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APPRAISAL OF REGIMES' AGRICULTURAL POLICIES RELATIVE TO NIGERIA'S ECONOMIC GROWTH: A GRAPHICAL EXPLORATION

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ABSTRACT

The paper assesses the contribution of regimes agricultural policies to economic growth in Nigeria via graphical exploration. Yearly data set on agricultural sector output and real gross domestic product (RGDP) used for analysis covered the period of 1981 to 2018. Graphical analysis based on the ratio growth (percentage ratio of agricultural sector output to RGDP) showed that the regime of (1999-2007) President Olusegun Obasanjo has the highest agricultural sector output contribution to real GDP growth with about 26% ratio growth value than any other regime. Hence, the regimes agricultural policy is said to be more proactive than any other for the period under study. However, boosting agricultural sector through practical policy will successfully stimulate economic growth in Nigeria.

1. Introduction

In the early 1950s and 1960s agricultural products was the major source for foreign exchange earnings, employment generation and food security. Many agricultural products like cotton, cocoa, rubber, groundnuts, palm oil etc, accounted 60 per cent of the country's foreign exchange earnings. In the 1960's, agriculture contributed up to 64% to the total GDP but retrogressively decline in the 1970's to 48% and falls to 20% in 1980 and 19% in 1985 as a result of oil discoveries in large quantity coupled with economic mismanagement pronounced in these periods (Ukeji, 2003).

It is good to note that any proactive agricultural policy which is vigorously implemented improves agricultural sector performance and invariably propels GDP growth. Since 70's, different agricultural support programmes have been launched to generally improve the agricultural sector in Nigeria.

As part of the drive towards re-strategizing and re-positioning the agricultural sector for sustainable growth and food security, the government had introduced a number of policies such as; **National Accelerated Food Production Programme (NAFPP)** initiated in 1972 by the Federal Department of Agriculture during General Yakubu Gowon's regime launched on 21st May 1976 under the military regime of General Olusegun Obasanjo, Agricultural Development Projects (1974), Operation Feed the Nation (1976), **the River Basin Development** Decree promulgated in 1976 to establish eleven River Basin Development Authorities (RBDAs) (Decree 25 of 1976), Green Revolution (1980) and Directorate for Food, Roads and Rural Infrastructure (1986), **the Nigerian Agricultural Land Development Authority (NALDA) that** was established in 1992. The first National Fadama Development Project (NFDP-1) was designed in the early 1990s to promote simple low-cost improved irrigation technology under World Bank financing. These policies, among other things, strive to enhance access of farmers to finance through agricultural loans, supply of fertilizers and insecticides to tackle outbreak of diseases. These efforts will improve productivity and output growth in the sector.

The **National Accelerated Food Production Programme (NAFPP)** initiated in 1972 by the Federal Department of Agriculture during General Yakubu Gowon's regime was focused on bringing about a significant increase in the production of maize, cassava, rice and wheat in the Northern states through subsistent production within a short period of time. The programme was designed to spread to other states in the country after the pilot stage that was established in Anambra, Imo, Ondo, Oyo, Ogun, Benue, Plateau and Kano states. the **National.** In 1976, the Federal Military Government of Nigeria launched the Operation 'Feed the Nation' Programme (OFN), as a result of the chronic inability of the agricultural sector of the economy to satisfy the food needs of the country, there was hope for a revival of interest in agriculture. Unfortunately, after two years of operation, the scheme has not achieved the expected goals.

Also during the Olusegun Obasanjo's administration in January 2002**,** the **National, Special Programme on Food Security (NSPFS)** was launched in all the thirty six states of the federation and on 16th April 2003 the **Root and Tuber Expansion Programme (RTEP)** was launched to address the problem of food production and rural poverty.

Moreover, the two consecutive quarters of declining growth in 2016 that necessitated the declaration of economic recession in Nigeria is an indication that even the agricultural sector which was the economic main stay before the discovery and exploration of oil in commercial quantity in the 1970's, has not enthused economic development in Nigeria.

The question now is; how has agricultural policies of different regimes in Nigeria positively influenced the economic growth? However, the study tends to appraise the impact of agricultural policies of different regimes in Nigeria relative to economic growth so as to identify the most proactive government agricultural policies which

have the highest positive effect on economic growth.

The remaining part of the paper is arranged as follows; section 2 deals with the literature review, section 3 presents materials and methods, section 4 presents the data analysis and results and section 5 presents the conclusion

2. **Literature Review**

In 2008, UNDP reported that the 12.6% reduction recorded in the proportion of underweight children between 1990 and 2008 can be attributed largely to growth in the agriculture sector in Nigeria (UNDP, 2008). Tiffin and Irz (2006) argued that growth of gross domestic product is influenced by agriculture in 85 developing countries. Awokuse (2009) argued that agriculture still can be the engine of growth based on the causality direction from agriculture to economic growth in developing countries.

Ahmed and Martini (2000) are of the view that both agricultural and industrial sector have to be in balance in order to sustain growth and ultimately development. Anyawu *et al.*(2010) using correlation matrix find that production of major staples in Nigeria contributed significantly to GDP growth (except wheat) between 1990 and 2001. Iganiga and Unemhilin (2011) and Oji-Okoro (2011) found that agricultural output is significantly influenced by government capital expenditure. Chien *et. al.,* (2011) conducted a study with the objective of investigating the relationship between the agriculture and economic growth in Thailand. Result found from the study indicates a bi-directional relationship between agriculture and economic growth.

Srikanth and Sathyanarayana, (2011) undertaken a study on the cointegration and causal relationship between GDP and agriculture sector in India. The study found a long-run relationship between agriculture and GDP in India. Results obtained from the Granger causality test indicated a bi-directional causal relationship between GDP and agriculture sector.

Raza *et.al.,* (2012) conducted a research on the role of agriculture in the economic growth of Pakistan. Results obtained from the study suggest that there is the significance role of agriculture sub-sectors towards the economic growth although forestry showed insignificant relationship with GDP. Similar research was also conducted by Olajide *et al.*(2012) to measure the relationship between agricultural resource and economic growth in Nigeria. The Ordinary Least Square (OLS) regression method was used for data analysis and the result showed a positive cause and effect relationship between GDP and agricultural outputs. Agricultural sector was estimated to contribute more than 30% to the GDP between 1970 and 2010 which implied that agricultural sector for the period of analysis has significant influence on macroeconomic output level.

Oluwafemi *et al.*(2015) study focused on Nigerian economy and agricultural contribution. Data available were analyzed using tools such as descriptive statistics and error correction model (ECM). The descriptive statistics showed that Nigerian economy had grown over the period of 32 years and this is obvious in the wider gap between the minimum and maximum values of the GDP and agricultural output respectively. The coefficient of R^2 was about 0.96 and the coefficient of agricultural output was found positive and statistically significant at 1% level. The coefficient of ECM (u-1) was significant at 1% level and this implies that GDP co-integrated with agricultural output and inflation.

Rahman and Hossain (2015) investigated the relationship between agriculture and economic growth in Bangladesh, employing the Vector Autoregression (VAR) approach. Their result showed that there is a long run relationship between agriculture and economic growth as it is confirmed by both Trace statistics and Maximum Eigen-value test statistics. Results found from Granger causality test suggest that uni-directional causality running from agriculture to economic growth exists in Bangladesh. The VAR results confirm that changes in agricultural GDP respond more critically to economic growth, suggesting that boosting agricultural sector will effectively stimulate economic growth in Bangladesh.

Usman(2016) studied the contribution of agriculture sector in the GDP growth rate of Pakistan. The important variables of his study were major crops, live stocks, other crops which contributed in the agriculture sector and after that study also provide the results of whole contribution of agriculture sector in the GDP growth rate of Pakistan. His data covered the period of 1990-2014. The results showed that there is a strong relationship between agriculture sector and GDP growth rate. Research also provides the significant impact of Major crops and other crops on agriculture sector and contribution towards (GDP) Gross Domestic Product. Live-stock is also major part of agriculture and has significant contribution in agriculture sector.

Several studies have investigated the relationship between agricultural and economic growth in abroad, few studies especially in this research topic, were found in case of Nigeria.

3. Materials and Method

This section deals with the source of data collection, variable measurement and definition, model specification and estimation method.

3.1. Source of Data Collection

The data sets on real gross domestic product (RGDP) and agricultural sector output growth were obtained from published Central Bank of Nigeria (CBN) statistical bulletin of 2018. The data sets cover the period of 1981 to 2018 (time series data of 38 observations)

3.2. Variable Measurement

This paper used real gross domestic product (RGDP) as the proxy for economic growth and agricultural sector output (which includes crop production (CP), livestock (LS), forestry (FO) and fishing (FI)) as proxy for agricultural policy output

3.3 Percentage Ratio Measure(PRM)

The PRM here, is calculated as the ratio of agricultural sector contribution to RGDP at time t to total RGDP at time t, mathematically represented as y_t such that

$$y_t = \frac{Agric_t}{RGDP_t} \times 100 \qquad (1)$$

where y_t is used as a proxy to measure the impact of agricultural policies on economic growth in Nigeria. Note that if agricultural sector output earnings increases, RGDP increases and if agricultural sector output earnings drops, RGDP drops. It is also good to note that; ratio of agricultural sector output to RGDP goes up when earnings on agricultural output rises and the ratio drops when earnings on agricultural output shrinks.

4. Data Analysis and Results

This section deals with the area plots of the variables of interest, graphical exploration based on the percentage ratio measure (which explains the contribution of agricultural sector output to real gross domestic product (RGDP)) growth in Nigeria).

4.1 Pictorial Analysis

The section presents the area plot of agricultural sector output and RGDP as shown in Figure1 and Figure2 below,. Figure3 exhibits the plot of the ratio of agricultural sector output to RGDP growth.

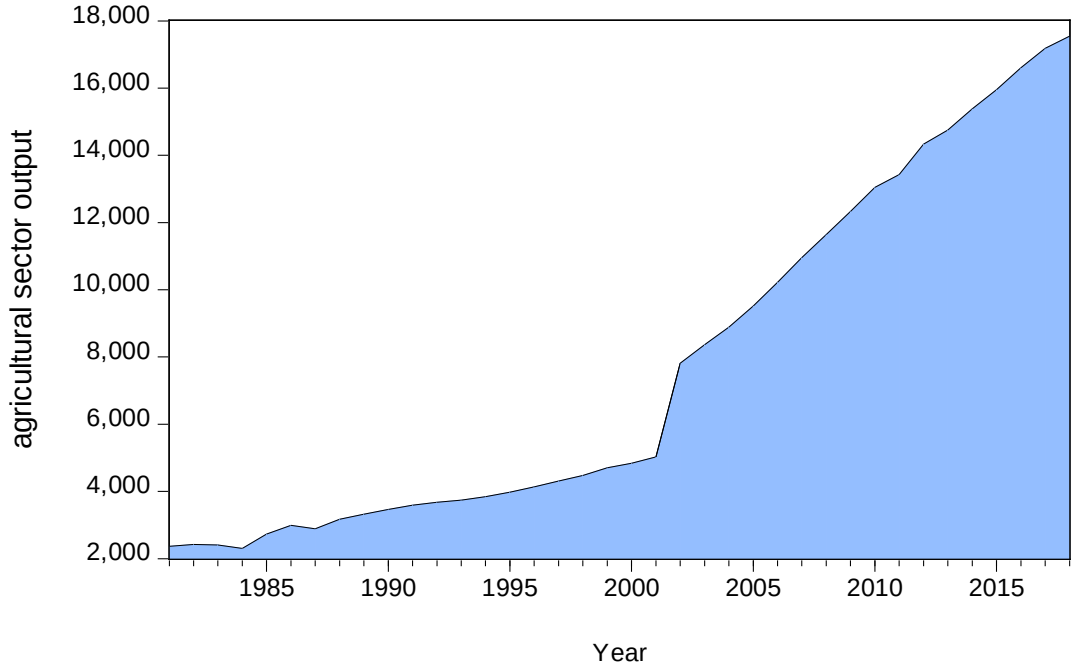

Figure1. Area plot of Agricultural sector output in Nigeria (1981-2018)

The area plot in Figure1 reveals clearly that agricultural sector output has increased over the years for the period under investigation. It is also observable that the growth in agricultural sector output was sluggish between 1981 and 2001 and seemingly doubled (exponential) between 2001 and 2018.

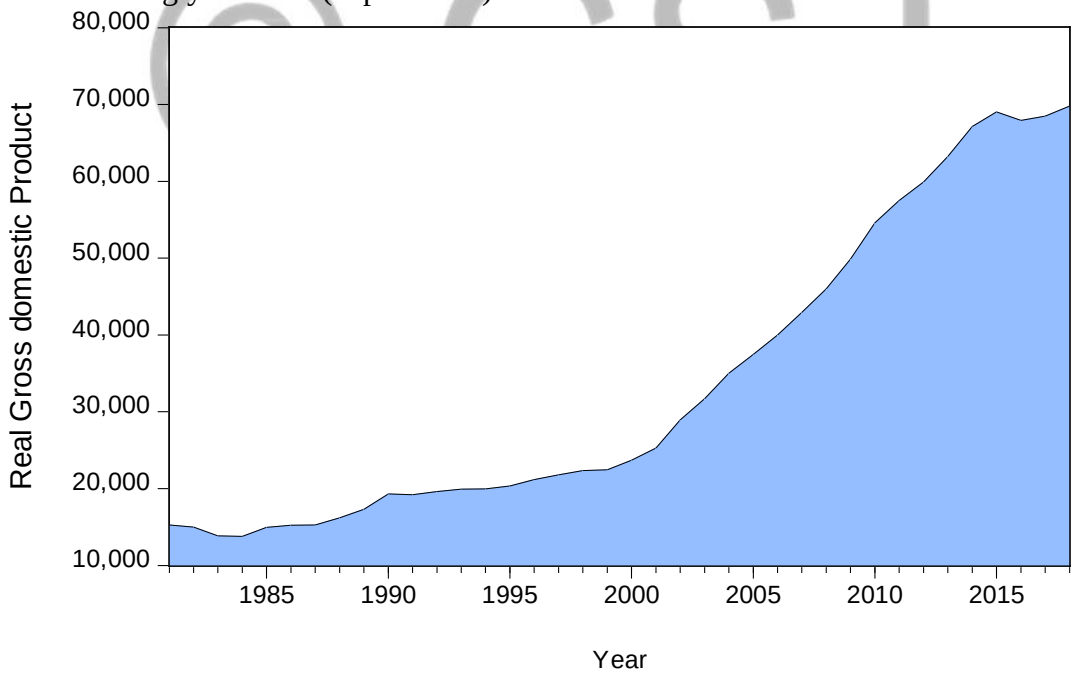

Figure2. Area plot of RGDP in Nigeria (1981-2018)

It is observable from the area plot in Figure2 that real gross domestic product has increased over the years for period under investigation. It is also observable that the growth was slower between 1981 and 2001 and seemingly doubled (exponential) between 2001 and 2018. Both Figure1 and Figure2 indicated that the two variables under investigation have trended upwards between 1981 and 2018.

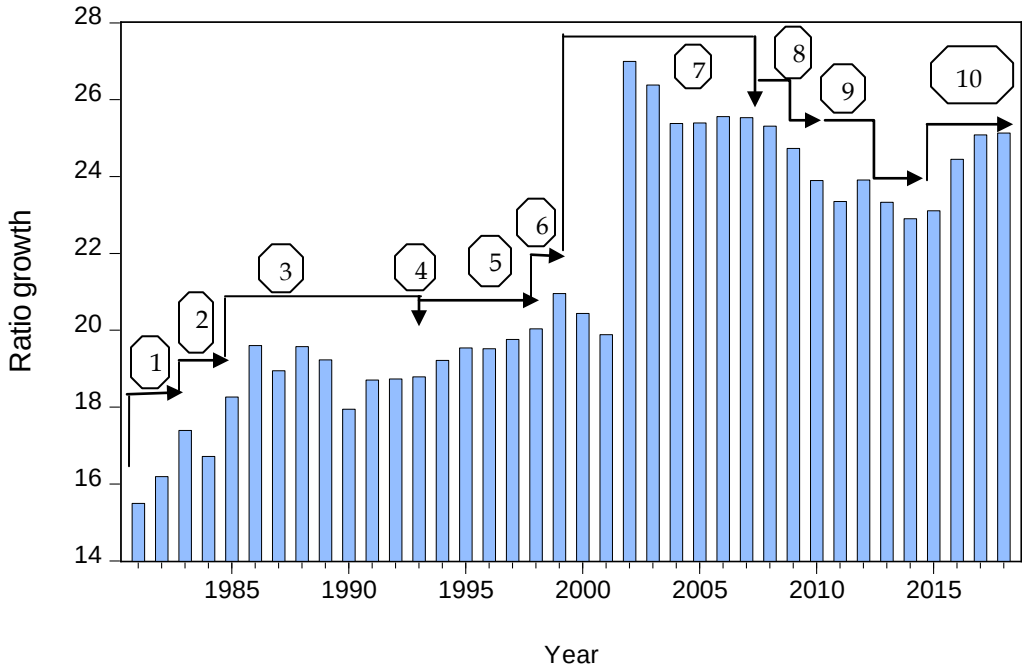

Figure3. Plot of the ratio of Agricultural sector output to GDP growth (Ratio growth) in Nigeria

The result of Figure3 above indicates how proactive different regimes agricultural policies have contributed to RGDP growth in Nigeria. However, when there is a consistent yearly rise in the ratio of agricultural sector output to RGDP, this implies a consistent increase in the contribution of agricultural sector to economic growth. So the regime where such growth is identified have a practical (commitment to making agriculture count in our GDP growth) policy that can enhance economic growth in Nigeria. Below are summary remarks on different government agricultural policies relative to output and economic growth. Note that the rise in the ratio of agricultural sector output to RGDP is hereafter known as "**ratio growth**" in this paper.

1	President Shehu Shagari	(1979-1983) had an active agricultural policy that consistently engenders economic growth for the period captured under review
2	Major-General Muhammadu Buhari	(1983-1985) did not sustain the ratio growth in 1984 but the ratio growth improved the year he government was overthrown. His regime policy on agriculture for the short period in office was not active.
3	General Ibrahim Babangida	(1985-1993) the ratio growth in this regime was not consistent and there are notable periods of stagnancy as it regards ratio growth. His regime policy on agriculture has little or no positive effect on the ratio growth.
4	President Ernest Shonekan	(1993) interim government for 3 months
5	General Sani Abacha	(1993-1998) the ratio growth in this regime is no significant, as there are no significant spikes in the successive ratio growth. Agricultural policy of this

		regime was not proactive to propel economic growth.
6	General Abdulsalami Abubakar	(1998-1999) this one year regime government was an interim military government that handed over to democratically elected civilian government. Building on the agricultural policy met on ground, the government stepped-up ratio growth.
7	President Olusegun Obasanjo	(1999-2007) this regime has the most proactive agricultural policies that raised the ratio growth to its highest peak for the period under review. The sharp ratio growth observable in 2002 aaccounted for the highest contribution of agricultural policy to GDP growth in Nigeria for the period under investigation.
8	President Umaru Musa Yar'Adua	(2007-2010) the agricultural policy of this regime was not practical enough to sustain the ratio growth index it met in 2007, as it is observable from Figure1 that ratio growth slowly and consistently dropped.
9	President Goodluck Jonathan	(2010-2015) the ratio growth index continued to degenerate which indicates that the regime agricultural policy as it relates to ratio growth was not active. Unstable ratio growth index is evidence that the regime agricultural policy has not fared well in comparison with that of the predecessor.
10	President Muhammadu Buhari	(2015-till date) the agricultural policy of this regime is active as observable from the consistent rise in ratio growth for the period capture under review.

4.2 Discussion of Results

The results via graphical exploration using Figure3 explicates that agricultural policies of different governments in Nigeria have contributed in one way or the other to economic growth. Though some of these policies based on the analytical techniques are more proactive than others. The findings reveals that a comparison of different regimes policies on agriculture as a means to improve agricultural production which at the long-run impact positively to economic growth, the regime of (1999-2007) President Olusegun Obasanjo has proven to be better than any other regime for the period under review.

The dimension of this paper is unique hence; it becomes somewhat difficult to relate the findings with any other one in the volume of literatures. And comparing regimes' agricultural policies relative to Nigeria's economic growth; it can be pointed out that the **National, Special Programme on Food Security (NSPFS)** that was launched in January 2002 in all the thirty six states of the federation and the **Root and Tuber Expansion Programme (RTEP)** that was launched on 16th April 2003 to address the problem of food production and rural poverty by Olusegun Obasanjo's administration were more practical than any other regime's policy on agricul-

ture in Nigeria.

5. Conclusion

The appraisal of regimes' agricultural policies relative to Nigeria's economic growth using a graphical exploration reveals that the regime of (1999-2007) President Olusegun Obasanjo has proven to be better than any other regime with about 26% ratio growth value for the period under review. The regime period records the highest agricultural sector output contribution to real GDP growth and the regimes agricultural policy is said to be more proactive than any other for the period under study.

Therefore, the **National, Special Programme on Food Security (NSPFS)** that was launched in January 2002 in all the thirty six states of the federation and the **Root and Tuber Expansion Programme (RTEP)** that was launched on 16th April 2003 to address the problem of food production and rural poverty by Olusegun Obasanjo's administration can be recommended to be more productive and adequate to sustain agricultural sector output growth and to improve economic growth in Nigeria. Moreover, boosting agricultural sector through practical policy will successfully stimulate economic growth in Nigeria.

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