Impact of Industrialization on Economic Growth in Nigeria

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Abstract: *This study examined the impact of industrialization on the growth of the Nigerian economy. The specific objectives of the study were to determine the impact of manufacturing sector output on economic growth in Nigeria, to find out the impact of crude petroleum and natural gas output on Nigerian economic output, and to investigate the impact of solid mineral mining output on economic growth in Nigeria. The study adopted the ex-post facto research design based on its efficacy in facilitating the projection of future outcomes with past occurrences. The dependent variable was real gross domestic product (RGDP) while the independent variables were the manufacturing sector contribution to the gross domestic product (MSO), crude petroleum and natural gas output (CPNGO), solid mineral mining output (SMMO), and real exchange rate (REXR); data analysis was done using the vector error correction and system equation estimation technique. The study found that there is a positive and significant impact of the manufacturing sector output, crude petroleum and natural gas output, and solid mineral and mining output on the real gross domestic product; also a long-run relationship was found to exist among the variables used. The study therefore recommends that: there is need for Government to, as a matter of urgency develop stimulants for the manufacturing sector and manufacturers in form of tax incentives and credit facilities, this will strategically reposition the manufacturing sector in driving economic growth in Nigeria; Government should try a balance of attention in terms of policies and capital investments between the petroleum industry and the solid mineral mining industry in order to harness the rich abundance of wealth in the solid mineral industry.; and there is need for the immediate implementation of the petroleum industry bill which will unbundle the NNPC and create efficient commercial units to fully carry on crude petroleum and natural gas business.*
Keywords: *Industrialization, Manufacturing, Crude Petroleum, Economy, Growth*

I. Introduction

Industrialization is the bedrock of economic growth, thus, the process of economic development usually begins with industrialization. Development efforts require consciously systemized plan, and in similar way industrialization is an outcome produced from national planning, the efforts are usually deliberate as it aims at certain macroeconomic goals beginning with economic growth. Industry is usually grouped into primary and tertiary production. Primary production has to do with the mining and extraction of deposits of mineral resources while tertiary production anchors on manufacturing which is the conversion and transformation of raw materials or primary products into finished consumable or tertiary products. CBN (2012) classifies industrial output in the Nigerian economy into three namely: crude petroleum and natural gas, solid mineral mining, and manufacturing.

Industrialization is synonymous with manufacturing and it is the process of building up of a nation's capacity to convert raw materials and other input into finished goods either for further production or for final consumption. In this case the closest appropriate measures and indicators of industrialization will include manufacturing, solid mineral mining, crude petroleum and natural gas as indicated in the classification by CBN (2015), and then to take into consideration the human capital factor manufacturing employment rate could also form a variable.

The effort towards industrialization began in the pre-colonial period. During the post-independence period of 1960s government policy of import substitution gained prominence and after the civil war of 1970s huge foreign exchange flowed in from the export of crude oil which provided avenue for direct government investments in manufacturing activities. The import substitution policy was followed by the indigenization policy programme aimed at making Nigerians assume full control of many firms operating in the country. Other strategies and incentives have been adopted by government such as export promotion, tax holidays, duty reliefs, provision of loans etc. These efforts saw industry including crude petroleum and natural gas accounting for large percentage of foreign exchange earnings and federally collected revenue.

The Nigerian manufacturing subsector took a lift at the onset of the discovery of petroleum in 1956, prior to this period Nigeria only dwelt on primary products production mainly agricultural produce which were exported overseas, processed and shipped back in form of finished consumables. Manufacturing addresses a wide range of issues pertinent to the industrial sector. Among all the 2,387 firms surveyed in the study by Chete, Adeoti, Adeyinka and Ogundele (2016) only 42 per cent of them fell within the six sub-sectoral classifications of the industrial sector viz., textile, garment, food, wood and furniture, other manufacturing, and construction.

 Proshare (2016) noted that in 1982 manufacturing sector contribution to total economic output was 7.8% at which time the sector was the most vulnerable to global economic pressures, and upon recovery from the after-effect of the early 1980s recession, price manipulations through export and import subsidies encouraged the importation of intermediary inputs and thus the expansion of assembly-based industry. Over reliance on crude oil is identified as the setback to the growth of manufacturing as a result of the attention-shift towards crude oil exports.

However, the sector has witnessed a crawling growth pattern up until 2010 during which its output and contribution to the gross domestic product was merely ₦6 ,845,768.59 million with about one-third increase in 2012 to ₦9,824,517.97 million (NBS 2015). The progressive increase in output is attributed to some manufacturing component activities including foods and beverages, textile apparel and footwear, basic metal, iron and steel.

Besides the goal of driving industrialization, manufacturing and solid minerals mining subsectors are also expected to address unemployment concerns, being that one of the basic features of industrialized nations is low unemployment rate. NBS (2010) states that only about 3 million persons are in employment under the manufacturing, crude petroleum and natural gas, and solid mineral mining subsectors; of this number 2million are Nigerian male, about 500,000 are Nigerian female while the rest are Non Nigerians. This underemployment could be attributed to lack of adequately trained human capital and as such the contribution to economic output has remained low. Human capital development is undoubtedly the pivot for any meaningful programme of economic development of Nations and indeed of Nigeria (Ejere, 2011).

There are underling views that all sectors are not equally important for economic growth. The view that economic growth depends on the expansion of a key sector was formalized in the eighteenth century physiocratic analysis of the production and distribution of agricultural output and has persisted in various forms ever since. The role assigned to industrialization has been a central element of numerous analytical studies. The thought above may have been what engineered or spurred the efforts made so far by successive governments in Nigeria to promote industrial activities as they contribute immensely to the growth of the economy through employment generation, increases in foreign exchange earnings, acquisition of both semi and highly specialized skills, minimization of the risk of complete foreign dependence and utilization of resources.

But the recent downturn in the world oil market calls for a test of the contribution of the industrial sector to economic growth in Nigeria. In 1981 the share of industry in GDP was 51.89%, it rose to 54.89 % in 1991, it maintained a steady decrease from 44.15% in 2001 to 42.86% in 2011. It decreased further to 39.03% in 2012 and 34.54% in 2013 (CBN 2014). These could be attributed to the decline in the output of crude petroleum and natural gas component of industrial activities. The implication of this is that other sub sectors of the industrial sector have been relatively dormant. In 1981, it was 33.34% and decreased 17.88% in 1991. It went further down to 7.52% in 2011 with an all time low of 1.61% in 2012.these results are not commensurate with the various government efforts and drive towards industrialization. This might suggest that government efforts have been wrongly applied or that the efforts have been too insignificant to yield the desired results; and has the industrial sector contributed significantly to the economic growth of Nigeria? This is the problem that necessitated this study.

The contribution of manufacturing to total output in Nigeria has fallen short of its goal in driving economic growth where in 2010 and 2013, it could only manage a meager 4% and 6.5% contribution to GDP. Thus it has failed to engineer the industrialization yearnings of Nigeria. In the stages of growth theory, it is said that industrialization could only be said to have occurred where the share of agricultural contribution to GDP has fallen and that of manufacturing rises up and above it forming a large percentage of the GDP (NBS, 2012).

The history of industrial development and manufacturing in Nigeria is a class illustration of how a nation could neglect a vital sector through policy inconsistencies and distractions attributable to oil discovery (Adeola, 2005). The absence of locally sourced inputs has resulted in low industrialization and some of the constraints faced include: high interest rate, unpredicted government policies, unstable foreign exchange rate, non-implementation of existing policies, infrastructural inadequacies, dumping of cheap products, unfair tariff regime and low patronage.

Over the years, successive governments have been paying near lip service to the actualization of Nigeria's Industrial Revolution Plan, and making Nigeria one of the 20 most developed economies in the world by the year 2020.The development of Raw Materials-Based Clusters is one of the core programmes of the Raw

Materials Research and Development Council (RMRDC) towards attaining this laudable objective (Gwarzo, 2015).

In contrast, the industrial sector in Nigeria (comprising manufacturing, mining, and utilities) accounts for a tiny proportion of economic activity (6 per cent) while the manufacturing sector contributed only 4 per cent to GDP in 2011. This is despite policy efforts, over the last 50 years, and, in particular, more recently, that have attempted to facilitate the industrialization process (Chete, Adeoti, Adeyinka and Ogundele 2016).

In 2009, the Manufacturers Association of Nigeria (MAN) declared that 820 manufacturing companies have closed down in the past nine years (between 2000 and 2008) of civilian rule and rendered thousands of people jobless, even as the Federal Government said the solution may not be very quick in coming. The high exit rate were blamed on tough operating environment, unstable electricity, high interest rate and exchange rate, smuggling, high cost of diesel and petroleum to power firms generators, high taxation and levies. This implies that there are not growth propelling resources at the disposal of manufacturing firms in Nigeria over the years and tends to deteriorate their growth mechanisms. These are the problems that necessitated this study. Therefore, this study sought to investigate the impact of industrialization on economic growth in Nigeria.

This study, the impact of industrialization on economic growth in Nigeria will influence various economic units in both public and private sectors of the economy. The major constraint that confronts the industrial sector in playing its pivotal role of driving the growth of the economy will be identified in the course of examining the overall development in the sector since the SAP era. Besides these, it will also serve as a guide to policymakers and investors in decision making. The study lies on the fact of its expectation to expose the extent to which the industrial sector in Nigeria has contributed to the growth of the economy and its efficacy to sustained growth. This study will highlight some of the obstacles hindering increase in industrial output. This work will be relevant to the government policies and entrepreneurs directing them on industrial development plan and also assist potential industrialists, economists and other end users of the study variables.

Nevertheless, if carried out successfully, the strategy has the capacity to boost foreign exchange earnings, reduce unemployment by creating job opportunities, and improve the technological state of the country, diversification of export among others.

II.   Review of Related Literature

Conceptual Review

The concept of industrialization has found its way into numerous literatures. It is a system whereby an economy creates or grows wealth through industries and machines. Industrialization is the process of transforming raw material into consumer goods, producer goods, and services with the help of capital and as well as human resources (Amechi and Azubuike 2004). Today, nations are partitioned into two distinct categories as industrialized and unindustrialized. Developed nation are usually the industrialized nations with very high output figures. Industrialization has a trickle-down effect on every other activity sector of the economy and the aggregate economy.

Aderinto, Akande, Anyawuocha and San (2008) defines industrialization as "a deliberate policy by government to create many industries in a country: the process of industrialization involves the production, increasing use of machinery and power tools, as well as the use of improved technology in production; all of which lead to a higher level of output of goods and services.

O'Sullivan and Sheffrin (2007) defined industrialization as the process of societal and economic change that transforms a human from agrarian to an industrial one. In their view, industries bring about change in three ways: modernization, the development of large scale energy and metallurgy production. These aspects are closely linked to economic growth. They also assert that industrialization brings with it the sociological process of rationalization. Economic growth has been conceived as an increase in per capita income over a period of time (Clunies-Ross, Foresyth, & Huq, 2010; Jhingan, 2005; Abbott, 2003) and it is considered that good governance, good legal framework, availability of natural resource, relative low cost skilled labor and technology are key positive factors stimulating industrialization.

In Jhingan (2011) industrialization is expressed as the process of manufacturing consumer goods and of creating social overhead capital in order to provide goods and services to both individuals and business. In all the literatures above, one word is common "process". This indicates that the path to industrialization is continuous and happens in stages and organized systemic structures. We can add here that it is the process of changing the indigenous technological structure to incorporate foreign technological structure in order to achieve large scale production and an improvement in the living standard of the average person in the country. Among the factors that promote growth in any economy includes technological progress. The technological progress implies improved methods of production of goods and services which increase output, and is possible by the transition from agrarian to industrialized structures or a combination of agriculture and industry such that the share in total output of industry significantly outweigh that of agriculture.

A good number of economists share the view that industrial policies are important growth stimulating policies. This is a situation where government would take a direct active role in shaping the structure and composition of industry so as to promote growth. Government industrial policies may be in form of hastening the expansion of high productivity industries or to speed up the movement of resources out of low productivity industries. In line with this view, Jhingan adds that "industrialization plays a major role in the economic development of the less developed countries (LDCs). It is a pre-requisite for economic development as the history of advanced countries show. For development to occur the share of the industrial sector should rise and that of the agricultural sector decline". He went ahead to state that "this is only possible through a policy of deliberate industrialization".

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Sharp (2002), view economic growth as the long run process that results from the compounding of economic events over time. Similarly, Dwivedi (2002) stated that economic growth means a sustained increase in per capita national output or net national product over a long period of time. It implies that the rate of increase in total output must be greater than the rate of population growth. To measure economic growth, economists generally examine the rate of change in real GDP from one year to the next.

Central Bank of Nigeria (2008) stated that GDP is the money value of goods and services produced in an economy during a period of time irrespective of the nationality of the people who produced the goods and services. It is usually calculated without making any allowance for capital consumption (or deductions for depreciation). Also, GDP by expenditure based is the total final expenditure at purchases' prices (including the f.o.b. value of exports of goods and services) less the f.o.b. value of imports of goods and services.

Industrialization Trends in Nigeria

Industrial development in Nigeria spans through some stages beginning with the pre-independence processing of primary raw materials for exports and production of simple consumer durables. This was followed by the post-independence characterized by more vigorous import substitution and decline in the export of processing raw materials as a result of the substitution policy which objectives were defeated as seen in the heavy dependence of the manufacturing sector for imported inputs.

The next was the liquid-gold era or the oil boom of 1970s when Nigeria made huge income from oil exports, this led to direct government investment into the manufacturing sector in the area of petroleum development and refining, fertilizer production, liquefied natural petrochemicals, iron, steel production etc. Then, we entered the SAP period where the decline in world oil prices led the government adopt the export promotion industrialization strategy. Lop sides were noticed in the industrial development during this stage and then in order to create greater linkages between the activity sectors of the economy, the country switched to balanced development industrialization. Thus, manufacturing industrialization is the latest industrialization trend in Nigeria. Industrialization appears to be a forward sector based on the held belief that rapid growth, structural changes and self-sufficiency can be achieved through growth of manufacturing.

The Nigerian economy experienced respectable growth in the first decade of political independence. In the period 1960-70, real gross domestic product (GDP) recorded 3.1 per cent annual growth. Similarly, real GDP grew by 6.2 per cent annually between 1970 and 1978. Negative growth, however, surfaced in the early 1980s, but this was reversed with the introduction of SAP with real GDP registering annual growth of 4 per cent in the period 1988- 97. Overall, annual growth averaged less than 3 per cent for most of the three decades following the discovery and exploitation of oil (NPC 2004). More recently, the Nigerian economy has recorded considerable acceleration in growth as real GDP grew by 6.27 per cent, 7.57 per cent, and 7.38 per cent, in 2009, 2010, and 2011, respectively. Correspondingly, growth in real per capita income was 2.78 per cent, 3.76 per cent, and 4.78 per cent in 2008, 2009, and 2010, respectively.

The structure of GDP in Nigeria during the last five decades shows the dominance of the primary sector, comprising agriculture and mining and quarrying (including crude oil and gas). At independence, the contribution of the primary sector to GDP was about 70 per cent. This share, however, dwindled in subsequent years to 62.10 per cent and 55.68 per cent in 1977 and 1990, respectively; indicating a sluggish transition from primary production to secondary and tertiary activities. Although the primary sector's contribution to GDP climbed in 2003 to 68 per cent, it declined progressively to 55.3 per cent in 2011, revealing that more than half of Nigeria's output is still generated by the primary sector. The secondary sector comprising manufacturing, building, and construction contributes least to the GDP in Nigeria.

Manufacturing and the Nigerian Economy

Manufacturing activities in Nigeria comprise cement production, oil refining and other manufacturing; other manufacturing is dominant in terms of size of activities. In 2009, the value added of manufacturing activities at current basic prices rose to N612.3 billion from 2008 value of N585.6 billion (NBS 2012).

Given the traditional roles played by firms in fostering growth through producing industry as evidenced in the industrialized and few emerging economies, we can clearly posit that manufacturing firms are one of the major sources of economic propeller through the production and export contribution. But, the growth, performance and productivity of Nigeria's manufacturing firms have deteriorated at present and even beyond the rate at which they grow in the past three decades when manufacturing still play significant roles in the Nigerian economy.

The lesson of the past few years in Nigeria have shown that if local manufacturers are to survive in a globalized world, the provision of energy and other key infrastructure facilities cannot be compromised particularly in our peculiar situation where the upgrading of energy production had suffered almost 30 years of neglect. From all account, the level of investment required to reverse the decay arising from prolonged neglect would be massive without establishing the exact factors that determine growth dynamics to ensure survival and play their expected roles in the economy.

Crude Petroleum and Natural gas: drivers of economic growth in Nigeria

The petroleum sector is one of the most important sectors in Nigeria. This is because the sector generates the highest amount of revenue to the federal, state and local governments in the country. According to Ogbonna (2011), the petroleum industry constitutes the major source of income and occupies a strategic position in the economic development of Nigeria. The Statement of Accounting Standard No. 14 on Petroleum also stated that the petroleum industry is very strategic in the Nigerian economy as the nation's major provider of foreign income and plays a major role in facilitating the economic development of Nigeria. For the past four decades, the petroleum industry in Nigeria has been playing vital and dominant role to the economic growth of Nigeria been the predominant source of revenue, and accounting for over 90% of the total revenue of the country.

Petroleum has both direct and indirect effects on the overall level of economic activities, but its impact is felt more in the urban sector where petroleum revenue has been used to stimulate the economic development of the nation. The impact of petroleum on the economy of Nigeria is felt specifically, through direct contributions to the national income and output, the generation of employment and manpower development, the creation of backward and forward linkage effects and other indirect benefits to the economy (Appah, 2010).

Oremade (2006) has made the argument that for petroleum profit tax purposes, crude oil sales valued at the prices actually realized by the oil producing company in the world oil market. However, this value has to be compared with the value at the posted price and if the posted price is higher, tax is then based on the posted price. Sales of crude oil for local refining and sales of gas are valued for petroleum profit tax purposes at the actual amount realized on sale.

Role and Benefits of Industrialization in Economic Growth

Industrialization is notably the engine of economic growth in any economy especially in the economies of less developed countries and is only possible through a policy of deliberate industrialization. Prior to independence and some two decades after independence, the total output of the Nigerian economy usually had a large composition of agricultural share. The tide began to change with the increasing interest in petroleum following its relative importance in the world stage. There became a shift of labour and materials investment away from agriculture towards industry particularly crude petroleum and natural gas. Cement manufacturing, mining and quarrying activities also began to gain prominence. Industrialization has continued to play a significant role in economic growth in so many facets as follows.

Industrialization leads to the increase in the production of export goods and services. Development in the crude petroleum and natural gas component of industry in Nigeria has seen much foreign exchange flow into Nigeria through export of crude oil and natural gas resources. This capacity to earn foreign exchange is drawn from export led industrialization where government makes deliberate policy that stimulates the production of goods and services manly for export.

Industrialization brings about saving of lost foreign exchange and improves the balance of payment. This is because it reduces the importation of finished goods which take away foreign exchange from the economy. The import-substitution drive sees that the importation of certain goods is minimized or out rightly stopped by producing those goods locally thereby saving foreign exchange that would have been committed to imports.

One of the factors that expose an economy to external shocks is the over dependence on external sources for economic needs. Industrialization corrects or reverses this trend. It does not completely wipe out

dependence but significantly reduce it to an extent that external shocks can be easily absorbed by the economy. The external shocks some time come as spill-over effects from other economies or from global economic politics.

Industrialization induces a kind of chain reaction in the economy. By producing more and improving incomes, marginal propensities especially to consume, save and invest also increase. Increase in marginal propensity to consume increases demand for goods and services and in other to satisfy the growing demand, industries will employ more human resources. This is how industrialization generates employment. Being that agriculture remains the highest employer of labour in developing economies like Nigeria, industrialization will generate employment for those who the agricultural sector cannot employ.

According to the national planning commission Nigeria (2004) the rate of urbanization in Nigeria of about 5.3% a year, is one of the fastest in the world. This signals a surge in urban unemployment. The NEEDS policy aims to adopt and engineer growth of the manufacturing sub-sector to sufficiently absorb the influx of labour to urban areas.

The quest to industrialize stimulates the need for the development and improvement of skilled manpower. The NEEDS policy recognized the urgency of unemployment situation with an understanding that a lag will show in the expected job-creation. This triggered its specific steps in facilitating individual skills empowerment. The strategy is to "empower people by providing for the acquisition of relevant skills to prepare them for the world of work (NPC 2004).

The drive for skill development necessitates the efforts to provide for the industrial attachment and experience program for college students and fresh graduates. For instance, the graduate internship scheme (GIS) developed by the subsidy re-investment and empowerment program (SURE-P) enabled fresh graduates to be placed in specific and relevant industries to enable them gain the experience that improve their employability status. Most of them were eventually retained by the industries they were placed. College students also benefit through the industrial attachment program of university and other tertiary institutions aimed at matching theory with practice. Industrialization has made it possible for these programmes to come by.

In addition, industrialization brings about social transformation, equity, income redistribution, and spread of regional development.

The Fore goings strengthens the view that industrialization is an indispensible source of growth and industrialization itself come about through deliberate actions and strategies. All growth strategies are not taken simultaneously as they fit into different economics situations and Anyanwu et al (1997) quoted in Wilson (2002) notes that " there are two main strategies of industrialization namely import substitution industrialization (ISI) and export-led industrialization strategy, other strategies are small versus large-scale industrialization strategy, balanced development strategy and local resource-based strategy".

One of the deliberate industrialization strategies of government which aims at encouraging the production of goods and services hitherto imported from other countries is the import substitution. This is done through the erection of tariff walls and prescription of policies that prohibit the importation of such goods and services intended to be substituted, this is followed by acquiring the technology required to produce such goods, setting up or encouraging the growth of the firms and industries that produce those goods by granting them export duty incentives. According to Wilson (2002), this strategy was initiated by the Latin American countries following disruption of flow of imports by the Second World War and depression in the international economy; and the success recorded by these countries through this strategy spurred the adoption of it by other countries. This same source notes that " In the case of Nigeria, the strategy was introduced around 1958 when such commodities as beer, soap, butter etc that were formerly imported began to be produced in the country". The argument in support of ISI adduce the such reasons as, it is easy to pursue as young industries would not face the problem of creating markets for their products, conservation of foreign exchange and easing of balance of payment problems, enhances economic independence, results in the emergence of modern industrial sector capable of earning substantial profits which can be re-invested to generate more growth.

Export-led strategy is government's industrial policy to stimulate and encourage the production of goods and services mainly for export. It is achieved by encouraging domestic industries to increase the production of goods and services through tax incentives, reduction of export duties or granting of export subsidies. Other government's actions in support of this strategy as noted by Wilson include liberalization of credit and importation of raw materials for export-based industries, providing assistance on export costing and pricing, support services for entrepreneurs seeking new export market etc. the major argument against this strategy is the emergence of paradigm shift of international economies from medieval economic theories of absolute and comparative cost advantage towards contemporary competitive advantage.

Empirical Review

Enwerem , Jelilov and Isik(2016) researched on the impact of industrialization on economic growth in Nigeria for the period 2000-2013. The study sets three major objectives, which include investigating the effect of fiscal and monetary policy on Gross Domestic Product (GDP), determining the relationship between government spending and industrial development and to determine the effect of budget on investment or employment generation. The study only utilized secondary data from the 2011 Central Bank of Nigeria Statistical Bulletin and the Nigerian National Bureau of Statistics. The study specified a workable model, which has GDP as the dependent variable while industrial output, foreign direct investment, interest rate, foreign exchange rate and inflation rate were independent variables. Ordinary least square (OLS) technique, F-test was used as analytical techniques. The study revealed that industrialization has a negative impact on economic growth in Nigeria in the long run. The study recommends amongst others, that the government should redirect its industrial and investment policy so as to increase output of the domestic production (RGDP), flexible exchange rate and control inflation rate since that showed that increase in exchange and inflation rate, decreased output, industrial and investment policy should be flexible on infant industries so as to encourage productivity and improve GDP.

Aliyal and Odoh (2016) studied the impact of industrialization in Nigeria. The objective was to analyze the relationship between GDP, agriculture (AR), industry (ID) and services sector (SV) in Nigeria. The Johansen co-integration testing approach demonstrates a significant long-run relationship between these three variables. The results reveal that agriculture, industry and services have a significant positive relationship with GDP. The Causality results demonstrate a bidirectional causal relationship between GDP, AR, ID and SV. It is suggested therefore that it is important to develop the agricultural sector to provide the needed support to the industrial and services sectors. Such a strategy can be expected to encourage the development and economic growth of a developing country.

Effiom and Enang(2014) researched on industrialization and economic development in a multicultural milieu: lessons for Nigeria, the paper relates multiculturalism to the very subject of industrialization which has eluded our national economy for decades since independence. Its main thesis is that for Nigeria to develop industrially, it must indigenize technology contemporaneously with the pursuit of foreign direct investment inflow, as well as other conventional policy instruments. The indigenization of technology must proceed from the comparative industrial strengths of the various multicultural groups in Nigeria. The government must re-learn the lost industrial lessons of the Nigerian Civil War (1967-1970) and also pursue the path of fiscal federalism but moderated by a fair design of central redistribution mechanism of the oil revenue needs in order to avoid "immiserizing growth". Thus, Nigeria's multicultural milieu provides the credentials and seeds needed to drive the industrialization process.

Ubi, Lionel and Eyo (2012) also researched on 'monetary policy and industrialization in an emerging open economy: lessons from Nigeria'. They adopted the ordinary least squares econometrics method regressing industrial output on exchange rate, trade openness, interest rate, money supply, and balance of payment, all the variables have significant impact on industrialization. The study did not determine the impact of industrialization on economic growth as a measure of the quest for industrialization in Nigeria.

Tamuno and Edoumiekumo (2012) study impact of globalization on the industrial sector development in Nigeria, the study employed ordinary Least Square (OLS) multiple regression analysis. The study covered a period of 1970-2008 using time series data, the result showed that gross fixed capital formation and degree of openness has negative significant relationship and domestic investment is weak and unreliable.

Ellahi (2011) tested the relationship between electricity supplies, development of industrial sector and economic growth employing the auto-distributed lag model to find the short run and long run estimates. The result showed that industrial sector play important role for improving economic growth.

Economic growth can be significantly spurred by growth in small and medium enterprises development. This is indicated by the work of Akingunola (2011) which assessed the specific financing options available to SMEs in Nigeria and their contribution to economic growth. By using descriptive statistics, the result showed a significant positive relationship between SMEs financing and economic growth.

According to Bodaky (2011) industries are very essential in developing countries like Nigeria because the marginal revenue products of labour in the industrial sector are higher than the agricultural sector. Based on this, the releasing of labour force from agricultural sector to the industrial sector increases the marginal product of labour in the agricultural sector and increases the overall revenue and output of the society, hence contributes to the economic growth. Therefore industrialization is an ideal policy option for sustainable economic growth in Nigeria.

Kaya (2010) investigates the effect of the latest wave of economic globalization on manufacturing employment in developing countries. The study is concerned with classic debate on the benefits of industrialization and how this affects developing countries. The study uses a comprehensive dataset on 64 developing countries from 1980 - 2003. The results generally demonstrate that manufacturing employment

increased in most developing countries. First, this study finds that the level of economic development measured by GDP per capita is the most important factor influencing the size of manufacturing employment. Second, economic globalization also influences manufacturing employment in developing countries, but mainly through trade. The sizes of exports and low-technology exports have a significant positive effect on manufacturing employment in developing countries.

Theoretical Framework

The theoretical framework adopted for the study is the unbalanced growth theory propounded Hirschman (1957). He posits that a deliberate unbalancing of the economy according to a pre-designed strategy is the best way to achieve economic growth in an underdeveloped nation. This deliberate unbalancing of the economy means heavy investment into a strategic sector of the economy and not all the sectors taken simultaneously. The underlying assumption of the theory as noted by Jinghan (2011) is that a strategic sector when fully developed catalyses the growth of other sectors and the aggregate national output. Furthermore, investment in strategically selected industries or sectors of the economy will lead to new investment opportunities and so pave way for further economic development, thus "growth is being communicated from leading sectors of the economy to the followers, from industry to another, from one firm to another". Rostow favors unbalanced growth and explains it in terms of leading sectors in an economy. Rowstow in his "Stages of economic growth" theory discussed the various phases undergone by countries as they transit from one level of economic development to another and how industrialization can spur growth and he described this in the take-off stage. Jinghan (2011) describes this stage as "when growth becomes its normal condition". As prescribed by Rostow, one of the conditions for the take-off is the development of leading sectors in the economy such as industrial sectors and regards this as the analytical bone structure of the stages of economic growth.

III.   Methodology

Research Design

The study adopted the *ex-post facto* research design due to its suitability in forecasting time series variables. In this design, the use of past values to explain future outcomes is made possible; it combines theory and empirical exercises in estimating the impact of the explanatory variable on the explained variable. The procedure to be adopted for data verification include the unit root rest, co integration test, vector error connection mechanism (VECM), and then the system equation estimation of the vector error correction estimates.

Sources of Data

Time series secondary data were sourced from the Central Bank of Nigeria (CBN) statistical bulletin. The period under review is 1986-2016 was selected for the study as it marked the period of government execution of industrialization policy following the structural adjustment programme.

Model Specification

In our econometric analysis of the impact of industrialization on the growth of the Nigerian economy we the model below:

RGDP = f(MSSO, CPNGO, SMMO)   … (1)

The mathematical form of our model is:

$MGDP = \beta_0 + \beta_1 MSSO + \beta_2 CPNGO + \beta_3 SMM + \beta_4 REXR + U_t$ … (2)

Where ;

RGDP = Real gross domestic product (dependent variable)

MSSO = manufacturing subsector output (independent variable)

CPNGO = crude petroleum and natural gas output (independent variable)

SMMO = solid mineral and mining output (independent variable)

β_0 = constant term

U_t = the error term

$\beta_1, \beta_2, \beta_3$ and β_4 are the coefficients of the parameter estimate

The a priori assumptions of our model are: $\beta_1, \beta_2, \beta_3$ and $\beta_4 > 0$ while $\beta_5 < 0$

Description of research Variables

Real Gross Domestic Product (RGDP): the gross domestic product represents the aggregate economic output per annum, due to the fact that inflationary effects distorts the real nature of economic indicators, there is need to cleans it of inflationary effects and when this has been done, it is then called the real gross domestic product.

Manufacturing Sector output: is the share of the manufacturing subsector in the total industrial output. According to the CBN statistical bulletin (2016), it is the total outputs of all the productive activities in the textiles and foot wears, food and beverages, basic metals, non metallic, and steel industries.

Crude Petroleum and Natural Gas Output (CPNGO): this variable represents the total output produced by economic activities in the oil and gas subsector, such as exploration, refining and marketing of refined products.

Solid Mineral Mining Output (SMMO):this is the share of the solid mineral and mining subsector in the total industrial output -output made by all economic activities of those involved in solid mineral extraction and mining such as limestone, gold, tin , lead etc.

The estimation procedure adopted in this study is in three sequences. In order to stem the problem of spurious regression, the Augmented Dickey Fuller unit root diagnostic test was first conducted to ascertain the time series properties of the data set employed in the estimation of the model; the implication of a stationary series is that it makes a model suitable for prediction, forecasting and policy analysis.

The Johansen co-integration test followed as the data set indicated integration property of order 1(1) for the variables employed. The co-integration test also helped to find out the existence or not of a sustainable long run relationship among the variables, where co integration is identified, then there is the existence of short run fluctuation. The vector error correction mechanism was employed to tie the short run fluctuation with the long run equilibrium and then, we can proceed to the ordinary least regression to determine the impact of parallel foreign exchange rate fluctuations on the growth of the manufacturing sector in Nigeria. The tests and estimation will be carried out using econometrics-views (E-views 8.0).

Conclusion on the study of the impact of industrialization on economic growth in Nigeria followed the decision rule. The decision rule on statistical significance of the result was based on the probability values at 5% level of significance. To accept any of the hypotheses, the T-statistic of the variable must be greater than 2 or the probability value must be less than 0.05 being the level of significance, otherwise we reject.

IV.   Discussion Of Results

In this study, the result of the unit root test shows that initially (@ level), the variables were not stationary, but at first difference they became stationary and are integrated of order 1(1). The conclusion of stationarity is based on the fact that the individual ADF statistic of the variables became greater than the 5% critical value. The implication of stationarity of data means that the model we have employed can be relied upon for policy analysis and decision making.

Relationship Between Industrial Sector Activities and Economic Growth in Nigeria.

The Johansen co-integration test was conducted after having established that the variables are integrated of the same order 1(1). Co-integration tests is employed to find out the existence of a tendency for long-run convergence among or between variables. The result indicated three (3) co integration equations at 5% level of significance; this is because the trace statistics of 91.32815 and 53.26775 are greater than the 5% critical values of 69.81889 and 47.85613 respectively. This shows that there is a long run relationship between economic growth represented by the real gross domestic product (RGDP) and all the explanatory variables. In other words, they possess the characteristics that would cause them to converge in the long-run. The implication of long run relationship is that over a long period, the variables can be allowed to work together in the economy to produce growth sustaining results; this result is in line with the empirical evidence by Akingbuola (2011).

The Vector Error Correction Mechanism

Co-integration between or among variables implies the presence of short-run errors, thus, the need for the error correction estimation. Usually the error correction mechanism smoothens the short-run errors associated with variables which have long run relationship or co-integration properties.

The conditions for smoothening effects state that the error correction coefficient must be negative, fractional and significant. Result of the study shows an error correction coefficient of -0.459679 which means that about 45.97% of the short run errors are corrected each year; hence, the conditions for error corrections are satisfied.

This study is set to determine the impact of industrialization on the growth of the Nigerian economy. Having identified the presence of co-integration among the variables and the error corrections, the system equation estimation of the vector error correction estimates was employed to determine how each of the industrial sector variables perform in relation to the economic growth:

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System Equation of VEC estimates

From the result, it is seen that the industrial sector variables do not only have positive sign, but also significant values, this outcome is in tandem with the empirical result by Ellahi (2011) which showed that industrial sector variables play important role in improving economic growth.

Manufacturing Subsector and Economic Growth

As also observed, manufacturing sector output (MSO) conforms to the apriori predicted sign, hence, a positive change in manufacturing output variable will lead to a positive change in the aggregate economic output in Nigeria. Precisely, one unit increase in (MSO) will lead to 1.980175 units increase in the aggregate national output in Nigeria. The implication of this finding is that the manufacturing activities play significant roles with wide spread positive effect on the growth of the Nigerian economy given the probability value of the estimated coefficient (0.0406<0.05).

Crude Petroleum and Natural Gas Industries and Economic Growth

The positive significant coefficient value of crude petroleum and natural gas output variable (CPNGO, 1.114798, p-value 0.0417) raises no eyebrow as it only validates the held and expected view that the petroleum industries' have promising returns on the economy. Empirical submissions by Appa and Ogbonna(2012) and Baghebo and Atima (2013) showed a positive and significant impact of crude petroleum and natural gas output on economic performance in Nigeria. This suggests that the heavy investments into the petroleum industry by both government and private sector stakeholders are gradually paying as a driver of economic growth.

Solid Mineral Mining Output and Economic Growth

It is common knowledge in the public domain that the huge solid mineral deposits remain relatively untapped. The positive significant coefficient value of solid mineral and mining output variable (SMMO, 5.792327, p-value 0.0436) confirms that delving into the solid mineral and mining industry will open up new resources that will constitute great additions to the aggregate economic output in Nigeria. This hints us that with more attention into the development of solid mineral and mining industrial segment of the economy both in policies and in capital inputs, it may soon position or even overtake the petroleum segments as a driver of economic growth.

V. Conclusion And Recommendations

In this study, we set out to empirically examine the impact of the industrialization on the growth of the Nigerian economy working on the data for a sample period of 1981-2016.Based on the error correction system estimation output, we then in consonance with economic theories, reach the conclusion that industrialization can drive growth of the aggregate economy.

Our result indicated positive and significant coefficient of all the specific objectives variables (manufacturing subsector output, crude petroleum and natural gas, solid mineral and mining output, and real exchange rate). The policy implication however, is that in line with theoretical positions, industrial policies if effectively implemented can drive the growth of output in Nigeria. The study concludes that industrialization has positive and statistically significant impact on the economy.

A long-run sustainable relationship among the variables was identified as indicated by the Johansen co-integration test. The implication is that there is possibility of convergence in the long-run between industrial activities and economic growth in Nigeria. This projection of a long run convergence is further strengthened by the outcome of the vector error correction estimate which satisfied all the conditions of negative, fractional and significant error correction estimate.

Recommendations

The outcome of the various tests carried out in this study and the results obtained leads us to recommend: that there is need for Government to, as a matter of urgency develop stimulants for the manufacturing sector and manufacturers in form of tax incentives and credit facilities, this will strategically reposition the manufacturing sector in driving economic growth in Nigeria; Government should try a balance of attention in terms of policies and capital investments between the petroleum industry and the solid mineral mining industry in order to harness the rich abundance of wealth in the solid mineral industry; There is need for the immediate implementation of the petroleum industry bill which will unbundle the NNPC and create efficient commercial units to fully carry on crude petroleum and natural gas business.

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