CONTRIBUTION OF AGRICULTURAL AND INDUSTRIAL SECTORS TO THE DEVELOPMENT OF NIGERIAN ECONOMY FROM 1995 TO 2012

DANKUMO, ALI MADINA¹; RITI, JOSHUA SUNDAY²; AYENI, BASHIR SAKA³

¹Department of Economics and Development Studies, Federal University, Kashere, Gombe State, Nigeria
²Department of Economics, University of Jos, Nigeria
³Department of Geography, Federal University, Kashere, Gombe State Nigeria

Correspondence author: E-mail: kumotito@yahoo.co.nz

ABSTRACT

This paper studied the impact of Agricultural and Industrial sectors on the Economic development of Nigeria (1995-2012). It centred on the contributions of the two sectors to the country’s development with emphasis on the growth of Gross Domestic Product (GDP). The paper used data from secondary sources which was analysed using the ordinary least square econometric technique, specifically Gretl econometric software. The prior information is that, Agriculture and Industrial Sector should have a positive impact on the growth of GDP. Our findings revealed that the coefficient of Agricultural contribution (2.21125) is positive and significant while that of Industry is negative (-0.166812) and insignificant. The implication is that Agricultural Sector contributed significantly to the economic development of Nigeria as shown by the percentage of the population involved in it whereas Industrial sector does not. Industries are found to be non-functional due to unavailability of raw materials, low power, and high cost of black oil. The paper recommended that government should encourage farmers by providing them with modern implements and loans with low interest and also revive the Industrial sector by making available and affordable black oil, improving power supply and subsidizing the costs of raw materials. The spill-over effect will be increase in GDP, Employment, Income, Standard of living, by and large Development.

Key words; Contribution, Agricultural, Industrial, Development, Economy
INTRODUCTION

Economic development could be referred to as series or sequential steps through which each and every economy passes, and that every country needs an amount of savings and investment as well as foreign aid to attain development, so economic growth (via Agricultural and Industrial) and development are synonymous (Rostow, 1960). Ogboru (2006) stresses that, the rate of annual increase (in GDP, Gross National Product, Per Capita Income, as well as alteration of the structure of production and unemployment) serves as the yardstick for the measurement of development. Rostow (1960) says development is a gradual transition of a society from the stage of traditionalism to the state of modernization (Industrialization) process of quantitative change characterized by economic-growth. Clelland (1961) considers it in terms of situation where greater social changes are achieved through high degree of individual achievements and motivations are reckoned rather than material accumulation and arrangement of the social classes. All the scholars above stressed the significance of adopting modern ways of doing things if development is to be achieved. Though, sometimes, society could possibly achieve economic growth without improvement in the lives of its citizens.

Nigeria as a nation, for instance, witnesses increase in GDP, number of schools and hospitals, yet records high rate of inequality, illiteracy, poverty, unemployment, hunger, poor conditions of health, etc. This situation describes economic growth without development condition (Anyanwu et al.1997). However, Nigeria could have attained a remarkable level of development if the two major sectors (Agricultural and Industrial) were given a needed attention. Though, the government, in most of its previous budgets, has allocated a reasonable percentage of budgets to these sectors considering their causal relationship, yet, the outcome is rhetoric and not glaring. No wonder, Dudley in Ahuja (2013), asked; what has been happening to poverty? What has been happening to unemployment? What has been happening to Inequality? Against this, the paper looked into the impact of Agricultural and Industrial sectors on the GDP in Nigeria to ascertain whether or not the two Sectors have significantly contributed to the growth and development of the economy. This will help the government to identify areas of intervention. The paper further reviewed related literatures, explains the methodology employed in the study, presents, analyzes, interprets data and finally concludes the paper.

Conceptual Framework

Agriculture, since independence, held the key to Nigeria’s rapid economic transformation, poverty alleviation, stable civil and good governance as well as national and food security. Agriculture employs about two-third of Nigeria’s labour force and provides about 88% of non-oil earnings. Nigerian agricultural output is accounted for by small-scale and subsistence farmers with less than two (2) hectares of farm holding. Generally, it is estimated that about 75% of Nigeria’s total land area amounting to 68 million ha has agricultural use potential while about 33 million hectares is actually under cultivation. Also, of the estimated 3.14 million ha of irrigable land, only about 220,000 ha or 7% is utilized, with diverse and rich vegetation that can support heavy livestock population, it also has a surface and underground water of about 267.7 billion cubic meter and 57.9 billion cubic meter respectively (Oxfam, 2012). An estimated 75 percent of the world’s poor rely on agriculture for all or some of their household’s income; farmers face a number of risks to their livelihoods, including unpredictable weather, insufficient farm inputs, land tenure problem and crop price variation. Therefore, as a matter of responsibility, every government must devote a reasonable amount of funds for the healthy growth of the sector, which is considered as the engine for accelerating the rate of growth and development of every economy (Asagbe, 2001). No wonder, Countries like Malaysia, India and others got to where they are today as a result of developing their agricultural sector. The fundamental role that agriculture plays in development has long been recognized, viz a viz.

Agricultural Sector and Growth Domestic Product

Agriculture is simply defined as the production of crops and animals for man use. In other words is a deliberate effort made by man to till the soil, cultivate crops and rear animal for food and other purposes. Its importance to the growth and development of Nigerian economy cannot be over emphasized. The importance among others are: - provides food, creates employment opportunities, provides raw materials for industries, generates income for farmers, market for industrial goods, source of government revenue and foreign exchange (Iwena, 1995). Others include; source of family and national income, generate savings, generate both external and internal revenues, supplies raw materials for use in other productive sector of the economy,
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a major user of products of other sectors, thus encouraging economic activities and finally contribute significantly to the GDP (about 32%) that will later metamorphose to development. Before oil discovery in commercial quantity in the late 60s in Nigeria, agriculture was the mainstay (major source of revenue) of the economy. Cash crops such as palm oil and kernels, cocoa, cotton, groundnut, rubber etc. were produced and exported. The country also produced enough food to feed her population. However, the agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s. Ever since then Nigeria has been witnessing extreme poverty and the insufficiency of basic food items. Historically, the roots of the crisis in the Nigerian economy lie in the neglect of agriculture and the increased dependence on a mono-cultural economy based on oil. The agricultural sector now accounts for less than 5% of Nigeria's GDP (Olagbaju and Falola, 1996:263). Hence, the crises in the two sectors, seen in importation of food items like rice, flour etc and other industrial goods that can be produced within. The development in the agricultural sector is however, not just a matter of growth inadequacy but also affects some development indices like unemployment, infant mortality, malnutrition, poverty, literacy etc. (Onimode, 1988) opines that Bureaucrats urge government to adopt the Green Revolution (GR) of large scale agricultural scheme. Such Bureaucrats prefer to see the agrarian crises in terms of the inadequacies of production rather than in more general problems. The adoption of this strategy was motivated by the apparent success of modern agriculture in the imperialist countries; the programme was adopted in 1976 – 1978. This was followed by Operation Feed the Nation (OFN) by Obasanjo, the River Basins Development authorities, Directorate for Food Roads and Rural Infrastructure (DFRRI). Back to land, etc (Jos, Journal of Economics 2002). The percentage contribution of Agricultural sector to GDP for the period of thirteen years (2000-2012) is presented in table 1. 

Table 1. The Sectoral growth rate of GDP at 1990 constant basic price for Agric Sector

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth Rates of Agric (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>2.95</td>
</tr>
<tr>
<td>2001</td>
<td>3.88</td>
</tr>
<tr>
<td>2002</td>
<td>4.25</td>
</tr>
<tr>
<td>2003</td>
<td>6.47</td>
</tr>
<tr>
<td>2004</td>
<td>6.50</td>
</tr>
<tr>
<td>2005</td>
<td>6.70</td>
</tr>
<tr>
<td>2006</td>
<td>7.40</td>
</tr>
<tr>
<td>2007</td>
<td>7.20</td>
</tr>
<tr>
<td>2008</td>
<td>6.30</td>
</tr>
<tr>
<td>2009</td>
<td>5.90</td>
</tr>
<tr>
<td>2010</td>
<td>5.60</td>
</tr>
<tr>
<td>2011</td>
<td>5.60</td>
</tr>
<tr>
<td>2012</td>
<td>4.0</td>
</tr>
</tbody>
</table>


From the above table, the Agric sector has witnessed an appreciable growth from 2.95% in 2000 up to 7.40% in 2006 attributed to presidential initiatives that went on to step-up agricultural development and ensure food security through root and tuber expansion programme, national cocoa development committee, Special Programme on Food Security (SPFS) and National Fadama Project. Others also include the Fish farm estate development, initiatives for increased agricultural production, south-south cooperation initiative and Nigeria-France project on agricultural development. This phase witnessed a drastic reduction in food imports from 14.5% to 5% of total imports. Presidential initiatives on specific agricultural commodities (for example cassava, rice) in order to generate N3 billion annually from exports also featured during this period. Public private partnership in the development of agricultural marketing as well as the promotion of integrated rural development marked this phase (Daniel and Ihechituru, 2011). The year 2007 witnessed a decline of 0.20% to 7.20% from the 2006 figure of 7.4% because the government attention was diverted to conduct of election . 2008 to 2012 experienced a drastic decline from 6.30% to 4.0%. This is due to policy incapacity, instability, implementation inefficiency and finally policy inconsistency over the period coupled with the amnesty
programme that has engulfed a reasonable percentage of the government budget. It is therefore, obvious from table 1 that the growth rate of GDP for Agricultural sector was fluctuating.

In various seminal works on the subject, agriculture was seen as a source of contributions that helped induce industrial growth and a structural transformation of the economy. However, globalization, integrated value chains, rapid technological and institutional innovations, and environmental constraints have deeply changed the context for agriculture’s role. We argue that a new paradigm is needed that recognizes agriculture’s multiple functions for development in that emerging context: triggering economic growth, reducing poverty, narrowing income disparities, providing food security, and delivering environmental services. Despite these contributions, governments and donors have neglected the sector which results to reduction in its growth and performance. With huge amount of revenue devoted to improve the agricultural sector, it has all been in vain. For instance, the recent government’s Growth Enhancement Support Scheme (GESS) designed to give farmers timely access to agricultural inputs has failed to deliver, because there was no impact due to untimely implementation and the corrupt attitude of the implementers (Daniel and Ihechituru, 2012). This has worsened the difficulties faced by farmers and the entire economy. With the claim of expending high on the sector, the negative effect are more pronounced, among which are; major importer of food items, stagnation of the sector, importation of raw materials, low income of farmers and hence limited industrialization, which by implication reduction in government revenue . Some of the problems of the sector are; inadequate fertilizers, insufficient farm inputs, unavailability of improved varieties among others.

**Industrial Sector and Gross Domestic Product**

Industrialisation is seen as a veritable channel of attaining the lofty and desirable conception and goals of improved quality of life for the populace. This is because; industrial development involves extensive technology-based development of the productive (manufacturing) system of the economy. In other words, it could be seen as a deliberate and sustained application and combination of suitable technology, management techniques and other resources to move the economy from the traditional mode of production to a more automated and efficient system of mass production of goods and services (Ayodele and Falokun, 2003). For instance, Bangladesh as a country with a poor land/person ratio, lack natural resources to be exploited with the exception of natural gas. Thus, industrialization and specialization in manufacturing was obviously the only way it could raise its per capita income and social productivity. The fastest rates of industrialization occurred in the late 20th century across four countries known as the Asian tigers (Hong Kong, Singapore, South Korea and Taiwan). Jhingan (2007:337) defines industrialization as the process of manufacturing consumer goods and capital goods and of creating social overhead capacity in order to provide goods and services to both individual and businesses. As such industrialization plays a major role in the economic development of Less Developed Economies.

Against this background, however, industrialisation seems to be central to economic growth and development. Developing the industrial sector is crucial for sustained growth and structural transformation in Africa and Nigeria in particular; it will also play a vital role in developing high- productivity sectors, feeding back into higher growth (UNCTAD, 2014). This therefore, explains why successive governments in developing countries like Nigeria emphasised industrialisation as a way of transforming the economy by expending much on power sector to ensure their effective and continual performance. The aim of Federal Expenditure in Nigeria is to improve the living standard of its citizens, device several ways of reducing the problem of unemployment, encourage economic diversification that provides antidote to incessant infractions and other challenges facing Nigeria. In an attempt to make this dream a reality the first national development plan (1962 – 1968), emphasized economic production. This pattern of expenditure was repeated in the successive national plans, with the share of manufacturing and production steadily increasing in the third and fourth plans as government was actively investing in public companies (Asagbe, 2001).

Following this footstep, industrialization measures economic development with strong capital intensive ventures as its expenditures continue to grow, it will surely build a strong economy’s base and increase productivity. The industrial sector is used as a tool for achieving these objectives. However, all the promises and huge expenditures present a sterling paradox. In spite of the robust natural and human resources endowment, the level of industrialization still stands in contrast to the country’s wealth for decades.
The country has struggled with the issue of industrial development which has remained on the decline in the face of increasing revenue from crude oil. No wonder the government established some banks to purposely fund the Industrial sector; The Nigerian Export-Import Bank (NEXIM Bank) and the Bank of Industry (BoI).

It is evident that industrialization in developed countries was a *sine-quan non* to economic development. Development could only be achieved, if the industrial sector is functional and contributes significantly to GDP. It is also necessary because it provides employment, brings increasing returns to scale, reduces imports and improve balance of payments (Jhingan, 2007). Industrialization is therefore viewed as an essential sector of a developing economy like Nigeria. It leads to increase variety of goods in the urban centers which also affects the rural sector through demonstration effect. Thus industrialization tends to raise the living standards and promotes social welfare. The history of industrialization in Nigeria has been disappointing, in that with the discovery of oil in the country, hopes were rekindled about the prospects and linkages it will bring to other sectors of the economy especially the industrial sector. But it rather turns other way round, as the barrier to industrial achievement are enormous owing to lack of proper planning and implementation. The failure of the sector brought about high import, high rate of unemployment, and increasing rate of abject poverty that leads to vicious cycle of poverty and in turn the suffering of the agricultural sector, above all there is hunger and underutilization of the natural resources even where they are put to use. (Adeoye, 2005). Table 2 shows sectoral growth rate of GDP at 1990 constant basic price for Industry.

**Table 2** The Sectoral growth rate of GDP at 1990 constant basic prices for Industry

<table>
<thead>
<tr>
<th>Year</th>
<th>Growth rate for Industry (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>10.2</td>
</tr>
<tr>
<td>2001</td>
<td>5.2</td>
</tr>
<tr>
<td>2002</td>
<td>-3.8</td>
</tr>
<tr>
<td>2003</td>
<td>21.4</td>
</tr>
<tr>
<td>2004</td>
<td>4.1</td>
</tr>
<tr>
<td>2005</td>
<td>-1.3</td>
</tr>
<tr>
<td>2006</td>
<td>NA</td>
</tr>
<tr>
<td>2007</td>
<td>NA</td>
</tr>
<tr>
<td>2008</td>
<td>NA</td>
</tr>
<tr>
<td>2009</td>
<td>NA</td>
</tr>
<tr>
<td>2010</td>
<td>2.0</td>
</tr>
<tr>
<td>2011</td>
<td>5.6</td>
</tr>
<tr>
<td>2012</td>
<td>1.9</td>
</tr>
</tbody>
</table>

NA= Not Available


The growth of industrial output showed a serious decline from 10.2 to -3.8 in 2002. Then it shoot up to 21.4 in 2003 after which it declined from 4.1 in 2004 to -3.4 in 2009. 2011 witnessed a rise to 5.6 and back to 1.9 in 2012. This table depicts a fluctuation in the growth rate of industry which by implication confirms the non-functionality of the Sector. Also, till this day in Nigeria, industrialization has not taken any meaningful expenditure and guessed plan policies are all in vain without good results.

**Interrelationship between Agricultural and Industrial Development**

So many debates are centred on the relative importance to be assigned to agriculture versus Industry. Though, experience has shown the limitations of overemphasizing industrialization, and it is increasingly recognised that agricultural progress must have a vital role in development process. The earlier confrontation of industrial development versus agriculture has been shown to be false, and the concern now is rather with the interrelationships between industry and agriculture and the contribution that each can make to the other. According to Lewis’ (1954) theory of development (the rent for surplus model) a limited highly skilled Agricultural labour force should sustain the sectors output and release the surplus to the industrial and services sectors. In LDCs, more people are engaged in agriculture for their livelihood than in the industrial and other sectors of the economy. Agricultural growth provides food for labour force and raw materials for both agro and non-agro-based industries, stimulates demand for industrial goods, increases savings and tax revenue.
to be utilized for further development, earns foreign exchange to finance imports of capital, facilitates the development of labour-intensive village, small and medium industries in rural and urban areas. Thus, both agricultural and industrial sectors are interrelated and each affects the growth of the other in ways discussed above. The developing countries (Nigeria in particular) needs to achieve the harmonious development of agriculture and industry for a steady growth and sustainable development of the economy.

Methodology

Secondary data were extensively used for this paper. The secondary data were from Monographs; published books, Journals and information available on the internet that were relevant to the topic. The data on the contribution of Agricultural sector and Industrial sector to the Real GDP at 1990 constant basic price for the period of Seventeen (17) years (1995-2012). GDP in this case is used as a proxy for Economic development. Linear regression model is employed in particular to achieve the objective. The data was analyzed using Gretl Econometric software. The model is specified in line with the hypothesis that:

H0A: B = that Agricultural Sector has no significant impact on the economic development of Nigeria.

H1A: B = that Agricultural Sector has significant impact on the economic development of Nigeria.

H0B: B = that Industrial Sector has no significant impact on the economic development of Nigeria

H1B: B = that Industrial Sector has significant impact on the economic development of Nigeria

GDP is the dependant variable which serves as a proxy to development since it is the GDP that ought to be translated into development. On the other hand the Agricultural and Industrial sectors’ contributions are the independent variables. Hence, the functional relationship specified as;

\[ Y = a_0 + a_1X_1 + a_2X_2 + U \]

Where \( a_0 \) is the intercept

\( a_1 \) and \( a_2 \) are parameter estimates

\( X_1 = \) Contribution of Agricultural Sector to GDP (CAGDP)

\( X_2 = \) Contribution of Industrial Sector to GDP (CIGDP)

Based on a priori assumption, the relationship between the GDP, CAGDP and CIGDP is

\[ \frac{\Delta GDP}{\Delta CAGDP} = a_1 > 0 \text{ and } \frac{\Delta GDP}{\Delta CIGDP} = a_2 > 0 \]

It therefore means that a positive relationship is expected between GDP, the CAGDP and CIGDP. This implies that the higher the CAGDP and CIGDP, the higher the GDP and by implication economic development.

Results and Discussions

A linear regression model, have the growth of GDP as the dependent variable and contributions of the Agricultural sector and industrial sector as the independent variables.

\[ RGDP = f (CAGDP, CIGDP), \text{ Where:} \]

\[ RGDP = \text{Real Gross Domestic Product} \]

\[ CAGDP = \text{Contribution of Agricultural Sector to GDP.} \]

\[ CIGDP = \text{Contribution of Industrial Sector to GDP.} \]

This is expressed in a linear equation as:

\[ RGDP = a_0 + a_1CAGDP + a_2CIGDP \]

The parameter estimate \( a_1 (2.21125) \), which is the coefficient of Agriculture and the Constant are found to be positive and significant, while \( a_2 (-0.16681) \), the coefficient of Industry is negative and statistically insignificant. The positive impact of Agriculture is in consonance with our priori expectation that 75% of Nigerians are engaged in small-scale and subsistence form of Agriculture, but, with most of the products primary ones, contributing to the growth of GDP. More so, the industrial sector’s negative impact is also attributed to the lack of functioning of the manufacturing sector due to problems discussed earlier in the conceptual framework.

From the standard error, \( S(a_0) > \% (a_0) \), \( S(a_1) < \% (a_1) \) and \( S(a_2) > \% (a_2) \), it indicates that \( a_2 \) is statistically significant; hence we reject \( H_0 \) and accept \( H_{1A} \). Also, we accept \( H_{1A} \) and reject \( H_{1B} \). Though, the result as a whole is significant as revealed by the high value of \( F – \text{statistics} \). The coefficient of determination \( R^2 \) shows that 98% variation in RGDP is explained by CAGDP, which is very high. Thus we reject the null hypothesis that Agricultural sector have no significant impact on the economic development of Nigeria and accept the
alternative hypothesis that Agricultural sector have significant impact in economic development of Nigeria. On the other hand Industrial sector has not impacted on the GDP, hence we accept our null hypothesis that Industrial sector has no significant impact on the development of Nigerian economy.

Table 3: The Regression result:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. error</th>
<th>t-Ratio</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>8143.2</td>
<td>6099.5</td>
<td>1.335</td>
<td>0.2031</td>
</tr>
<tr>
<td>CAGDP</td>
<td>2.21125</td>
<td>0.142894</td>
<td>15.47</td>
<td>3.37e-010 ***</td>
</tr>
<tr>
<td>CIGDP</td>
<td>-0.166812</td>
<td>0.619037</td>
<td>-0.2695</td>
<td>0.7915</td>
</tr>
</tbody>
</table>

Conclusions

It was observed that the Agricultural sector have impacted significantly on the Real Gross Domestic Product which was attributed to the fact that more than 75% of Nigerians are farmers with bulk of the products primarily consumed and less of it taken to the market for sale, because of the use of crude implements and lack of it. For the industrial sector, its impact is not established because the industrial contribution to Real Gross Domestic Product is not significant. Despite the positive relationship shown by the result of the study, the impact is not felt by Nigerians. Hence, the conclusion that other factors – corruption, lack of political will by the leaders and so on explains why Nigeria has not recorded any meaningful development. Despite the abundant land area with agricultural potentials and underground water, the country still imports food items, while greater percentage of the population swims in abject poverty and hunger. This in turn leads to rural-urban drift. The industrial sector, considering its contribution to the economic development of Nigeria in terms of employment generation, foreign exchange earnings etc is not functioning, for instance, functional industries in places like Kaduna, Sokoto, Shagamu, Lagos, Onitsha, Aba and Kano had to shut down because of high unit cost of production that makes it very difficult for them to compete with foreign goods. This increase in unit cost is brought about by lack of raw materials, lack of power and high cost of black oil.

In view of this, it is recommended that the Government should encourage the farmers by providing farm implements, subsidies and loans at low interest, because the role of agriculture deserves prominence since agricultural development provides the foundation for economic development. A strong and an efficient agricultural sector would enable the country to feed its growing population, generate employment and foreign exchange, and provide raw materials for industries as well as market for industrial products. On a final note, the agricultural sector remains one area where we could successfully address unemployment in the country.

We need to take a cue from a country like Israel which, despite obvious limitations, has turned around its agricultural sector.

The Federal and State governments should also intensify efforts at reviving ailing industries by increasing power and black oil supply at affordable price and possibly establish more in order to provide employment for the reasonable percentage of the population by and large guaranteeing an improvement in their standard of living. It is hoped that with time, a country like Nigeria blessed with immense natural and human resources will exploit the immense benefits accruable from its well-developed agricultural and industrial sector. The need for an urgent diversification of the Nigerian economy, coupled with the quest for
rural development and poverty eradication make this move a critical necessity. Once this is achieved, then development is said to have taken place.

REFERENCES


