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IMPACT OF GOVERNMENT SECTORAL EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL ANALYSIS

By

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Abstract

There have been public debates on the relevance of fiscal policy in correcting market failure and ensuring economic growth. In Nigeria, there have been public outcry over the continue rise in government expenditure in the last three decades. Though the rise has not translated into economic prosperity for the citizens as the country has been reported to have the highest number of poor people in the world. This further generated argument as to whether the rise in the government expenditure is channeled to productive sectors of the economy. It is on this note that the study examined the impact of government sectoral expenditure on economic growth from 1981-2017. The specific objective of the study is to find out the impact of government agricultural, health and educational expenditure on economic growth in Nigeria. To achieve the broad objective, the study sourced data from the CBN statistical bulletin for annual period of 36 years (1981-2017) being a time series analysis. The study adopted Ordinary Least Square (OLS) estimation technique for the analysis. The unit root test was done using Augmented Dickey Fuller (ADF) test and Johansen test was used to test the long run relationship amongst the variables in the model which were facilitated using Eviews 10 software. The result from the findings revealed that government health expenditure (GHE) has positive and significant effect on economic growth (RGDP) while government agricultural expenditure (GAE) and government education expenditure (GEE) both have inverse and insignificant effect on economic growth for the period under study. The study recommended among other things that government should begin to prioritize agricultural funding up to the Maputo declaration of 10% budgetary commitment to agriculture. This is necessary because of the viability of the sector to create employment opportunity and ensure food security in the country.

Keywords: Public expenditure, economic growth, agriculture, health, education.

Introduction

Government spending remains one of the fundamental instruments of fiscal policy in an economy. Though this fiscal policy covers taxation and expenditure but in developing countries, expenditure has been instrumental in improving economic growth. Economic growth is usually examined with special reference to Gross Domestic Product (GDP) which takes account of output of a country. Sugimoto (2011) stated that the rudimentary measure of the output arising from economic engagements can be referred to as the Gross Domestic Product (GDP).

The expenditure pattern of government is expected to portray the direction of the economy especially when there is market failure or need to redistribute income. Though, economic growth must be sustained for a developing economy to break the circle of poverty in order to increase productivity and fiscal policy especially expenditure is used to achieve accelerated economic growth. This is the reason why Abubakar, Yusuf, and Abdulmalik (2020) noted that it is not out of place to say that fiscal policy helps to achieve full employment and also maintain high rate of economic growth. There have been practical evidences to show the relevance of government spending as a veritable tool to ensure full utilization of resources and economic growth. The

classical economists like Smith proposed a smaller role for government in the society by positing that "government function should be reduced to that of protecting the society from violence and invasion; establishing the administration of justice; and erection of the public works which facilitate the commerce of any country, such as good roads, bridges and so on" (Smith, 1776, p. 922-964). However, government expenditure has been an increase over time and this has bred hypotheses concerning public expenditure and provoked empirical studies to show if government expenditure enhances economic growth in an economy. Olukayode (2009) noted that a widely held opinion is that "public spending calls it recurrent or capital, on social and economic infrastructure can enhance economic growth in the country" (p.4). In stating the relationship between public expenditure and economic growth, Bhatia (2012) stated that:

> *In a developed country, through economic stabilization, stimulation of investment activity and so on, public expenditure can be expected to sustain a long term growth rate. In an underdeveloped country, public expenditure has an*

additional task of helping in reducing regional disparities, developing social overheads, and creation of infrastructure of economic growth in the form of transport and communication facilities, education and training, growth of capital goods industries, basic and key industries, research and development and so on (p.216).

In Nigeria, government spending continues to rise even with a decrease in revenue base of government. Jumare, Yusuf, and Mohammed (2017) noted that "the factor responsible for this increase in public spending is not unconnected to increase in revenue from crude oil until lately when the crude oil price dropped" (p. 4). The other reason that can be seen to have given rise to the government expenditure in Nigeria can be identified with the pressure on government to cure certain ills of the society which include but not limited to unemployment, illiteracy, ill-health, lack of infrastructure, agricultural backwardness and so on. This is why Abdulmalik, Abdallah, and Dan-Sadiq (2018) noted that even after fifty-five years

of political liberation; Nigeria has not recorded the much-anticipated improvement on the indices of development even with evidence of the abundance of resources.

There is a concern in respect to drop in the crude oil prices which is the major revenue base of Nigerian government. From a figure of $104 per barrel on August 1, 2014, the price collapsed to about $82 per barrel on October 28, 2014 within one year and this trend was further aggravated with the drop of crude oil price to $49.26 per barrel on June 5, 2017; however, at the peak of COVID-19 pandemic, April 20, 2020 the price collapsed to $12 per barrel as world awash with crude oil (Vanguard, 2014, 2017 & 2020). The implication of this fluctuation in the price of crude oil means a huge debt to Nigeria as government would have to borrow money to finance the budget. The Debt Management Office (DMO) total debt stock at N24.047 trillion as at March 31, 2019 and it was further reported that within the first three-and-a-half years of the current administration (Buhari-led administration) the debt rose by N10.31 trillion which is 85.06 percent (Business Day, 2019).

It is worthy to note that with some special attention to some sectors of the economy through fiscal policy, the much-desired improvement in economic growth can be

recorded; this is because those sectors can be seen as economic drivers.

Those sectors include but not limited to agriculture, education, and health sector. Government expenditure on agriculture sector could help to provide food security for the entire nations and raw material for industries and as well generate employment opportunities to the teeming population. Government expenditure on the health sector will help to end medical tourism abroad. It was reported that Nigeria spends $1 billion USD annually on medical tourism and with a well-equipped hospital, the money can be invested in the economy (The Business day, 8 December, 2019). Unfortunately, the COVID-19 pandemic that broke out in city of Wuhan, China in December, 2019 has mandated all citizens to receive medical attention in their home country as a result of restriction on the international flight. This reality ought to have sent signal to the government about the need to give attention to the health sector in Nigeria. Government expenditure on education can ensure the competency of the workforce while health could help to keep the workforce healthy. In acknowledging the importance of these sectors, Todaro and Smith (2015) noted that "health is central to the well-being of the people and education is essential for a

satisfying and rewarding life" (p. 382). It is important to say that knowledge is power and ideas rule the world which could be gotten through education that will enhance productivity and output of the country. This means that these two sectors can contribute to the development of any nation and ensure economic prosperity for the nation and liberate the people to become self-reliant and away from poverty.

There are divergent findings, where some studies found that public spending has a positive and significant effect on the growth (Edeme & Olisakwe, 2019; Idoko & Jatto, 2018; Osuji et al., 2017; Piabuo & Tieguhong, 2017; Alor et al., 2018; Aremu et al., 2015). Other studies revealed negative and insignificant relationship (Nurudeen & Usman, 2010; Aremu et al., 2015; Chinedu et al., 2018). Some studies revealed a positive but insignificant relationship between expenditure and economic growth (Aremu et al., 2015; Chinedu et al., 2018. Alor et al., 2018). The reason for these diverse findings is not unconnected to the difference in the methodology employed by the researchers, variables covered under study, time period covered. Therefore, this study is an improvement in the previous studies on impact of government expenditure and economic growth in Nigeria having identified

the gap in the existing literature. Therefore, this study covered government sectoral spending on education, health, and agriculture.

Statement of the Problem

There have been public outcries over a high increase in government expenditure without corresponding increase in government revenue and improvement in the life of the people. Okonjo-Iweala (2017) noted that "Nigeria is Africa's largest economy with an estimated 2017 Gross Domestic Product (GDP) of $400 billion and constitutes 71 percent of West Africa's GDP and 27 percent of the continent's GDP" (p. 21). Government spending on the other hand has been on the increase in Nigeria in the last decades. From 1981-1990 the total expenditure rose from N11.41 billion to N60.27 billion (42.8% on average); 1991-2000 the total expenditure rose from N66.58 billion to N701.05 billion (95.3% on average); 2001-2010 the total expenditure rose from N1,018 trillion to N4,194.58 trillion (31.2% on average) and in 2011-2017 the total expenditure rose from N4,712.06 trillion to N8,302.10 trillion which translated to 10% increase on an average (CBN statistical bulletin, 2017).

This study was informed as a result of the increase in public spending in the last three decade yet the country has emerged as the country with the highest number of poor people in the world. The report by the Brookings Institution, data from the World poverty clock shows that Nigeria now has over 87 million people living in poverty as compared to India's 73 million (The Punch, 26 June 2018). The number of unemployment as in the third quarter of 2018 is now 20.9 million (The Vanguard, 20 December 2018). It is on this note that this topic has received attention from researchers and their findings left more to be desired. Therefore, the major objective of this study is to ascertain the impact of government key sectoral expenditure on the growth of the Nigerian economy. The specific objective is to investigate the effect of government expenditure on health, education and agriculture on economic growth in Nigeria. The research is carried out in order to provide empirical answers to the following questions:

Research Questions

i.   What is the impact of government agricultural expenditure on economic growth in Nigeria?

ii. What is the impact of government health expenditure on economic growth in Nigeria?

iii. What is the impact of government educational expenditure on economic growth in Nigeria?

Research Objectives

The major objective of the study is to examine the impact of government sectoral expenditure on economic growth in Nigeria between 1981-2017. The specific objectives are:

i.　To determine the impact of government agricultural expenditure on economic growth in Nigeria.

ii.　To determine the impact of government healthexpenditure on economic growth in Nigeria.

iii.　To determine the impact of government educationalexpenditure on economic growth in Nigeria.

Research Hypotheses

The hypotheses of the study are stated in the null form as follows:

H0$_1$: Government agricultural expenditure does not have significant impact on economic growth in Nigeria.

H0$_2$: Government health expenditure does not have significant impact on economic growth in Nigeria.

H0$_3$: Government education expenditure does not have significant impact on economic growth in Nigeria.

Literature Review and Theoretical Framework

Review of Empirical Literature

Notable research efforts have been made on the impact between government sectoral expenditure and economic growth (GDP), these studies recorded different findings. The differences in findings can be linked to demography, methodology, and estimation techniques.

Edeme and Olisakwe (2019) investigated the relationship between public health expenditure and economic growth using time series data from Nigeria. The study adopted a regression analysis and Granger causality test. The finding revealed that public health expenditure positive relationship on economic growth for the period under study.

Alor, Bidemi, and Okey (2018) in their study on the impact of health expenditure on economic growth in Nigeria covered a period of 36 years (1980 to 2016). The study relied on a secondary source of data Central Bank of Nigeria (CBN) statistical bulletin. The study employed the Generalized Method of

Moments (GMM) estimation techniques and the result revealed that health expenditure has a positive but statistically insignificant value at a 5% level of significance. The coefficient of education expenditure conformed to economics theory (i.e. positive) and statistically significant at a 5% level while education expenditure had a positive significant impact on economic growth for the period covered by the study.

Chinedu et al. (2018) investigated sectoral spreads of government spending and the growth of Nigeria's economy for a period of 37years (1980-2017). The study estimated Error Correction Model (ECM). The result of the findings revealed government expenditure on agriculture and defense have a significant effect on economic growth in Nigeria while spending on health, education, and transportation and communication revealed an insignificant effect on economic growth.

An empirical investigation was carried out by Idoko and Jatto (2018) to find out the relationship between government agricultural expenditure and economic growth in Nigeria. They relied on the secondary sources of data from the CBN statistical bulletin for a period of exactly 30 years (1985-2015). The analysis of the study

was executed using multiple regression analysis and the study discovered that government agricultural expenditure has a positive and significant relationship with GDP which was proxy for economic growth in the study.

Osuji, Ehirim, Ukoha, and Anyanwu (2017) investigated the relationship between government sectoral expenditure and economic growth in Nigeria. They relied on the secondary source of data from the CBN statistical bulletin for a period of 22 years (1990-2012) being a time series analysis. They made use of Ordinary Least Square (OLS) estimation techniques and their result revealed that expenditure on education, road construction, general administration, and health has positive and significant relation on GDP (economic, growth) while government agricultural expenditure revealed an inverse relationship with GDP.

Piabuo and Tieguhong (2017) investigated health expenditure and economic growth in the economic community for central African States (CEMAC) and some selected African countries. The study did a comparative analysis between the health expenditure between countries in the CEMAC sub-region and five other African countries that have implemented the Abuja declaration of

spending not least than 15% of total budget on health. Data for this study was extracted from the World Development Indicators (2016) being a panel study. The result revealed that health expenditure has a positive and significant effect on economic growth in both samples. The study further revealed that a unit change in health expenditure an increase GDP per capita by 0.38 for the five other countries and 0.3 units for CEMAC countries.

Tabar, Najafi, and Badooei (2017) investigated the relationship between government educational expenditure and economic growth in Iran using annual data for a period of 31years (1981-2012). The study employed Auto Regressive Distributive Lag (ARDL) for both long-term and short-term relationships. The findings revealed among other things that the educational expenditure exerts a positive relationship on economic growth for the period covered by the study.

Onyinyechi and Azubike (2016) empirically investigated government expenditure on education and economic development in Nigeria using time series data for a period of 15years (2000–2015). The study relied on multiple regression analysis and the result revealed that expenditure on education is

significant and impacts on the economy, while the result on SCS and ENRL showed a significant relationship with the GDP but little or no impact on the economy.

Chijioke and Olulu-Briggs (2015) in their quest to establish if there is nexus between public health expenditure and economic growth in Nigeria carried out a study for a period of 32years (1981-2013). They relied on secondary data from the CBN statistical bulletin. The study employed an Ordinary Least Square (OLS) estimation technique. The result of the findings revealed a positive and significant long-run relationship between public health expenditures and economic growth.

A study on the impact of sectoral spending on the growth of Nigerian economy was carried out by Aremu, et al., (2015). The study used time series data from 1984-2013. The study employed Auto-Regressive Distributed Lag and revealed that expenditure on defense has an inverse relationship with economic growth. The result further revealed that agricultural expenditure has a positive and significant effect on agriculture while education and transport/communication expenditure have no impact on economic growth in the long-run and also revealed that none of the government spendings

contributes to the economic growth in the short-run.

Oyinbo, Zakari, and Rekwot (2013) investigated the nexus between agricultural spending and economic growth in Nigeria from an econometric perspective using time series data. The study estimated Vector Error Correction Estimates and the result revealed among other things that there is a positive relationship between agricultural spending and economic growth in Nigeria.

Nurudeen and Usman (2010) investigated the relationship between government spending and economic growth using time series data for a period of 38 years (1970-2008) and employed Ordinary Least Square (OLS) econometric technique. The study revealed among other things that government educational expenditure exerts a negative effect on economic growth while spending on transport and communication alongside with health revealed a positive impact on economic growth in Nigeria.

Theoretical Underpinning

This theory was propounded by an England economist, J.M Keynes in 1936. Traditional economist like Smith propounded that market force is self-regulatory. The laissez-faire they so much preach is the absence of interference by the government. This school opined that the government should perform functions of protecting life and property, establishing the justice system and provide a conducive environment for business enterprises. Hence, the government should spend little as they cannot be seen as the best users of commonwealth.This notion was supported by McGee and Yoon (2008) when they stated that:

> *There are ample real-world examples to prove this point. The collapse of the Soviet Union in the late 1980s is partly attributable to the massive misallocation of resources that necessarily results when there is no price system to make allocations efficient. Ludwig von Mises (1881–1973), an Austrian economist, predicted as far back as the 1920s that the Soviet Union would collapse because of this inefficiency (1923, 1928, 1935) (p.41).*

This is not to say that the government role in an economy should be ruled out. Keynes (1936) noted that "classical theory of economics has not provided so much in

finding logical flaws in its analysis as in pointing out that its tacit assumptions are seldom or never satisfied" (p.19). In fact, it cannot solve the economic problems of the actual world. The claim that an economy can regulate itself by the so-called invisible hands was threatened by the economic depression of 1930s. If it can regulate itself, how then do we explain terrible recessions such as the Great Depression of the 1930, where unemployment figures were seen as high as 25% (Guess 2003 as cited in Keynes, 1936). It is important to note that the great depression of the 1930s and other similar economic crises were resolved through government intervention by manipulating the expenditure pattern. This explains Nigerian situation better because the government plays a dominant role in the economy by increasing expenditure on agriculture, education, health, and this explains why this study is anchored on this theory. The expenditure on health ensures healthy workforce that can contribute to the economy and also the education sector will produce competent man power for the nation in the long run.

Research procedure

Sources of Data

A secondary source of data was used for this study. The data was sourced from Central Bank of Nigeria (CBN) Statistical Bulletin and it covers 36 annual years (1981-2017) being a time series analysis. The independent variables are the sectoral (expenditure of agriculture, health and education) while the economic growth was proxy with Real Gross Domestic Product (RGDP) all measured in naira.

Model Specification

This work employed and Ordinary Least Squares (OLS) estimation technique. Though, Augmented Dickey-Fuller (ADF) test was used to test the stationarity of the data being a time series analysis. The model captures agricultural, health, and education expenditure on economic growth proxied by RGDP. The functional and econometric relationship between the variable and therefore the independent variables are seen within the equation below:

$$RGDP = f (GAE, GHE, GEE)\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

The equation was further presented as follows:

$$RGDP_t = \beta_0 + \beta_1 GAE_t + \beta_2 GHE_t + \beta_3 GEE_t + \mu_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Note: All the variables in the model are in their natural log form as LnRGDP, LnGAE, LnGHE and LnGEE respectively.

Where:

RGDP = Real Gross Domestic Product

GAE= Government Agricultural Expenditure

GHE = Government Health Expenditure

GEE=Government Educational Expenditure

β_0 = Constant

t = statistic dimension

μ = Error term.

Ln= Natural log.

Data Analysis Technique

This study adopted the Ordinary Least Square (OLS) estimation technique. The analysis of data was carried out using Eviews10 Econometric software. To avoid spurious regression, the Augmented Dickey Fuller (ADF) test was conducted to check for stationarity of the data set. The unit root test was used to test for the order of integration of the individual time series. The long-run relationship was examined using the Johansen Co-integration test.

Research Data

Table 1: Data on Real Gross Domestic Product (RGDP), Government Agricultural Expenditure (GAE), Government Health Expenditure (GHE), Government Educational Expenditure (GEE) in Nigeria from 1981 to 2017.

YEAR	EDUCATION	HEALTH	AGRICULTURE	RGDP
1981	0.17	0.08	0.01	15,258.00
1982	0.19	0.10	0.01	14,985.08
1983	0.16	0.08	0.01	13,849.73
1984	0.20	0.10	0.02	13,779.26
1985	0.26	0.13	0.02	14,953.91
1986	0.26	0.13	0.02	15,237.99
1987	0.23	0.04	0.05	15,263.93
1988	1.46	0.42	0.08	16,215.37
1989	3.01	0.58	0.15	17,294.68
1990	2.40	0.50	0.26	19,305.63
1991	1.26	0.62	0.21	19,199.06
1992	0.29	0.15	0.46	19,620.19
1993	8.88	3.87	1.80	19,927.99
1994	7.38	2.09	1.18	19,979.12

1995	9.75	3.32	1.51	20,353.20
1996	11.50	3.02	1.59	21,177.92
1997	14.85	3.89	2.06	21,789.10
1998	13.59	4.74	2.89	22,332.87
1999	43.61	16.64	59.32	22,449.41
2000	57.96	15.22	6.34	23,688.28
2001	39.88	24.52	7.06	25,267.54
2002	80.53	40.62	9.99	28,957.71
2003	64.78	33.27	7.54	31,709.45
2004	76.53	34.20	11.26	35,020.55
2005	82.80	55.66	16.33	37,474.95
2006	119.02	62.25	17.92	39,995.50
2007	150.78	81.91	32.48	42,922.41
2008	163.98	98.22	65.40	46,012.52
2009	137.12	90.20	22.44	49,856.10
2010	170.80	99.10	28.22	54,612.26
2011	335.80	231.80	41.20	57,511.04
2012	348.40	197.90	33.30	59,929.89
2013	390.42	179.99	39.43	63,218.72
2014	343.75	195.98	36.70	67,152.79
2015	325.19	257.72	41.27	69,023.93
2016	341.88	202.36	36.58	67,931.24
2017	394.90	236.10	43.50	68,490.98

Source: Central Bank of Nigeria (CBN) Statistical Bulletin (2017).

RESULTS AND DISCUSSION OF FINDINGS

The study examined the relationship between government sectoral expenditure on economic

growth in Nigeria from 1981 to 2017. The estimation technique adopted was Ordinary Least

Square (OLS) estimation technique.

Table 2 Ordinary Least Square (OLS) Estimation Output

Dependent Variable: LNRGDP
Method: Least Squares
Date: 07/27/20   Time: 22:36
Sample: 1981 2017
Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	10.01327	0.129524	77.30816	0.0000
LNAGRIC	-0.044606	0.045228	-0.986253	0.3312
LNHEALTH	0.366111	0.089616	4.085309	0.0003
LNEDUC	-0.156630	0.103674	-1.510793	0.1404

R-squared	0.892983	Mean dependent var	10.24503
Adjusted R-squared	0.883254	S.D. dependent var	0.548966
S.E. of regression	0.187571	Akaike info criterion	-0.407512
Sum squared resid	1.161036	Schwarz criterion	-0.233359
Log likelihood	11.53897	Hannan-Quinn criter.	-0.346115
F-statistic	91.78745	Durbin-Watson stat	2.006802
Prob(F-statistic)	0.000000		

Source: Authors' computation using Eviews 10

Decision Rule: Rejectthe null hypothesis if the P-value is less than a 5% level of probability and if the P-value is greater than a 5% level of significance, the null hypothesis will be accepted.

Table 2 displayed OLS results. The R-squared from the OLS result shows a value that is 89% which shows that the model is generally robust and obtained 89% goodness of fit. This gives credence to the fact that 89% variation in the dependent variable (RGDP) is accounted for by the regressors (government agricultural expenditure, government health expenditure and government educational expenditure). The F-statistic is considered to be large with 91.79 and has a P-value that is less than a5% level of significance. The P-value of the F statistics is less than 5% level of significance which indicates that the model is significant and all the independent variables jointly can explain RGDP. The Durbin Watson (DW) value of 2.00 which falls within 1.5-2.5 indicates that there is no autocorrelation in the model.

The regression model revealed that government health expenditure (GHE) has a positive and statistically significant effect on economic growth (RGDP). The relationship depicted in the model is positive because government health expenditure increases RGDP. The coefficient of GHE is 0.36 which implies that a percentage increase in GHE will lead to a 36% increase in economic growth (RGDP) for the period under study. The P-value of government health expenditure is 0.0003 (0.03%) which is less than 0.05 (5%), this means that the study has enough statistical evidence to reject the null hypothesis and therefore concludes that there is a significant relationship between government health expenditure and economic growth in Nigeria for the period covered by the study. This finding is in line with previous studies reviewed in the empirical literature such as Edem and Olisakwe (2019); Osuji et al., (2017); Piabuo

and Tieguhong (2017); Chijioke and Olulu-Briggs (2015).

The result further revealed that the coefficient of government agricultural expenditure (GAE) is negative and statistically insignificant at a 5 percent level with economic growth (RGDP). The P-value of GAE is 0.3312 (33%) which is greater than 0.05 (5%), this means that the study has enough statistical evidence to accept the null hypothesis and therefore concludes that there is no significant relationship between government agricultural expenditure and economic growth for the period covered by the study. The inverse relationship between government agricultural expenditure and economic growth shows a coefficient value of -0.04which means that a percentage increase in government agricultural expenditure will lead to 4% decrease in economic growth for the period under study. This implies that the insignificance of GAE on RGDP shows that the pattern of current agriculture spending does not significantly contribute to RGDP for the period under study. This finding also in line with previous studies reviewed in the empirical literature such as Chinedu et al., (2018); Nurudeen and Usman (2015); Aremu et al., (2015).

Lastly, the OLS result from the estimated model shows that government education expenditure (GEE) has a negative and statistically insignificant effect on economic growth (RGDP). The relationship depicted in this model is inverse because of a negative value of the coefficient of government education expenditure. The coefficient of GEE is -0.15 which implies that a percentage increase in GEE will lead to a 15% decrease in economic growth (RGDP) for the period under study. The P-value of government education expenditure is 0.1404 (14%) which is greater than 0.05 (5%), this means that the study has enough statistical evidence to accept the null hypothesis and therefore concludes that there is no significant relationship between government education expenditure and economic growth for the period covered by the study. Therefore, the insignificant value shows that government education expenditure does not contribute to economic growth. This finding is in line with the work of Osuji et al., (2017).

Stationarity Test

The unit root test was done using ADF statistics. The decision rule states that if the ADF statistics is > than the critical value at 5% then there is no unit root in the data, but it is stationary. Gujarati (2004) noted that empirical work based on time series data assumes that the underlying time series is stationary. The result shows that RGDP,

GAE, GHE, and GEE were stationary not staionarity at level I (0) but all the variables were stationary I (1) at 1st difference (see appendix i). This indicates that the variables are all integrated of order I (1); a necessary precondition for the use of the Co-integration test for long-run relationship of the variables.

Test of Co-Integration Result

The Johansen test revealed that there is no long-run relationship in the variables. This is because the Trace statistics and Max Eigen statistics values are less than the 5% critical value. Hence, there is no Co integration as the null hypothesis of no co-integrating equations cannot be rejected (see appendix ii).

Conclusion and Recommendations

The study investigated the impact of government sectoral expenditure and economic growth in Nigeria from 1981 to 2017. To achieve the broad objective of the study, OLS estimation technique was employed. The results revealed that government health expenditure has a positive and significant impact on economic growth in Nigeria. This shows that the Nigerian health sector contributes to the country RGDP for the period under study.

However, the study also concludes that government agricultural and educational expenditure has an inverse and insignificant effect on economic growth in Nigeria. This means that the expenditure patterns in these two sectors are so meager that they cannot contribute to the economic growth of the country for the period under study. The retarding contribution of these two sectors can point to the fact that these two sectors have not received adequate funding to make them contribute significantly to economic growth in Nigeria. In fact, the Johansen test revealed that none of these sectors contribute to economic growth in Nigeria in the long run. The evidence in poor funding of agriculture can be attributable to the use of crude implements and inadequate credit facilities to farmers. The study, therefore, recommended thus:

1. The government should begin to prioritize agricultural funding up to Maputo declaration of 10% budgetary commitment to agriculture. This is necessary because of the viability of the sector to create employment opportunities and ensure food security in the country as this will help agriculture to contribute positively and significantly to economic output.

2. There is a need for the government to keep pace with health funding in

order to provide state-of-the-art medical facilities in our hospitals and also ensure competitive remuneration for medical personnel to end brain drain in the health sector. This is necessary to ensure that health sector expenditure contribute to our economy in the long-run.

3. Lastly, the study recommended that government should collaborate with other stakeholders within and outside Nigeria to ensure proper funding of the education sector. This is because the pattern of funding does not ensure a significant contribution to the economic growth in Nigeria. This explains why the lecturers in tertiary institutions in Nigeria usually embark on strike because of poor funding of the university.

Area for further Study

However, like all studies, this study has some limitations. It was carried out in Nigeria and as such, there is limit to which the result can be generalised. Therefore, there is need for further study to be carried out in another developing country and cover more sectors to increase the utility of the result.

Conflict of Interest

There are no conflicts of interest in this research paper.

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APPENDICES

Appendix I ADF Unit Root Test Result

Variable	Order of stationarity	ADF calculated	ADF critical value	Order of integration	Decision
LnRGDP	At level	0.032145	-2.948404	I(0)	Not stationary
	1st difference	-3.339751	-2.948404	I(1)	Stationary
LnGAE	At level	-1.988404	-2.951125	I(0)	Not stationary
	1st difference	-8.293305	-2.948404	I(1)	Stationary

LnGHE	At level	-1.386465	-2.957110	I(0)	Not
	1st difference	-9.832980	-2.948404	I(1)	stationary
					Stationary
LnGEE	At level	-1.996167	-2.957110	I(0)	Not
	1st difference	-7.559233	-2.948404	I(1)	stationary
					Stationary

Source: Computed at 5% ADF critical value using Eviews 10

Appendix II Johansen Long run result

Date: 07/28/20   Time: 10:03
Sample (adjusted): 1983 2017
Included observations: 35 after adjustments
Trend assumption: Linear deterministic trend
Series: LNRGDP LNAGRIC LNHEALTH LNEDUC
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.416125	41.89584	47.85613	0.1617
At most 1	0.346949	23.06344	29.79707	0.2430
At most 2	0.182860	8.149908	15.49471	0.4495
At most 3	0.030437	1.081857	3.841466	0.2983

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values