Agricultural output and government expenditure in Nigeria

KEJI Sunday Anderu[*]; EFUNTADE Olubunmi Omotayo

Department of Economics, Federal University Oye-Ekiti, Ekiti State, Nigeria

To whom correspondence should be addressed. Email: sunday.keji@fuoye.edu.ng

Abstract

The study empirically investigate the link between agricultural output growth and government spending in Nigeria from 1981 to 2018. Augmented Dickey-Fuller (ADF) test was used to investigate stationary variable at different levels. The mixture in order of integration necessitate Auto Redistributed Lag (ARDL) and Bounds co-integration, since it allows combination of fractionally integrated variables. The results show both short and long run effect of government spending on the growth of agricultural output in Nigeria. The policy implication is that any disruption in government spending on agricultural sector would have adverse effect on agricultural output growth in Nigeria. In view of poor agricultural output growth in Nigeria, coupled with corruption, and policy summersaults in the sector. It is pertinent in the study, to come up with the following recommendations thus; government should re-double it efforts in terms food security through improved agricultural policies, proper channelization of loans across board with sustainable fiscal measures that can translate to actual growth.

INTRODUCTION

It is quite commonly explain that agriculture is the mainstay of an economy, especially in the developing one like Nigeria. However, this assertion has become triviality in Nigeria's scenario over the years. Agricultural output growth is the most vital component of general economic growth attainment, which could be achieved through aggressive investment in the agricultural sector. Ogiogio, (1995) posits that agricultural contribution to economic growth cut across four cardinal points thus; factor earning, product earning, market earning and foreign exchange earnings (Jhingan, 2003). Despite all these benefits, little attention has been drawn towards actualizing the above benefits in case of Nigeria, although government in the past had come up with different attempts to harness these benefits, such as structural adjustment programme (SAP), operation feed the nation (OFN) among others, but the agricultural growth continuously remains slow, coupled with poor agricultural funding by the government across all tiers. Interestingly, the sector witnessed it first major set-back in the early 1970s when oil discovery took the center stage and this attracted huge revenue deposit in the government convers which was termed as free money by most politicians in the helms of the nation's affairs. As a result, government attention was drastically shifted from the agricultural sector to petroleum sector hence agricultural product dropped sharply to less 1 percent on it contribution to annual growth. The crop export also fall with marginal rise in food production due short

labour supply in the sector. This ugly trend brought about general fall of domestic food supply, which led to augmentation of this shortages through foreign imports. According to the nation's apex bank in 2003, food import expenditure rose between 1970s and 1990s. This is connected to macroeconomic disequilibrium such as exchange volatility, skyrocket consumer price index with poor infrastructural based, policy inconsistence, over reliance on crude oil among others (Keji, 2018).

Notably, over the years, several measures were put in place to change the ugly scenario in the agricultural sector especially through agricultural financing, policy implementation like increase in agricultural budgetary allocation, among others, yet these measures fail to transmit to growth of the Nigerian economy, that is, measures without explicitly translating to an equivalent expansion in agricultural output hence slow economic growth is achieved. Consequently, several studies were carried out to examine what might had caused the slow growth in agricultural sector from different perspectives with little or no attention on the nexus between government expenditure and agricultural output growth. For example, studies like Oboh & Ekpebu (2010), Akintola (2004), Iganiga & Unemhilin (2011), Adekanye (2005), Rhaji, (2008), Egwu (2016) and Ebere, (2014) attempted to explain some other factors that affect agricultural output in broader perspective without specifically focus on factor such as government expenditure and agricultural output growth. Therefore, in the light of the above gap in the literature, it is pertinent in this study to investigate the relationship between government expenditure and agricultural output in Nigeria.

On this note, different research questions were raised thus; what is the nexus between government expenditure and agricultural out growth in Nigeria? What is the trend of government spending on agricultural output growth in Nigeria? In lieu of these questions, the study intended to empirically investigate the relationship between the two key variables (government expenditure and agricultural output growth) and to examine the government spending on agricultural output between 1981 and 2018. Interestingly, the findings from this study would serve as policy guide to the policy makers in the future. Also, it can be used by other researchers as point of references in the cause carrying further studies. It is worthy to note that the study is grouped into five different sections thus; Section one explains the introduction and section two contains the literature review. While section three, four and five address the research methodology, data analysis and conclusion respectively.

LITERATURE REVIEW

Agriculture is said to an art of crop growing and livestock production in one hand and scientific way of processing crops and livestock in medium and large quantity via modern bio-technology on the other hand. Agricultural practice is as old as man himself, which stands as mean of livelihood since the ancient time till the present day. Interestingly, over the years, agricultural practice had gone through diverse transformation in terms, scope, form that dictate the type of crop(s) to be cultivated, livestock management and down to processing and marketing. Agriculture plays central role in economic emancipation of any developing economy and Nigeria is not exceptional from this.

Government expenditure means the expended funds from the fiscal allocation, mostly on yearly basis across the whole sectors of the economy towards achieving growth objectives. While government expenditure on agriculture growth is said to be the total allocative resources set assign from the annual budgetary allocation specifically meant for enhance agricultural output through crop and seedling development, procurement of fertilizer and mechanized tools, agricultural research and development among others, so as to attained economic growth objectives. It is worthy to note that Rostow's growth

theory posit five stages of economic growth thus; firstly, the traditional society that emphasis more acquisition of land for cultivation so as to expand the volume of trade, which could rise general income level. Secondly, the pre-condition to take off analysis the transition period that is characterized by inventions and innovations. Thirdly, the take-off era predominantly characterized by new discoveries that bring an end to feudalism, which consequently give rise to discoveries and inventions and consequently the rise to bourgeoisies and emergence of new mercantile cities. Fourthly, the drive to maturity mainly address deficient high mass production to sufficient production via the needed transformation. Fifthly, the era of high mass consumption which is basically explain migration, use of automobile, where society is faced diverse production needs of the consumers.

Evidently, Adolph Wagner's law in 1876 opined that increasing public spending by the state on activities occur as government commitments increases. As it predicted that rise in the ratio of government to nation's income whilst per capital income grows. The law further states that public sector share of the economy rise as economic activities rises, that societal progress brings rise in state activities which in the long rise the public spending. Over time, Wagner's was divided into six strata to further test it adaptability across different periods by different researchers (Henrekson, 1993; Anoke, Odo, Chukwu & Agbi, 2016). For example, Peacock and Wiseman postulated the traditional form; G = F (GDP). It was argued that government expenditure has direct nexus with Gross Domestic Product.

It is pertinent to note that agricultural sector in Nigeria is being pigeon-holed by several problems, ranging from the point of production, through storage system to the point of marketing, which had been largely caused by different policy summersaults in the time past and this had resulted to poor performance of the sector. These ugly scenario were further worsen by poor financing system of the sector over the years. Although, there were claims that agricultural financing has been on the rise through different government agencies in the recent years, but without really translating to increase in output. In this note, it is pertinent in this study to empirically find the remote and immediate causes of this misleading claim by assessing the link between government expenditure and agricultural output in Nigeria.

Notwithstanding, several empirical studies have made different attempts in the time past to critically examine the link between agricultural financing and economic growth, through different perspectives thus; for example, Rhaji, (2008) adopt Ordinary Least Square (OLS) to examine the determinants of agricultural credit approval/loan size by commercial banks in south-western Nigeria. The study reveal that lack of sufficient access and affordable credit responsible for systematic fall in agricultural output, hence the rate of economic growth declines. Awoke, (2004) argued that unwillingness, default, and high rate of agricultural loans among the farmers pose serious danger to growth sustainability in Nigeria. The study inspect factors affecting loan acquisition and repayment method among the small scale farmers in Delta sate, Nigeria. Meanwhile, Obansa & Maduekwe (2013) employed Ordinary Least Square technique and Granger causality test to submit that agricultural output increases both by direct private loan to farmers and foreign direct investment in agriculture. The causality test disclosed two way relationship i.e. bidirectional relationship between agricultural financing and economic growth. In a similar vein, Nwankwo (2013) revealed that there is strong nexus between economic growth and agricultural financing in Nigeria, through Ordinary Least Square technique. It was further revealed that loan repayment rate has significant negative effect on economic growth in Nigeria. Interestingly, Egwu, (2016) adopt cointegration technique to investigate the effect of agricultural financing on agricultural output, economic growth and poverty alleviation in Nigeria. The study reveal that agricultural financing has

significant effect on agricultural output, which in the long run alleviate poverty among the populace.

Notably, Ihugba, Chinedu, & Njoku (2013) study Nigeria expenditure on the agricultural sector: Its relationship with agricultural output between 1980 and 2011, through the Engle-Granger modeling (EGM) of co-integration and Error Correction Mechanism and Pair wise Granger Causality tests. The results show that there is long run nexus between agricultural contribution and government expenditure. While, the causality test results reveal that weak causality exist among the two key variables in the study. Hence, the study posit that any drop in agricultural financing would have drastic negative impact on economic growth in Nigeria. Ewubare and Udo (2017) study the impact of public sector financing on agricultural output in Nigeria between 1980 and 2014, in which Johansen co-integration and error correction model techniques were used to establish that public sector financing has great effects on agricultural output in Nigeria during the period of study. Hence, the study recommends the need for government to increase her spending on agricultural sector so as to achieve sustainable growth in the economy.

Ayeomoni and Aladejana (2016) examine the nexus between agricultural credit and economic growth in Nigeria through Auto-Regressive Distributed Lag (ARDL) method to establish both short and long run link between the key variables- economic growth and agricultural credit. Hence, the study suggest that there is need for policy makers to improve boost agriculture credits in Nigeria so as to enhance growth. Again, Garba, (2011) agued through the impact of development banks via agricultural financing on economic growth in Nigeria. Multiple regression from the study disclosed that agricultural financing from development banks does not have significant impact on economic growth in Nigeria. The study therefore conclude that frantic efforts must be put in place in terms of proper loan monitoring, along with the whole operations of the said banks. Okoh, (2015) examines the effect of fiscal policy on the growth of agriculture sector in Nigeria from 1981 to 2013 through Error Correction Model. The study therefore revealed that long run relationship exist between fiscal policy and agriculture sector though with some serious concerns, in which the study recommend that government should increase budgetary allocation to agriculture with proper monitoring of the funds. In a similar vein, Eze, (2017) argued that agricultural output has positive without significant impact on real gross domestic product in the long run through co-integration and Vector Error Correction Model (VECM). On his work, which examine the link between agricultural sector performance and economic growth in Nigeria. The study recommends that there is need for government to boost agricultural through improved spending.

METHODS

In this section, empirical review of the study shall be discussed under various sub-sections. Preliminary test shall be employed in the cause of investigating the nexus between government expenditure and agricultural output growth in Nigeria, which is unit root test. The test is adopted to establish the order of integration of the time series. Interestingly, the study shall derive it empirical findings from Peacock and Wiseman version of Wagner's theory but with some re-modifications. Meanwhile, secondary data are sourced between 1981 and 2018 from the central Bank and World Bank development indicators.

It is a known fact that Wagner's theory model is broadly captured in six diverse (Anoke, Odo, Chukwu & Agbi, 2016). However, this study shall align with that of Peacock and Wiseman version as adopted by (Anoke, Odo, Chukwu & Agbi, 2016) as earlier stated but with some re-modifications thus:

$G = F(GDP)$...(1)

Where G implies Norminal total government expenditure, while GDP explains Nominal gross domestic product. In order to achieve the set objectives of study, the model hereby transformed to accommodate other series employed in the study thus:

$AGOUT = F(GEX, GCF, EXC, INT, IDV, INF, GDP)$..(2)

Where AGOUT = Agricultural output
GEX   = Government expenditure
GCF   = Gross Capital Formation
EXC   = Exchange Rate
INT   = Intrest Rate
IDV   = Industrial Value
INF   = Inflation Rate
GDP   = Gross domestic product (measure of national income)
$\mathcal{E}_t$ = Error term and $\alpha_0 - \alpha_7$, are parameters estimates.

The functional transformation of the model as:

$$AGOUT_t = \alpha_0 + \alpha_1 GEX_t + \alpha_2 GCF_t + \alpha_3 EXC_t + \alpha_4 INT_t + \alpha_5 IDV_t + \alpha_6 INF_t + \alpha_7 GDP_t + \mathcal{E}_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3)$$

For the purpose of achieve valid results, the high decimal series are hereby log for accurate analysis as;

$$LogAGOUT_t = \alpha_0 + \alpha_1 LogGEX_t + \alpha_2 LogGCF_t + \alpha_3 EXC_t + \alpha_4 INT_t + \alpha_5 IDV_t + \alpha_6 INF_t + \alpha_7 LogGDP_t + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots (4)$$

DATA ANALYSIS

This section contains findings from the data employed in the study. The empirical findings are carried out in different sub-sections. Firstly, the descriptive analysis was conducted to reveal the summary information of the data. Secondly, unit root test is being carried out to know the appropriate technique to use in the study. Thirdly, the predicted techniques are carried out as suggested by unit root test results. Lastly, other post estimation analysis were conducted to check the validity of the estimated results.

Descriptive statistics

From the results in Table 1, it is observed that the mean values of the agricultural output (AGOUT), gross capital formation (GCF), inflation rate (INFR) and interest rate (INTR) are 5353.42, 38.35, 19.57 and 18.03 respectively while exchange rate (EXC) industrial value (IDV) gross domestic product (GDP) and government expenditure (GEX) are 78.63, 0.92, 3.74 and 1568.60 separately. The standard deviation showed that exchange rate (AGOUT) is the most volatile variable (6754.37) while economic growth (GDP) is the least volatile variable (4.80). Skewness statistics revealed that industrial value (IDV) gross and domestic product (GDP) are negatively skewed while the other series (like agricultural output, gross capital formation, inflation rate, interest rate, exchange rate and government expenditure) were positively skewed. The Kurtosis results disclosed that agricultural output, exchange rate, government expenditure were platykurtic, signifying flatness of the normal distribution, while inflation rate, industrial value and gross domestic product are leptokurtic showing the peaked comparative to normal distribution. Again, gross capital formation and interest rate Kurtosis statistics are mesokurtic i.e. the distribution of the series is bell shaped, which means the variables normally distributed. The null hypothesis of normal distribution from Jarque-Bera statistic for agricultural output, gross capital formation, interest rate, exchange rate, industrial value, gross domestic product and government expenditure were rejected while, the null hypothesis of normal distribution for inflation rate cannot be rejected at 5% level.

Table 1. Descriptive analysis

	AGOUT	GCF	INFR	INTR	EXC	IDV	GDP	GEX
Mean	5353.415	38.34767	19.56848	18.03226	78.63377	0.924866	3.743944	1568.597
Median	1426.974	37.23967	12.21701	17.79500	92.33810	1.695439	4.631193	701.0509
Maximum	21523.51	89.38105	72.83550	31.65000	253.4920	18.05893	15.32916	5185.318
Minimum	20.12592	14.90391	5.382224	9.433333	0.673461	-18.9746	-10.92409	9.636500
Std. Dev.	6754.374	19.09927	17.94746	4.799836	71.79460	6.983876	5.002072	1859.250
Skewness	1.064946	0.963758	1.647443	0.247753	0.384886	-0.41233	-0.597665	0.915066
Kurtosis	2.735759	3.673975	4.414909	3.743379	1.979013	4.183027	4.220342	2.246872
Jarque-Bera	6.717470	6.080604	18.75161	1.163951	2.384321	3.032781	4.255486	5.711683
Probability	0.034779	0.047820	0.000085	0.558793	0.303565	0.219503	0.119106	0.057507
Sum	187369.5	1342.168	684.8969	631.1290	2752.182	32.37032	131.0381	54900.88
Sum Sq. Dev.	1.55E+09	12402.59	10951.79	783.3065	175251.8	1658.334	850.7047	1.18E+08
Observations	35	35	35	35	35	35	35	35

Unit root test

The Augmented Dickey Fuller test was conducted which explains the results disclosed on Table 2. It can be observed that series were integrated of mix results i.e. unit root test results are of mix order of integration such as I(0) and I(1). For example, industrial value, gross domestic product and inflation rate are integrated of order zero I(0), while log of agricultural output, log of gross capital formation, interest rate, exchange rate and log of government expenditure are integrated of order one I(1). Consequently, the mix in the order of co-integration necessitates the need for bound co-integration technique as suggested by Pesaran, Shin and Smith (2001).

Table 2. Unit root test

Variable	T. Statics	Probability	Order of Integration
LOGAGOUT	-3.7952	0.0067	I(1)
LOGGCF	-5.6137	0.0001	I(1)
INFR	-3.4021	0.0179	I(0)
INTR	-6.5178	0.0000	I(1)
EXC	-3.6446	0.0099	I(1)
IDV	-4.9419	0.0003	I(0)
GDP	-3.9560	0.0044	I(0)
LOGGEXP	-7.0788	0.0000	I(1)

ARDL bound test

The Bound test results critical values revealed cointegrating series in the model. According to Pesaran, Shin and Smith (2001), For instance, if the F-statistic is greater than the upper critical value, then the null hypothesis of no co-integration is rejected, which indicates the presence of co-integration among the variables. Contrariwise, if the F-statistic is lower than the lower critical value, it is therefore implies that the null hypothesis of no co-integration cannot be rejected, which explains none co-integration among the variables. However, if the F-statistic falls between the upper and lower critical values, it is hence signifies that the result is inconclusive. Consequently, in the study, F-Statistic of 4.086147 is higher than both lower and higher Bounds of 2.32 and 3.5 at 5% level respectively (Ewubare & Udo, 2017; Keji, 2018).

Autoressive distributed lag model results

The autoregressive distributed lag model results reveal that log of agricultural output in first and second previous years are statistically significance on the current year agricultural output at 1% level, while series for interest rate and log of government expenditure in first previous years, industrial value and gross domestic products in current year are influence the current year agricultural output growth at 5% level. Whereas, log of gross capital formation and gross domestic products in first previous and interest rate

in the in second previous year are weakly significant on the current year agricultural output at 10% level. Interestingly, the key variables confirms the expected economic intuition e.g. current year gross domestic is positively related to current agricultural output, while interest rate and log of government expenditure in first year lag are negatively related to the current year agricultural output. This is in line with the findings of Ewubare & Udo, (2017).

The coefficient of multiple determination of the model (R-squared) explained that the independent variables jointly determined about 99 per cent of the variations in agricultural output while the remaining1 per cent explained by variables not included in the model. The result of the coefficient of multiple determination showed that the model is good and fit. While, the Durbin-Watson Stat of 2.13 showed that the estimate of the model is free from the problem of serial auto-correlation. As a result, the estimate model is appropriate and can be used for policy recommendation.

$$LOGAGOUT_t = 1.049LOGAGOUT_{(-1)} - 0.607LOGAGOUT_{(-2)} + 0.081LOGGCF$$
$$(6.799953)*** \qquad (-2.738872)*** \qquad (0.356455)$$

$$- 0.455LOGGCF_{(-1)} + 0.345LOGGCF_{(-2)} + 0.000INFR + 0.014INTR$$
$$(-1.820556)* \qquad (1.481963) \qquad (0.442158) \qquad (0.935655)$$

$$- 0.026INTR_{(-1)} + 0.016INTR_{(-2)} - 2.742e05EXC - 0.001EXC_{(-1)}$$
$$(-2.352000)** \qquad (2.091349)* \qquad (-0.021908) \qquad (-0.474457)$$

$$+ 0.004EXC_{(-2)} - 0.014IDV + 0.020GDP - 0.013GDP_{(-1)}$$
$$(1.632758) \quad (-2.896624)** \ (2.166515)** \ (-2.102923)*$$

$$+ 0.100LOGGEXP + 0.421LOGGEXP_{(-1)} + 0.688 \ .... (5)$$
$$(0.446962) \qquad (2.537994)** \quad (0.568576)$$

*Note: The standard errors are in the parenthesis, while * denotes statistical significance at 10%, ** denotes 5% and *** denotes 1% respectively. Whereas, the lag length ranges between one and two.*

Table 3. ARDL bound test results

Significance	I0 Bound	I1 Bound
10%	2.03	3.13
5%	2.32	3.50
2.5%	2.60	3.84
1%	2.96	4.26
Critical Value Bounds, F-Statistics = 4.086147, K = 7		

Meanwhile, the long run impact of the explanatory variables disclosed the long run effects of the key variables on the dependent variable. For example, log of government expenditure, exchange rate and industrial value have long run effects on the agricultural output growth in Nigeria between 1981 and 2016. Notably, the short-run dynamic model (error correction model) explain the speed of adjustment around the equilibrium points Ihugba, Chinedu, & Njoku (2013). That is, it explains -2.003279 (200.3%) of speed to adjust back to equilibrium at the slightest divergence.

Table 4. Long run coefficients

Variable	Coefficient	Std. Error	t-statistic	Prob.
LOGGCF	0.133826	0.128612	1.040534	0.3157
INFR	0.000418	0.000965	0.433021	0.6716
INTR	0.001747	0.004804	0.363761	0.7215
EXC	0.001149**	0.000535	2.149364	0.0496
IDV	-0.006856***	0.002241	-3.059509	0.0085
GDP	0.003850	0.005930	0.649238	0.5267
LOGGEXP	0.260117***	0.070133	3.708906	0.0023

** Denotes statistical significance at 10%, ** denotes 5% and *** denotes 1%.*

Table 5. Error correction model results

Variable	Coefficient	Std. Error	t-statistic	Prob.
D(LOGGCF)	0.377734	0.227818	1.658052	0.3414
INFR	0.000837	0.001893	0.442158	0.6651
D(INTR(-1))	-0.016210*	0.007751	2.091349	0.0552
D(IDV)	-0.013735**	0.004742	-2.896624	0.0117
D(GDP)	0.020307**	0.009373	2.166515	0.0480
D(LOGGEXP)	0.100430	0.224695	0.446962	0.6617
CointEq(-1)***	-2.003279***	0.202559	3.708906	0.0000

* Denotes statistical significance at 10%, ** denotes 5% and *** denotes 1%.

It is interesting to note that post estimated tests validated the results obtained from the ARDL and Bounds cointegration models. Specifically, diagnostic tests like normality and heteroscedatic (ARCH tests) and Serial Correlation LM Test (Breusch-Godfrey) were carried out to establish the validity of the earlier estimated results. Notably, the normality test result on figure 1 displays the Jarque-Bera statistics probability value which is greater than 5%, showing that the residuals from the series are normally distributed. Also, results obtained from heteroscedatic (ARCH tests) and Serial Correlation LM Test (Breusch-Godfrey) disclosed homoscedastic and absence of serial correlation in the model. That is, 0.3017 and 0.7075 the probability of no heteroskedasticity and serial correlation cannot be rejected.
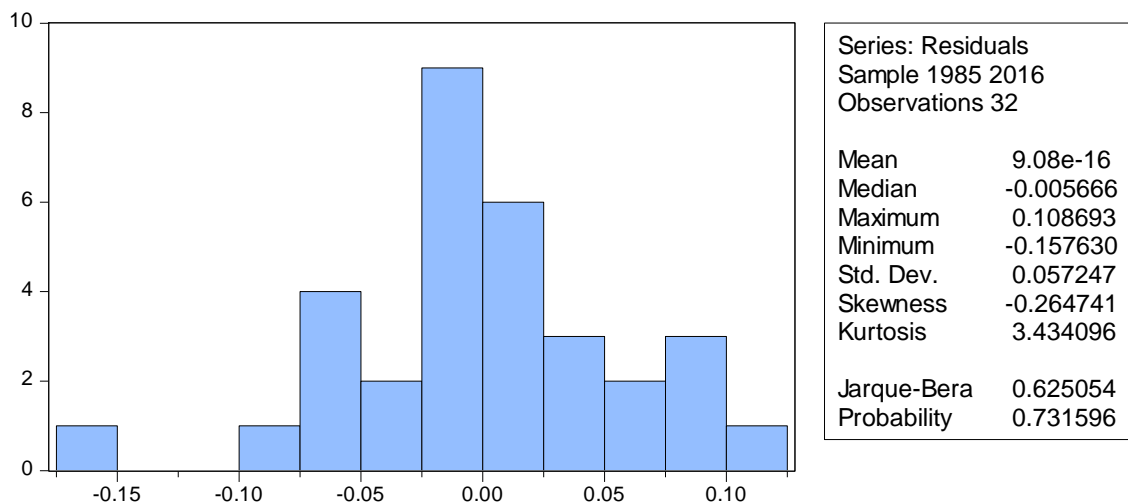
Table 6. Heteroskedasticity test: ARCH

F-Statistics	1.1057	Prob. F(1,29)	0.3017
Obs*R-squared	1.1386	Prob. Chi-Square(1)	0.2859

Note: * and ** denote 1% and 5% critical values respectively.

Table 7. Serial correlation LM test: Breusch-Godfrey

F-Statistics	0.1471	Prob. F(1,13)	0.7075
Obs*R-squared	0.3580	Prob. Chi-Square(1)	0.5496

Note: * and ** denote 1% and 5% critical values respectively.

Figure 1. Normality curve

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

In so far, this study assesses the nexus between the agricultural output growth and government expenditure in Nigeria from 1981 to 2017. Autoregressive distributed lag (ARDL) and Bound cointegrating techniques were employed to empirically study the impact of government spending on agricultural output growth in Nigeria. The outcome disclosed that government spending has long significant effect on agricultural output performance in Nigeria, specifically between 1981 and 2017. The coefficient of multiple determination of the model (R-squared) explained that the independent variables jointly determined about 99 per cent of the variations in agricultural output while the remaining1 per cent explained by variables not included in the model. The result of the coefficient of multiple determination showed that the model is good and fit for the findings. While, the Durbin-Watson Stat of 2.13 showed that the estimate of the model is free from the problem of serial auto-correlation. As a result, the estimated model is appropriate and can be used for policy recommendation.

Recommendations

In view of the findings, the study recommends as follows; firstly, government should implement policies that would enhance agricultural productivity performance e.g. improve seedling for farmers, provision of modern mechanized tools among others, which corroborates the view of (Eze, 2017; Okezie et al., 2013). Secondly, government should improve agricultural finance system across all the financial institutions. Lastly, there is need for government to improve spending on critical infrastructure that could fast track conveyance of agricultural produce to appropriate quarters such as market, industrial zone etc.

REFERENCES

Adekanye, F. (2005). *Elements of Banking in Nigeria*. Lagos: F and A Publishers.

Akintola, S. (2004). *Banks Move against Soludo*. Nigerian Tribune (July 23rd), p.24

Ayeomoni, I.O. & Aladejana, S. A. (2016) The Relationship between Agricultural Credit And Economic Growth In Nigeria. *International Journal of Academic Research in Accounting, Finance and Management Sciences,* 6(2), 146–158.

Anoke, C. I., Odo S.I, Chukwu, B. C. & Agbi, P. E. (2016) Testing the Applicability of Wagner's Law in Nigeria. *Journal of Research in Business and Management,* 4(6), 33-45.

Awoke, M. U. (2004). Factors affecting loan acquisition and repayment patterns of small holder farmers in Ika North West of Delta State, Nigeria: *Journal of Sustainable Agricultural Resources*, 9, 61-64.

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

Egwu, P.N. (2016) Impact of Agricultural Financing on Agricultural Output, Economic Growth and Poverty Alleviation in Nigeria. *Journal of Biology, Agriculture and Healthcare,* 6(2), 36-42.

Ewubare, D. B. & Udo, V.E. (2017) Public Sector Financing and Agricultural Output in Nigeria. *International Journal of Economics, Business and Management Research,* 1(2), 79-88.

Eze, O.M. (2017) Agricultural Sector Performance and Nigeria's Economic Growth. *Asian Journal of Agricultural Extension, Economics & Sociology,* 15(1), 1-13.

Garba, J. (2011). *Impact of Development Banks Agricultural Financing on Economic Growth of Nigeria*. (Master's thesis). Ahmadu Bello University, Zaria. Available at: https://www.academia.edu/27174550/IMPACT_OF_DEVELOPMENT_

BANKS_AGRICULTURAL_FINANCING_ON_ECONOMIC_GROWTH_OF_ NIGERIA

Henrekson, M. (1993) Wagner's Law - A Spurious Relationship? *Public Finance/Finances Publiques*, 48(2), 406-415.

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.

Ihugba, O.A, Chinedu, N. & 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.

Jhingan M. L. (2003) *Advanced economic theory: The theory of economic growth,* 12th edition. Delhi: Vrinda Publications (P) Ltd.

Keji S. A. (2018). An Empirical Investigation into the Nexus between Agricultural Financing and Economic Growth in Nigeria. *Saudi Journal of Economics and Finance (SJEF)* 2(2), 57-64

Nwankwo, Odi (2013) Agricultural Financing in Nigeria: An Empirical Study of Nigerian Agricultural Co-operative and Rural Development Bank (NACRDB): 1990-2010. *Journal of Management Research,* 5 (2), 28-44.

Obansa, S.A.J. & Maduekwe, I.M. (2013) Agriculture Financing and Economic Growth in Nigeria. *European Scientific Journal January,* 9 (1), 168-204.

Oboh, V. U., & Ekpebu, I. D. (2011). Determinants of formal agricultural credit allocation to the farm sector by arable crop farmers in Benue State, Nigeria. *African Journal of Agricultural Research,* 6(1), 181-185.

Ogiogio, G. O. (1995). Government expenditure and economic growth in Nigeria. *Journal of economic management*, *2*(1), 1-15

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

Okoh, A. S. (2015) Impact of Fiscal Policy on the Growth of Agricultural Sector in Nigeria. *European Journal of Educational and Development Psychology,* 3(4), 1-17.

Rhaji, M. A. (2008). An Analysis of the Determinants of Agricultural Credit Approval/Loan size by commercial banks in south-western Nigeria. *Nigeria Agricultural Development Studies, 1*(1), 17-26.

Solow, R. M. (1956). A contribution to the theory of Economic Growth. *Quarterly Journal of Economics*, LXX. (70), 65-9.

Udoh, E., (2011). An Examination of Public Expenditure, Public Investment and Agricultural Sector Growth in Nigeria: Bounds Testing Approach. *Journal of Business and Social sciences*, 2(1), 285-292.

Pesaran, M. H, Yongcheol S., Smith, R. (2001) Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometric*, 16(3), 289 - 326