

Investigating The Interaction Between Government Expenditure On Agriculture Sector, FDI Inflow and Agriculture Output In Nigeria

Adewale BEKE¹

Chidi Patrick NWAFOR²

Charity Gwandzang ISA³

Abstract



Article Type

Research Article

Application Date

2022-03-03

Acceptance Date

2022-11-19

DOI

10.53306/klujeas.1082183

This study set out to examine the impact of government expenditure on the agriculture sector performance. The result indicates that government expenditure on the agriculture sector significantly improves the performance of the sector in the period under review. This implies that spending policies of the government on the sector is yielding result as expected. However, commercial bank loan to the sector demonstrates weak positive influence on the agriculture sector output. FDI inflow on the other hand plays anti-growth role in the sector. Thus, the government is advice to adopt expansionary fiscal policy for the sector. The government is further advice to discourage the flow of FDI into the same sector to avoid the stagnation of the sector's output. Government should mobilize local resources for the sector rather than foreign sources. Monetary policy towards the sector should be strengthened to improve the performance of the sector. Interest rate charged on loan for the purpose of agriculture activities should be lower than other sectors. Commercial banks should be encouraged to increase their participation in providing loan to farmers which will go a long way to boost output.

Key words: Economic growth, agriculture sector, foreign direct investment, government expenditure.

¹ Corresponding Author: Lecturer, Federal University Lokoja, Department of Economics, adewale.beke@fulokoja.edu.ng, ORCID: 0000-0002-3595-9364

² Title, Faculty, Department, chidieberenwafor@gmail.com, ORCID: 0000-0002-5881-6008

³ Lecturer, Federal University of Wukari, Department of Economics, charity@fuwukari.edu.ng, ORCID: 0000-0003-2821-5962

Nijerya'da Tarım Sektörüne Yapılan Devlet Harcamaları, DYY Girişi ve Tarım Çıktısı Arasındaki Etkileşimin Araştırılması

Adewale BEKE⁴

Chidi Patrick NWAFOR⁵

Charity Gwandzang ISA⁶

Öz

Bu çalışma, devlet harcamalarının tarım sektörü performansı üzerindeki etkisini incelemeyi amaçlamaktadır. Sonuç, tarım sektörüne yapılan devlet harcamalarının, incelenen dönemde sektörün performansını önemli ölçüde iyileştirdiğini göstermektedir. Bu da hükümetin sektöre yönelik harcama politikalarının beklendiği gibi sonuç verdiğini göstermektedir. Bununla birlikte, sektöre verilen ticari banka kredisi, tarım sektörü çıktısı üzerinde zayıf pozitif etki göstermektedir. DYY girişi ise sektörde büyüme karşıtı bir rol oynamaktadır. Bu nedenle hükümet, sektör için genişletici maliye politikası benimsemesini tavsiye ediyor. Hükümet, sektörün çıktısındaki durgunluğu önlemek için aynı sektöre doğrudan yabancı yatırım akışının caydırılması için daha fazla tavsiyede bulunuyor. Devlet sektör için yabancı kaynaklar yerine yerel kaynakları seferber etmelidir. Sektör performansının iyileştirilmesi için sektöre yönelik para politikası güçlendirilmelidir. Tarım faaliyetleri için krediye uygulanan faiz oranı diğer sektörlerle göre daha düşük olmalıdır. Ticari bankalar, üretimi artırmak için uzun bir yol kat edecek olan çiftçilere kredi sağlamaya katılımlarını artırmaya teşvik edilmelidir.

Anahtar sözcükler: Ekonomik büyüme, tarım sektörü, doğrudan yabancı yatırım, devlet harcamaları.


Makale Türü
Araştırma Makalesi
Başvuru Tarihi
03.03.2022
Kabul Tarihi
19.11.2022
DOI
10.53306/klujfeas.1082183

⁴ Sorumlu Yazar: Öğretim Görevlisi, Federal University Lokoja, Ekonomi Bölümü, adewale.beke@fulokoja.edu.ng, ORCID: 0000-0002-3595-9364

⁵ Unvan, Fakülte, Bölüm, Anabilim Dalı, chidieberenwafor@gmail.com, ORCID: 0000-0002-5881-6008

⁶ Öğretim Görevlisi, Federal University of Wakari, Ekonomi Bölümü, charity@fuwakari.edu.ng, ORCID: 0000-0003-2821-5962

Introduction

Agriculture remains one of the major contributors to economic growth in Nigerian in spite of its decrease in the 1970s. Large number of the country's population depend on the agricultural sector for their livelihood and the rural economy is still basically agriculture. Agricultural holdings are generally small and scattered. Agriculture provided 41% and 30% of Nigeria's total Gross Domestic Product (GDP) in 1999 and 2012 respectively (Haruna, 2015). However, this has dropped drastically as more attention has been shifted from agriculture to oil sector. In essence, the negligent of the agriculture by the government keep increasing from one government to the other. Nigerian is blessed with a wide range of climate variations, which allows it to produce a variety of food and cash crops such as cassava, yams and cocoa.

The export destinations for Nigerian agricultural exports are Britain, the United States, Canada, France, and Germany (Abdellah, 2010). Specifically, prior to oil discovery in the country, agriculture was the leading sector during late 1950s and early 1960s. Currently, the sector still plays a significant role in achieving economic growth as its engaged most of the youths as well as the majority of the populations of the country especially the rural areas. The sector also acts as the agent that determine the pace of structural adjustment and diversification of the economy, enabling the country to depend less on foreign supply of agricultural product or raw materials for its economic growth.

Apart from laying solid foundation for the economy growth, it also serves as import sector, as it provides readymade market for raw materials and intermediate goods for industries. Apart from been considered as the bedrock of economic growth and development, it also acts as an agent of poverty eradication in the developing countries as asserted by Sertoğlu (2017). Sertoğlu (2017) maintain that agriculture is carried out either on a large or small scale. On a large scale, it is capital intensive and majorly rely on external sources of fund for smooth operation. Capital is needed for the purpose of acquiring large land, modern farm implements, and inputs like fertilizers. The effect of like of access to loanable fund is that, the small scale farmers find it difficult to expand, as a result they remain stagnated over time. In Nigeria particularly, the Sector is mainly characterized by inefficacy and is highly subsistent in nature. Also, the sector appeared to be highly risky with low productivity and to a greater extend remain unattractive to the teeming youths who form the larger and productive part of the population. This has degenerated to mass exodus of youth from the rural communities to urban areas. According to (Ijaiya & Abdulaheem, 2005), the sector serves as the sources of food, raw materials for the economy.

The inadequate capital suffered by former as a result of lack of access to credit facilities by the agriculture sector is particularly of serious concern as agricultural credit forms an integral part of the modern agriculture practice especially for commercial purpose. The introduction of easy and cheaper credit will go a long way to boost the sector performance. This has informed the decision of the need for prime policy of all the successive governments, to meet the credit requirements of the farming community. However, despite the farmers over the years suffered from limited access to the much needed credit for investment in their farm

business. Sources of finances for farming activity are Micro and Macro. The micro sources is provided by the Deposit Money bank. The availability of credit from the bank is a booster of productivity. Since banks exist to maximize profit, they channel credit only to those with the prospect to repay both the loan and the interest on the loan. Lending to agricultural sector seems as a risk that commercial banks mostly try to avoid considering the risk associated with the sector in terms of climate change, weather conditions and other natural disasters that are unpredictable and more or less beyond man's control.

However, commercial banks decision to lend out loans are influenced by a lot of factors such as the prevailing interest rate, volume of deposits, the level of their domestic and foreign investment, banks liquidity ratio, prestige and public recognition to mention a few (Olokoyo, 2011). One of the reasons for the fall in the contribution of agricultural sector to GDP is lack of access to commercial banks credit to enable them to take advantage of economic opportunities to increase their level of output, hence move out of poverty. Government at different level has embarked on different agricultural policies and programmes to boost agricultural sector performance. However, it appeared that the policies could not address the prevailing issues of the sector due to the variance nature of the policies, high rate of corruption, unproductive policies by the leaders, preference for foreign goods as well as negligent of the sector by the citizens in search for white-collar jobs. All these made the agricultural sector stagnant. Great proportion of Nigeria's farmer seems not to derive significant benefit from government expenditure in the agricultural sector. Thus, the intended aims and goals of government expenditure on the sector have been greatly overshadowed. Naturally, it is anticipated that the level of government spending should produce a proportionate output in the sector. However, this is still a mirage as efforts on the part of agriculture sector have not yet produced the desired outcome.

Based on the aforementioned problem, this research work tends to examine the relationship between government expenditure on agriculture and agricultural output in Nigeria, and to ascertain the level of the impact and to compare it with the impact of external factor (FDI) on agriculture output.

Empirical Review

Nosike (2019) examined the relationship between governments spending on agriculture performance from period 1970-2015 using Engle-Granger (1987) two step modeling (EGM) procedure involving: co-integration analysis and error correction of parameter estimates. It was discovered that total government spending on agriculture (TGSA) has significant effect on agriculture output (AGDP) in the long and short-run. Ikwuba (2019) examined the effect of government agricultural spending on agricultural output in Nigeria. The co-integration test shows that, long- run equilibrium relationship exist among the variables. Sebastian, Ariwa, and Uremadu (2018) submits that the effect of government agricultural expenditure on agricultural performance in Nigeria in positively strong. Rufus and Oyewole (2018) evaluated the nexus between public spending on agriculture and Nigerian output growth. The study employed secondary data, the data which spanned from 1981 through 2016. The relationship between growth rate of real GDP and public spending on agriculture was

examined using ordinary least square method of analysis. The findings showed that agricultural development in Nigeria has positive impact on the economic growth in Nigeria and that all the variables in the model proved significant, which shows that agricultural sector output has positively impact on the economic growth in Nigeria over the period under study.

Cletus& Sunday Mary (2018) examined the relationship between government expenditure on agriculture and economic expansion in Nigeria (1985- 2015). The finding results of the study revealed a strong positive connection between the variables.

Kumar and Dkhar (2018) understudy the interaction between government expenditure on agriculture and agricultural output of Meghalaya where the ARDL approach was adopted. The result indicates the evidence of a long-run cointegrating relationship between the variables. The results further revealed that in the long run, the effect of public expenditure through agriculture and, on agricultural output is detrimental. Sunday (2017) investigates the government expenditure-agriculture output interaction in Nigeria. The research concluded that there is a strong impact of the independent variable on the dependent variable. The outcome from the work of Sumbal, Tariq and Urooge (2017) revealed that public spending and credit disbursement to the agricultural sector of Pakistan strongly promote the output performance of the sector. This is similar to the work of Aina and Omojola (2017) which found positive influence of government expenditure on output performance, which turned to be negative in the long run.

Ken and Bidemi (2016) investigates the dynamic effect of government spending on agricultural output in Nigeria. Using method of co-integration/ error correction mechanism and granger causality test methods. The coefficient of government capital and recurrent spending on agriculture were positively related to agricultural output. Matthew and Mordecai (2016) on the other found that government expenditure exhibits positive influence on output performance of the sector in Nigeria which confirmed the work of Harerimana (2016) for Rwanda and the work of Chandio and Jingdong (2016 in Pakistan. Ayeomoni and Aladejana (2016) found a strong positive interaction between the variables under investigation. Similarly, the work of Makinde (2016) supported the evidence of the nexus between government expenditure and output performance of the agriculture sector in Nigeria.

Nnamocha and Charles (2015) and Adewole, Adekanmi and Gabriel (2015) in separate studies subscribed to the conclusion that bank loan to the agriculture sector is a determinant of the performance of the same sector in Nigeria. Agunwa, Iyanya, and Proso (2015) submits that commercial banks credit and government expenditure exerts strong positive impact on output performance of the agricultural sector cementing the work of Ogbonna and Osondu (2015), Ayunku and Etale (2015) and Shuaib et al. (2015) in Nigeria. Muhammad et al. (2015) found similar outcome for the Pakistani economy.

The study of Brown and Ajayi (2015) submits that the effects of government spending on the agricultural sector in Nigeria demonstrate strong positive influence. Uzomba and Chukwu (2014) investigated the level of influence of the Deposit Money Banks' loans and advances granted to agricultural sector in Nigerian and found that former did make positive impact on

the later. The work of Demenongu et al. (2014) found a cointegrating relationship between the variables of interest. Rekwot (2013) estimated the effect of agricultural budgetary allocation on output performance of the agriculture sector in Nigeria. Result from the findings shows that there is a positive relationship between budgetary allocation and agricultural output only in the long- run. Similarly, Uger (2013), examined the impact of federal government's expenditure on the agricultural sector in Nigeria using data spanning from 1991-2010. The results also concluded a weak relationship between the variables using a simple regression analysis.

Methodology And Model Specification

According to Keynes (1936), government expenditure is potent enough to influence the growth every sector of an economy positively. Although this assertion has been contended with by the monetarists, it remains relevant to most of the economies in the world particularly the developing countries like Nigeria. Thus, this study models the impact of government spending on the agriculture output in Nigeria. The model consists of one behavioural equation and five explanatory variables. Autoregressive Distributed lag model (ARDL) is adopted for purpose of estimation as informed by the mixed order of integration from the stationarity test. Thus, the equation is stated as follows:

$$AOUPT = \beta_0 + \beta_1GEAG + \beta_2CBLA + \beta_3FDI + \beta_4EXCH + \beta_5MPR + \varepsilon \dots \dots \dots (1)$$

$$AOUPT = \beta_0 + \beta_1GEXAG + \beta_2CBLA_{t-i} + \beta_3FDI + \beta_4EXCH + \beta_5MPR + ECT_{-1} \dots \dots \dots (2)$$

Where:

AOUPT = Agriculture Output

GEAG = Government Expenditure on Agriculture

CBLA = Commercial Bank Loan to Agriculture

FDI = Foreign Direct Investment

EXR = Exchange Rate

MPR = Monetary Policy Rate

ARDL Bound Testing to Cointegration

Normally, the order of integration achieved from the unit root test is used to determine the most appropriate method of estimation. The need for unit root test became necessary as empirical evidence prove that macroeconomics variables trends up and down due to uncertainty in an economy. A case of single order of integration like I(0) I(0) requires the adoption of the OLS method., while I(1), I(1), requires the use of VECM Joshua et al. (2020).

Due to the dynamic nature of the ARDL approach, it can be adopted for any other of integration whether I(1), I(1) or I(0), I(0) or mixed order I(0), I(1). However, ARDL method perform best with the mixed order of integration. Thus, the specified equation of the method is as follows:

$$\Delta Z = \mu_0 + \mu_1 t + \varepsilon_1 \delta_{t-1} + \sum_{i=1}^n \sigma_1 v_{it-1} + \sum_{j=1}^k \phi_j \Delta Z_{t-j} + \sum_{i=1}^n \sum_{j=1}^k \omega_{ij} \Delta V_{it-j} + \gamma D_t + \varepsilon_t$$

(3.4)

$$H_0 : \beta_1 = \beta_2 = \dots = \beta_{n+2} = 0$$

$$H_1 : \beta_1 \neq \beta_2 \neq \dots \neq \beta_{n+2} \neq 0$$

The reject of the H_0 implies that the series converged in the long run and vice versa.

Result Presentation and Interpretation

This section dwells on the presentation and analysis of the data for the model of the study. The estimation begins with the preliminary test known as unit root test which is carry out to determine the level of stationarity. This test became critical considering the fact that most macroeconomic variables are highly volatile in nature, thus, are not stable at level. Secondly, the stationarity test is the determinant of the method of estimation, which further help in avoiding spurious regression. Inview of the above, this study adopted the Augmented Dickey-Fuller (ADF) and Philip-Peron (PP) unit root tests to ascertain the level of stationarity of the variables under consideration. As presented in Table I, the result proves that AOUPT, FDI, MPR and EXR are stationary at level, while GEAG and CBLA achieved stationarity test only after first differencing. This represents the case of a mixed order of integration thereby, suggested the adoption of the ARDL method of analysis to achieve an authentic result for policy guided.

Table I: Result of Stationarity (Unit Root) Test

VARIABLES	ADF Statistics	P- value	Order of Integration	PP Statistics	P- value	Order of Integration
LNAOUP	-3.0728**	0.0377	I(0)	-3.2613**	0.0240	I(0)

LNGEAG	- 8.6530***	0.0000	I(1)	- 9.2451***	0.0000	I(1)
LNCBLA	- 7.0020***	0.0000	I(1)	- 7.3382***	0.0000	I(1)
LNFDI	-3.2428**	0.0916	I(0)	-3.3313**	0.0766	I(0)
LNMPR	-2.9019**	0.0545	I(0)	-2.9249**	0.0518	I(0)
LNEXR	-1.6714**	0.0890	I(0)	-1.6374**	0.0951	I(0)

Source: Author's Computation 2022, ***, **, *, represent 1%, 5% and 10%

The estimation of the model is carried out using the ARDL approach as present in Table II. The finding shows that commercial Bank loan to the agriculture sector (CBLA) asserts positive but weak impact on the sector's performance in both terms. A 1% increase in the CBLA will lead to a 0.79% and 2.42% increase in the output of the sector insignificantly in both short run and long run. On the other hand, government expenditure on agriculture (GEAG) demonstrate a significant influence on the performance of the sector in both short run and long run. A 1% increase in the GEAG will cause the output of the sector to improve significantly by 4.32% and 2.42% in the short run and long run respectively in line with the work of Ariwa, and Uremadu (2018), in Nigeria. The implication is that GEAG is yielding the desire positive result and will help in achieving the desire macroeconomic goal of diversifying the economy. Contrarily, FDI inflow prove a mixed order of influence on the performance of the sector. For instance, the relationship between FDI inflow and the AOUP is positive in the short run but turn out to be negative in the long run. In essence, a 1% increase in FDI inflow will generate about 0.10% increase in the output of the sector insignificantly in the short run. While in the long run, a 1% increase in FDI inflow will reverse the growth of output in the sector by 11.3% insignificantly. This proves that FDI inflow benefit the sector only little in the short run, as its long run impact prove to be detrimental to the performance of the sector. Monetary policy rate (MPR) proves a negative interaction with the sector in the short run, but turn out to be positive in the long run. A 1% increase in MPR will degenerate to 0.9% significant decrease in the AOUP in the short run. While in the long run, a 1% increase in the MPR will cause an insignificant positive increase in the AOUP by 0.19%. By implication, the result shows that MPR is long term monetary policy instrument for the sector under consideration. Exchange rate exhibits positive influence on AOUP in the short run, but negative impact in the long run. A 1% increase in EXR will cause an increase in the output of the sector by 980% in short run which prove to be an elastic relationship. However, in the long run, a 1% increase in EXR will degenerate to 0.01% reduction in output. The finding of

the F-statistics proves that the null hypothesis is rejected confirming the presence of long run relationship for the series. Furthermore, in other to authenticate the presence of cointegration of the model, this study adopts both the ARDL bound test to cointegration and the traditional Johansen cointegration test. The cointegration test (ECT) from ARDL approach presented in Table III indicates a 60% speed of adjust in the economy implying that any form of deviation or disequilibrium will be corrected speedily, and the economy will return to a state of balance. This result is confirmed by the Johansen cointegration test which indicates the presence of long convergence in the economy as presented in Table IV.

Table II. Long/Short Run Relationship of the Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNCO2= f(LNAGOUT, LNFDI, LNGDPPC, LNGDPPC2, LNEC)				
Short Run				
LNCBLA	0.007966	0.041239	0.193173	0.8501
LNGEAG	0.043208**	0.017497	2.469416	0.0295
LNFDI	0.001025	0.023705	0.043260	0.9662
MPR	-0.009020**	0.004517	-1.996964	0.0690
EXR	9.80E-05	0.000171	0.573065	0.5772
ECT (-1)	-0.614655***	0.074755	-8.222230	0.0000
Long Run				
LNCBLA	0.024222	0.139756	0.173320	0.8653
LNGEAG	0.096443**	0.037178	2.594072	0.0235
LNFDI	-0.112911	0.072542	-1.556483	0.1456
MPR	0.001986	0.007372	0.269426	0.7922
EXR	-0.000119	0.000236	-0.504452	0.6231

Source: Author's Computation 2022, ***, **, *, represent 1%, 5% and 10%

Table III. ARDL Bound Test

Test Statistic	Value	Signif.	I(0)	I(1)
Finite sample: n=35				
F-statistic	7.953538	10%	3.087	4.277
K	5	5%	3.673	5.002

1% 5.095 6.77

Source: Author's Computation

Table IV. Johansen Cointegration

Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.625302	93.93239	95.75366	0.0663
At most 1	0.514728	58.59355	69.81889	0.2811
At most 2	0.344948	32.56394	47.85613	0.5810
At most 3	0.207986	17.33449	29.79707	0.6153
At most 4	0.128808	8.940167	15.49471	0.3709
At most 5 *	0.104564	3.976017	3.841466	0.0461

Source: Author's Computation 2022, ***, **, *, represent 1%, 5% and 10%

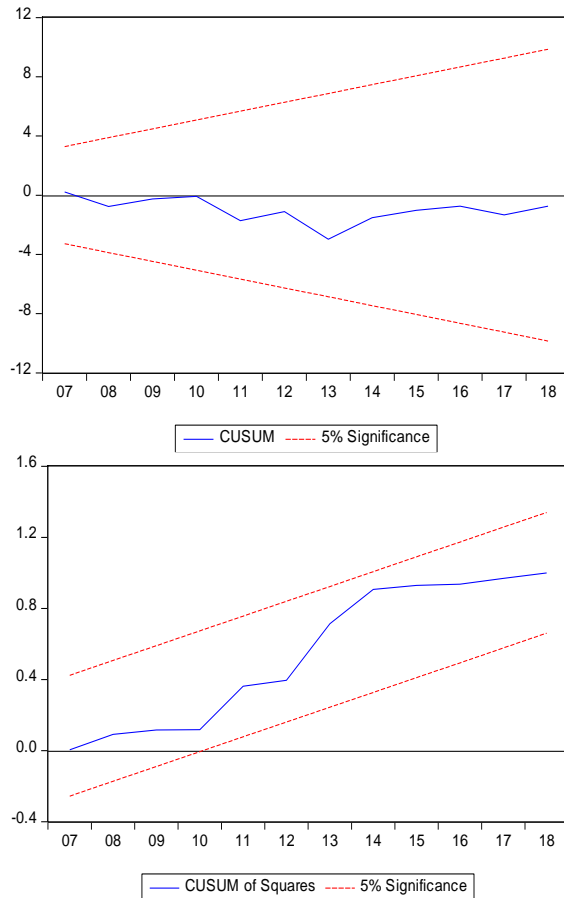
Generally, any model that is fit for policy guide and direction most pass through the diagnostic test. The reliability and accuracy of a model is critical. This conditions or requirement is achieve through diagnostic tests such as the normality test, heteroscedasticity test, serial correlation test and the Ramsey reset test as presented in table V. The variables under consideration were found to be normally distributed, and that there is no case of serial correlation. Further outcome proves that the series are homoscedastic and that the model is well specified. Finally, the stability test as presented in figure 1 shows that the model is stable and fit for policy implication as the blue line fall within the critical bond at 5 level of significance Joshua (2019).

Table V: Residuals of Diagnostics Tests

Tests	F-statistic	P. Value
χ^2 NORMALITY	3.9864	0.13625
χ^2 SERIAL	1.9381	0.2060
χ^2 WHITE	0.8583	0.6363
χ^2 RAMSEY	0.6672	0.3452

Source: Author's Computation 2022, ***, **, * represent 1%, 5% and 10%

Fig. 1 Cusum And Cusum Of Square Plots



Causality test is generally carry out to determine causal effect of one variable on the other. This study also adopted the causality test as presented in Table VII. The outcome prove that GEAG granger causes the AOUP as expected and which further confirm the result from the ARDL method. This implies that GEAG is a predictor of the performance of the agriculture sector. Similarly, the finding shows a one way causal relationship running only from MPR to AOUP. This means that MPR is a determinant of the changes in the output of the agriculture sector in Nigeria. The result indicates another significant causal link running only from AOUP to FDI inflow. As a result, the AOUP is said to be an influencer of the flow of FDI into the economy. A non-causal effect exists between other variables of the model. For instance, the output shows a non-causal effect between AOUP and CBLA.

Table VI: Granger Causality Result

Null Hypothesis:	Obs	F-Statistic	Prob.
LNGEAG does not Granger Cause LNAOUP	36	3.95560**	0.0176
LNAOUP does not Granger Cause LNGEAG		0.65697	0.5852
LNCBLA does not Granger Cause LNAOUP	36	1.52228	0.2297
LNAOUP does not Granger Cause LNCBLA		0.35525	0.7857
LNFDI does not Granger Cause LNAOUP	36	0.74502	0.5340
LNAOUP does not Granger Cause LNFDI		2.31135**	0.0970
MPR does not Granger Cause LNAOUP	36	4.09741**	0.0153
LNAOUP does not Granger Cause MPR		1.16149	0.3413
EXR does not Granger Cause LNAOUP	35	0.35227	0.7878
LNAOUP does not Granger Cause EXR		1.09599	0.3672
LNCBLA does not Granger Cause LNGEAG	36	1.52304	0.2295
LNGEAG does not Granger Cause LNCBLA		0.68750	0.5670
LNFDI does not Granger Cause LNGEAG	36	0.23035	0.8745
LNGEAG does not Granger Cause LNFDI		2.01478	0.1338
MPR does not Granger Cause LNGEAG	36	0.31805	0.8122
LNGEAG does not Granger Cause MPR		1.04702	0.3866

EXR does not Granger Cause LNGEAG	35	0.32777	0.8053
LNGEAG does not Granger Cause EXR		0.61990	0.6080
LNFDI does not Granger Cause LNCBLA	36	1.56591	0.2189
LNCBLA does not Granger Cause LNFDI		0.56481	0.6426
MPR does not Granger Cause LNCBLA	36	0.08351	0.9685
LNCBLA does not Granger Cause MPR		0.46532	0.7087
EXR does not Granger Cause LNCBLA	35	0.35624	0.7850
LNCBLA does not Granger Cause EXR		0.64909	0.5901
MPR does not Granger Cause LNFDI	36	1.62837	0.2044
LNFDI does not Granger Cause MPR		1.35639	0.2756
EXR does not Granger Cause LNFDI	35	0.90281	0.4522
LNFDI does not Granger Cause EXR		0.36146	0.7813
EXR does not Granger Cause MPR	35	0.33084	0.8031
MPR does not Granger Cause EXR		0.08738	0.9664

Source: Author's Computation 2022, ***, **, *, represent 1%, 5% and 10%

Conclusion, Policy Implication and Direction

The agriculture sector has suffered so much setback and negligent especially from the period when oil was discovered in Nigeria in a commercial quantity. The sector literary lost its dominant position to the oil sector. However, with the volatility in the price of oil, various government especially of the oil producing developing countries like Nigeria are been forced to diversified their economies. In Nigeria particularly severally effort have been made to improve the performance of the agriculture sector through relevant policies both fiscal and monetary. In-spite of this, the sector is still struggling to feed the nation and to increase export substantially. Therefore, this study set out to investigate whether or not the federal government spending policy on the agriculture sector is yielding positive result. The result proves that government expenditure on the sector promotes the performance of the sector significantly. Similarly, commercial bank loan to the sector indicates positive but insignificant contribution to the sector. Monetary policy rate (MPR) which is one of the monetary policy instruments indicate a weak positive impact only in the long run, implying that the policy will

yield little result only in the long run. Contrarily, the foreign resource (FDI inflow) prove to be anti-growth agent to the sector as demonstrated in the negative interaction between the sectors. Exchange rate prove to relate with the sector performance positively only in the short run. Thus, this study recommends an increase fiscal policy for the sector to further boost the performance of the sector. The government is advice to increase budgetary allocate to the sector and to ensure a thorough follow up by ensuring that allocated budget get to the sector. Secondly, to revitalize the agricultural sector, monetary policy should focus on loans to the sector. In this case the interest rate on funds borrowed for agricultural sector purposes should be less compared to other sectors. Mechanisms should be put in place to ensure that those who borrow at the rate prescribed for the agricultural sector are actually involved in the sector. Funds allocated for agricultural sector for the purpose of increasing output of the sector should be monitored thoroughly to ensure that they are not diverted to other use. Finally, government is advice to discourage the flow of FDI into the sector. Strict policy such as high tax should be adopted to restrict entry of FDI into the sector.

Ethical Statement Information of the Article Titled As “Investigating The Interaction Between Government Expenditure On Agriculture Sector, FDI Inflow and Agriculture Output In Nigeria”

	This study has been prepared in accordance with the values of “Research and Publication Ethics” and checked in a plagiarism control software. All responsibility of the article belongs to the author(s).
Acknowledgement	We thank the editor in advance and looking forward for considering our paper for possible publication in this highly esteemed journal.
Conflict of Interest Statement	The authors declares that they has no relevant or material financial interests that relate to the research described in this paper.
Author Contributions	Charity Gwandzang ISA, conceptualized the idea and did the estimation. Chidi Patrick NWAFOR, wrote the introduction and methodology, Adewale Jethro BEKE wrote the literature review and interpret the estimation and the conclusion.
Support	During the process of preparing the manuscript there is no kind of financial support that has been received.
Ethics Committee Certificate Of Approval	Ethics Committee approval is not required.
Scale Permission	Scale permission is not required.

References

- Abdellah. (2010). Agricultural Credit And Technical Efficiency In Ghana: Is There A Nexus? *Agricultural Finance Review*, 76(2), 309-324.
- Abellanos, A., & Pava, H. (1987). *Introduction to Crop Science*. Musuan, Bukidon: Central Mindanno University.
- Adegboye, R. O. (1967). The Need For Land Reform in Nigeria. *Nigerian Journal of Economics*, 8(3), 441-453.
- Adeniyi, P. (2016). Environmental Sustainability and Conservation of Nigeria Forest Reserves. *Journal of Geography, Environment and Earth Science*, 6(1), 1-9.
- Adetiloye, K. A. (2012). Agricultural Financing in Nigeria: An Assessment of the Agricultural Credit Guarantee Scheme Fund (ACGSF) For Food Security in Nigeria (1978-2006). *Journal of Economics*, 3(1), 39-48.
- Adewole, J., Adekambi, A., & Gabriel, I. (2015). An Assessment Of The Contributions Of Commercial Banks To Agricultural Financing in The Nigerian Economy. *International Journal of Advanced Academic Research*, 1(2), 1-16.
- Aina, A. (2015). *Government Spending and Agricultural Sector Performance in Nigeria*. M.Sc. Unpublished Dissertation. University of Port Harcourt, College of Graduate Studies.
- Argyrous, G. (2011). *Statistics for Researchers*. London: SAGE.
- Ayeomoni, & Aladejana. (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.
- Benin, & Sunday. (2018). *Government Expenditures in Kenya, 1950–2014: Determinants and Agricultural Growth Effects*. International Food Policy Research Institute (IFPRI).
- Brown, & Ajayi. (2015). Does Productivity Indices And Sire Effects Of A Heterogeneous Rabbit Population In South-Western Nigeria. *International Journal of Applied Agriculture and Apiculture Research*, 11(1-2), 1-9.
- CBN. (2019). *Central Bank Statistical Bullentin*.
- Central Bank of Nigeria. (2019). (CBN) *Statistical Bulletin*, Abuja.
- Chandio, A., Yuansheng, J., Sahito, J., & Larik. (2016). Impact Of Formal Credit On Agricultural Output: Evidence From Pakistan. *African Journal of Business Management*, 10(8), 162-168.
- Chandio, Jiang, Joyo, & Rehman. (2016). Impact Of Area Under Cultivation, Water Availability, Credit Disbursement. *Journal of Applied Environmental and Biological Sciences*, 6, 10–18.
- Cletus, & Sunday. (2018). Government Expenditure On Agriculture And Economic Growth In Nigeria. *International Journal of Academic Research and Reflection*, 6(4), 24-39.

- Demengnou, T. S., Ukohol, F. Y., & Daudu, S. (2014). Trends in Budgetary Expenditure On The Agricultural Sector In Nigeria. *Journal of Agricultural Extension and Rural Development*, 2(1), 50-62.
- Etale, & Ayunku. (2015). Determinants of Stock Market Development in Nigeria: A Cointegration Approach. *Advances in Research*, 3(4), 366-373.
- Federal Department of Forestry, Nigeria. (2001). *The Forest Revenue System And Government Expenditure On Forestry in Nigeria*.
- Federal Department Of Forestry/FAO. (2001). *Forestry Outlook Study For Africa*.
- FMA, W. (2008). *Guideline For Disbursement Of Funds For USSRP Works Contracts Programme Management Unit (PMU)*. Federal Ministry Of Agriculture And Water Resources, Nigeria.
- Fugile, K., & Rada, N. (2013). *Resorces, Policies, and Agricultural Productivityin Subsaharan Africa*. Economic Research Report No. 145. US Department of Agriculture, Economic and Research Service.
- Fuller, D. (2007). Contrasting Paterns in Crop Domestication And Domestication Rates: Recent Archeological Insights From The Old Work. *Animal of Bootany*, 903-924.
- Granger, C. (1981). Some Properties Of Time Series Data and Their Use in Econometric Model Specification. *Journal of Econometrics*, 16(1), 121-130.
- Gujarati, D. (2009). *Basic Econometrics*. New Delhi: Tata McGraw-Hill Education.
- Harerimana. (2016). Analysis of Government Spending on Agriculture Sector and its Effects on Economic Growth in Rwanda. MSc. of Science in Economics, University of Rwanda.
- Harris, D. (1989). An Evolutionary Continuum Of People-Plant Interaction, in D.R. Harrison and GC Hillman. *Forging And Farming. The Evolution Of Plant Exploitation*. London: Unwin Human.
- Haruna. (2015). Impact of Baryte Mining on Agriculture and Food Security in Azara, Nasarawa State, *Dutse Journal of Agriculture and Food Security*, 2(1), 59-65.
- Iganiga, B. O., & Unemhilin, D. O. (2011). The Impact of Federal Government Agricultural Expenditure on Agricultural Output in Nigeria. *Journal of Economics*, 2(2), 81-88.
- Ijaiya, G., & Abudulraheem, A. (2000). Commercial Bank Credit To The Agricultural Sector And Poverty Reduction in Nigeria: A Calibration Analysis. *Nigeria Journal of Agribusiness and Rural Development*, 1(1), 43-57.
- Ikpesu, F. (2019). Growth Effects Of Capital Inflows And Investment. *International Journal of Management, Economics and Social Science.*, 8(1), 5-19.
- Ita, E. (1993). In-land Fisheries of Nigeria. Rome Publucation of FAO.

- Iya, I. B., & Aminu, U. (2015). An Investigation Into The Impact Of Domestic Investment And Foreign Direct Investment On Economic Growth In Nigeria. *International Journal of Humanities Social Sciences*, (2), 40-50.
- Izuchukwu, O. (2011). Analysis Of The Contribution Of Agricultural Sector. *World Review of Business Research*, 1(1), 191-200.
- Jhingan, M. (2010). *Macroeconomics Theory*, 12th edition. Delhi, India: Vrinda Publications.
- Kemi, A. (2016). Diversification of Nigeria Economy Through Agricultural Production. *Journal of Economics and Finance*, 7(6), 104-107.
- Ken, O., & Bidemi, J. (2016). Dynamic Effect Of Government Spending On Agricultural Output In Nigeria. *The International Journal of Social Sciences and Humanities Invention*, 3(2), 1880–1886.
- Keynes, J. M. (1936). *General Theory of Employment, Interest and Money*. London: Palgrave Macmillian.
- Lloyd, P. C. (1962). *Yoruba Land Law*. London: Oxford University Press.
- Makinde, H. (2016). Implications of Commercial Bank Loans On Economic Growth in Nigeria (1986-2014). *Journal of Emerging Trends in Economics and Management Sciences*, 7(3), 124-136.
- Matthew, & Mordecai. (2016). The Impact of Agricultural Output on Economic Development in Nigeria (1986-2014). *Archives of Current Research International*.
- NBS. (2010). 2009 Annual Collaborative Survey of Socio-Economic Activities in Nigeria. Publication of the federal Republic of Nigeria.
- NBS. (2020). National Bureau of Statistics- Nigeria. Retrieved from <https://www.nigerianstat.gov.ng/nada/index.php/catalog>
- Ngozi, N., & Cordelia, O. (2018). Industrial policy on Fish Farming and Sustainable Economic Development in Nigeria (1990-2016). *Saudi Journal of Business and Management Studies*, 2(5A), 500-506.
- Nnamocha, P., & Eke, C. (2015). Bank Credit And Agricultural Output In Nigeria: An Error Correction Model (ECM) Approach. *British Journal of Economics, Management & Trade*, 10(2), 1-12.
- Nosike, A. (2019). Total Government Spending On Agriculture and Its Output Growth in Nigeria. *American Based Research Journal*, 8(2), 28-41
- Nwafor. (2012.). Assessment Of Socio-Economic Factors Affecting The Utilization Of Manual Screw Press For Gari Production in Kwara State, Nigeria. *International Journal of Agricultural Extension*, 7(1), 107-115.
- Nwajiuba, C. (n.d.). *Nigeria's Food Security Challenges*. Retrieved from www.nestinterative.org. accessed, 11/25/2013.

- Ojo, L. (2004). The Fate Of A Tropical Rain Forest in Nigeria: Abeku Sector Of One Forest Reserve. *Global Nest: The International Journal*, 6(2), 116-130.
- Olokoyo, O. (2011). Determinants of Commercial Banks' Lending Behavior in Nigeria. *International Journal of Financial Research*, 2(2), 61-72.
- Olomola. (2006). Oil Price Shock and Macroeconomic Activities in Nigeria. *International Research Journal of Finance and Economics*. (3), 28-34.
- Oluwaseun, Solomon, & Yusuf. (2020). Impact of Fiscal Policy on Agricultural Output in Nigeria. *International Journal of Academic Research, Business and Social Science*, 10(8) 224–243.
- Osondu, C. K., & Ogbonna, S. I. (2015). Savings, Income and Investment Patterns and its Determinants Smong Small Holder Arable. *European Journal of Business and Innovation Research*, 3(1), 51-70.
- Pesaran, & Shin. (1999). *Centennial Volume of Rangar Frisch*. Cambridge: Cambridge University Press.
- Rebentein, J. (2003). *The Cultural Landscape: An Introduction To Human Geography*. Upper Saddle River: Pearson Education, Inc.
- Rekwot, Zakari, & Oyinbo. (2013). Agricultural Budgetary Allocation and Economic Growth in Nigeria: Implications for Agricultural Transformation in Nigeria. Department of Agricultural Economics and Rural Sociology, Ahmadu Bello University, Zaria, Nigeria.
- Rimando, T. (2004). *Fundamentals Crop Sciences: U.P. Los Banos*. University Publications Office. P.I.
- Rufus, & Oyewole. (2018). Public Expenditure On Agriculture And Output Growth in Nigeria. *International Journal of Arts and Commerce*. 7(4), 60-78.
- Sebastian, Ariwa, & Uremadu. (2018). Impact of Government Agricultural Expenditure on Agricultural Productivity in Nigeria. *Current Investigations in Agriculture and Current Research*.
- Sertoğlu, Ugural, & Bekun. (2017). The Contribution of Agricultural Sector on Economic Growth of Nigeria. *International Journal of Economics and Financial Issues*, 7(1), 547-552.
- Shaibu, Igbinuson, & Ahmed. (2015). Impact of Government Agricultural Expenditure on the Growth of the Nigerian Economy. *Asian Journal of Agricultural Extension Economics & Sociology*, 6(1), 23-33.
- Solow, R. M. (1956). *A Contribution to the Theory of Economic Growth*. Princeton: Princeton University Press.
- Stein, F. (2006). *Organic Agriculture and Food Security*. Sustainable Agriculture.

- Steinfeld, H. (2006). *Livestock's Long Shadow: Environmental Issues and Options*. Rome, Italy: FAO.
- Uger. (2013). The Impact of Federal Government's Expenditure on the Agricultural Sector in Nigeria. *Publication of Nasarawa State University, Keffi*, 114-122.
- Ukeje, E. (2002). Towards Accelerated Industrial Crop Production: Problems And Prospects. *CBN Bullion*, 1(2).
- Uzomba, P. C., Chukwu, S. N., Jumbo, G. A., & Nwankwo, N. U. (2014). An Inquiring into the Impact of Deposit Money Banks' Loans/Advances on Agricultural Sector in Nigeria; 1980 –2011. *International Review of Social Sciences and Humanities*, 7(2), 130-139.
- Vanguard News. (2015). *PMB Agricultural Policies*. Retrieved from <https://www.vanguardngr.com/2015/agricultural%20policies>
- Wikipedia. (2020). *Contribution of Agriculture to the economy of Nigeria*. Retrieved from <https://www.google.com/search?client=opera&q=wikipedia+contribution+of+agriculture+to+the+economy&sourceid=opera&ie=UTF-8&oe=UTF-8%20of%20Nigeria>
- World Bank Development Indicator. (2019).
- Yisa, A. A. (2009). Cassava Marketing: Option For Sustainable Agricultural Development in Nigeria. *Ozean Journal of Applied Science*, 20(4), 12-23.