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REGRESSION ANALYSIS OF HEALTH AND DEFENSE EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

This research work measures the effects of defence and health expenditures on Economic growth in Nigeria. In a bid to justify this work, data from 1970 to 2015 were collated from the annual statistical Bulletin of the Central Bank of Nigeria volume 27. The Error Correction Mechanism (ECM) and Granger Causality methods were methods of analysis used in the estimation of the models. The econometric software Eviews 8.0 was used to carry out the estimation. Among other findings, the result of the ECM model shows that defence spending has positive and statistically significant impact on the Nigerian economy in the short run. Health spending also has positive and significant short run impact on the economy. The labour force however did not have any significant impact on the gross domestic product. Diagnostic tests such as Normality and autocorrelation tests were carried out on the model's outputs to establish the robustness or otherwise of it. It was found that the residuals were normally distributed and no autocorrelation present. The Granger causality result also revealed a unidirectional causality running from DSP to GDP but not the other way round. Also, there exists a one-directional causal relationship between GDP and health spending in Nigeria. The result shows causality running from health spending to GDP but not the other way round. Based on the findings of this work, recommendations made among other things include: Government should increase funding of the military so as to increase GDP; Government should also step up spending on the health sector and stepping up the provision of employment to teeming population so as to enable them contribute meaningfully to the growth of the economy.

Keywords: *GDP, Defence Spending, Health Spending, Nigerian economy, Government*

INTRODUCTION

Defence and health expenditures are major concerns to any economy in the world, this is because, the services rendered by these sectors are essential and a large share of the budget is absorbed by this sectors. Literatures have shown that the effects of defense and health spending on economic growth are important and controversial topic among researchers.

Nigeria spends a large portion of its expenditure on defense and health sector in order to maintain a credible level of both security of life, property and health of her citizens due its vital ethnicity in geopolitical position and other outstanding dispute and differences that escalated over the time coupled with different diseases in some regions of the country (Abu and Abdullahi, 2010). It is generally perceived that low economic growth in Nigeria is due to huge resources allocated to defense and health sector at the detriment of other sectors in the country, like Education, Agriculture, and other development projects, (Alexander, 2011).

In Nigeria, due to insecurity in the country, government expenditure on defence has been increasing steadily over the years in absolute terms as indicated in the yearly statistical bulletin of Central Bank of Nigeria (CBN). In 1970 Federal Government in its budget allocated the sum of N135.6m, N63.3m in 1971, N108.8 in 1972 and subsequently N348.91b in 2013 N968.127b in 2014 and N934billion in 2015. This development generated a lot of debate amongst policy makers and public office holders that the amount was too large when compared to other critical sectors of the economy such as agriculture, education and health. Despite the huge budgetary allocation to defence sector in Nigeria, the issue of insurgency in the Northeast persist. As a result, the Federal Government declared a state of emergency on three states in the North namely; Borno, Yobe and Adamawa State respectively. Also there was militancy in the Niger Delta region, oil bunker, pipeline vandalization and kidnapping of foreign expatriates and indigenes for ransom. These factors are the major reasons for the rising defence spending in Nigeria.

The Federal Government of Nigeria have allocated large amount of resources to the health sector though not up to defence budget allocation. Furthermore, the health status in Nigeria is ranked low among other developing countries in the same category. Life expectancy was put at 26years in 1970, 21-30 in 1988, 52 years in 2011 and 52.60 in 2014 (World Bank, 2001) and crude death rate, in that same year as 14%. It has been estimated that 124 out of 1000 new births do not survive beyond the age of 5. Only 39.56% of male and 42.25% of female survive up to the age of 65 years. There are over 3million adults (ages 15-49) living with HIV. While the estimated HIV/AIDS prevalence rate is 3.7million. Nigeria has large stock of health workers that is comparable to that of Egypt and South Africa. However, births attended by skilled health personnel are estimated at 39 percent of total birth, Central Intelligence Agency (CIA World Fact Book, 2014). Health sector expenditure has shown an increasing trend over the years. For example 1970 health expenditure stood at N7.4m, it increased to 8.00m in 1971, N6.80m in 1972, N16.60m in 1973, N90.20 in 2013 and N99.10 in 2015, (CBN Bulletin, 1999). It has been argued that government spending on defence reduces the volume of resources available for spending in education and health sectors (Alexander, 2011). In recent times there has been increase in defence and health expenditure in developing countries such as Nigeria, which has drastically reduced funds for meeting other sectors needs. Defence and health expenditures account for one of the highest sectoral budgetary allocation in Nigeria. Thus defence and health expenditures not only compete with other public spending, but also affect the allocation of available resources (Abdullahi, 2008).

The experience of civil war would be an eye opener to increase in security spending to unforeseen security challenges, other crises and violence experienced were religious violence in Zaria in 1980, Maitatsine in Kano, followed by Borno in 1982 and then Gongola present Adamawa State in 1984, others are a coup detats in 1966, 1976. Kafanchan crises in 1987 and another coup attempt by Major Okah, and with the recent Boko-Haram crises in some states in the Northeast just to mention a few. In fact different sort and forms of crises occurred within the time frame of this research work 1970-2015. According to Alexander (2011), defence and health sector may enhance the supply of skilled labour, healthy investment environment, thereby alleviating an important growth constraint. Whichever, defence and health sector expenditures contribute to economic development even as it absorbs large resources at the expense of other sectors. The above views are indications that the effects of defence and health expenditure could be positive or negative which is the focus of this research. The research is guided by 3 basic research questions which are:

- What is the effect of Defence and Health sectors spending on Nigerian economic growth?

- Is there a causal relationship between DSP, HSP and economic growth?
- Is there causality between HSP and defence expenditure?

Based on these questions, the research would be significant in explaining why government expenditure in Nigeria have continued to rise due to huge receipt from sales of crude oil, and such increases have they resulted in significant growth and development of the Nigerian economy over the years? This study is not the first of its kind using the Nigeria data, other studies are Abdullahi (2008), Alexander (2011), Atesoglu & Mueller (1990), Bakare & Sanni (2011) & Ekpo (2004). However, it shall go a little further than earlier works to correctly recapture composition of government expenditure on defence and health during the years under review and to assess the effects of defence and health expenditure effects on the economic growth, the combination of health and defence expenditure in this study is because the government spend heavily on this sector of the economy. The research will also be of benefit and assistance to the government, military, and researchers. Defence and Health sectors are very important for developing country like Nigeria, most of which have experienced increasing levels of government expenditures over time. This tends to be associated with rising fiscal deficit, suggesting their limited ability to raise sufficient revenue to finance higher level of expenditure. Rising deficit tends to retard economic growth in developing countries because of the inability of such country to check inflation during deficit years. Thus, this study gives a good insight into problems created by rising government expenditure. This study is an improvement in relation to others because it considers government expenditure on defence and health as important variables that affect economic growth, also it will add to the existing scanty literatures on defence and health expenditure on economic growth in Nigeria.

LITERATURE REVIEW

Several empirical researches on the relationship between government expenditures on defence, health sector and economic growth (GDP) have been conducted. Yildrim and Sezgin (2002) investigated the possible trade-off between Turkish defence spending on health and education expenditure during the Turkish republican era. The study cover the period from 1924-1996. A multi-equation framework was developed and technique was employed for the analysis of the study the Seemingly Unrelated Regression Estimation (SURE). The findings showed that while defence spending decisions are made independently of health and education expenditure, there is a trade-off between defence and welfare spending. Also the result indicated that a negative trade off exist between defence and health, whereas a trade off was found between defence and education. They conclude that there is a competition between education and health expenditures in the budgeting process.

In Nigeria, for instance Oyinlola (1993) employed Gregory-Hansen structural breaks cointegration Technique from 1970-2009. The outcome of the investigation suggests a positive impact of government expenditure on defence and economic growth. In another development Ogiogio (1995), investigated the influence of public spending on economic growth. The outcome of the estimated regression revealed that recurrent expenditure has more influence than capital expenditure in Nigeria.

Akpan (2005) used a disaggregated approach to determine the components (that is capital, recurrent, administrative, economic service, social and community services, and transfers) of government expenditure that enhances growth, and those that do not. The author concluded that there was no significant association between most components of government expenditure and

economic growth in Nigeria. Abu and Abdullahi (2010) in their study on capital expenditure, total recurrent expenditure and government expenditure on education, found that government expenditure has decline effect on economic growth in Nigeria. On the contrary, government expenditures on transport & communication and health had an increasing effect on economic growth. Taiwo and Agbatogun (2011) used Johansen cointegration unit root test and error correction model in their study of government expenditure in Nigeria: a sine qua non for economic growth and development. The investigation revealed that total capital expenditure, inflation rate, degree of openness and current government revenue affects economic growth and are statistically significantly while total recurrent expenditure and exchange rate are statistically insignificant to economic growth in Nigeria.

Loto (2011) investigated the impact of sectoral government expenditure on economic growth in Nigeria for the period 1980-2008 and applied Johansen cointegration technique and error correction model. The results inferred that in the short run expenditures on agricultures and education were negatively related to economic growth. However, expenditures on health, national security, transportation, and communication were positively related to economic growth, though the impacts were not statistically significant. Chowdhury (1991) applies granger causality test for 55 developing countries. The results reveals that 15 countries defence spending causes economic growth and there is a unidirectional granger causality running from economic growth to defence spending in 7 countries while in 3 countries, there is a feedback relationship between the variables in the model. Galvin (2003) used Two Stages Least Square (2SLS) and Three Stages Least Square (3SLS) to estimate a demand and supply side model for 64 developing countries using cross sectional data. He concludes that defence spending has negative effects for both economic growth and savings income ratio. Sezgin (2007), analyze the defence-growth relationship in Turkey from 1956-1994 and applied a supply side model, conclude that Turkey's economic growth is stimulated by its defence sector, while defence spending has no significant effect on saving and balance of trade. Odior (2011) using an integrated sequential dynamic computable general equilibrium (CGE) model, examined the potential impact of increase in government expenditure on health in Nigeria. His result shows that the re-allocation of government expenditure to health sector is significant in explaining economic growth in Nigeria.

Odubunmi (2012) examined the relationship between health care expenditure and economic growth in Nigeria for the period 1970-2009. The study employed the multivariate cointegration technique proposed by Johansen and found the existence of at least one cointegration vector describing a long run relationship among economic growth, foreign aids, health expenditure, total saving and population. The cointegration equation however shows some deviations in terms of the signs of the coefficients of foreign aids and health expenditure which they attributed to some diversification of foreign aids to other uses or inadequate allocation to health services.

METHODOLOGY

Taking cognizance of the theoretical frame work within which this work is situated, that is Keynesian demand side growth model, which stipulates the stimulation of any of the components of aggregate demand to achieve growth in the economy, the relationship between government spending on defence and health and the impact of such spending on economic growth, is therefore, drawn. This work disaggregated the expenditure component into defence and health spending.

The model is given as:

$GDP = f(DSP,HSP)$……..(1)

$GDP = \beta_o + \beta_1 DSP + \beta_2 HSP + \mu_t$ ……..(2)

Where:

GDP = Gross domestic product a proxy for economic growth

f = function

DSP = Defence spending

HSP = Health spending

β_1 to β_2 = Slope coefficient

β_o = Intercept

μ_t = Error term in time t.

The model was expanded by incorporating two other variables (labour force and gross domestic saving), which are deemed important factors that can influence economic growth. The expanded model is re-written thus:

$GDP = \beta_o + \beta_1 DSP + \beta_2 HSP + \beta_3 LBF_t + \beta_4 GDS_t + \mu_t$ ……..(3)

Where:

LBF = Labour force measured by the percentage of the labour force to the total population in each year

GDS = Gross domestic Savings

β_1 to β_4 = Slope Coefficient

A priory expectation

$\beta_1>0$, $\beta_2>0$, $\beta_3>0$, $\beta_4>0$,

That is, if DSP, HSP, LBF and GDS increase, economic growth will increase. The above model was estimated by the Engel – Granger (1987) cointegration and error correction methods of analysis. The first model examines the stationarity of the variables by applying Augmented Dickey-Fuller test. Second model examines the existence of long run relationship between infrastructural expenditure and revenue resources by applying a regression model. Third is the cointegration model is to test for stationarity or non-stationarity of error term (the residual) and fourth is the application of error correction model to determine the short run dynamics and speed of adjustment towards the long run. To capture the effects of defence and health expenditure on economic growth, the variables are Labour force measured by population growth, Gross domestic Savings and Slope Coefficient.

DATA ANALYSIS

Table 4.1: Unit Root Test Statistics (Augmented Dickey-Fuller and Philips-Perron)

	ADF AND PHILIP PERON UNIT ROOT TESTS					
VARIABLES	ADF TEST			PHILIP PERON TEST		
	1ST DIFF	P-VALUE	I(d)	1ST DIFF	P-VALUE	I(d)
GDP_t	-13.194	0.0000	I(1)	-6.664	0.0000	I(1)
DSP_t	-4.284	0.0087	I(1)	-9.460	0.0000	I(1)
HSP_t	-3.550	0.0120	I(1)	-8.586	0.0000	I(1)
LBF_t	-3.285	0.0016	I(1)	-2.488	0.0140	I(1)
GDS_t	-4.395	0.0000	I(1)	-7.086	0.0000	I(1)

Source: Eviews 8.0 was used in the estimation * stationary at 5%

Table 4.1 shows both the ADF and Philips-Perron unit root tests summary. All the variables are non-stationary at levels but when differenced once, they become stationary. That is, all are integrated of order one I(1) irrespective of the method used—ADF or Philips-Perron.. This conclusion is arrived at because, at first difference, the probability values (P-Value) of all the variables are less than the usual 5% (0.05) level of significance, which means Stationarity. The Stationarity attained among all variables at first difference, therefore, paves the way for cointegration test, which measures the long run relationship among the variables.

COINTEGRATION TEST (JOHANSEN TEST)

Table 4.2 Trace tests

TRACE TEST						
Hypotheses No of CE(s)		Eigenvalue	Trace Statistic	Critical values		
H_0	H_1			5% critical value	P-value	Decision
r=0	r=1*	0.843030	152.8291	60.06	0.0000	Reject
r≤1	r=2*	0.661416	71.35436	40.17	0.0000	Reject
r≤2	r=3	0.293037	23.70307	24.27	0.0589	Accept
r≤3	r=4	0.141034	8.444878	12.32	0.2042	Accept
r≤4	r=5	0.039117	1.755721	4.13	0.2177	Accept

Source: Author's computation. Eviews 8.0 was used in the estimation. The comprehensive output is in the appendix

From the result of Trace test of table 4.2, cointegration is determined by comparing the trace value with the critical value. Cointegration is established if the trace value is greater than the critical value in at least one rank, otherwise we do not reject the null hypothesis of no cointegration. By using the no deterministic trend model based on Akaike and Schwarz information criteria, the trace test result presents us with 2 cointegrating equations at 5 per cent level of significance because, trace values are greater than the critical values at the first two ranks coupled with the probability values that are less than 0.05. This is an evidence of a long run relationship between the explained variables GDP and the explanatory variables (DSP, HSP, LBF and GDS). Hence, the null hypothesis of no cointegration is rejected at 5% level of significance and based on the P-value. As such, we conclude that, cointegration does exist among the variables.

Table 4.3 Maximum Eingenvalue tests

MAXIMUM EIGEN VALUE TEST						
Hypotheses No of CE(s)		Eigenvalue	Max-Eigen Statistic	Critical values		
H_0	H_1			5% critical value	P-value	Decision
r=0	r=1*	0.843030	81.47477	30.44	0.0000	Reject
r≤1	r=2*	0.661416	47.65129	24.16	0.0000	Reject
r≤2	r=3	0.293037	15.25819	17.80	0.1158	Accept
r ≤3	r=4	0.141034	6.689157	11.22	0.2778	Accept
r≤4	r=5	0.039117	1.755721	4.13	0.2177	Accept

Source: Author's computation. Eviews 8.0 was used in the estimation. The comprehensive output is in the appendix

In table 4.3, the number of cointegrating equations in the maximum eigenvalue test. Following the same process as in trace test, maximum eigenvalue test presents us with two cointegrating equations at 5 per cent level of significance and based on the probability values less than 0.05. This result equally presents empirical ground to reject the null hypothesis of no cointegration among the variables. Therefore, these series do have common long run relationship in Nigeria considering the period under review, hence the null hypothesis of no cointegration among GDP, DSP, HSP, LBF and GDS is rejected and the alternative hypothesis of cointegration relationship is upheld. This result, therefore, justifies the deployment of Error Correction Model (ECM) in the analysis of this work, which helps to measure the speed of adjustment to long run equilibrium any time there is a shock to the system.

SHORT RUN MODEL ESTIMATION RESULT

Table 4.4: Result of Short-run Parsimonious Dynamic Model

Dependent Variable: D(GDP)
Method: Least Squares
Date: 09/10/16 Time: 22:18
Sample (adjusted): 1976 2015
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-379178.9	90018.67	-4.212225	0.0003
D(DSP(-1))	47.29950	5.446991	8.683602	0.0000
D(DSP(-4))	120.8256	10.35247	11.67119	0.0000
D(HSP(-2))	72.40477	9.902785	7.311557	0.0000
D(HSP(-3))	115.5090	18.58699	6.214507	0.0000
D(HSP(-4))	-110.1325	27.03307	-4.073991	0.0004
D(HSP(-5))	142.5763	15.97909	8.922675	0.0000
D(GDS)	4710.995	377.5141	12.47899	0.0000
D(GDS(-1))	-2155.351	739.2035	-2.915775	0.0071
D(GDS(-2))	-5878.195	1285.848	-4.571453	0.0001
D(GDS(-4))	-17062.48	1832.463	-9.311227	0.0000
D(GDS(-5))	14919.96	1492.505	9.996593	0.0000
ECM(-1)	-0.270432	0.044286	-17.39673	0.0000

R^2 = 0.96; Adj.R = 0.92; F-Stat = 3704 (P-value 0.0000)

Source: Eviews 8.0 was used in the estimation.

The output of table 4.3 is the parsimonious result of Error Correction Model (ECM). From the table, the R^2 of 0.96 shows that about 96 percent of the explained variable, GDP is explained by the explanatory variables while the remaining 4 percent are exogenous to the model. The F-statistics of 3704 with corresponding statistics of 0.0000 indicates that the entire model is statistically significant. That is, all independent variables have joint significant impact on the dependent variable. The parsimonious ECM (i.e. by eliminating non-significant variables), was estimated with lag of 5 based on Akaike Information Criterion (AIC). The result shows D(DSP) has short-run positive and statistically significant impact on the D(GDP) at lags one (1) and four (4). The coefficients of D(DSP(-1)) and D(DSP(-4)) are 47.30 and 120.82 with the corresponding probability value of 0.0000 in both cases. Since the P-value in each case is less than the 5% (0.05) level of significance, the null hypothesis that defence spending does not have significant impact on the Nigerian economy is rejected and the alternative is upheld. By implication, if defence spending in the case of DSP(-1) increases by ₦1, the GDP through the multiplier process increases in value by about ₦47 in the short run. At lag 4, increase in defence spending by ₦1, increases the GDP also through the multipliers process by ₦120. This is in consonance with the Keynesian fiscal policy that government spending through the multiplier process leads to economic growth.

Apart from HSP(-4), which has negative coefficient, health spending at lags 2,3 and 5 are positive and statistically significant in explaining economic growth in Nigeria in the short-run. This is because the P-values are less than the 5% rule of thumb level of significance; hence, we conclude that health spending has significant impact on the GDP in the short run. At lag 2, a naira rise in health spending through the multiplier process increases the GDP by about ₦72; at lag 3, at about N116 and at lag 5 by ₦142. At lag 4, however, a one-naira increase in health spending decreases the GDP by about ₦110. Since three out of four of the lagged variables of HSP are positive, we can conclude that health spending has positive and significant impact on the Nigerian economy in the short-run. This is also in agreement with the Keynesian fiscal policy of growing the economy.

The coefficient of Gross Domestic Savings (GDS) at level and lag of 5 are positive and significant given the respective coefficients of about 4711 and 14919 with both having the corresponding P-values of 0.0000 each, which is less than 5% critical value a condition for upholding the alternative hypothesis of significant relationship. By implication, a naira rise in gross savings increases GDP by about ₦4711 through the multiplier process at level while on the other hand, at lag of 5, a one-naira increase in gross domestic savings increases the GDP by ₦14919. The transmission mechanism through which this happens is from savings to investment and from investment to growth. When the GDS is, however, produces negative coefficients at lags 1, 2 and 4.

The variable, labour force (LBF) was eliminated through the elimination of the non-significant variables (parsimony) as none of its lagged variables was significant, hence their elimination from the system. This result actually negates the apriori expectation that labour force has significant impact on economic growth. The reason for the non-significance of labour force might be due to the high level of unemployment, where able-bodied men and women do not have the opportunity to contribute to the growth of the economy due to unemployment. Another reason may also be due to low level of human capital development. This may largely hamper the contribution of an individual to the growth of the economy, as they may not have the matching skills to the available jobs.

Finally, the ECM coefficient of (-0.270432) complies with apriori expectation of negative sign and it is also statistically significant since its p-value 0.0000 is also less than the critical value of 5% (0.05). The implication of this is that, whenever the system is out of equilibrium, it is corrected

with a speed of about 27 percent annually. This percentage shows that the system quickly corrects itself and returns to equilibrium. The coefficient also shows that there is a long run causality running from all the explanatory variables to the dependent variables since it is negative and significant.

DIAGNOSTIC CHECKING

4.5.1 Autocorrelation Test Result

Tale 4.5 Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.552024	Prob. F(2,34)	0.5809
Obs*R-squared	1.320932	Prob. Chi-Square(2)	0.5166

Source: Eviews 8.0 was used in the estimation

From the result obtained from table 4.5, since the p-value of observed R-squared (0.52) is greater than 0.05 level of significance, we cannot reject the null hypothesis; hence, we conclude that the error terms are not serially correlated. This lends credence to the robustness of the work and its forecast ability.

Normality Test

One of the assumptions of the classical linear regression model (CLRM) is that the error terms are normally distributed with zero mean and constant variance i.e.

$\mu_t \sim N(0,\sigma^2)$

The normality test is conducted to verify whether the error terms are normally distributed. The Jacque–Bera (JB) test of normality is used to verify this assumption.

The hypothesis to be tested is

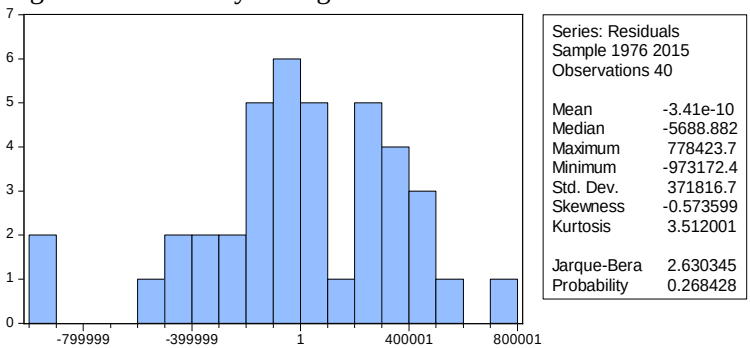
H_0: Residuals are normally distributed

H_1: Residuals are not normally distributed

Decision Rule: Reject Ho if the Jacque–Bera (JB) statistic is less than 5% (0.05) level of significance; otherwise, do not reject H_0.

Conclusion: Form the result of figure 4.1, JB –statistics of 2.63 and the corresponding-value of 0.27 is greater than the 5% (0.05) level of significance, hence, we cannot reject the null hypothesis we conclude that the error terms are normally distributed. This is also good for this work.

Figure 4.1 Normality Histogram



GRANGER CAUSALITY RESULT

4.6.1: Causality between GDP and DSP

Table 4.6 Pairwise Granger Causality Tests Between GDP and DSP

Date: 09/13/16 Time: 00:07

Sample: 1970 2015

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
DSP does not Granger Cause GDP	45	11.1895	0.0017
GDP does not Granger Cause DSP		0.09649	0.7576

Table 4.6 shows the pairwise granger causality between GDP and DSP. The result shows that there is a unidirectional causality running from DSP to GDP but not the other way round. The coefficient of F-statistic of the first null hypothesis, DSP does not Granger Cause GDP is about 11.19 and the accompanying p-value is 0.0017. Since the p-value is less than the critical value of 0.05, we reject the null hypothesis and uphold the alternative hypothesis, which says DSP granger causes GDP. On the other hand, the coefficient of F-statistic of the second null hypothesis, GDP does not Granger Cause DSP is about 0.096 and the corresponding probability value is 0.76. Since the p-value is greater than the 5% (0.05) critical value, we cannot reject the null hypothesis. By implication, in the long run also, defence spending has an impact on the nation's GDP but the size of the GDP does not determine the amount budgeted for defence. This finding corroborate the cross country work of Dakura (2001) who found a unidirectional causality running from defence spending to growth in twenty-three countries but not the other way round.

4.6.1 Causality between GDP and HSP

Table 4.7 Pairwise Granger Causality Tests Between GDP and HSP

Date: 09/13/16 Time: 00:09
Sample: 1970 2015
Lags: 1

Null Hypothesis:	Obs	F-Statistic	Prob.
HSP does not Granger Cause GDP	45	6.93799	0.0118
GDP does not Granger Cause HSP		0.37422	0.5440

Table 4.7 shows the pairwise granger causality between GDP and HSP. The result shows that there is a unidirectional causality running from HSP to GDP but not the other way round. The coefficient of F-statistic of the first null hypothesis, HSP does not Granger Cause GDP is about 6.94 and the accompanying p-value is 0.011. Since the p-value is less than the critical value of 5% (0.05), the null hypothesis, which says HSP granger causes GDP is rejected and the alternative upheld. In the same vein, the coefficient of F-statistics of the second null hypothesis, GDP does not Granger Cause HSP is about 0.37 and the corresponding probability value is 0.54. Since the p-value is

greater than the 5% (0.05) critical value, we cannot reject the null hypothesis. By implication, in the long run also, health spending has an impact on the nation's GDP but the size of the GDP does not determine the amount budgeted for health.

CONCLUSION AND RECOMMENDATIONS

The major contribution that can be drawn from this study is that both defence and health possess the potential of contributing significantly to economic growth and development in Nigeria. For defence and health expenditure to contribute meaningfully to economic growth and development it has to be managed by experienced personnel, who are responsive, innovative and technology driven. Experience from the past shows public expenditure management has quite unimpressive and disappointing. Accountability and transparency was limited towards public resources management to the teeming populace. It also shows the share of recurrent expenditure for both sectors has been consistently high compared to capital expenditure. This study in general found defence and health expenditure are essential for economic growth. They are therefore productive. As a policy conclusion, growth maximizing outcome is to avoid cut of defence and health expenditure. This study agreed and adopts the Keynesian view that government spending on anything can increase aggregate demand and economic growth.

Based on the findings of this work, the following recommendations are made:

1. Government should increase the funding of the military as this will increase the GDP especially in the short-run through the Keynesian multiplier process by a larger amount of increase in the spending. Government should also step up spending on the health sector, as this will produce similar effect through the multiplier process as defence spending on the nation's economic growth.

2. Government should step up in the provision of employment to its teeming unemployed population so as to enable them contribute meaningfully to the growing of the economy. Investment in human capital development will also make labour to contribute more to the economic growth.

3. Government should also help to stabilize macroeconomic variables such as inflation so that the cost of living can be reduce and people will be able to save more and when they save more the surplus unit can be mobilized for investment and hence economic growth.

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