

Telecommunications Trend analysis of the performance of Nigeria's manufacturing sector, 1960-2010

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General Note

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ABSTRACT

This paper examines the performance of the Nigerian manufacturing sector for fifty years (1960-2010) using such performance indices as manufacturing sector real GDP, percentage contribution to the Gross Domestic Product, index of manufacturing production, and percentage average manufacturing capacity utilization within this period. The major finding was that despite many policies and developmental initiatives undertaken by successive civilian and military administrations since independence, the Nigerian manufacturing sector has grossly underperformed in relation to its potential due to several daunting challenges facing the sector. The data analysis revealed the unimpressive state of the manufacturing sector over the years, its low percentage contribution to GDP, as well as the effect of the fluctuating average manufacturing capacity utilization on the growth rate and productivity of the sector. The study recommended that the key to reversing the poor performance of Nigerian manufacturing is an increase in adequate capacity utilization to boost local manufacturing and export.

Keywords: Manufacturing sector, industrialization.

1. INTRODUCTION

Industrialization has been accepted as the major driving force of the modern economy. In most modern economies, industrial sector serves as the vehicle for the production of goods and services, the generation of employment and the enhancement of incomes. Hence, industrialization, and in particular the manufacturing sub-sector, can be seen as the heart of the economy.

The manufacturing sector of any economy worldwide is reputed to be the engine of growth and a catalyst for sustainable transformation and national development. This is because of its enormous potentials as a tool for creating wealth, generating employment, contributing to the country's Gross Domestic Product as well as alleviating poverty among the citizenry. The experiences of the developed countries of the world and the emerging economies of China, India, North Korea, Malaysia and Singapore show that there is a positive correlation between the aforementioned indicators of the performance of the manufacturing sector and national growth and development. Thus, for many developing countries like Nigeria, the development of the manufacturing sector is an imperative for meaningful and sustainable national growth.

In the light of the above, Nigeria has employed several strategies which were aimed at enhancing the productivity of the sector in order to bring about economic growth and development. For instance, the country adopted the import substitution industrialization strategy during the First National Development Plan (1962-1968) which aimed at reducing the volume of imports of finished goods and encouraging foreign exchange savings by producing locally, some of the imported consumer goods (CBN, 2003). The country consolidated her import substitution industrialization strategy during Second National Development Plan period (1970-1974) which actually fell within oil boom era. At this time, manufacturing activities were so organized to depend on imported inputs because of the weak technological base of the economy. However, as a result of the collapse of the world oil market in the early 1980s, there was a severe reduction in the earnings from oil exports. Consequently, the import-dependent industrial structure that had emerged became unsustainable owing to the paucity of earnings from oil exports which could not adequately pay for the huge import bills.

Various policy measures were adopted to ameliorate the above situation, such as the stabilization measures of 1982, the restrictive monetary policy and stringent exchange control measures of 1984, all proved abortive. This led to the introduction of the Structural Adjustment Programme (SAP) in 1986 (CBN, 2003).

One of the main reasons for the introduction of SAP was to reduce the high dependence of the economy on crude oil as the major foreign earner, by promoting non-oil exports, particularly manufactured goods. The non-oil sector comprises those groups of economic activities which are outside the petroleum and gas industry or those not directly linked to them. It consists of sectors such as manufacturing, agriculture, telecommunication, service, finance, tourism, real estate, construction and health sectors. However, despite the efforts of government, and all the economic policies introduced, the growth of the non-oil sector, particularly the manufacturing sub-sector remains inconclusive. The contribution of the manufacturing sub sector to GDP has fluctuated and declined steadily over the years, the average manufacturing capacity utilization remains less than 60% since 1983, and the manufacturing production index also remains inconclusive.

This study seeks to determine the manufacturing performance in Nigeria for sustainable economic development for fifty years, after gaining her independence in 1960. In the pursuit of this, the specific objectives are to:

- i. Evaluate the growth rate and contribution of manufacturing to GDP;
- ii. To examine the trend in the manufacturing production index;
- iii. To determine the nature and structure of capacity utilization; and,
- iv. Identifying factors influencing manufacturing performance.

2. LITERATURE REVIEW

The potential of industrialization for explosive growth is particularly distinctive to manufacturing. Manufacturing sector is very germane to the development of any nation most especially the underdeveloped ones. And over the years, Economists have for a long time discussed the causes of economic growth and the mechanisms behind it. The theory of the growth of conventional economy began with the neoclassical proposition of Solow (1956), which basically highlights issues such as "constant returns to scale, diminishing marginal productivity of capital, exogenously determined technical progress and substitutability between capital and labour". Consequently, Solow's initiative foregrounds the elements of savings and investment as important factor responsible for immediate growth in economy. For the long- time experience, progress and sophistication in technology is identified to be core, even though the foregoing is seen as exogenous" to the economy concerned. Suffice to submit that even though the neoclassical growth approach favours labour and capital as indexes of growth in economy, other alternatives such as growth in technology, which is considered exogenous, have remained unexplored. This omission, as well as inconsistent practical evidence, has necessitated the

quest for alternatives by researchers. Specifically, the contribution of progress in technology as an important stimulus to sustainable economic growth has been continuously adopted when regular and progressive returns to capital are emphasized.

Nigeria's approaches and methods of industrialization have been quite different leading to not too impressive results. In fact, large scale manufacturing plants were rare in Nigeria until the 1950s. The only enterprises equipped in organization and finance for these activities were the trading companies, which imported manufactured goods and beyond them, the overseas manufacturers who produced for the Nigerian market, but neither group saw compelling reasons to locate production in Nigeria (Kirk-Greene, 1981). In 1958, the contribution of manufacturing to GDP was N81 million (4% of GDP). Five years later (1963), it rose to N157.8 million (5.6% of GDP). The corresponding annual rate of growth was 17%. By 1967, manufacturing contributed N225.8 million (8.4% of GDP). The high degree of transformation taking place in the manufacturing sector was very remarkable. From 50% in 1958, the value-added generation from the processing of agricultural products fell to less than 25% in 1967, while industrial factory production accounted for the rest (Anakom, 2008).

The sector was to record more worrisome developments in later years. For instance, manufacturing value-added as a percentage of GDP was about 5% in 2000 (less than the proportion at independence in 1960), making Nigeria one of the 20 least industrialized economies in the world. The situation later picked up as industrialization soared during the oil boom era (1973 – 81) with manufacturing share of GDP reaching 11%, but later had a precipitous decline to about 5% in 2000. Manufacturing export was barely 0.4% of exports, while import of manufactured goods was about 15% of GDP or more than 60% of total imports (Ikepeze, 2004). Anyanwu (2004) proposed that productivity in the Nigerian manufacturing industry is hampered by lingering factors such as low level of technology, low level of capacity utilization rate, low investments, high cost of production, inflation, and poor performing infrastructure.

Ebong et al (2014) examined the nature of the influence globalization might have exerted on the industrial development of Nigeria over the past five decades (1960-2010). Findings clearly showed that globalization had significant impacts on industrial development in Nigeria. Specifically, trade openness had a positive influence on industrial development. This suggested that increasing the level of trade with the rest of the world would create opportunities to export local raw materials and import necessary inputs into the industrial process. In contrast, financial liberalization adversely impacted on industrial development.

Riman, Akpan, Offiong and Ojong (2013) examined the nexus among oil revenue shock, non-oil export and industrial output in Nigeria for the period 1970 to 2010. The Johansen co-integration estimate showed that a long run behaviour exist among oil revenue shock, non-oil export, policy/regime shift and industrial output in Nigeria.

Zainawa (2006) examined the impact of globalization on Nigerian industries, focusing attention on the footwear industry in Kano State for the period covering 1980 to 2004. Descriptive methods were mainly used in analyzing the data. Finding from this study shows that globalization has a serious negative impact on footwear industry in Kano State. In specific terms, the results showed that the phenomenon of globalization has led to industrial closures, production capacity underutilization, unemployment, stagnation, industrial backwardness, and over dependence on imported leather footwear products from industrialized economies.

According to Ajakaiye and Fakiyesi (2009), earnings from non-oil exports, such as finished leather products, cocoa and its products, sesame seeds and manufactured products like cosmetics and toiletries, rose to about U.S. \$1.38 billion in 2007. By the end of 2008, this value rose to \$1.8 billion, the highest in the country's history. To Onwualu (2009), gross official external reserves rose by 20% to stand at about \$50.75 billion by end-December 2007, as against \$42.3 billion in December 2006. In 2008, estimated growth of GDP of 6.77% was higher than that of 2007 (at 6.2%). Growth was again driven by the non-oil sector, especially the agriculture sector, which contributed 39.8% out of the 80.7% total contribution of the non-oil sector to GDP in the first half of 2008. This increased to 60% by the last quarter of 2008. This improvement in its output, especially in the first half of 2008, was attributed partly to moderate weather, especially the early rains experienced in the southern and northern states of Nigeria. Other factors that helped to boost agricultural production included several government intervention measures, like the National Agricultural Project, the National Special Programme for Food Security, zero tariffs on imported agro-chemicals, export expansion grants as well as tightening of controls on illegal imports of agricultural products. The country maintained a balance of payments surplus in 2007, fuelled by the current account surplus.

Simon and Awoyemi (2010) investigated the impact of manufacturing capacity utilization on industrial development in Nigeria during the period of 1976-2005. Manufacturing capacity utilization, value added and employment generation were regressed on index of industrial productivity, as a proxy for industrial performance, using the co-integration and error correction as analytical tools. The cointegration evidence confirmed that there is a long run positive relationship between manufacturing capacity utilization, value added and index of industrial productivity in Nigeria.

Sola et al (2013) examined manufacturing performance for sustained economic development in Nigeria using regression analysis on data from 1980-2008, several other indigenous scholars wrote on exports, with focus on non-oil exports and its effects on

industrialization, the manufacturing sub-sector, and their effects on economic growth and development. Sola et al (2013) equally highlighted some of the factors affecting the manufacturing sector in Nigeria. This study, however, focuses on data spanning from 1960-2010 to examine Nigeria's manufacturing sector using simple data analysis techniques such as tables, graphs, indices and percentages to present and analyze trends, describe and explain changes in Nigeria's manufacturing performance.

3. METHODOLOGY

This paper adopted a non-experimental research design. It employed historical analysis of the activities of the manufacturing sector in Nigeria during the given time interval. Modern modeling strategies are data centred, as they allow data play strategic roles in the analysis of observation. Thus, this research work employed Exploratory Data Analysis (EDA). It is an approach to analyzing data sets to summarize their main characteristics, often with visual methods, such as tables, charts, graphs, and frequency distributions. The data used for the analysis were manufacturing sector real GDP, percentage contribution of manufacturing to real GDP, index of manufacturing production and average manufacturing capacity utilization as key indices for analysis of manufacturing performance in the nation.

4. DATA PRESENTATION AND ANALYSIS

Real GDP is a macroeconomic measure of the value of economic output adjusted for price changes (i.e. inflation or deflation). GDP itself is a sum of consumer spending, investment made by industry, excess of exports over imports, and government spending. Due to inflation, GDP increases and does not actually reflect the true growth in the economy. That is why inflation rate must be subtracted from the GDP to get the real growth value, called Real GDP (RGDP). The index of manufacturing production is a derivative of the index of industrial production, which comprises of the index of manufacturing production, principal mining production, and electricity consumption. It measures the real production output of each of the manufacturing, mining, and utilities/energy and its records were commenced in 1970. The average manufacturing capacity utilization (AMCU) of Nigeria's manufacturing sector from 1975-2010. The average manufacturing capacity utilization is the extent to which a nation's manufacturing sector actually uses its installed productive capacity. It is the relationship between the actual output that is actually produced with the installed equipment/facilities, and the potential output which could be produced with it, if the capacity was fully utilized. Computation of this data set commenced in Nigeria in 1975. Below is a tabular presentation of data used in the trend analysis:

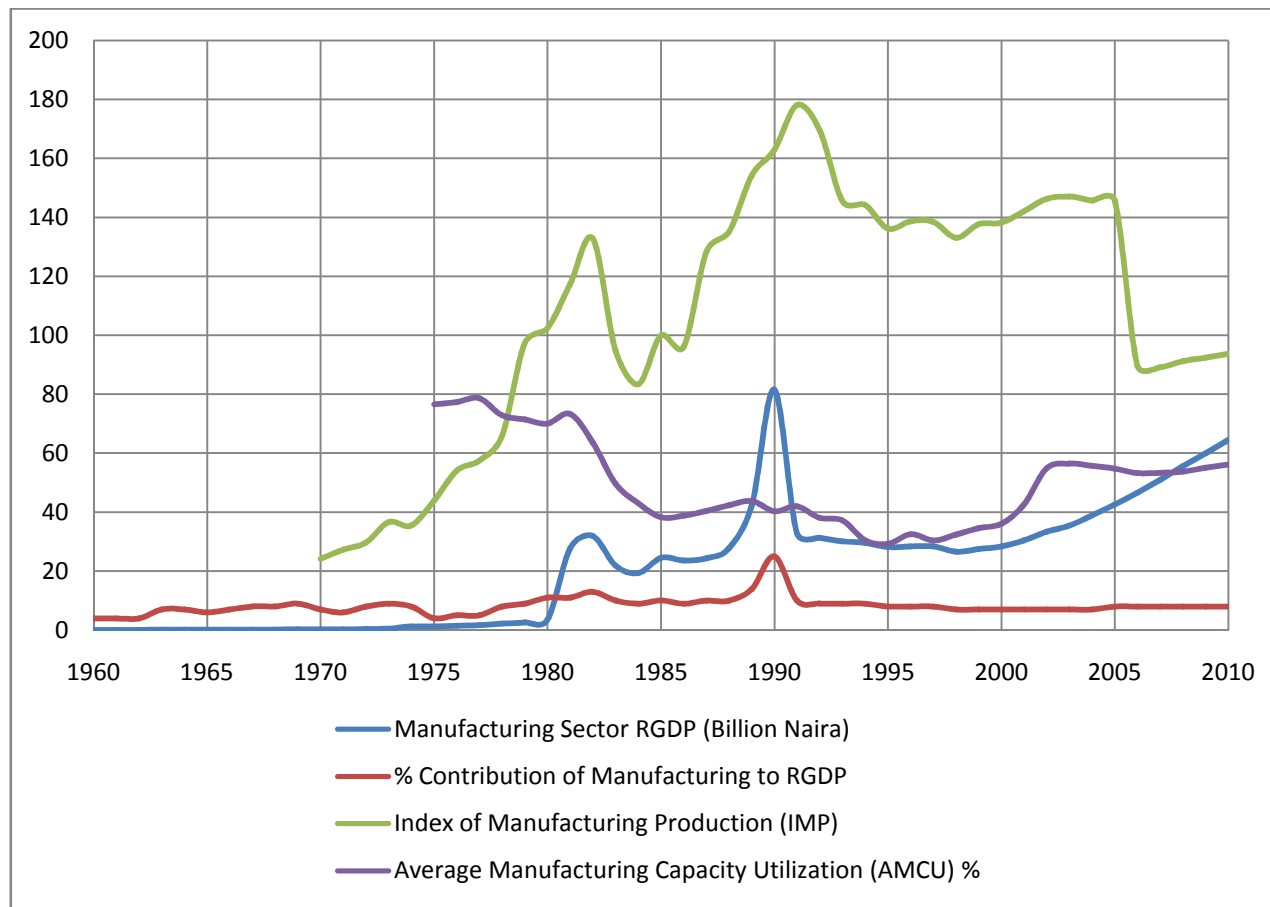
Table 1 Manufacturing sector real GDP, percentage contribution of manufacturing to real GDP, index of manufacturing production and average manufacturing capacity utilization as key indices for analysis of manufacturing performance in Nigeria from 1960 to 2010.

Years	Manufacturing Sector RGDP (Billion Naira)	% Contribution of Manufacturing to RGDP	Index of Manufacturing Production (IMP)	Average Manufacturing Capacity Utilization (AMCU) %
1960	0.1	4	-	-
1961	0.1	4	-	-
1962	0.1	4	-	-
1963	0.2	7	-	-
1964	0.2	7	-	-
1965	0.2	6	-	-
1966	0.2	7	-	-
1967	0.2	8	-	-
1968	0.2	8	-	-
1969	0.3	9	-	-
1970	0.3	7	24.1	-
1971	0.3	6	27.3	-

1972	0.4	8	29.7	-
1973	0.5	9	36.6	-
1974	1.2	8	35.5	-
1975	1.2	4	43.9	76.6
1976	1.5	5	54.1	77.4
1977	1.7	5	57.5	78.7
1978	2.2	8	65.8	72.9
1979	2.6	9	97.3	71.5
1980	3.5	11	102.4	70.1
1981	27.7	11	117.4	73.3
1982	31.9	13	132.8	63.6
1983	21.9	10	94.8	49.7
1984	19.4	9	83.4	43.0
1985	24.5	10	100.0	38.3
1986	23.6	9	96.1	38.8
1987	24.4	10	128.4	40.4
1988	27.8	10	135.2	42.4
1989	42.5	14	154.3	43.8
1990	81.6	25	162.9	40.3
1991	32.8	10	178.1	42.0
1992	31.3	9	169.5	38.1
1993	30.1	9	145.5	37.2
1994	29.6	9	144.2	30.4
1995	28.2	8	136.2	29.3
1996	28.4	8	138.7	32.5
1997	28.4	8	138.5	30.4
1998	26.6	7	133.1	32.4
1999	27.5	7	137.7	34.6
2000	28.4	7	138.2	36.1
2001	30.4	7	142.2	42.7
2002	33.4	7	146.3	54.9
2003	35.4	7	147.1	56.5
2004	38.9	7	145.7	55.7
2005	42.6	8	145.7	54.8
2006	46.6	8	89.6	53.3
2007	51.0	8	89.2	53.4
2008	55.6	8	91.2	53.8
2009	60.0	8	92.4	55.1
2010	64.5	8	93.7	56.2

Source: National Bureau of Statistics

Graph 1 is a diagrammatic representation to give a visual depiction of the data in table 1.



Graph 1 Graph of manufacturing sector real GDP, percentage contribution of manufacturing to real GDP, index of manufacturing production and average manufacturing capacity utilization as key indices for analysis of manufacturing performance in Nigeria from 1960 to 2010

Source: Generated by researcher from Table 1

As can be seen from Graph 1 above, the average manufacturing capacity utilization (AMCU) had a good start from about 77% in 1975 and reached its highest peak in 1977, after which a rise to that capacity has not been experienced till date. The AMCU plot reveals a struggle more on the lower side (percentages between 39 and 45), as it fluctuates between 1985 and 2002, since the sharp fall after 1981. However, the sharp rise after 2000 put the AMCU on a higher level out of the trough to remain on a level above 50% but barely up to 60% from 2002 till date. The AMCU plot clearly shows a poor but struggling performance by the manufacturing sector. Generally, it can be concluded that the average manufacturing capacity utilization in Nigeria has declined since 1977.

The plots of the manufacturing sector RGDP, percent contribution of manufacturing to RGDP, and the index of manufacturing production (IMP) all show a very low start, between 1960 and 1976, before reaching their first peaks between 1980 and 1983. While the IMP plot shows a sharp rise to its first peak in 1982, the manufacturing sector RGDP and percent contribution of manufacturing to RGDP plots show a slow and steady rise to their peaks in 1982. All three plots (the manufacturing sector RGDP, the percent contribution of manufacturing to RGDP, and the IMP plots) show a sharp fall from 1983, and a struggle to reach their second peaks in 1990 and 1991, higher than the first. After the second peak, the three plots show an inconclusive trend until 1999 and 2000, where IMP and manufacturing sector RGDP begin to rise again: however, the percent contribution of manufacturing to RGDP remains inconclusive. Generally, IMP and manufacturing sector RGDP have fluctuated but have also risen over the years.

An overall analysis of the data shows that, AMCU has fallen 76.6% in 1975 to 56.2% in 2010, a difference of 20.4% after 50 years of independence. IMP, manufacturing sector RGDP and percent contribution of manufacturing to RGDP have increased since their recorded years, although just by an unimpressive difference. IMP has increased by 90.1 from 1970-2010, manufacturing sector RGDP

increased by 6,680.5 billion Naira, but the percent contribution of manufacturing to RGDP has increased by just 6%; an unimpressive trend after 50 years of independence and policy changes to better the sector's performance.

Anyanwu (2004) proposed that low manufacturing capacity utilization rate is a lingering factor affecting high productivity in Nigeria's industrial sector. Graph 1 above shows that manufacturing sector RGDP, percent contribution of manufacturing to RGDP, and the index of manufacturing production show sensitivity to the changes in AMCU between 1980 and 2005. After the AMCU rose to its second peak in 1981, the other three plots (the manufacturing sector RGDP, the percent contribution of manufacturing to RGDP, and the IMP plots) rose to peak in 1982. The sharp fall in AMCU after 1981 was followed by a fall in the manufacturing sector RGDP, the percent contribution of manufacturing to RGDP, and the IMP; and the manufacturing sector RGDP, the percent contribution of manufacturing to RGDP, and the IMP exhibited sensitivity to the gentle rise in AMCU from 1985 to 1993 when they reached their second peaks in 1990 and 1991. The rising in 2000 was equally followed by a steady rise in the manufacturing sector RGDP, percent contribution of manufacturing to RGDP, and the IMP.

The above agrees with the findings of indigenous scholars such as Anyanwu (2004), Simon and Awoyemi (2010), Sola et al (2013), and Riman et al (2013), who found that capacity utilization has a strong impact on manufacturing or industrial output. Variations shown in the graph (variations in sensitivity of other trends, including AMCU can be accounted for by other factors affecting the manufacturing sector, as given by Anyanwu (2004).

5. CONCLUSION

Manufacturing is the bedrock of development. Nigeria can only be a developed economy with a strong and dynamic manufacturing sector. The study concludes by arguing that the key to reversing the poor performance of Nigerian manufacturing is an increase in adequate capacity utilization, and importation of technology to boost local manufacturing and export. A major ingredient in the successful transformation of most economies where there are sustained rises in per-capita incomes has been the growth in manufacturing output. An important policy issue facing the Nigerian government is understanding and addressing factors that will enable efficiency of firms and their competitiveness to increase. At the more general level, it is clear that a sound economic policy is enormously important for economic development.

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