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PUBLIC SPENDING AND AGRICULTURAL SECTOR OUTPUT: A PATH WAY FOR GROWING NIGERIA OUT OF RECESSION

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Abstract

Agriculture has been identified in extant economic literature as a critical sector in an economy. It has a huge potential for promoting and stimulating economic growth, reduce poverty and creating employment for a large number of people especially in developing countries. Thus, the objective of this paper is to empirically examine the effect of public spending on agricultural sector output in Nigeria between 1980 and 2016. Time series data were sourced from secondary sources on Agricultural Sector Output (AGR), Government spending in Agriculture (GEA), Foreign Direct Investment inflow into Agriculture (FIA) and Deposit Money Banks' Credit to the Agricultural Sector (BCA). The data sets were analysed based on the Auto Regressive Distributed Lag (ARDL) Bounds testing approach for co-integration that estimates the long-run and short-run relationship between variables. The result of the analysis reveals that both short-run and long-run relationship exists between government spending and agricultural sector output in Nigeria. Again, the result also revealed that government spending has a positive insignificant relationship with agricultural sector output in Nigeria within the period under review. The policy implication of this result is that theoretically, government funding can enhance the pace of agricultural development in a country but Nigeria currently does not enjoy such optimal benefit. Based on these findings, the paper recommends that government should increase her budgetary allocation and ensure fiscal discipline regarding spending in the agricultural sector so as to boost economic growth and development, a panacea for growing out of recession.

Key Words: Agricultural Sector Output, Government spending, Credit, ARDL, ECM

I. Introduction

The agricultural sector in recent times all over the worldaccelerates the pace of structural transfiguration and modification of the economy, making the nation to exploit fully its factor endowment, depending less on imported supply of agricultural products or raw materials for its economic development, growth, and sustainability (Ademola, Olaleye, Olusuyi and Edun, 2013).

According to Matthew and Mordecai (2016), the agricultural sector plays a major role in an economy which include the provision of raw materials for the other sectors of the economy especially the manufacturing sector, provision of foreign exchange earnings, provision of food

for the growing population, lowering of inflationary pressure, provide savings and income for farmers, employment generation, provide market for products of the manufacturing sector and enhancement in the general standard of living of the citizenry.

In lieu of the all-important place of agriculture above, the Nigerian government over the years has providedboth monetary and other capital resources to encourage the agricultural sector. Also, the government has undertaken severalpolicies and programmes intended at consolidating the agriculture sector so that it can perform its primary roles as well as other actions for fighting poverty. Iganiga and Unemhilin (2011) identified some of these policies as Land Use Decree, the Green Revolution (GR), Operation Feed the Nation (OFN), e National Agriculture Land Development Authority (NALDA), Fertilizer Company of Nigeria (NAFCON), and recently Agriculture Development Project (ADP). But these strategies have not facilitated much on the performance of the agricultural sector over the years.

Average total annual expenditure on agriculture, has been on the increase over the years. Total annual expenditure on agriculture increased on the average from 39.54 million naira in the 1980-1989 to 7190.95 million naira in 1990/1999 to 19675.13 million naira in 2000/2009 and by 2010/2016 it has reached 36667.30 million naira (CBN, 2016).

Despite the increase in public expenditure to the agricultural sector over the years,the state of agriculture in Nigeria still remains poor and largely underdeveloped as its contribution to GDP has decreased and productivity has also declined. On the average, the contribution of agriculture to GDP shows that between 1960/1969, the percentage share of agriculture to GDP decreased from about 70 percent to 40 percent in 1970/1979. It decreased further to 20.26 percent in 1980/1989 and later increase slightly to 25.89 percent in 1990/1999 to 27.84 percent in 2000/2009 and later decline to 21.65 percent in 2010/2016 (CBN, 2016).

In line with the above, Christiaensen, Demery and Kuhl (2007); Falola and Heaton (2008); and Matthew and Mordecai (2016) asserts the poor state of the agricultural sector in Nigeria can beas a result of oil excesses and its costs on several occasions, which will not result or translate to increases in production agricultural sector as expected to boost industrialization.Thus, the aimof this paper therefore is to investgate empirically the effect of public expenditure on Nigeria's agricultural sector from 1980 to 2016.

The paper is structuredinto five segments.First, is the introduction, following is the review of literature and theoretical framework. Thirdis the methodof analysis and specification of the model. The results were discussed in section four, and lastly, conclusion and recommendations were made.

II. Literature Review

A growing concern in extent economic literature suggests that there is a divide in literature as regards the effect of public expenditure on agricultural sector output of countries. These studies could be grouped into those that settle for positive effect as well as negative effects (see Kareem, Bakare, Ademoyewa, Ologunla and Arije, 2015; Okoh, 2015 and Matthew and Mordecai, 2016).

Thus, this study does not set to join issues with these varying debates rather settle for the works of Okezie, Nwosu and Njoku (2013), Ademola et al (2013),Ewubare and Eyitope (2015), Abbas, Yuansheng, Abdul and Luan (2016) and more. In their view, public expenditure in agriculture has a positive effect on agricultural sector output in Nigeria.

Specifically, Okezie, Nwosu and Njoku (2013) examined the effect of government spending on the Nigeria's agricultural sector between 1980 and 2011. The study employed the Engle-Granger two step modeling (EGM) procedure to co-integration and Error Correction Model to analyze the data. The study found that agricultural contribution to GDP (Gross domestic product) and total government expenditure on agriculture are co-integrated in this study. The study also found that there is no causality between the variables.Similarly, Ademola, Olaleye, Olusuyi,and Edun (2013)equally studied the effect of government expenditure on agricultural sector on the Nigerian economy from 1981 to 2010. The study adopted the Ordinary Least Squares (OLS) method of analysis to analyze the data. The results of the analysis showed that government spending on agriculture has a positive and a significant impact on the Nigeria's economic growth.Also, Uger (2013)investigated the effect of governmentspending in the agriculture sector of the Nigerian economy from 1991 to 2010.The study employed simple regression of OLS for the analysis. The study indicates that government spending in the agriculture sector does not impact significantly on the Nigerian economy. Ogbalubi and Wokocha (2013) analyzed the linkamong agricultural development and employment generation in Nigeria. Thestudyfound that inattention of the agricultural sector, insufficient infrastructural amenities, poor extension services, lack of manpower, as a result of infrastructural amenities, inadequate extension services, changes in policies, etc. are the major causes hindering agricultural output and performance in Nigeria.

Oloyede (2014) investigated the effect of Foreign Direct Investment (FDI) on Nigeria's agricultural sector progress from 1981 to 2012. The study adopted the Ordinary Least Squares (OLS) method for the analysis. The study reveals that foreign direct investment and exchange rate has a positive and a significant relationship with agricultural sector output while interest rate has a negative relationship but does not impact significantly on Nigeria's agricultural sector productivity. Conversely, Kareem, Bakare, Ademoyewa, Ologunla,and Arije (2015) studied the linkamonggovernment expenditure in the agricultural sector, agricultural productivity and Nigerian economic growth for 35 years spanning from 1979 to 2013. The study employed the OLS method of analysis to analyze the data. The result of the analysis revealsthat government expenditure on agriculture negatively impacted on agricultural production and economic growth in Nigeria within the period of study. Okoh (2015) studied the effect of fiscal policy on Nigeria's agricultural sector output from 1981 to 2013. The study employed the ECM method of analysis. The result of the analysis reveals that Custom and Excise Duties (CED) has a negative and a significant effect on agricultural sector output andValue Added Tax (VAT) has a positive and a significant effect on agricultural sector output in Nigeria.

Ewubare and Eyitope (2015) analyzedthe impact of public expenditure on Nigeria's agricultural sector. The study employed the Error Correction Mechanism (ECM) to estimate the model.The

result showsthat government spending on agricultural sector hasa positively influenced the performance of the agricultural sector.Ayeomoni and Aladejana (2016) analyzed the effect ofbanks' credit to agriculture onNigeria's economic growth between 1986 and 2014. The study employed the Auto-Regressive Distributed Lag (ARDL) approach to estimate the model. The finding showed that government spending on agriculture negatively impacted on the output of agricultural sector. Also deposit money banks' credit to the agriculture and interest rate positively impacted on output of agricultural sector.

Matthew and Mordecai (2016) analyze the effect of public spending on agriculture on Nigeria's agricultural output between 1981 and 2014. The study employed the Error Correction Method (ECM) for the analysis. The results of the analysis show that government spending on agriculture negatively impacted on the output of agricultural sector. Also deposit money banks' credit to the agriculture and interest rate positively impacted on output of agricultural sector.

III. Materials and Methods

3.1 Analytical Framework

This study employs Barro (1990) simple endogenous growth model to analyse the effect of government spending on agriculture. Historically, Barro (1990) and (1991) expanded the AK growth model of Paul Romer (1986 and 1989) and Robert Lucas (1988) and included government component.In the Barro model public spending goes for public investment (such as agriculture, social welfare, infrastructures, education, health, industrial development etc.)

Thus, the model is specified as:

$Y_t = f(AK^{1-\theta} g^{\theta})$ (1)

Where;

Y_t = Output growth rate

A = Index of Technology

K = Private Capital

g = publicly provided input

$1-\theta$ = Share of Private Capital

θ = Share of Publicly provided input

For the purpose of this study, equation (1) is written in an intensive form as:

$Y_t = f(g^{\theta})$ (2)

Where;

Y_t = Output growth rate

g = publicly provided input

For the purpose of this study, public expenditure is defined narrowly to be public expenditure on agricultural sector. Hence, the relationship now becomes;

$Y_t = f(GEA^{\theta})$ (3)

Where;

Y_t = Output growth rate proxied by agricultural sector GDP

GEA = Public expenditure on agriculture

Following the studies by Okezie, Nwosu and Njoku (2013) and Ayeomoni and Aladejana (2016), banks' credit to agriculture and foreign direct investment in agriculture are two major variables that affect the performance of the agricultural sector. Thus, this study incorporates these twovariables in to model. Hence, equation (3) becomes:

$Y_t = f(GEA^{\theta}, FIA^{\omega}, BCA^{\Phi})$ (4)

Econometrically, equation (4) is specified as:

$Y_t = A\ (GEA)^{\theta}(FIA)^{\omega}\ (BCA)^{\Phi}\mu$ (5)

Equation (3.5) is transformed into a log-linear form as follows:

$LogY_t = LogA_t + \Phi Log(GEA)_t + \omega Log(FIA)_t + \theta Log(BCA)_t + Log\mu_t$ (6)

Equation (3.6) is re-written as:

$LogY_t = \beta_0 + \beta_1 Log(GEA) + \beta_2 Log(FIA) + \beta_3 Log(BCA) + \epsilon$ (7)

From equation (7)

$LogY_t$ = Agriculture GDP

$LogA_t$, Φ, ω, and θ are represented by β_0, β_1, β_2, and β_3

GEA = Government Expenditure on Agriculture

FIA = Foreign Direct Investment Inflow into Agriculture

BCA = Deposit Money Banks' Credit to Agriculture

It is expected that increase in these variables (GEA, FIA and BCA) will promote output of the agricultural sector. Thus, a priori expectations are β_1, β_2,and$\beta_3 > 0$

3.2 Data Sets and Estimation Techniques

Data on agriculture GDP, government expenditure on agriculture, foreign direct investment on agriculture and deposit money banks' credit on agriculture were gathered from various issues of Central Bank of Nigeria statistical bulletin between the period 1980 to 2016. Thereafter, the data were analysed using Auto Regressive Distributive Lag (ARDL) technique of analysis (Bound testing method).

The study adopted the ARDL modeling technique to estimate the model because of one major advantage the ARDL has over other estimation methods such as the OLS. The methodproducesreliable estimates of the parameterswhen the variables are 1(0) and 1(1).This simply implies that a long run associationwill exists among the variables (Pesaran and Shin, 1998).

IV. Results and Discussions

The empirical analysis of data in this paper was conducted in five phases. It begins with the descriptive statistics analysis of the data and thereafter conducted the unit test. Furthermore, bound test for co-integration, the short run and long run estimation of the ARDL and diagnostic tests were conducted.

4.1 Descriptive Statistics

The result of the descriptive statistics is presented in Table 1 below. Table 1 shows that, the standard deviation calculated for government expenditure on agriculture was the most volatile in the series with a value of 2.98 while FDI Inflow into agriculture was the least volatile variable with a value of 1.042. The calculated values for the skewness statistic for all the variables – AGR, GEA, FIA and BCA - were negatively skewed, suggesting that their distributions have a long left tail. Again, the kurtosis statistics of all the variables wereequally platykurtic. This means that their distributions were flat relative to normal distribution.Again, the Jarque-Bera statistic (J-B) for FIA variable rejected the null hypothesis for normal distribution while those of AGR, GEA and BCA variables do not reject null hypothesis of normal distribution at 5 percent level of significance. Based on these observations, it therefore means that there is unit root (non-stationarity) in the series. Thus, estimating these variables at level might not give good results, hence, the need to conduct the unit root test.The unit root test is conducted to test whether or not the variables were stationary. The study adopts the Augmented Dickey Fuller (ADF) unit root tests procedures.

Table 1: Descriptive Statistics

	LOG(AGR)	LOG(GEA)	LOG(FIA)	LOG(BCA)

Mean	13.70188	7.448782	6.423141	9.948560
Median	14.10896	7.969600	7.097549	10.34322
Maximum	16.88466	11.08826	7.243899	13.11223
Minimum	9.211486	2.547099	4.764735	6.135998
Std. Dev.	2.444316	2.984814	1.041509	2.096900
Skewness	-0.280208	-0.470606	-0.784258	-0.255656
Kurtosis	1.669606	1.741984	1.747177	1.905101
Jarque-Bera	3.212855	3.805584	6.212625	2.251207
Probability	0.200603	0.149152	0.044766	0.324457
Sum	506.9697	275.6049	237.6562	368.0967
Sum Sq. Dev.	215.0886	320.7281	39.05068	158.2917
Observations	37	37	37	37

Source: *Author's Computation (2017)*

4.2 Unit Root Test

The results of the unit root test using the ADF are reported in Table2. The result of the variables shows that AGR, GEA and BCA were found stationary in their 1st difference while FIA was stationary at their 2nddifference.

Table 2: Unit Root Test Results

Augmented Dickey Fuller (ADF) Test					
Variables	Level	5% Critical Values	1st Diff.	5% Critical Values	Status
LOG(AGR)	-2.361469	-2.945842	-4.907792	-2.948404	I(1)
LOG(GEA)	-1.552831	-2.951125	-8.010252	-2.948404	I(1)
LOG(FIA)	-1.878412	-2.954021	-1.982213	-2.954021	I(2)
LOG(BCA)	-1.119639	-2.945842	-6.738549	-2.948404	I(1)

Source: *Author's Computation (2017)*

4.3 Bound Test Result

Since the series are of different order of integration, we cannot use the Engle-Granger and Johansen cointegration but rather the appropriate test to use is the Bound Cointegration test (Salisu, 2016). The result of the Bound Cointegration test is presented in Table 3. The results revealed that the computed F-statistic value of 5.993369 in the ARDL estimated model is greater that the upper critical bound test. This means that a long run relationship exist between the variables in the model within the period under review.

Table 3: ARDL Bound Test Result

F-Statistics	5.993369	
% Critical Levels	Critical Value for Bond Test	
Significance	1(0) Bond	1(1) Bond
10%	2.72	3.77

5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: *Author's Computation (2017)*

4.4 Short Run Estimation Result

Table 4 shows that the short run estimated coefficients of the model (that is ECM) is rightly signed and statistically significant at 5 percent level. The result shows adjustment of 35 percent in the previous year. This adjustment implies that errors are corrected within one year since that data were annual series. The ECM also reveals a long run relationship between the independent variables (GEA, FIA and BCA) and the response variable (AGR) in this model. The findings confirmed that a short run relationship exist between the variables. Furthermore, direct relationship exist between current GEA and AGR, past lagged (1 and 2) of GEA showed an inverse relationship with AGR in the model. Also, FIA has an inverse relationship with AGR while BCA has a direct relationship with AGR in the model.

Table 4: Estimated Short Run Coefficients Using the ARDL Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(AGR(-1))	0.307786	0.145111	2.121031	0.0440
DLOG(GEA)	0.055518	0.037722	1.471781	0.1536
DLOG(GEA(-1))	-0.039299	0.038406	-1.023244	0.3160
DLOG(GEA(-2))	-0.120957	0.037304	-3.242440	0.0033
DLOG(FIA)	-0.085616	0.079067	-1.082828	0.2892
DLOG(BCA)	0.097845	0.063524	1.540273	0.1361
ECM(-1)	-0.348589	0.077951	-4.471918	0.0001
R2 = 0.565, Adj-R2 = 0.426, f-stat. = 4.059, DW = 1.627				

Source: *Author's Computation (2017)*

4.5 Long Run Estimation Results

Table 5below presents the estimated coefficients of the long run relationship between the variables in the model.

Table 5: Estimated Long Run Coefficients Using the ARDL Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GEA)	0.652542	0.132777	4.914586	0.0000
LOG(FIA)	-0.245608	0.203697	-1.205749	0.2392
LOG(BCA)	0.280688	0.159878	1.755635	0.0914
C	8.151189	1.260052	6.468931	0.0000

Source: *Author's Computation (2017)*

Table 5shows that government expenditure on agriculture (GEA) is positive, that is 0.6525. This implies that one percent increase in government expenditure on agricultural sector (GEA) increases agricultural sector output by 0.65 percent. The coefficient of Government Expenditure (GEA) impacts significantly on agricultural sector output in Nigeria.This finding agrees with the works of Ebere and Osundina, 2012; Okezie, Nwosu and Njoku, 2013; Uger, 2013; Ademola et al., 2013; Ewubare and Eyitope, 2015; Abbas et al., 2016, and more). These scholars have found that government expenditure on agriculture has a positively impacted onthe output of the agricultural sector.

Furthermore, the result indicated that the coefficient of foreign direct investment on the agricultural sector (FIA) is negative, that is -0.2456. The implication of this result is that one percent increase in foreign direct investment on the agricultural sector (FIA) reduces agricultural sector output in Nigeria by about 0.25 percent within the period under review. The coefficient of foreign direct investment on agriculture does not impact significantly on agricultural sector output in Nigeria. These result corroborate with Katerina, John and Athanasios (2004), Olusanya (2013), Adelowokan and Maku (2013) and Enu, Havi and Hagan (2013) who found that FDI negatively affect the host country's productivity and economic growth. These scholars observed that though foreign direct investment has the capacity to increasesthe level of investment, consumption and productivity in the host country, but it lowers growth rate as a result of factor price alterations or misallocations of resources.

Again, the coefficient of Deposit Money Banks' Credit to agriculture (BCA) is positive, that is 0.2806. This implies that one percent increase in Deposit Money Banks' Credit to agriculture (BCA) increases agricultural sector output by about 0.28 percent. The coefficient of Deposit Money Banks' Credit to agriculture (BCA) impacts significantly on agricultural sector output at 10 per centlevel. This result is in line with the works of Ebere and Osundina, 2012; Okezie, Nwosu and Njoku, 2013; Uger, 2013; Ademola et al., 2013; Ewubare and Eyitope, 2015; Abbass et al., 2016, and more. These scholars have found that deposit money banks' credit to agriculture has a positive relationship with agricultural sector output.

4.6 Diagnostic Testing Results

The result of the diagnostic tests is presented in Table 6. Table 6 shows the Linearity test (using Ramsey Reset Test), Serial Correlation test (using Breusch-Godfrey Serial Correlation LM Test), Heteroscedasticity test (using Breusch-Pegan-Godfrey Test) and Normality test (using Jarque-Bera Statistics). The study reveals that the model passes the entire post estimation test as presented in Table 6. This is because the respective probability of the test was greater than 0.05 critical value.

Table 6: Diagnostic Test Results

Test	Result	Prob.
Ramsey RESET Test	0.108212	0.8979
Normality Test	0.950653	0.621682
Heterosckedasticity Test	1.282000	0.2728
Breusch-Godfrey Serial Correlation LM Test	0.305010	0.6445

Source: *Author's Computation (2017)*

5. Conclusion

This paper empirically examined the effect of public expenditure on Nigeria's agricultural sector performance between 1980 and 2016 by employing the Auto Regressive Distributed Lag (ARDL) approach. Data for the empirical analysis were sourced from secondary sources like CBN Statistical Bulletin (Various- Issues). The results of analysis indicated there is both short run and long run relationship among the variables(government expenditure on agriculture, foreign direct investment in agriculture, banks' credit to agriculture and agricultural sector output). Furthermore, the paper revealed that government expenditure on agriculture and banks' credit to agriculture impacts positively on agricultural sector output in Nigeria within the period. Again, foreign direct investment inflow into agriculture had a negative relationship but does not impact significantly on agricultural sector output.

In light of the above findings, the paper recommends as follows:

1. That the government should increase her budgetary allocation and ensure fiscal discipline regarding spending in the agricultural sector so as to boost economic growth and development, a panacea for growing out of recession.

2. The government should create enabling environment that will attract foreign direct investment inflow into agricultural sector.

3. The Central Bank of Nigeria should formulate policies that will enable deposit money banks provide loanable funds to the agricultural sector at a low interest rate.

REFERENCES

Abbas, A. C., Yuansheng, J. Abdul, R., & Luan, J. (2016). Impact of government expenditure on agricultural sector and economic growth in Pakistan. *International Journal of Advanced Biotechnology and Research (IJBR)*, 7(3), 1046-1053.

Adelowokan, O. A. and Maku, A. O. (2013). Trade openness,foreign investment and economic growth in Nigeria: A Long-Run analysis. *European Journal of Globalization and Development Research*, 7(1): 445-458.

Ademola, I. S., Olaleye S.O., Olusuyi, A. E., & Edun, F. (2013). Government expenditure on agricultural sector and economic growth in Nigeria (1981 – 2010). *IOSR Journal of Humanities and Social Sciences*, 8(4), 62-67.

Ayeomoni, I. O., & Aladejana, S. A. (2016). Agricultural credit and economic growth nexus: Evidence from Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 6(2), 146–158.

Barro, R. J. (1990). Government spending in a simple model of endogenous growth. *Journal of Political Economy*, 98, 103-125.

Barro, R. J. (1991). Economic growth in a cross-section of countries. *Quarterly Journal of Economics*, 106 (2), 407-443.

Central Bank of Nigeria (2016): Statistical Bulletin Central Bank of Nigeria. Vol.27, December.

Christiaensen, L., Demery, L., & Kuhl, J. (2007). The role of agriculture in poverty reduction: An empirical perspective. *World Bank Policy Research Working Paper*, No. 4013.

Ebere, C., & Osundina, K. C. (2014). Government expenditure on agriculture and economic growth in Nigeria. *International Journal of Science and Research (IJSR)*, 3(9), 188-194.

Enu, P., Havi, E. D. K. & Hogan, E. (2013). The impact of foreign trade on economic growth of Ghana. *International journal of academic research in economics and management sciences*, 2(5): 174-191.

Ewubare, D. B., & Eyitope, J. A. (2015). The effects of public expenditure on agricultural production output in Nigeria. *Journal of Research in Humanities and Social Sciences*, 3(11), 07-23.

Falola, T., & Heaton, M. (2008). *A history of Nigeria.* New York: Cambrige University Press.

Iganiga, B., & Unemhilin, D. (2011). The impact of federal government agricultural expenditure on agricultural output in Nigeria. *Journal of Economics*, 2(2), 81-88.

Kareem, R. O., Bakare, H. A., Ademoyewa, G. R., Ologunla, S. E., & Arije, A. R. (2015). Nexus between federal government spending on agriculture, agricultural output response and economic growth of Nigeria (1979-2013). *American Journal of Business, Economics and Management*, 3(6), 359-366.

Katerina, L., John, P. and Athanasios, V. (2004). Foreign direct investment and economic growth in transition economies.*South Eastern Europe Journal of Economics,* 2(1), 97-110.

Lucas, R. Jr. (1988). On the mechanics of economic development. *Journal of Monetary Economics,* 22.

Matthew, A., & Mordecai, B. D. (2016). The impact of public agricultural expenditure on agricultural output in Nigeria (1981-2014). *Asian Journal of Agricultural Extension, Economics& Sociology,* 11(2), 1-10.

Oboh, V. U., & Adeleke, A. I. (2016). Accelerating inclusive agricultural growth in Nigeria: An examination of strategic issues, challenges and policy options. *International Journal of Development and Economic Sustainability*, 4(6), 1-25.

Ogbalubi, L. N., & Wokocha, C. C. (2013). Agricultural development and employment generation: The Nigeria experience. *IOSR Journal of Agriculture and Veterinary Sciences,* 2(2), 60-69.

Okezie, A. I, Nwosu, C., & Njoku, A. C. (2013). An assessment of Nigeria expenditure on the agricultural sector: Its relationship with agricultural output (1980 - 2011). *Journal of Economics and International Finance,* 5(5), 177-186. DOI: 10.5897/JEIF2012.0471

Okoh, A. S. (2015). Impact of fiscal policy on the growth of agricultural sector in Nigeria, 1981-2013. *European Journal of Educational and Development Psychology*, 3(4), 1-17

Oloyede, B. B. (2014). Impact of foreign direct investment on agricultural sector development in Nigeria, (1981-2012). *Kuwait Chapter of Arabian Journal of Business and Management Review*, 3(1), 14-24.

Olusanya, S. O. (2013).Impact of foreign direct investment inflow on economicgrowth in a pre and post deregulated Nigerian economy. A granger causality test (1970-2010).*European Scientific Journal*, 9(25): 1857 – 7881.

Pesaran, M.H., and Smith, R.P. (1995). Estimating Long Run Relationship from Dynamic Heterogeneous Panels. Journal of Econometrics, 68, 79-113.

Pesaran, M. H, & Shin, Y. (1998). Bound testing approaches to the analysis of level relationships. *Journal of Applied Econometrics,* 16, 289-326.

Romer, Paul M. (1986). Increasing returns and long-run growth. J.P.E. 94, 1002-37.

Salisu, A. A. (2016).Analyses of long run and short run models. CEAR Econometrics Workshop, Nigeria, *Centre for Econometric & Allied Research*, University of Ibadan, DOI:10.13140/RG.2.2.35204.53121

Uger, F. I. (2013). The impact of federal government's expenditure on the agricultural sector in Nigeria. *Production Agriculture and Technology Journal*, 9(1), 114-122