1996) also confirmed this by saying that the industrial sector of the Nigerian economy was relatively insignificant starting from independence in terms of contribution to the Gross Domestic Product (GDP). Most of the earliest manufacturing industries, established by the colonial trading companies and a handful of other international firms, concentrated on the production of light industrial commodities such as detergents soft drinks, leather work, textiles and confectionery (Olukoshi 2009). He went further to point out that the pre-owned post-colonial production policy caused distortions in the sector, which was as a result of neglecting research and an excessive reliance on foreign input. The

manufacturing sub-sector is still characterized by distortions despite the adjustment programme. This needs to be eliminated according to him if the sector is to experience substantial growth. The industrial development survey published by the United Nations pointed out the factors that determine the growth of industrial output. These are called growth factors. They include:

1. The growth rate of GDP
2. The growth rate of per capita GDP
3. The level of per capita GDP
4. The growth rate of total export
5. The growth rate of gross capita formation
6. The level of investment.

## RESEARCH METHODOLOGY

### Sources of Data

This study rely purely on secondary source of data collection obtained from institutional and government publications such as National Bureau of Statistics and Central Bank of Nigeria Statistical Bulletin containing data on Gross Domestic Product, Industrial Output, Gross Savings and Inflation.

### Data Processing

The study explored the impact of Industrial Output on Economic Growth in Nigeria. The functional model specification borrowed from the linear production function.

$$g = f(L, K, T) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1) \text{ where}$$

$$g = GDP, L = Labour, K = Capital, T = Technology.$$

The application of this method has been extended to incorporate other economic determinants that affect Industrial Output as adopted by Akinlo (1996).

These variables include Total Savings and inflation. The justification for the fact that Industrial Output strongly depend on volume of investment which in turn determines industrial output.

$$GDP = \alpha_0 + \alpha_1 IOQ + \alpha_2 TSV + \alpha_3 INF \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (2)$$

To account for other indices that are specified in the model, the error term is introduced with linearization.

In line with the above specification, the model for the study becomes thus;

$$GDP = \alpha_0 + \alpha_1 \, IOQ + \alpha_2 \, TSV + \alpha_3 \, INF + \mu \; \dots\dots\dots\dots\dots\dots\dots\dots\dots \; (3)$$

Where: GDP = Gross Domestic Product

IOQ = Industrial Output

TSV = Total Savings in the economy

INF = Inflation Rate

$\mu$ = Error Term

In à priori, $\alpha_1$ and $\alpha_2$ are expected to be positive i.e. greater than zero while $\alpha_3$ is expected to be less than zero, that is:

$$\alpha_1 \; \alpha_2 > 0$$

$$\alpha_3 < 0.$$

**Estimation Procedure**

When dealing with time series data, it is pertinent to investigate whether the series are stationary or not. This is because the regression of non-stationary series on another may yield spurious results. According to Engle and Granger (1987), the parameter estimates from such a regression may be biased or inconsistent.

The stand and approach for testing stationery of time series data is the unit root test. The study employed the Augmented Dickey – Fuller (ADF) test proposed by Dickey and Fuller (1981), to test for the stationarity of the variables.

**Unit Root Test**

It is important to verify the stationarity or otherwise of the used variables so as to avoid spurious regression.

Equations (2) and (3) were used to test for the stationery properties of the variables involved. The null hypothesis being tested is that the variables are non-stationery at level against the alternative of stationery.

The Augmented Dickey Fuller (ADF) test as shown in table 1.0 shows that all the four variables in the series are stationery at 5 percent level of significance, Mc Kinnon critical level is -2.96. It is assumed that the variables were tested at first difference. Since all the variables were found to

be stationery at levels, further differentiating for stationery induction or co-integration among the variables were not needed.

**Table 1.0 Augmented Dickey Fuller test of unit root of variables.**

| Variables | ADF Statistic | Order of integration |
|-----------|---------------|----------------------|
| GDP | -3.60 | I(0) |
| IOQ | -3.21 | I(0) |
| TSV | -3.42 | I(0) |
| INF | -3.47 | I(0) |

**Source: Author's computation with e-view 7.0 version**

Having carried out the stationery test, the next thing is to empirically examine the impact of output on economic growth proxied by the Gross Domestic Product.

**Model Estimation and Interpretation of Results**

To empirically examine the relationship between industrial output and economic growth, equation (3) was regressed with GDP as the dependent variable and other variables (i.e. Industrial Output, Total Savings and Inflation) as independent variables as stated in the equation.

The three independent variables namely: Industrial output, total savings and inflation had $R^2$ of 0.88544 adjusted to 0.84662 indicating that the three variables have explained 85% of the variation in the independent variable, that is the GDP (economic growth).

As expected, industrial output (IOQ) and total savings (TSV) had positively signed coefficients with numerical values of 0.7124 and 0.6821 respectively.

Moreover, the inflation displayed the expected negative sign with numerical value of 0.4227. All the variables behaved in line with theoretical under pinning.

**DISCUSSION OF RESULTS**

**Coefficient of Determination ($R^2$ and Adjusted $R^2$):** This value measures the proportion or percentage of the total variation in the dependent that was explained by the independent variable in the model. Thus, the $R^2$ and adjusted $R^2$ for this regression are 89% and 85% respectively. This means that 85% of the variation in Gross Domestic Product during the period under investigation was explained by industrial output, total savings and inflation.

**F-Statistics:** This parameter measures the overall significance of the model. As shown in the regression, the F-Value calculated is 7.2 and this shows that it is statistically significant at 5% level. This basically means that the explanatory variables i.e. industrial output, total savings and inflation simultaneously explained the variations in the dependent variable i.e. economic growth.

**Durbin Watson (DW) Statistic:** The Durbin Watson Statistic measures the presence of serial autocorrelation i.e. the correlation between members of series of observation ordered in time. The DW – Statistic for the regression is 2.18. This means that the model is reliable in explaining the dependent variable in the model i.e. economic growth.

Thus, the à priori expectation of positive relationship between GDP and industrial output is correct. The total savings impacted positively on GDP as the slope coefficient is 0.6821 meaning that 1% change in savings will result to 68% change in GDP which is in tandem with the à priori expectation as theory stipulates. Moreover, the industrial output has positive relationship with the Gross Domestic Product with the slope coefficient of 0.7124. This means that 1% change in industrial output will result to 71% change in GDP affirming the à priori expectation of positive relation between the two variables.

On the other hand, inflation showed negative relationship with GDP, thus, affirming inverse relationship between inflation and Gross Domestic Product. This is line with the à priori expectation.

## CONCLUSION

Less controversy abounds about the fact that one of the significant contributors to the growth and development of any economy is the output from the industries in an economy. Literature is awashed with records of developed economies where industrial output both for exportation and local consumption formed the fulcrum of development.

In addition, researches have also shown that the impact of industrialization and industrial output in developing any economy cannot be over-emphasized.

From this study, it can be concluded that given the mild impact of industrial output on economic growth, output from industries in Nigeria is not impacting as expected given its contributory impact to growth in other developed countries of the world.

The following conclusions are obvious from the study:

    (i)    There is slight positive relationship between industrial output and economic growth.

(ii)   Total savings also impacts mildly on Economic growth.

(iii)   This poor performance of industrial output might not be unconnected with high level of inflation in the economy, industrial policy summersault and structured rigidities in the economy among others.

## RECOMMENDATIONS

Consequent upon the findings of this study, it becomes crystal clear that for industries in Nigeria to perform the expected developmental function, formulation of appropriate fiscal and monetary policy mix that will encourage investment, reduce inflation and attract prospective investors are inevitable. Moreover, efforts should be geared towards removing the structural and institutional rigidities in the economy.

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