Impact Of Government Expenditures In Agriculture And Education On Economic Growth In Nigeria: A Disaggregated Analysis

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ABSTRACT
This study uses a disaggregated analysis to examine the impact of government expenditures in agriculture and education on economic growth in Nigeria over the period 1980-2017. To achieve the objective of the study, agriculture was disaggregated into agricultural outputs (AGRO), government expenditures on agriculture (GEXA), poultry (POUL) while education was disaggregated into government expenditures on education (GEXE) and school enrolment (SCHE). Annual time series data on gross domestic product (GDP), AGRO, GEXA, POUL, GEXE and SCHE was collected from the online database of World Bank development indicators (WDI) and the 2018 Statistical Bulletin of the Central Bank of Nigeria (CBN). The data were analyzed using the structural equation model. Findings from the study show that government expenditures in agriculture and in education have different impacts on economic growth in Nigeria over the period of the study. The results of agricultural sector block reveals that agricultural outputs, government expenditure on agriculture and poultry production have positive and significant impacts on the Nigerian economy. Similar results are found for education sector block where government expenditures in education and school enrolment are found to have positive impact on the growth of Nigerian economy. Based on the findings of this study, it is recommended that a review of the Nigerian budgetary system should be geared towards capital projects like diversification of agricultural sector and the education sector.

Keywords: government expenditure in education, government expenditure in agriculture

1. INTRODUCTION
Government expenditures affect the economy through various sectors that connect the economy. These sectors such as education, health, agriculture, defence, transport and information makes demand from the governments’ annual budgetary allocations. Thus, with continuous increase state activities over the years, the demand from the various sectors that constitutes the economy have also increased. This is more so in both the developed and the developing countries. In developed countries, government expenditures, over a decade, have grown quite considerably in both absolute and relative terms. The remarkable growth in government spending is attributed to many factors including rising State responsibilities in the areas of defence, agriculture, and infrastructures.

In Nigeria, like other countries, government expenditure consists of allocation to the various sectors of the economy (Abdullah, 2000). The priority sectors include agriculture, education, health, infrastructure, and manufacturing, among others. The agriculture and education sectors were prioritized because they have suffered neglect over the years, resulting in the poor contributions of these sectors to GDP and employment level. For example, the relationship between agricultural sector and economic growth process is well documented in the literature (Ojenagbo, 2011). The sector apart from being a major source of raw materials for industries also provides food and employment for both the urban and the rural populations. Furthermore, International development association (2009) maintains that agriculture is still the single most important productive sector in low income countries, often in terms of its share of Gross
Domestic Product and in terms of the number of people it employs. In countries where the share of agriculture in overall employment is large, growth in agricultural sector is essential in stimulating growth in the overall economy.

Furthermore, Development Economists have argued that education bears a strong correlation with economic growth because sound education could increase the productivities and efficiencies of individuals (Todaro & Smith, 2003). In other word, education forms a major component of human resources that could work together with other component like health to make the individual more productive. However, it is difficult to establish whether education is a more important component of human resources than health or vice-versa. For example, as Matthew (2011) argued, educated individual, who is ill, is as inefficient as an illiterate. Therefore, both the components of human resources are related and move together. Hence, Appleton and Teal (1998) describe health and education as components of human resources that are contributors to economic transformation. Despite the recognized role of agriculture and education in economic growth, they suffer neglect more than other sector, with agriculture contributing about 23.1 per cent of GDP and 21 per cent of employment in 2017 which is lower than 24.4 percent and 23 per cent contribution of education sector to GDP and employment respectively. In other word, the agricultural sector and the education sector usually received the least annual budgetary allocations which are often inadequate to put the sectors on the path of sustainable growth (Ebong, Ogwumike, Udongwo & Ayodele, 2016).

Although, the rising sectoral government expenditure in Nigeria is expected to translate into meaningful growth and development however, there are evidences that the country has not fare well over the last thirty years. For example, there is a high level of unemployment and poverty rate in Nigeria which has been put at over 18.4 per cent and 65 per cent respectively (NBS, 2017). One reason for the inability of increasing government expenditure to tackle macroeconomic problem, as Abubakar (2001) observes, is that a very significant proportion of government spending go to recurrent rather than capital expenditure. Recurrent expenditure is meant to satisfy current consumption without adequate provisions for the future. Unless the government is able to check this phenomenon, increased government spending is bound to have negative impact on the economy.

Furthermore, the proportion of public expenditure that goes to the various sectors of the economy has been attracting the attention of scholars due to varying effects of the different sectors on the level of growth (Sunday & Elizabeth, 2012). Therefore, allocations of public expenditure with lack of consideration for the proportion that goes to the various sectors may endanger greater distortion in the economy which may be detrimental to growth. Against this backdrop, this study examines the trend of government sectoral expenditure and the impact on economic growth in Nigeria. The study focuses on two sectors of the economy (agriculture and education) and disaggregated the sectors into agriculture and education sector blocks. Agriculture was decomposed into agricultural output, poultry, crop production, livestock, forestry, recurrent and capital expenditures in agriculture, expenditure in fertilizer procurement, agricultural mechanization, seed production and fishery. On the other hand, education was disaggregated into school enrolment, recurrent and capital expenditures in education, government transfers, male and female primary school enrolments. The rest of the study is structured as follows: Section two reviews the literature while Section three dwells on methodology. Section four focuses presentation of results while Section five gives the conclusion and the recommendation.

2. Literature Review
2.1 Concept of Government Expenditure
Eze (2015) posits that government expenditure includes all government consumption, investment, and transfer payments. It encompasses all acquisition by governments of goods and services for current use, to directly satisfy the individual or collective needs of the community. Government acquisition of goods and services intended to create future benefits, such as infrastructure investment or research spending, is classed as government investment (government gross capital formation). These two types of government spending, on final consumption and on gross capital formation, together constitute one of the major components of gross domestic product. Government expenditure is financed by government borrowing...
or taxes. A change in government spending is a major component of fiscal policy used to stabilize the macroeconomic business cycle.

Cookey (2015) opines that government spends money towards the supply of goods and services that are not provided by the private sector but are important for the nation’s welfare. Government spending goes to the nation’s defense, infrastructure, health and welfare benefits. Furthermore, governments subsidize startup industries or industries that cannot propel their operations with funding by the private sector, such as transportation or agriculture. Similarly, the Organization for Economic Co-operation and Development (2014) refers to government expenditure as all the purchase of goods and services, which include public consumption and public investment, and transfer payments consisting of income transfers (pension, social benefits) and capital transfer by the government of a country. The expenditure is directed towards the supply of goods and services that are not provided by the private sector but are important for the nation’s welfare. Government spending goes to the nation’s defense, infrastructure, health, agriculture and welfare benefits.

Okoh (2008) sees government expenditure as the expenses the government incurs in carrying out its programmes. On the other hand, Oriakhi (2004) defines government expenditure as the expenses which government incurs for the maintenance of the government and the society in general while Anyawu (1997) sees public expenditure as all expenses which the public sector incurs for its maintenance for the benefit of the economy. For decades, public expenditure has been expanding in Kaduna State as in all the other states of the federation. Also, Amos (2007) opines that spending by the government sector includes both the purchase of final goods and services, or gross domestic product, and transfer payments. Government expenditures are used by the government sector to undertake key functions, such as national defense and education. These expenditures are financed with a combination of taxes and borrowing. Government expenditures are used either to purchase a portion of gross domestic product (government purchases) or as gifts to members of the other sectors (transfer payments). Both types of expenditures have an impact on the macro-economy. They can trigger business-cycle instability or be used to address the unemployment and inflation problems of this instability.

2.2 Government Expenditure in Agriculture

Government expenditure in agriculture includes spending by local/municipal, regional and national governments on agriculture from annual budgetary allocation. It is the expenditure on crop development, seed production and distribution, fertilizer procurement, agricultural mechanization, extension services, control of pests and diseases, soil conservation, irrigation and research (Matthew and Mordecai, 2016).

In the Nigerian experience, the downturn of the global oil market of the early 1980s and the sharp decline in foreign exchange earnings have adversely affected economic growth and development in Nigeria. Government spending on agriculture in Nigeria is exceedingly low. Less than 2 percent of total federal expenditure was allotted to agriculture during 2001 to 2005, far lower than spending in other key sectors such as education, health, and water. This spending contrasts dramatically with the sector’s importance in the Nigerian economy and the policy emphasis on diversifying away from oil, and falls well below the 10 percent goal set by African leaders in the 2003 Maputo agreement and far below the Food and Agricultural Organisation (FAO) recommendation in 2013 and 2015 that 25 per cent of government capital budget be assigned to the agricultural development projects.

2.3 Government Expenditure in Education

Government expenditure in education as a percentage of GDP is the total public expenditure (current and capital) on education expressed as a percentage of the Gross Domestic Product (GDP) in a given year (World Bank, 2016). Public expenditure on education includes government spending on educational institutions (both public and private), education administration, and transfers/subsidies for private entities (students/households and other private entities). Available data shows that the annual growth rate of education expenditure in Nigeria as a share of GDP has been declining since 1980 but between 1991 and 2015, Nigeria expenditure on education as a share of GDP remained stable at around 0.85% (Yodatai, 2017).
The relationship between education and economic growth lies in the fact that sound education could increase the productivities and efficiencies of individuals (Todaro & Smith, 2003). In other word, education forms a major component of human resources that could work together with other component like health to make the individual more productive. Hence, Appleton and Teal (1998) describe health and education as components of human resources that are contributors to economic transformation. Despite the recognized role of agriculture and education in economic growth, they suffer neglect more than other sector, with agriculture contributing about 23.1 per cent of GDP and 21 per cent of employment in 2017 which is lower than 24.4 percent and 23 per cent contribution of education sector to GDP and employment respectively.

2.5 Peacock-Wiseman Hypothesis of public Expenditure

Wiseman and Peacock (1995) in their study of public expenditure in UK for the period of 1890-1995, opine, main reason of the thesis that public expenditure does not increase in a smooth and continuous manner, but in jerks or step like fashion. At times, some social or other disturbance like war takes place creating a need for increasing public expenditure which the existing public revenue cannot meet. While earlier due to an insufficient pressure for public expenditure the revenue constraint was dominating and restraining an expansion in public expenditure now under changed requirements such as restraint gives way. The public expenditure increases and makes the inadequacy of the present revenue quite clear to everyone. The movement from the older level of expenditure and taxation to a new and higher level is the displacement effect. The inadequacy of the revenue as compared with the required public expenditure creates an inspection effect.

The government and the people review the revenue position and the need to find a solution of the important problems that have come up and agree to the required adjustments to finance the increased expenditure. They attain a new level of tax tolerance. They are now ready to tolerate a greater burden of taxation and as a result, the general level of expenditures and revenue goes up. In this way, the public expenditure and revenue get stabilized at a new level till another disturbance occurs to cause a displacement effect. Thus each major disturbance leads to the government assuming a larger proportion of the total national activity. In other words, there is a concentration effect. The concentration effect also refers to the apparent tendency for central government economy activity to grow faster than that of the state, and that of the local government level. The higher level of expenditure of central government is due to the fact that the lower level of government depend more on the higher level of government for grant – in – aid during any disturbance, while the displacement effect is referred to as an observed tendency for public expenditure to rise during war or other national crisis but not to fall to the original after the crisis or war.

The Wiseman Peacock study was undertaken for three objectives. The first objective was to provide available statistical information about the British economy. Secondly to relate a statistical derive generally to the then economic history and thirdly to provide hypothesis that may help to explain the rise and increase of public expenditure in other countries and at other periods. Their study findings reveals that, although British government expenditures decreases after the wars it did not return to the pre war level and the share of government expenditure in the national product remained much greater after the wars than it was in the pre-war period (Gupta 1967). To that effect, the only constraint to the increase growth expenditure after the disturbance lies in the inability of the government to increase tax rate to finance the expenditure.

Many developing countries have experienced the displacement effect as analyzed above in the Wiseman Peacock hypothesis as many developing countries and Nigeria in particular has experienced war, political instability and ethno-religious crisis, at different times. The recent one is the Kaduna 2000 ethno-religious crisis, 2001 Miss World riot, 2011 presidential election crisis and ongoing Boko Haram insurgency that have caused a shift in expenditure level of the government. Beside the displacement effect, other factors, like inflation, population explosion has triggered a rise in government expenditures. An increase in population is associated with increase urbanization which will lead to increase demand for social services, security public health facilities, education and others.
Although Wiseman Peacock theory fits British statistics very well, it cannot be used to make generalization about the growth of public expenditure. A careful examination of Wiseman Peacock theory in the mirror of Wagner’s law shows that they put more emphasis on recurrence of extreme situation that caused increase in public expenditure in jerks or steps like fashion rather than the smooth and continuous manner occasioned by some expansion and structural changes in the economy or due to huge receipts from production and sales of crude oil and the increase demand for public goods like roads, communication, power, educational, health beside the increasing need to provide both internal and external security for the people as observed by Abu and Adullah (2010).

2.6 Empirical Literature

Ebong, Ogwumike, Udongwo and Ayodele (2016), using disaggregated analysis, assess the impact of capital expenditures on economic growth in Nigeria during 1970 and 2012. A multiple regression model based on a modified endogenous growth framework was utilized to capture the interrelationships among capital expenditures on agriculture, education, health economic infrastructure and economic growth. Also, the error correction and co-integration specifications were estimated for short-run and long run dynamics respectively. Results show that government capital expenditures had differential effects on economic growth. Capital expenditures on agriculture did not exert any significant influence on growth both in the long and short runs. Similarly, the corresponding short-run and long-run impacts on growth of capital expenditures on Education were positive respectively. Moreover, these expenditures do not crowd-out private investment. However, although, the study is anchored on disaggregated components, it does not sufficiently explain the impact of each component on the economic growth of Nigeria.

Usman, Mobolaji, Kilishi, Yaru and Yakubu (2011) investigate the effect of government expenditure on economic growth in Nigeria spanning the period 1970-2008. An augmented Solow model was specified in Cobb-Douglas production equation form with public capital as one of the factors. The study decomposed expenditure into three expenditure streams namely public expenditure on education and health, public expenditure on transport and communication and public expenditure on administration. They found that in long run, there is relationship between public expenditure and growth while in the short run, public spending has no impact on growth.

Oluwatobi and Ogunrinola (2011) examined the impact of government recurrent and capital expenditures on education and health and their effect on economic growth in Nigeria. The study adopted the augmented Solow model and real output as dependent variable while the explanatory variables were government capital and recurrent expenditures on education and health, gross fixed capital formation and the labour force. The study found that there exists a positive relationship between government recurrent expenditure on human capital development and the level of real output while capital expenditure is negatively related to the level of real output.

Nurudeen and Usman (2010) use a disaggregated analysis to examine the impact of capital expenditures on economic growth in Nigeria during 1970 and 2008. The study reveals that rising government expenditure has not translated to meaningful development as Nigeria still ranks among world’s poorest countries. The results also reveal that government total capital expenditure (TCAP), total recurrent expenditures (TREC), and government expenditure on education (EDU) have negative effect on economic growth. On the contrary, rising government expenditure on transport and communication (TRACO), and health (HEA) results to an increase in economic growth.

Ogundipe and Oluwatobi (2010) investigate the effect of government expenditure (both recurrent and capital) on growth rate in Nigeria using the Johansen co-integration analysis. Evidences from the analysis spanning from 1970-2009 shows that the components of total government expenditure induced a negative (except spending on education and health) and insignificant in explaining the trend of economic growth. Also, the study shows the possibility of long-run equilibrium convergence between the components of capital expenditure and growth while the long-run convergence between the components of recurrent expenditure and economic growth may not be attainable. Similarly, Cooray (2009) uses an econometric model that takes government expenditure and quality of governance into consideration, in a cross-
sectional study that includes 71 countries. The result of the study which cover 1970-2008, reveals that both the size and quality of the government expenditure are associated with economic growth. Liu, Hsu and Younis (2008) examine the causal relationship between GDP and public expenditure for the US data during the period 1947-2002. The causality results reveal that total government expenditure causes growth of GDP. On the other hand, growth of GDP does not cause expansion of government expenditure. Beside the unidirectional influence shown by the causality test, the estimation results indicate that public expenditure raises the United States economic growth. The authors concluded that, judging from the causality test; Keynesian hypothesis exerts more influence than the Wegner and Wagner’s law in the US. This is similar to Gregariou and Ghosh (2007) who sued used the heterogeneous panel data to investigate the impact of government expenditure on economic growth and reported that countries with large government expenditure tend to experience higher economic growth, but the effect varies from one country to another.

Ranjan and Sharma (2008) evaluate the effect of government development expenditure on economic growth of India over the period 1950-2007. The study uses multiple regression and found that government expenditure has a significant positive impact on government expenditure on economic growth. They also found the existence of co-integration among the variable. This implies that government spending is a determinant of economic growth both in the short and the long run.

3. METHODOLOGY
3.2 Types and Sources of Data
The study uses time series data drawn from the publications of the 2018 statistical Bulletin of the Central Bank of Nigeria (CBN) and online database of World Bank development indicators (WDI). The variables on which data were collected are gross domestic product (GDP), government expenditures on agriculture (GEXA) and government expenditures on education (GEXE). Data on gross domestic product (GDP) was collected from CBN while data on government expenditures on agriculture (GEXA), and government expenditures on education (GEXE) were collected World Bank development indicators (WBDI).

3.3 Model Specification
3.3.1 Structural Equation Model
To achieve the broad and the specific objectives of the study, the structural equation model was used to analyze the interaction between two sectoral blocks (agriculture and education blocks). Each sectoral block has its structural equations of interrelationship between the endogenous and the exogenous variables. A structural equation modeling is a multivariate statistical technique that is used to analyze structural relationships. This is a system of simultaneous equations that seeks to explain the behaviour of key economic variables at the aggregate level, based on the received theories of economics (Akanbi and Du Toit, 2010; Annicchiarico, 2011; Brunnermeier and Sannikov, 2011 and Krishnamurty and Pandit, 1985). Following Akanbi and Du Toit (2010), the model in this study will consist of 7 behavioural equations and will be made up of two major blocks: agriculture and education blocks. The model is stated below in equations 1 to 7 starting with the agricultural block.

3.3.2 Agricultural Sector Block
The agricultural sector block consists of one endogenous and three exogenous variables. The variables were selected due to data availability. The gross domestic product is the endogenous variable while agricultural output, government expenditure in agriculture and investment in agricultural sector are the exogenous variables. The structural econometric model specification for the agricultural sector block is given in equation 1 while the sectoral specifications are given in 2, 3 and 4. Thus;

GDP = AGRO + GEXA + POUL ............................................................................. 1
AGRO = a₀ + a₁CROP + a₂LSTP + a₃FRS + a₄FSHR a₅LABF + a₆EXFP + μ₁ .................. 2
GEXA = b₀ + b₁AREX + b₂ACEX + b₃EXFP + b₄AGRM + b₅SEDP + μ₂ ......................... 3
POUL = c₀ + c₁AGRM + c₂BKLF + c₃LABF + c₄CSTB + μ₃ ............................................. 4

Where:
GDP = gross domestic product
AGRO = agricultural output
GEXA = government expenditure in agriculture  
POUL = Poultry (investment in agriculture)  
CROP = crop production  
LSTP = livestock production  
FRS = forestry  
FSHR = fishery  
LABF = labour force  
AREX = agricultural recurrent expenditure  
ACEX = agricultural capital expenditure  
EXFP = expenditure on fertilizer procurement  
AGRM = agricultural mechanization  
SEDP = seed production  
BKLF = bank loan to farmers  
CSTB = cost of borrowing  
\( a_0, b_0, c_0 \) = intercept  
\( a_i, b_i, c_i \) = partial slopes \((i = 1, 2, \ldots)\)  
\( \mu_1, \ldots, \mu_3 \) = error terms

### 3.3.3 Education Sector Block

Government expenditure in education is expressed as percentage of GDP. It includes expenditure funded by transfers from international sources to government. It is also broke down into recurrent and capital expenditure components. The structural econometric model specification for the agricultural sector block is given in equation 5 while the sectoral specifications are given in 6 and 7. Thus;

\[
GDP = GEXE + SCHE \tag{5}
\]

\[
GEXE = d_0 + d_1REXE + d_2CEXE + d_3TRSF + \mu_4 \tag{6}
\]

\[
SCHE = e_0 + e_1FPSE + e_2MPSE + e_3FSSE + e_4MSSE + \mu_5 \tag{7}
\]

Where;

- GEXE = government expenditure in education  
- SCHE = school enrolment  
- REXE = recurrent government expenditure in education  
- CEXE = capital government expenditure in education  
- TRSF = government transfer  
- FPSE = female primary school enrolment  
- MPSE = male primary school enrolment  
- FSSE = female secondary school enrolment  
- MSSE = male secondary school enrolment  
- \( d_0, e_0 \) = intercept  
- \( d_i, e_i \) = partial slopes \((i = 1, 2, \ldots)\)
4. RESULT AND DISCUSSION OF FINDINGS

Table 1: Estimated Result for Agricultural Sector Block

<table>
<thead>
<tr>
<th>Dependent Variable = GDP</th>
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<tr>
<td><strong>Table 1: Estimated Result for Agricultural Sector Block</strong></td>
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<table>
<thead>
<tr>
<th>Variable</th>
<th>CROP</th>
<th>LSTP</th>
<th>FRS</th>
<th>FSHR</th>
<th>LABF</th>
<th>EXFP</th>
<th>AREF</th>
<th>ACEX</th>
<th>AGRM</th>
<th>SEDP</th>
<th>CSTB</th>
<th>BKLF</th>
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<tbody>
<tr>
<td>AGRO</td>
<td>0.255*</td>
<td>0.259*</td>
<td>-0.289*</td>
<td>-0.026*</td>
<td>0.271*</td>
<td>0.328*</td>
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<tr>
<td>GEXA</td>
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<td>POUL</td>
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</table>

**R²(AGRO) = 0.56**

**D-W = 1.124**

**R²(GEXA) = 0.51**

**D-W = 0.017**

**R²(POUL) = 0.86**

**D-W = 1.16**

*Denote significant at 1%  
**means significant at 10%  
Figures in parenthesis ( ) are t-values while figures in square bracket [ ] are probability values  
D-W = Durbin-Watson value  
R² = goodness of fit

Source Computed by the Researcher using e-views 9

Table 1 shows the estimated results for the equations 2, 3 and 4 of the agricultural sector block established in section three. The equations 2, 3 and 4 were obtained from decomposing equation 1 into various components of agricultural sector. The second row of table 1 represents the estimated results for equation 2, third row for equation 3 and fourth row for equation 4. The equations established the linear relationship between GDP and the agricultural sector unit of the Nigerian economy. The important variables used as proxies in the agricultural sector are represented in the first row of table 1. The variables are gross domestic product (GDP), agricultural output (AGRO), government expenditure in agriculture (GEXA), Poultry (POUL), crop production (CROP), livestock production (LSTP), forestry (FRS), fishery (FSHR), labour force (LABF), agricultural recurrent expenditure (AREX), agricultural capital expenditure (ACEX), expenditure on fertilizer procurement (EXFP), agricultural mechanization (AGRM), seed production (SEDP), bank loan to farmers (BKLF) and cost of borrowing (CSTB). These variables are assumed to be the input variables that influence the system of equations in the estimated models.

Most of the estimated coefficients of the decomposed variables of agricultural sector in table 1 are impressive because they satisfy the a priori expectation, suggesting that government through the agricultural sector boost the GDP of the Nigerian economy. The result in table 1 shows that one per cent increase in crop production (CROP) in the agricultural sector increases the output of agriculture (AGRO) by about 0.26 per cent and the estimate is statistically significant. This is because an increase in CROP may be essentially due to increase in the number of farmers or their productivity resulting from improved agricultural technologies provided by the government. This then boosts the output of agriculture and then adds to GDP. The implication of this finding is that crop production is the major source of the foods consumed by Nigeria and a major source of cash crops for export. This agrees with Okolo and Obidigbo (2015) that food consumed in Nigeria are determined largely by the proportion of income generated from the agricultural sector.

Like crop production (CROP), livestock production (LSTP), labour force (LABF) and expenditure on fertilizer procurement (EXFP) have positive and significant impacts on AGRO. The result shows that a one per cent increases in livestock production (LSTP), labour force (LABF) and expenditure on fertilizer procurement (EXFP) have positive and significant impacts on AGRO. This is because these variables are the input variables that influence the system of equations in the estimated models.
procurement (EXFP) increased AGRO by about 0.26 per cent, 0.27 per cent and 0.33 per cent respectively. These results are as expected. Increase in LSTP increases the revenue base of farmers, their consumption expenditure as well as their standard of living. Consumption expenditure, being a component of aggregate demand, increases the national income of the economy. Furthermore, the output per unit of agriculture increases with increase either in the quantity or the quality of labour force. Increase in the quality of labour force increases technical efficiency while increase in the quantity of labour force increases allocative efficiency.

These findings above are in tandem with Todaro (1994) who notes that the primary factors which stimulate economic growth are investments that improve the quality of existing physical and human resources as well as investment in services that increase the quantity of these same productive resources. However, forestry (FRS) and fishery (FSHR) both have negative but highly statistically significant impacts on AGRO. The result show that a one per cent increases in forestry (FRS) and fishery (FSHR) decreased AGRO by about 0.29 per cent and 0.03 per cent respectively. These do not conform to the a priori expectation and also disagree with Oyakhilomen and Zibah (2013).

With respect to government expenditure in agriculture (GEXA) however, the results in the second row of table 1 indicate that agricultural capital expenditure (ACEX), expenditure on fertilizer procurement (EXFP), agricultural mechanization (AGRM) and seed production (SEDP) have positive impacts on GEXA while agricultural recurrent expenditure (AREX) has a negative impact on GEXA. Form the result in table 1, a one per cent increase in ACEX, EXFP, AGRM and SEDP increases GEXA by about 0.14 per cent, 0.30 per cent, 0.93 per cent and 0.21 per cent respectively while a one per cent increase in AREX decreases GEXA by about 0.78 per cent. All the estimated coefficients are highly statistically significant.

Furthermore, poultry (POUL) in the third row of table 1 has a positive relationship with labour force (LABF) but a negative relationship with agricultural mechanization (AGRM), bank loan to farmers (BKLF) and cost of borrowing (CSTB). The results show that a one per cent increase in LABF increases POUL by about 0.27 per cent while a one per cent increase in AGRM, BKLF and CSTB decreased POUL by about 0.03 per cent, 0.10 per cent and 0.11 per cent respectively. The positive relationship between LABF and POUL on the one hand, and the negative relationship between BKLF, CSTB and POUL on the other, satisfies the apriori expectation. For example, the cost of borrowing (CSTB) capital for investment in poultry production, when increased, could discourage the investor from taking loan from financial institutions for investment purposes. The result agrees with Muhammad and Muhammed’s (2012) study for Pakistan.

The R-squares from the estimated results in table 1 show that all the decomposed variables of the agricultural sector have good fits. The $R^2$ value of 0.56 shows that about 56 per cent of the variability in the output of agriculture (AGRO) is explained by the joint independent variables in the model. This is a representation of goodness of fit for the regression line. Similarly, the estimated $R^2$ for GEXA and POUL are 0.51 and 0.86 respectively, suggesting that about 51 per cent of the variability in government expenditures in agriculture (GEXA) and 86 per cent of the variability in poultry farming (POUL) are explained by the joint independent variables used in the models. Furthermore, all the estimated the Durbin-Watson values for the decomposed variables of the agricultural sector, except for GEXA, are fairly within acceptable limit. They are closer to the value 2 than to the value 0, suggesting the absence of autocorrelation in the residuals of the estimated models.
Table 2: Estimated Result for Education Sector Block
**Dependent Variable = GDP**

<table>
<thead>
<tr>
<th>Variables</th>
<th>REXE</th>
<th>CEXE</th>
<th>TRSF</th>
<th>FPSE</th>
<th>MPSE</th>
<th>FSSE</th>
<th>MSSE</th>
<th>Diagnostics</th>
</tr>
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<tbody>
<tr>
<td><strong>GEXE</strong></td>
<td>-0.576*</td>
<td>0.188*</td>
<td>-0.130</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>R² = 0.655</td>
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<tr>
<td></td>
<td>(7.29)</td>
<td>(2.11)</td>
<td>(1.45)</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>D-W = 1.70</td>
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<tr>
<td></td>
<td>[0.000]</td>
<td>[0.03]</td>
<td>[0.14]</td>
<td>-</td>
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</tr>
<tr>
<td><strong>SCHE</strong></td>
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<td>------</td>
<td>------</td>
<td>R² = 0.861</td>
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<tr>
<td></td>
<td>0.699</td>
<td>0.133*</td>
<td>-0.113</td>
<td>0.728*</td>
<td>0.728*</td>
<td>0.728*</td>
<td>0.728*</td>
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</tr>
<tr>
<td></td>
<td>(1.23)</td>
<td>(2.215)</td>
<td>(0.20)</td>
<td>(12.8)</td>
<td>(12.8)</td>
<td>(12.8)</td>
<td>(12.8)</td>
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</tr>
<tr>
<td></td>
<td>[0.22]</td>
<td>[0.03]</td>
<td>[0.84]</td>
<td>[0.00]</td>
<td>[0.00]</td>
<td>[0.00]</td>
<td>[0.00]</td>
<td></td>
</tr>
</tbody>
</table>

* means significant at 1%

Figures in parenthesis ( ) are t-values while figures in square bracket [ ] are probability values

D-W = Durbin-Watson value

R² = goodness of fit

Source Computed by the Researcher using e-views 9

Table 2 shows the estimated results for the equations 6 and 7 of the education sector block established in section three. The equations 6 and 7 were obtained from decomposing equation 5 into various components of education sector. The row 1 of table 2 represents the estimated results for equation 6 and the row 2 for equation 7. The equations established the linear relationship between GDP and the education sector unit of the Nigerian economy. The important variables used as proxies in the education sector are represented in the table 2. The variables are gross domestic product (GDP), government expenditure in education (GEXE), school enrolment (SCHE), recurrent government expenditure in education (REXE), capital government expenditure in education (CEXE), government transfer (TRSF), female primary school enrolment (FPSE), male primary school enrolment (MPSE), female secondary school enrolment (FSSE), male secondary school enrolment (MSSE).

The results in table 2 show that there exist positive and significant relationships between government expenditure in education (GEXE) and capital government expenditure in education (CEXE) but negative relationship between government expenditure in education (GEXE), recurrent government expenditure in education (REXE) and government transfer (TRSF). A one per cent increases in CEXE increases government expenditure in education (GEXE) by about 0.19 per cent and the estimate is highly statistically significant. The positive relationship between GEXE and CEXE satisfies the a priori expectation. This is as expected. Capital expenditure in the form of capital projects in education increases the level of employment thereby stimulating the economy. This increases the level of aggregate demand and hence GDP in the economy. This result also agrees with the findings of Noman and Khudri (2015). However, a one per cent increases in government recurrent expenditure (REXE) and government transfers (TRSF) decreases GEXE by about 0.57 per cent and 0.13 per cent respectively. This is as expected. Recurrent expenditure in the form of payment of salaries reduces the amount of resources available for capital projects. This reduces the pace of capital development in the economy. However, these results disagree with Noman and Khudri (2015), Cyril (2016).

Furthermore, the results in table 2 show that there exist positive relationships between school enrolment (SHCE), female primary school enrolment (FPSE), male primary school enrolment (MPSE) and male secondary school enrolment (MSSE) but a negative relationship between school enrolment and female secondary school enrolment (FSSE). A one per cent increases in FPSE, MPSE and MSSE increases school enrolment by about 0.70 per cent, 0.13 per cent and 0.73 per cent respectively while a one per cent increase in FSSE decreases school enrolment by about 0.11 per cent. Furthermore, the R-squares from the estimated results in table 2 show that all the decomposed variables of the education sector have good fits. The R² value of 0.66 shows that about 66 per cent of the variability in government expenditure in education (GEXE) is explained by the joint independent variables in the model. This is a representation of goodness of fit for the regression line. Similarly, the estimated R²-square for SCHE is 0.86, suggesting...
that about 86 per cent of the variability in SCHE is explained by the joint independent variables used in the models. Furthermore, all the estimated the Durbin-Watson values for the decomposed variables are fairly within acceptable limit. They are closer to the value 2 than to the value 0, suggesting the absence of autocorrelation in the residuals of the estimated models.

5. CONCLUSIONS
This study uses a disaggregated analysis to examine the impact government expenditures in agriculture and education on economic growth in Nigeria. Findings in this study show that government expenditures in the various sectors of the Nigerian economy have different impacts on economic growth in Nigeria over the period of the study. The results of agricultural sector block show that, except for few variables, agricultural outputs, government expenditure on agriculture and poultry production have positive and significant impacts on the Nigerian economy. Similar results are found for education sector block where government expenditures in education and school enrolment are found to have positive impact on the growth of Nigerian economy. This findings are consistent with the Keynesian claimed that increase in increase in government expenditures could increase consumption expenditure, all other things being equal, and will translate into higher national income and hence, economic growth.

Based on the findings of this study, conclusions are that sectoral government expenditures have the potentials of contributing significantly to economic growth in Nigeria. Given that government capital expenditures both in agriculture and in education were found to have positive coefficients it is recommended that a review of the Nigerian budgetary system should be geared towards capital projects like diversification of agricultural sector and the education sector. Finally, there is the need to minimized government recurrent expenditures both in agriculture and in education, since they have negative coefficients, suggests that they are likely to be unproductive.

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