

## **Analyzing the Drivers of manufacturing sector growth in Sub-Saharan Africa: Evidence from Nigeria**

**Charles Ibebi PhD**

Department of Banking and Finance, Federal University Otuoke, Bayelsa State  
Nigeria  
ibebicharles@gmail.com

**Benson Emmanuel PhD**

Department of Banking and Finance, Federal University Otuoke, Bayelsa State  
Nigeria  
besonemmanuel2014@gmail.com

DOI: 10.56201/wjfir.v7.no3.2023.pg1.15

---

### **Abstract**

*This study examines the determinants of manufacturing sector performance in the Nigerian economy from 1990 to 2021. This was aimed at ascertaining how per capita income (PKY), inflation (INF) and gross fixed capital formation (GFKF) has stimulate the manufacturing sector performance in Nigeria. Historical data was collated and estimated employing the Ordinary Least Squares (OLS) technique. The empirical results indicate that both inflation and per capita income exert significant positive impacts on the manufacturing sector performance in Nigeria, gross fixed capita formation did not even though it was positive. On the basis of the findings of this study, the following recommendations are made: The monetary authorities have to regularly review their monetary policy direction to bring inflation lower than it is; Policies that promote more employment and economic stimulus should be pursued to enhance the performance of the manufacturing sector performance; Government should create the appropriate macroeconomic policies by increasing capital investment to make the private sector accumulate more productive capital.*

---

### **1.1 Background of the Study**

The transformation from a traditional economy in SSA countries to a modern one where technology and modern production activities in manufacturing sector assume a significant role has remained a defining characteristic of economic growth and development (Naude & Szirmai,2012). The role of the manufacturing sector in the development of any economy cannot be over emphasized. Manufacturing has generally been described and accepted as a catalyst for economic growth and development all over the world, industrialization under industrial sector is widely conceived as a critical tool for accelerating economic growth and development. In the words of Sola, Obamuyi, Adekunjo and Ogunleye (2013), the manufacturing sector provides

medium to produce goods and services, facilitate good jobs, and also earn the economic agents' handsome rewards.

The manufacturing sector contribution to GDP in sub-Saharan African (SSA) economies has remained stagnant over the years. The adjustment reforms instituted by SSA countries to address their low industrial growth mainly due to the decline in oil prices during the global economic recession of the 1980s were not completely successful. Although the debates over the determinants of the manufacturing sector in developing countries was decades old, there was no concrete evidence that showed how the manufacturing sector varied relative to the components of economic development such as foreign direct investments (FDI), interest rates, inflation, labor costs, and government incentives. There are many empirical studies that suggest a significant relationship among the manufacturing sector, foreign direct investment, and GDP such as Quattara (2004) and Fredrick (2000) in SSA countries.

Szirmai (2009) argued that there was an empirical correlation between the degree of industrialization and per capita income in developing countries. Tybout (2000) maintained that the manufacturing sector was perceived as an engine of growth, a key source of skilled job creation and an avenue for various spillovers to other sectors. The scarcity of resources in SSA countries, coupled with limited foreign inflows for developmental purposes has often limited manufacturing sector growth and hindered the capability of developing countries to invest in growth projects such as infrastructure, education, energy, communications, and roads (Mallik, 2008). Although some scholars had lauded foreign direct investments as a key tool for stimulating growth in the manufacturing sector and other vital sectors within an economy (Chudnovsky & Lopez, 2002; Dunning, 2002), there has been no evidence to indicate its relevance on the economies of SSA countries. Kosack and Tobin (2006) argued that empirical evidence did not confirm a significantly positive relationship between FDI, GDP and manufacturing sector. Rana and Dowling (1988) explained that the effects of foreign aid on domestic savings, domestic investment, and the manufacturing sector growth of developing countries had been controversial since the end of the World War II.

Based on the foregoing, an empirical work that will critically identify and analyze the determinants of manufacturing sector performance in Nigeria is crucial to industrial policy formulation in Nigeria as posited by World Bank (2002). This will be done by taking a holistic view of the determinants of manufacturing sector in Nigeria, while the very relevant ones are selected based on available data.

From the foregoing, the study seeks to achieve the following objectives;

- i. To examine the relationship between per capita income and manufacturing sector value added in Nigeria.
- ii. To find out the nature of relationship between inflation and manufacturing sector value added in Nigeria.
- iii. To determine the relationship between gross fixed capital formation and manufacturing sector value added in Nigeria.

The following hypotheses have been formulated based on the objectives of study;

- H0<sub>1</sub>:** The per capita income does not have significant impact on manufacturing sector value added in Nigeria.
- H0<sub>2</sub>:** Inflation does not have significant impact on manufacturing sector value added in Nigeria.
- H0<sub>3</sub>:** Gross fixed capita formation does not have significant impact on manufacturing sector value added in Nigeria.

## LITERATURE REVIEW

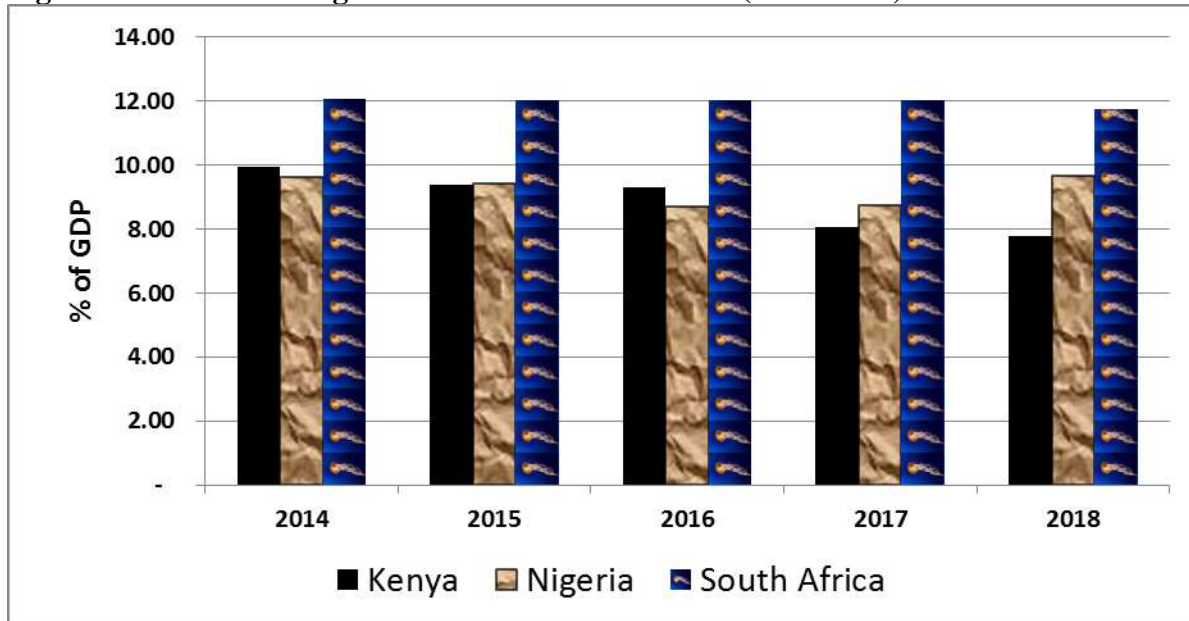
### 2.1. Conceptual framework

#### 2.1.2 Manufacturing sector Policy and Development in Nigeria

The government introduced the Structural Adjustment Programme (SAP) to deal with the unwholesome situation. Specifically, SAP was introduced to help correct the imbalance in resource allocations among and across sectors, accelerate development and enhance the use of local raw materials and intermediate inputs (Akinlo, 1996). According to Uwubanwen (2008) "it was to restructure and diversify the productive base of the economy in order to reduce dependence on oil and on imports" as well as remove bottlenecks that have impeded rapid industrial development.

Unfortunately, the expected relief and upliftment for the industrial sector was never realized because of the nature and structure of our industrial sector. Cost of local production shot up following the introduction of SAP. Locally produced goods couldn't compete favourably with imported goods both in price and quality. Because our industries still depended heavily on imported machineries and raw materials, the costs of sourcing them became exorbitant and unbearable in the face of scarce foreign exchange. Sadly, no serious attention was given to developing local sourcing of neither raw materials nor indigenous technology necessary to process such materials. Consequently, serious economic crisis completely enveloped the manufacturing sector and thereby restrained its potentials to create wealth, generate employment as well as enhance poverty alleviation. As the UNDP in 2007 report on Nigeria showed, the poverty level in Nigeria had progressively worsened over the years (Banjoko, Iwuji & Bagshaw, 2012).

The main indicator of manufacturing sector performance is the manufacturing sector value added (MVA). Among the Sub-Saharan African countries included in this study, South Africa appear to have performed better in terms of manufacturing sector value added as percentage ratio of GDP. Data from the World Bank shows that the ratio of MVA to GDP averaged 11.97% between 2014 and 2018. This is contrary to the case in Nigeria and Kenya that averaged 9.23% and 8.90% for the same period.

**Figure 1: Manufacturing Value Added Performances (% of GDP)**

Source: World Bank Data, 2018 (<https://data.worldbank.org>)

For Nigeria, Loto (2012) availed that the manufacturing sector in Nigeria is still at an infant stage. There is hardly any production of capital and intermediate goods. Another feature of the manufacturing 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.

The Nigerian manufacturing sector as at today has not contributed substantially to the country's GDP nor has it contributed significantly to employment generation. The growth rate of employment in the sector has been on the downward trend. Today, the nation's overall employment situation has worsened. Part of what the Economic Reform Programmes under the National Economic Empowerment Development Strategy (NEEDS) was supposed to achieve was to generate more employment for our teeming jobless youths. Unfortunately, and rather than abate, the rank of our jobless graduates is widening day by day. Worst hit is the textile industry sub-sector where not less than 37 textile companies have folded up since year 2000 (Banjoko, Iwuji & Bagshaw, 2012).

### 2.1.3 Determinants of Manufacturing Sector in Sub-Sahara Africa

A review of the empirical literature has shown first, that the manufacturing sector in SSA countries declined following the global oil price decline and the global recession in the early 80s. The decline has been confirmed by studies undertaken by Ghura and Goodwin (2000), and Alli (2007). Existing literature supports the notion that inflation exerts a negative impact on private investment and manufacturing sector growth.

However, The major factors responsible for the retrogression of the Nigerian manufacturing sector can be traced to the following unwholesome challenges on the account of Banjoko, Iwuji and Bagshaw (2012).

- a) **Unfriendly Business Environment.** The Nigerian business environment is far from being friendly and congenial for manufacturing activities to thrive. The availability of critical infrastructures necessary to support the sector is far from being adequate, imports of essential raw materials are problematic and government bureaucracy is very cumbersome.
- b) **Poor Regulatory Environment.** Nigeria is characterized by a poor regulating environment. Laws are made and broken at will and enforcement machineries and agencies are seriously deficient and corrupt.
- c) **Infrastructural Challenges.** Nigeria's infrastructural challenges are so daunting to the extent that they have caused incalculable damage to the growth of the economy in general and the manufacturing sector in particular. The truth is that successive governments in Nigeria have not made adequate investments in public infrastructure to the level required to guarantee sustainable growth of our economy. The nation's power supply is erratic and grossly inadequate. The Nigerian power sector has witnessed serious neglect over the years. For example, for a period of twenty years between 1979 and 1999, no new investment in the power sector took place despite the fact that our population and economy grew remarkably during this period. It is sad and shameful that the power sector cannot generate 4000 megawatts of electricity for an economy that requires between 40,000 and 50,000 megawatts for sustainable national growth and development.
- d) **Multiple Taxation.** Another serious challenge facing the operators of our manufacturing sector thereby constituting the problem of multiplicity of taxes, levies and other spurious charges that have imposed heavy cost burden on the companies thereby escalating the cost of doing business.
- e) **Rising Cost of Capital.** Rising interest rate on borrowed loans have in the past risen to as high as 22% thereby constituting another crippling factor on the growth of the Nigerian manufacturing sector. In recent time, the lending rates have crashed but not sufficient enough to give the needed reprieve. The recent CBN banking reforms and recapitalization have made access to banking facilities more difficult as banks have become more cautious in granting credits to the operators of the real sector. With restricted access to bank facilities, the woes of the manufacturing sector have become even more compounded.
- f) **Per Capita Level of Real GDP:** if the per capita level of real GDP is high, there is tendency for the purchasing power of the people to increase (i.e. effective demand) if this happens, a high demand for output leads to expansion in order to meet demand, and this will in turn lead to increase in demand of the inputs needed to produce the required increase in output.
- g) **Capacity Utilization:** A positive relationship is expected. If there is increase in demand for manufactured goods, the production capacity must be increased to meet the increase in demand and at the same time will increase output.
- h) **Rate in Inflation:** a negative relationship is expected. An increase in inflation rate will dampen output expansion, since inflation reduces the purchasing power of the people.

- i) **Export of Manufacture:** a positive relationship is expected. Increase in manufacturing exports will generate needed foreign exchange to pay for imports especially raw material to improve capacity.
- j) **Political Stability:** this is a dummy variable that can also affect output expansion. When the country is stable politically, there is tendency for increase in investment especially from outside the country to take place. This will also promote output expansion.
- k) **Real GDP:** growth in GDP is associated with efficient performance in manufacturing sub-sector. A positive relationship is expected.
- l) **Domestic Capital Formation:** a positive relationship is expected between manufacturing output and domestic capital formation.

## 2.2 Theoretical Framework

### 2.2.1 Harrod-Domar Growth Model

The Harrod-Domar is a modern theory of growth which is propounded by Roy Harrod with an article "an Essay Dynamic Theory (1939)". This model was meant to tackle the problem of underdevelopment in the developing countries the necessary criterion for development is the ability of a nation to save a proportionate part of its national income, if only to change worn-out or impaired capital goods (buildings, equipment, and materials). However, in order to grow, new investments representing net additions to the capital stock are necessary.

Harrod-Domar theory of economic growth, states simply that the rate of growth of GDP ( $\Delta Y/Y$ ) is determined jointly by the net national savings ratio,  $s$ , and the national capital-output ratio,  $c$ . More specifically, it stated that in the absence of government intervention, the growth rate of national income will be directly or positively related to the savings ratio (that is, the more an economy is able to save and invest out of a given GDP, the greater the growth of that GDP will be) and inversely or negatively related to the economy's capital-output ratio (that is, the higher  $c$  is, the lower the rate of GDP growth will be).

The equation of the Harrod-Domar theory of growth is given thus:

$$\Delta Y/Y = S/C \quad (1)$$

Where

$Y$  = GDP of the economy,

$\Delta Y/Y$  = rate of GDP growth,

$S$  = net savings ratio,

$C$  = capital-output ratio.

On a general note, the famous Harrod-Domar equation of economic growth can be stated as:

$$\Delta Y/Y = Sg/c - \delta \quad (2)$$

where  $\delta$  is the rate of capital depreciation. Unfortunately, the mechanisms of development stated in the Harrod-Domar model failed. The basic reason of its failure was not because more saving and investment isn't a necessary condition for accelerated rates of economic growth but rather because it is not a sufficient condition. The Harrod-Domar model based its analysis implicitly on the existence of already made institutional, structural and attitudinal conditions because it explained vividly the development situation of Europe via the Marshall Plan

### 2.3 Empirical Review

Adebiyi et al. (2004) conducted an empirical investigation on Trade Liberalization Policy and Industrial Growth Performance in Nigeria. The work studied the relationship between trade policies and industrial growth in Nigeria, using quarterly time series data spanning 1973 and 2001. The model developed by Lucas (1988) is taken as the theoretical framework for undertaking empirical work on the relation between trade liberalization and industrial growth in Nigeria. The study adopted cointegration and error correction mechanism. After the estimation, it was confirmed that trade openness and real export were significant determinants of industrial production in Nigeria.

Akinlo (2013) draws attention to the performance of the manufacturing sub-sector before and after SAP. Adopting OLS technique, it was observed that the manufacturing industries of Nigeria is relatively insignificant at independence in terms of contribution to the Gross Domestic Product (GDP) because most of the earliest manufacturing industries established by the colonial trading companies concentrated on the production of light industrial commodities such as detergent, soft drinks, leatherwork, and confectionaries. He opined that pre and post-colonial production policy occasioned in the sector was as a result of neglecting research and excessive reliance on foreign input. According to him, distortions affected the performance of output in the manufacturing sector in terms of its contribution to the gross domestic products, employment generation, capacity utilization and value added adversely. Despite the economic adjustment reforms initiated in 1986, the manufacturing sector is still characterized by distortion. He concludes that these, need to be eliminated if the sector is to experience substantial growth.

Adenikiju (2012) used an empirical model to investigate and analyze the impact of government investments on manufacturing performance and found that inefficient investment in economic infrastructure has a negative effect. He opined that the weak state of basic infrastructure; for instance, fuel shortage has forced industries to incur huge man hour losses arising from absence of workers from work, raw material spoilage and extra investment in fuel pumps.

Fabayo (2014), used the concept of capacity output to measure, the capacity utilization level of some selected Nigerian manufacturing industries. He sees capacity output as the production flow that is associated with the input of fully utilized manpower, capital, price of capital and other relevant factors of production, the difference between capacity output and actual output flow is regarded as the 'output gap' and the ratio of actual output to capacity output measures the capacity utilization rates.

Haggan and Enu (2013), analyzed on the impact of macroeconomic indicators on industrial production in Ghana. The ordinary least squares estimation technique is utilized given the sample

size of 21 due to the unavailability of data. The study identified real petroleum prices (-), real exchange rate (-), import of goods and services (+) and government spending (+) as the key macroeconomic factors that influence industrial production in Ghana. Based on the findings, he recommended that the government of Ghana should continue to stabilize the macroeconomic environment of Ghana in order to achieve industrial growth and development.

Orji (2012) examines the impact of industrial sector on the economic growth in Nigeria, he adopted johansen test of cointegration to check if the variables are cointegrated in the long run, he find out that industrial growth has a positive relationship on the economic growth in Nigeria.

Yesufu (2014) examines the empirical relationship between industrial growth and the economic growth in Nigeria, using OLS method to examine the direction of the relationship between the variables under study, from his analyses he found out that industrial growth has positive relationship on the economic growth in Nigeria.

In the analysis of determinants and effects of capacity utilization on manufacturing sector in Nigeria, Osoba (1977) identifies the following factors and measured their effects on capacity utilization. The variables are the level of output, average basic hourly rate of pay of workers in each establishment, the shift ratio, age of the establishment and the size of each establishment in terms of unemployment. Using a recursive simultaneous model formulated in a double logarithmic functional form of which parameters were estimated. The result shows that the elasticity of output with respect to the rate of capacity utilization is 3.87. Thus, the output of an establishment would be expected to rise as the rate of capacity utilization increases. Also, the result obtained from the data for 68 firms in Nigeria shows that the elasticity of utilization with respect to the wage rate is positive, but less than unity in the manufacturing industry in Nigeria.

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The research design adopted in this study falls within the paradigm of an Ex-post facto design type. The reason is that the events observed, in this case the determinants of manufacturing sector performance in Nigeria. Hence, the study is intended to review and evaluate per capita income, inflation and gross fixed capital formation determinants of manufacturing sector value added in Nigeria, with the view to ascertaining their effectiveness, and making possible recommendations for improvement to make the economy of the country more effective. This study also used the explanatory research design. This is because the study will also seek to establish the effects of per capita income, inflation and gross fixed capital formation on manufacturing sector value added in Nigeria. To this end, regression models which seeks to explain these relationships will be formulated through foundational theories and empirical studies to cover for the period 1990 to 2021.

#### **3.2 Nature and Sources of Data**

This study relies primarily on secondary data. The secondary data involves are carefully collected from the World Bank data base, Central Bank of Nigeria (CBN) statistical bulletin, and world bank data base. Again, to achieve the stated objectives of this study, annual time series data



for the period 1990-2021 were sourced and will be used. Other available sources of data used include Journals, Books and Magazines etc. which are relevant to this study.

### 3.3 Analytical Framework and Model Specification

This study is guided by the theoretical framework discussed in the previous section of this proposal with special reference to the Leontiff input and output model particularly the DilipDutta(2006) industrial production function model  $MNP = f(PKY, INF, GFKF)$ . Where manufacturing sector value added was expressed as a function of per capita income, inflation and gross fixed capital formation. However our model is seen to have modified in a way that accommodates only per capita income, inflation and gross fixed capital formation. These were also included in our model consequently; our model for industrial production function is modified to accommodate these variables and is specified thus:

$$MNP = f(PKY, INF, GFKF) \dots \dots \dots (3.1).$$

Equation 3.1 shows a single-equation regression model (SERM) which seek to explain the relationship between per capita income, inflation and gross fixed capital formation and manufacturing sector value added for this study.

Where,

MNP - manufacturing sector value added

PKY - per capita income,

INF - inflation

GFKF - gross fixed capital formation

### 3.5 Method of Data Analysis

The simple ordinary least squares based on the ARDL framework to examine the relationship between per capita income, inflation and gross fixed capital formation and manufacturing sector value added. The model is autoregressive because the dependent variable is explained in part by the lagged values of itself. The approach involves estimating the following equation:

$$MNP_t = \alpha_0 + \alpha_1 MNP_{t-i} + \alpha_2 PKY + \alpha_3 INF + \alpha_4 GFKF + \mu_t \dots \dots \dots (3.2)$$

Equations 3.5 are the derived from the derived model earlier adopted for this study.

Where,

t = time

$\alpha_0$  = constant term

$\alpha_1 - \alpha_4$  = long-run coefficients

$\mu_t$  = white noise error term

### 3.6 Hypothesis Testing and Decision Rule Criteria

The decision rule was employed to test the hypothesis of the study and to make comparison between the probability value and the critical value. The study adopted 5% as its level of significance. The following decision rules were adopted for rejecting or accepting the null hypotheses: If,

- i. Probability value (p-value) > 0.05 critical value; do not reject the null hypothesis ( $H_{0i}$ ).
- ii. Probability value (p-value) < 0.05 critical value; reject the null hypothesis ( $H_{0i}$ ).

## DATA PRESENTATION AND ANALYSIS

### 4.2 Descriptive Statistics

The study conducted the descriptive statistics of the relevant variables involved. Table 4.1 vividly shows these statistics. It shows total number of observations, mean, median, maximum, minimum, standard deviation and the sum of mean deviation. This study's dependent variable is manufacturing sector value added (MNP), while the independent variables are per capita income (PKY), inflation (INF) and gross fixed capital formation (GFKF). However, MNPhas a minimum of 1.155% and a maximum value of 67.467% of Nigeria's GDP. In the same measure, the maximum and minimum values for PKY are \$270.22 and \$3,098.98; for GFKF are 14.17% and 53.12%; for INF are 5.38% and 72.83%, respectively.

**Table 4.1: Descriptive Statistics**

	<b>MNP</b>	<b>GFKF</b>	<b>INF</b>	<b>PKY</b>
<b>Mean</b>	20.59070	27.92886	18.06083	1436.332
<b>Median</b>	18.32409	26.11488	12.71577	1462.404
<b>Maximum</b>	67.45683	53.12219	72.83550	3098.986
<b>Minimum</b>	<b>-1.155239</b>	<b>14.16873</b>	<b>5.388008</b>	<b>270.2240</b>
<b>Std. Dev.</b>	15.76498	11.40089	16.36505	923.0286
<b>Skewness</b>	1.236336	0.485330	2.170105	0.196059
<b>Kurtosis</b>	4.606616	2.103022	6.633406	1.531827
<b>Jarque-Bera</b>	11.59377	2.328999	42.71876	3.079049
<b>Probability</b>	0.003037	0.312079	0.000000	0.214483
<b>Sum</b>	658.9025	893.7235	577.9467	45962.64
<b>Sum Sq. Dev.</b>	7704.571	4029.386	8302.263	26411435
<b>Observations</b>	32	32	32	32

**Source: Researcher**

For the degree of volatility, the standard deviation in table 4.1 showed that PKY in Nigeria was more volatile having a standard deviation value of 923.0286. This is clearly so because the standard deviation value is the highest among all the data included in the model.

### 4.3 Hypotheses Testing

To test the hypotheses, we will use probability criteria, if:

$p > 0.05$ : Accept  $H_0$ .

$p < 0.05$ : Reject  $H_0$ .

#### 4.3.1 Testing of Hypothesis One (1)

Hypothesis one is restated below:

**H0<sub>1</sub>:** The per capita income does not have significant impact on manufacturing sector value added in Nigeria.

**Table 4.2: Extraction for Testing Hypotheses One**

Variable	Coefficient	t-Statistic	Prob.	Decision
PKY	0.0089	2.2584	0.0329	Reject H01

Source: Researcher

First of all, the result shows that there is a positive and significant relationship between PKY and MNP (representative of the performance of the manufacturing sector) in Nigeria. The result means that a single unit increase in PKY leads to an increase of 0.0089 units in manufacturing sector performance in Nigeria. Since the computed probability value of PKY (0.0329) is less than the critical test level of 0.05 (i.e.  $P < 0.05$ ), we reject the null hypothesis and conclude that per capita income has significant impact on manufacturing sector value added in Nigeria.

#### 4.3.2 Testing of Hypothesis two (2)

Hypothesis two is restated below:

**H0<sub>2</sub>:** Inflation does not have significant impact on manufacturing sector value added in Nigeria.

**Table 4.3: Extraction for Testing Hypotheses Two**

Variable	Coefficient	t-Statistic	Prob.	Decision
INF	0.8825	7.6095	0.0000	Reject H02

Source: Researcher

The result in table 4.4 as issued in regression revealed that there is a positive and significant relationship between INF and MNP (representative of the performance of the manufacturing sector) in Nigeria. The result means that a single unit increase in INF leads to an increase of 0.8825 units in manufacturing sector performance in Nigeria. Since the computed probability value of INF (0.0000) is less than the critical test level of 0.05 (i.e.  $P < 0.05$ ), we reject the null hypothesis and conclude that inflation has significant impact on manufacturing sector value added in Nigeria.

### 4.3.3 Testing of Hypothesis three (3)

Hypothesis three is restated below:

**H0<sub>3</sub>:** Gross fixed capita formation does not have significant impact on manufacturing sector value added in Nigeria.

**Table 4.4: Extraction for Testing Hypotheses Three**

Variable	Coefficient	t-Statistic	Prob.	Decision
GFKF	0.6695	1.9164	0.0668	Accept H03

**Source: Researcher**

Thirdly, the result in table 4.5 as issued in regression revealed that there is a positive and insignificant relationship between GFKF and MNP (representative of the performance of the manufacturing sector) in Nigeria. The result means that a single unit increase in GFKF leads to an increase of 0.6695 units in manufacturing sector performance in Nigeria. Since the computed probability value of GFKF (0.0668) is more than the critical test level of 0.05 (i.e.  $P > 0.05$ ), we accept the null hypothesis and conclude that gross fixed capital formation does not have significant impact on manufacturing sector value added in Nigeria.

## 4.4 Discussion of Results

### Effect of per capita income on manufacturing sector performance in Nigeria

The first objective of this study was to determine the effect of per capita income on manufacturing sector performance in Nigeria. The regression analysis shows that per capita income has a positive and significant relationship with manufacturing sector performance in Nigeria. The coefficient of per capita income is positive. Per capita income indicating a positive and significant relationship with manufacturing value added in the long run, conforms to economic theory in terms of the sign and the magnitude in terms of its significance makes economic sense. Per capita income being one of the key factors of development used in production is expected to show a positive relationship with manufacturing value added coupled with the labour intensive nature of the Nigerian economy. The statistically significant relationship shows the significance of the factor inputs in the manufacturing sector as less of per capita income is used.

#### **4.4.2 Effect of inflation on manufacturing sector performance in Nigeria**

Another objective of this study was to determine the effect of inflation on manufacturing sector performance in Nigeria. The regression analysis shows that inflation is positive and significant; implying that an increase in value of inflation in Nigerian would increase manufacturing sector performance in Nigeria. The coefficient of the value of inflation in Nigeria is positive. This implies that the value of inflation has a positive impact on manufacturing sector performance in the Nigerian economy.

When the economy is not running at capacity, meaning there is unused labor or resources, inflation theoretically helps increase production. More dollars translates to more spending, which equates to more aggregated demand. More demand, in turn, triggers more production to meet that demand. British economist John Maynard Keynes believed that some inflation was necessary to prevent the Paradox of Thrift. This paradox states that if consumer prices are allowed to fall consistently because the country is becoming too productive, consumers learn to hold off their purchases to wait for a better deal. The net effect of this paradox is to reduce aggregate demand, leading to less production, layoffs, and a faltering economy.

#### **Effect of gross fixed capital formation manufacturing sector performance in Nigeria**

From the findings, it was established that gross fixed capital formation have positive and insignificant effect on manufacturing sector performance in Nigeria. The coefficient of gross fixed capital formation was found to be positive. This implies that the gross fixed capital formation exert a direct impact on the demand and use of manufacturing sector product in the economy. Further observations indicate that the gross fixed capital formation is statistically invalid in this respect. Gross fixed capital formation found a positive and significant relationship with manufacturing value added in the long run and this agrees with economic theory. Capital is one of the key factor inputs used in production and given the limited supply of this factor input in the Nigerian economy, it is expected to have a positive and significant relationship with manufacturing value added in the long run.

### **CONCLUSION AND RECOMMENDATION**

#### **5.1 Conclusion**

This study examines the determinants of manufacturing sector performance in the Nigerian economy. This was aimed at ascertaining how per capita income (PKY), inflation (INF) and gross fixed capital formation (GFKF) has stimulate the manufacturing sector performance in Nigeria. Historical data was collated and estimated employing the Ordinary Least Squares (OLS) technique. The empirical results indicate that both inflation and per capita income exert significant positive impacts on the manufacturing sector performance in Nigeria, gross fixed capita formation did not even though it was positive.

#### **5.2 Recommendations**

On the basis of the findings of this study, the following recommendations are made.

- a) The monetary authorities have to regularly review their monetary policy direction to bring inflation lower than it is.
- b) Policies that promote more employment and economic stimulus should be pursued to enhance the performance of the manufacturing sector performance.
- c) Government should create the appropriate macroeconomic policies by increasing capital investment to make the private sector accumulate more productive capital.

## References

- Adebiyi M.A.(2004) “Trade Liberalization policy and industrial Growth”.*Nigerian Economic Society Publication.*
- Adofu, I., Taiga, U. U. & Tijani, Y. (2015). Manufacturing Sector and Economic Growth in Nigeria. *Donnish Journal of Economics and International Finance*, 1(1), 001-006. Accessed from <http://www.donnishjournals.org/djeif>
- Akinlo. (2013) “Industrialisation and Nigeria’s Economic Development” *Nigerian Economic Society Publication.*
- Akpan H.E.(2001) “Industrialisation and Nigeria’s Economic Development” *Nigerian Economic Society Publication.*
- Alli, F. (2008, May 29). Nigeria: 9 years of manufacturing with tears, any hope in sight? Retrieved from <http://www.allafrica.com/stories/200805290133>
- Banjoko S., Iwuji, I., & Bagshaw, K. (2012). The performance of the Nigerian manufacturing sector: A 52 year analysis of growth and retrogression (1960-2012). *Journal of Asian Business Strategy*, 2(8), 171-191.
- Edmond Hagan and Patrick Enu (2013) “Impact of Macroeconomic Factors on Industrial Production In Ghana” *European Journal of Scientific Research*. November 2013. Accessed through <https://www.researchgate.net/publication/276266694>
- Falade, O.E., & Oladiran, I. O. (2015). Effects of Government Capital Expenditure on Manufacturing Sector Output in Nigeria, *Business and Economic Research*, 5(2), 137-152.
- Fredrick, M. (2000). Determinants and constraints to private investment: The case of Kenya. *African Institute for Economic Development and Planning (IDEP).*
- Ghura, D., & Goodwin, B. (2000). Determinants of private investment: A cross regional empirical Investigation. *Applied Economics*, 32(14), 1819-1829. Retrieved from <http://www.ingentaconnect.com/content/routledg/raefm>

- Ilegbinosa, I. A. (2013). An Appraisal of Fiscal Policy Measures and its Implication for Growth of the Nigerian Economy: 1970-2009," *Advances in Management and Applied Economics*, vol. 3, (4), pp. 193.
- Kosack, S. and Tobin, J. (2006) Funding Self-Sustaining Development: The Role of Aid, FDI and Government in Economic Success. *International Organization*, 60, 205-243. <http://dx.doi.org/10.1017/S0020818306060097>
- Loto, M. A. (2012). Global Economic Downturn and the Manufacturing Sector performance in the Nigerian Economy, *Journal of Emerging Trends in Economics and Management Sciences*, 3(1), 38-45.
- Malik, G. (2008). Foreign Aid and Economic Growth: A Cointegration Analysis of the Six Poorest African Countries February 2008 *Economic Analysis and Policy* 38(2):251-260 DOI:10.1016/S0313-5926(08)50020-8
- Mgbemena, O.O., Nwogwugwu, U.C. & Kalu, C.U. (2015). Determinant of Private Investment in Nigeria's Manufacturing Sub-sector. *International Journal of Academic Research in Business and Social Sciences*, 5(5), 376-384
- Millin, M.W. 2003. Economic growth in South Africa: A Kaldorian approach. Durban: UKZN. (Dissertation – Mcom). Accessed from <http://researchspace.ukzn.ac.za/jspui/handle/10413/7309>
- Molapo, S. & Damane, M. (2015). Determinants of Private Investment in Lesotho. *European Scientific Journal*, *ESJ*, 11(34). Retrieved from <https://ejournal.org/index.php/esj/article/view/6743>
- Obioma, B.K., Anyanwu, U. N., & Kalu, A. O.U. (2015). The Effect of Industrial Development on Economic Growth (An Empirical Evidence in Nigeria 1973-2013). *European Journal of Business and Management*, 7, 160-170.
- Olamade, O., Oyebisi, T.O., & Olabode, S.O. (2014). Strategic ICT-Use Intensity of Manufacturing Companies in Nigeria. *Journal of Asian Business Strategy*, 4, 1-17.
- Orji (2012). The Nigerian Economy. Anatomy of a Traumatized Economy With some Prospects of Stabilization. Fourth Dimension Publishing Company. Enugu.
- Sola, O., Obamuyi, T.M., Adekunjo, F.O., & Ogunleye, E.O. (2013). Manufacturing Performance in Nigeria: Implication for Sustainable Development. *Asian Economic and Financial Review*, 3, 1195-1213.
- Szirmai, A. (2009). Industrialization and an engine of growth in developing

countries, 1950 - 2005. UNU –MERIT and UNIDO workshop on pathways to industrialization in the 21st century: New challenges and Emerging Paradigms, Maastricht, The Netherlands. Retrieved from <http://www.iariw.org>

Tybout, J. (2000). Manufacturing firms in developing countries: How well do they do, and why? *Journal of Economic Literature*, 11-44. doi: 10.1257/jel.38.1.11

Yesufu(2014). Industrial Development in Nigeria.Pertternsand Problems. U.I Press Ibadan.