Effects of Shocks on Education Spending on Economic Growth in Nigeria

Faizah Adhama Mukhtar[1], Nadira Madaki Iliyasu[2] and Maryam Rabi'u Zakariyya [3]

[1&2] *Federal University Dutse, Jigawa State*
[3]*Kano State College of Education and Preliminary studies*

Abstract: **The effect of shocks on budgetary education spending on economic growth in Nigeria is looked at through Structural Vector Autoregressive (SVAR) Model and annual data from 1981-2016. Data was obtained from central bank of Nigeria statistical bulletin and world development indicator. Result of SVAR reveals that the response of GDP to a shock on budgetary capital education spending, budgetary recurrent education spending and total federal collected revenue is significant. Response of GDP to shocks on budgetary capital and budgetary recurrent spending on education in the short run is negative but turned out to be positive in the long run. The study therefore advice that government should consider the effective use of education spending in order to achieve economic growth; and that revenue base should be broadened through effective and efficient tax system.**

Key words: **Fiscal policy, budgetary education expenses, Nigeria, GDP, SVAR**

I. INTRODUCTION

Keynes during the great depression came up with fiscal policy as an effective gadget for economic stabilization; this device successfully brought the European economies back on track and from then on words it's seen as an effective stabilisation tool. The problem is Nigeria has witnessed and is still witnessing series of swings in the country's budgetary spendings level as a result of economic depression of the 1980's and that of 2015. The country is also linked with budget deficit and huge public external debt (Chikezie, Joe & Tarila, 2016). Empirical reviews on Nigeria used diversity of models such as Ordinary least square (OLS), Cointegration, Vector Autoregressive (VAR) model, Autoregressive Distributed Lag Model (ARDL) in order to empirically find answers pertaining the relationship amid education spendings and economic growth. However, going by the collection reviewed literature, it is somewhat astonishing that there are no comprehensive studies that consider studying the effects of shocks on budgetary education spendings on economic growth and the magnitude of the changes, as a result of which the study intends to fill in this gap. In relation to this, the objective is to look at the effects of shocks on budgetary education spendings on Nigeria's economic growth and its magnitude from 1981 to 2016. The study consist of five portions; introduction which take account of background and statement of research problem; literature review which contains of conceptual, theoretical and empirical reviews;

methodology which covers model of analysis and choice of variables; results discussions; and to close up conclusions.

II. LITERATURE REVIEW

2.1 Conceptual review

According to Friedmann (1972) as sited in Jhingan (1997), growth is the expansion of the system in one or more dimensions without a change in its structure. Kuznets (1966) as sited in Jhingan (1997), defined economic growth as a long-term rise in the capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands. Kuznets sees economic progress through improvement in technology as an accommodating factor which makes possible growing capacity in the ability to supply diverse goods to the population. In order to acquire this improved technology and innovation, changes in the institutional ideology through improvement in stock of knowledge must be made.

It should be taken into reason that this improvement in knowledge that will make possible advancement in technology can be reached through boost in budgetary education spendings.

2.2 Theoretical review

Owing to the 1929-30 great depression, the European economies' market botched for the reason that the market forces of demand and supply could not take along the economies back on the track of equilibrium. In order to find a way out, Keynes opined that government should spend more. He believed that when government upsurges public spending, individuals will have more money in hand and therefore will buy more goods and services, this will give birth to an upsurge in collective demand, as a result of which, producers will have more capital at disposal; and to meet up with the upsurge in demand will have to produce more, this will then entice more employment. This shackle is what Keynes symbolises as the multiplier effect which demonstrates causality from public spending economic progress (Keynes, 1936).

Keynes theory sees upsurge in government spendings brings about economic growth, and the study is aimed at knowing whether shocks on budgetary education spendings impacts on

Nigeria's economic growth and the magnitude of the shock. The interconnection amid the two sets up a base for the study.

2.3 Empirical review

Literature from different countries using structural vector autoregressive model made an effort to find out whether or not public spendings shocks have an impact on economic growth, Yahia (2018) the case of Algeria, Abubakar (2016) in Nigeria, Todorov (2015) the case of Bulgaria, Jemec, Kastelec and Delakorda (2012) in Slovenia, Akpan and Atan (2015) the case of Nigeria, and Lozano and Rodríguez (2009) for Colombia establish a strong response of output to shocks on public spendings. Hjelm and Stockhammar (2016) for Sweden, Boiciuc (2015) and Leonte and Stoica (2012) for Romania and Perrotti, (2002) in OECD Countries put forward a trifling public spendings effects on output; lastly, Contreras and Battelle (2014) for 55 countries establishes zero fiscal multiplier in flexible exchange rates countries and high-debt countries. A collection of literature from different countries using different methods of analysis tried to examine the relationship between education spendings and economic growth; Sbaouelgi (2016) examines the relationship between higher education and the GDP per capita in Tunisia, Morocco and South Korea through the usage of cointegration test. Results show that cointegration between higher education and economic growth exists only in South Korea. Mallick and Dash (2015) for the case of India uses on the bivariate VAR model, co-integration, granger causality, variance decomposition and impulse response. Results reveal long run relationship between expenditure on education and economic growth, a unidirectional causality running from expenditure on education to economic growth and shocks due to education expenditure on economic growth is positive. Aysen and Hakan (2014) in MENA countries health and education public spendings have no significance on GDP per capita. Idrees and Siddiqi (2013) used panel data consisting of 14 cross sections including seven developed countries which include the G-7(United Kingdom, United States of America, Canada, Germany, France, Italy and Japan) and seven developing countries which include Pakistan, India, China, Turkey, Poland, Russia and South Africa. Panel fully modified ordinary least square (FMOLS) regression results indicate that the impact of public education expenditures on economic growth is greater in the case of developing countries as compared to the developed countries. A body of empirical review from Nigeria presents different findings on the relationship sandwiched between education expenditure and economic growth; Jaiyeoba (2015) using Johansen cointegration and ordinary least square technique indicates a long-run relationship between government expenditure on education, health and economic growth. On the contrary, Obi and Obi (2014) using the same techniques with Jaiyeoba (2015) establishes that long run relationship does not exist amid education expenditure and economic growth. Kizito (2013) hired Ordinary Least Squares method suggests that long-run relationship exist among education and economic growth. Adelowokan (2012) using a static regression model establishes a long run relationship amoung education expenditure, health expenditure and economic growth. Omojimite (2010) through the use of Johansen Cointegration and Granger Causality Tests illustrates that there is cointegration between public expenditures on education, primary school enrolment and economic growth; and public expenditures on education Granger causes economic growth. Taiwo (2010) employing Johansen Cointegration technique and Vector Error Correction finds that education is not associated with economic growth. On the other hand, Ohwofasa, Obeh and Atumah (2012) and Babatunde and Adefabi (2005) using the same technique with Taiwo (2010) establishes a long run relationship between education and economic growth in Nigeria between 1970 and 2003.

To sum it up, the study aims at filling in the gap in this collection of literature by glancing the effects of shocks on budgetary education spendings on economic growth and its magnitude in Nigeria.

III. METHODOLOGY

3.1 Model of analysis

The study decides on the Keynesian theory of public spending (1936) with some alterations to glance at the effects of shocks on budgetary education spending's on economic growth in Nigeria from 1981 to 2016 and its magnitude. To interpret the theory government spending is represented by budgetary capital education spendings (CEE) and budgetary recurrent education spendings (REE). Total federal collected revenue (TOR) is used as a controlvariable. While economic growth is proxied with GDP. The annual data was picked up from CBN statistical bulletins 2008 and 2016; and WDI 2017. The model is demonstrated in equation 1:

$$GDP = f (CEE, REE, TOR) \qquad (1)$$

$$GDP_t = \propto + \Phi_1 CEE_t + \Phi_2 REE_t + \Phi_3 TOR_t + \varepsilon_t \qquad (2)$$

Where subscript t stand for the period (t = 1981 ……..2016), α and Φ are the parameters in the model and ε is the stochastic error term.

The apriori expectation (Ψ_1, Ψ_2, Ψ_3, > 0), therefore, CEE, REE, and TOR are positively related to economic progress.

Hence, SVAR technique is applied to check effects of shocks on budgetary education spending's on economic growth and its magnitude. The structural Cholesky identification of model based on institutional knowledge. The recursive identification detailed the variables ordering as {TOR, CEE, REE, GDP}.Total federal collected revenue ordered first, meaning it doesn't react concurrently to budgetary capital education spending's, budgetary recurrent education spending's and gross domestic product. Budgetary capital education spending's is ordered second and recurrent education expenses third and gross domestic product comes last because it might be possible to be endogenously affected by federal collected revenue in the course of a year. Ggovernment

spending's (capital and recurrent education) with respect to output is set to zero; by institutional knowledge real government spending's (with exclusion of transfer payments) won't respond to concurrent changes in GDP within a quarter. This is in agreement with Blanchard and Perotti (2002). So also government revenue with respect to spending and output is set to zero. Hence, our SVAR model is identified as:

$$\begin{bmatrix} 1 & 0 & 0 & 0 \\ \gamma CEE,TOR & 1 & 0 & 0 \\ \gamma REE,TOR & \gamma REE,CEE & 1 & 0 \\ \gamma GDP,TOR & \gamma GDP,CEE & \gamma GDP,REE & 1 \end{bmatrix} \begin{bmatrix} U_t\,NOR \\ U_t\,CEE \\ U_t\,REE \\ U_t\,GDP \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} e_t\,NOR \\ e_t\,CEE \\ e_t\,REE \\ e_t\,GDP \end{bmatrix}$$

(3.3)

IV. RESULTS

Table 1: Descriptive values for the Variables

Variables	Mean	SD	Min	Max
LTOR	6.33	2.46	2.35	9.31
LCEE	8.60	2.43	4.94	11.98
LREE	2.59	2.74	-1.82	5.97
LGDP	6.37	0.91	5.03	8.08

Source: Investigator's work out

Table 1 shows the descriptive values of variables cast-off in the study. It made public that budgetary capital education spendings attained the highest mean value to the turn of 8.60 percent. However, budgetary recurrent education spendings has the lowest mean value of 2.59 percent.

Table 2: Lag Length Result

Lag	R	FPE	AIC	SC	HQ
1	03503*	0.000408*	3.538321*	4.445295*	3.843490*

*designates lag Length
Source: Investigator's work out

Based on the results of the table 2 of the information criteria' basically final prediction error, akaike and sequential modified LR test statistic choses lag one as the optimal lag length. Thus the research employs lag one as the optimum lag order.

Table 3: Diagnostic Tests

Residual Serial Correlation LM Tests		
Lags	LM-Stat	Prob
1	15.45307	0.4917
2	17.36737	0.3622
VAR Residual Heteroskedasticity Tests		
Chi-sq	df	Prob.
93.16336	80	0.1490
VAR Residual Normality Tests		
Jarque-Bera	df	Prob.
10.76090	8	0.2156

Source: Investigator's work out

From table 3, it is clear that the model is free from serial correlation, heteroskedasticity and the residuals are normally distributed.

Stability Test Results

Based on the result of figure 1, it is clear that the structural vector autoregressive model is stable as all the roots are within the polynomial circle. Output of the stability test is revealed in figure 1.
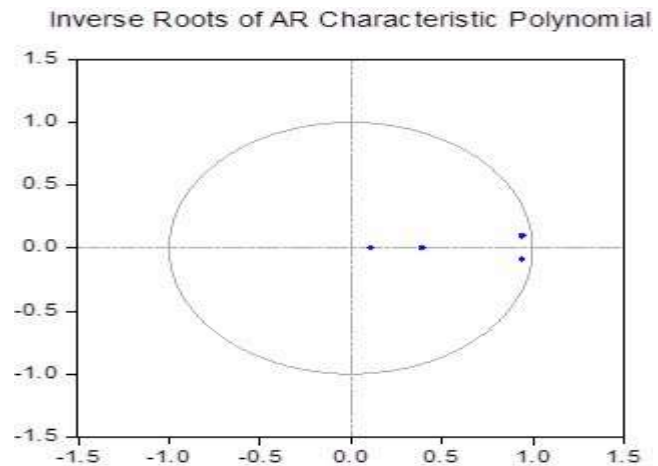

Inverse Roots of AR Characteristic Polynomial

Figure 1: Output of Stability Test
Source: Researcher's work out

Stability Tests

Tests done consist of Augmented Dickey-Fuller (ADF) and Phillips and Perron (PP) tests to primarily define the stationarity nature of the series so as to avoid obtaining a spurious regression result and also to determine the technique of analysis to be employed. The tests are conducted with constant alone.

Table 4 Stationary Test Result

Level			First Difference	
Variables	ADF	PP	ADF	PP
LGDP	-0.19(0.92)	-0.33(0.90)	-5.28*(0.00)	-5.27*(0.00)
LCEE	-0.66(0.84)	-0.66(0.84)	-6.99*(0.00)	-7.00*(0.00)
LREE	-1.84(0.35)	-1.23(0.64)	-7.44*(0.00)	-10.27*(0.00)
LTOR	-2.98**(0.04)			-5.63*(0.00)

Note * and ** illustrates statistical significance at 1 percent, 5 percent.

As indicated by the result obtained from table 4, all variables remain stationary at first difference. Specifically, gross domestic product is found to be stationary at first difference for both ADF and PP at 1 percent level of significance with an ADF test statistic of (-5.28) and a PP of (-5.27) besides a probability value of (0.00) respectively. Likewise, budgetary capital education spending's has an ADF value of (-6.99), a

probability of (0.00); and a PP value of (-7.00) with probability of (0.00). Similarly, stationary level is achieved for budgetary recurrent education spendings for both ADF and PP tests at 1percent significance. The ADF value of the variable is (-7.44) with probability of (0.00); and a PP test statistics of (-10.27) with a corresponding probability value of (0.00). Lastly, total federal collected revenue is level stationary at 5 percent significance with an ADF of (-2.98) and a probability of (0.04). It is differenced for PP at 1 percent with a value of (-5.63) and a probability of (0.00).

Table 5 Result of Johansen Cointegration Test

Hypothesized		Trace		0.05
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.935970	152.4627	63.87610	0.0000
At most 1*	0.691907	64.51364	42.91525	0.0001
At most 2*	0.438150	26.83833	25.87211	0.0378
At most 3	0.230626	8.389689	12.51798	0.2215
Trace test indicates 3 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				

Source: Investigator's work out

Hypothesized		Max-Eigen 0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None*	0.935970	87.94901	32.11832	0.0000
At most 1*	0.691907	37.67531	25.82321	0.0009
At most 2	0.438150	8.44865	19.38704	0.0680
At most 3	0.230626	8.389689	12.51798	0.2215

Max-eigen test indicates 2 cointegrating eqn(s) at 0.05 level
*Denotes rejection of the hypothesis at 0.05 level
Source: Investigator's work out

Referenced from the table, trace statistics indicates the existence of three cointegrating vectors at 0.05 level. The maximum eigen value statistics also shows the existence of cointegration but it indicates two cointegrating vectors at 0.05 level. The study concludes to use the maximum eigen value cointegration as it has sharper and stronger alternative hypothesis (Galadima and Aminu, 2019). Going by the result of the test, it implies that in Nigeria, there is a long run relationship between education spending's and economic growth.

Results of Results of Impulse Response Function

This section presents outcomes of the impulse response function.
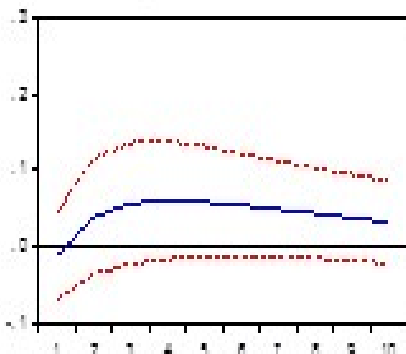

Figure 2a: Response of GDP to Shock on CEE

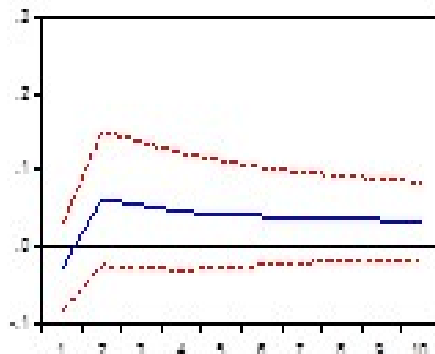*Source: Researchers computation Using e-views 9*

Figure 2b: Response of GDP to Shock on REE

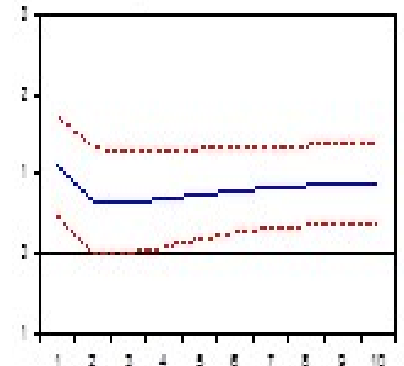*Source: Researchers computation Using e-views*

Figure 2c: Responses of GDP to Shock On TOR

Source: Researchers computation using E-views 9.

Impulse response demonstrates the dynamic response of a variable to a one time shock on another variable or a series of variables. In other words it measures the reaction/change in the path of a variable as a result of exogenous shock on another variable. The thick blue line signifies the impulse function and the two spotted red lines signify the 5% asymptotic error bands. The boarder lines signifies confidence interval, the vertical line in the impulse shows the magnitude of response to shocks, and horizontal line (the zero line) shows the time period after the initial shock. Figure 2a-c indicates the response of GDP to a unit shock on budgetary capital education spendings, budgetary recurrent education spendings and total federal revenue in Nigeria.

Figure 2a displays the response of economic growth to shock on budgetary capital education spendings. As depicted from the result, the response of GDP to a shock on budgetary capital education spendings is significant. Although in the short run from zero to one year is negative but is positive in the long run up to the tenth year. This is in line with the Keynesian theory of government spendings and output; and also conforms the apriori expectations that output responds to budgetary capital education spendings. In simple terms, the result of the impulse response function shows that budgetary capital education spendings is effective in enhancing economic growth in the country.

Figure 2b points out the response of economic growth to shock on budgetary recurrent education spendings. The result portrays that the response of GDP to a shock on budgetary recurrent education spendings is significant. Although in the short run just as in the case of the response of GDP to a shock on budgetary capital education spendings, the response of GDP to shock on budgetary recurrent education spending's is also negative, but the negative response ends in the first year. In the second year, the response is positive and continue to be positive up to the long run period, it could thus be inferred from the above that the budgetary recurrent education spending's is also effective in enhancing economic growth. This is also in agreement with the Keynesian theory of government spendings and output.

The response of GDP to shock on total federal collected revenue also is significant and positive. It reveals that in the short run in period one, a one unit shock to total federal revenue results to change in GDP by 0.1 percent but in the long run the increase reduces to 0.7 percent, the response decreases. Nonetheless, the positive response extends to the long run. This response is also as expected and is in line with economic theory because an increase in government revenue will lead to upsurge in government expenses and thereby boost output in the economy. The result is depicted in figure 2c.

Results of Variance Decomposition

Table 6 illustrates the decomposition of the forecast error variance of economic progress examined in this research for budgetary capital education spendings, budgetary recurrent education spendings and total federal revenue.

Table 6 Variance Decomposition Out come

Period	S.E	GDP vs. CEE	GDP vs. REE	GDP vs. TOR
1	0.202196	0.353763	1.794363	29.92058
2	0.264518	2.422718	6.676506	23.74075
3	0.305756	5.320632	8.123092	22.17430
4	0.336062	7.709221	8.584893	22.57386
5	0.359730	9.434203	8.848011	24.00909
6	0.378996	10.59774	9.075733	26.04377
7	0.395232	11.32373	9.287001	28.40730
8	0.409355	11.71437	9.470428	30.90342
9	0.421991	11.85003	9.612360	33.38081
10	0.433573	11.79532	9.703646	35.72295

Source: Investigator's Work out

From 6 table, from the table during the first year, shock on budgetary capital education spendings accounted for only about 0.4 percent of disparities in economic growth, in the second year it increased to about 2 percent of disparities, it to explains more and more of the differences in economic growth as it accounted for 9 percent in the fifth year and rose

to about 12 percent in the tenth year. This means that budgetary capital education spendings influence economic progress. Also, initially shocks on budgetary recurrent education spending's influences only a small percentage of the movement in economic growth as it accounted for only about 2 percent of the changes, but this increased in the second year and continue to increase up to the tenth year. In the tenth year, it influences about 10 percent in the movement of economic growth. Total federal revenue influences about 30 percent of variations in economic growth in the first year, the influence dropped in the second year up to the seventh year and picked up in the eight year and increased in the ninth year up to the time when it influences about 36 percent of the movement in economic growth in the tenth year. The findings of the structural analysis in respect of the influence of government spendings on economic growth is in consistence with previous reviewed literature such as; Blanchard and Perotti (2002), Perrotti, (2002), Fernández and Cos (2007), Jemec, Kastelec and Delakorda, (2012), Akpan and Atan (2015) and Yahia (2018)

IV. CONCLUSION

This study examines the effects of shocks on education spendings on economic growth in Nigeria and its magnitude using SVAR. Findings of the analysis reveals that shocks on Nigeria's education spendings has impact on the country's economic growth, as such for the government to foster sustainable economic growth which will lead to a rise in aggregate demand, improve productivity, improve the standard of living of the populace and equally reduce the wide margin between the rich and the poor, there is the need to increase education spendings and broaden revenue base through effective and efficient tax system.

REFERENCES

[1] Abubakar, A. B., 2016. Dynamic Effects of Fiscal Policy on Output and Unemployment in Nigeria: An Econometric Investigation. *CBN Journal of Applied Statistics Vol. 7 No. 2*

[2] Akpan, U.F., Atan, J.A., 2015. Macroeconomic Effects of Fiscal Policy Shock in Nigeria: A SVAR Approach. International Journal of Business and Economics Research; 4(3): 109-120.

[3] Adelowokan, O. A., 2012. Growth effect of Education and Health Expenditure in Nigeria (1970-2010). *African Journal of Scientific Research* 10(1):2220-9433.

[4] Ayşen, A. A., Hakan, A., 2014. Human Capital and Economic Growth: A Panel Data Analysis with Health and Education for MENA Region. *Advances in Management & Applied Economics,* 4(4):59-71.

[5] Babatunde, M. A., Adefabi, R A., 2005. Long Run Relationship between Education and Economic Growth in Nigeria: Evidence from the Johansen's Cointegration Approach. *Regional Conference on Education in West Africa.*

[6] Blanchard, O., Perotti, R., (2002). An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output. *Quaterly Journal of Economics, vol. 117, issue 4.*

[7] Boiciuc, I., 2015. The effects of fiscal policy shocks in Romania: A SVAR Approach. *Procedia Economics and Finance 32 (2015) 1131 – 1139.*

[8] Breuer, C., Buettner, T., 2010 Fiscal Policy in a Structural VAR Model for Germany. Leibniz Information Centre for Economics.

[9] CBN, 2008. Statistical bulletin. 50 years special anniversary edition central bank of Nigeria 2008 pg 166.

[10] CBN, 2016. Statistical bulletin.

[11] Chikezie A.K., Joe, O. J. U. & Tarila, B., 2016. Fiscal Policy and the Nigerian Economy: An Econometric Review. *International Journal of Business and Management; vol.12, No.4*

[12] Contreras, J., Battelle, H., 2014. *Fiscal Multipliers in a Panel of Countries.* Banco de México Working Papers No. 2014-15.

[13] Fernández, F. C., Cos, P. H., 2007. The Economic Effects of Fiscal Policy: the Case of Spain. Research Department, Bank of Spain. C/Alcalá 48. E28014 Madrid.

[14] Galadima, M. D., Aminu, A. W., 2019. Shocks effects of macro- economic variables on natural gas consumption in Nigeria: Structural VAR with sign restrictions. *Elsevier Journal on Energy policy 125, pp135-144.*

[15] Hjelm, G. and Stockhamme, P., 2016. Short Run Effects of Fiscal Policy on GDP and Employment: The Swedish Evidence, *National Institute of Economic Research Working Paper No. 147.National Institute of E*conomic Res.

[16] Idrees, A. S. and Siddiqi, M. W., 2013. Does Public Education Expenditure Cause Economic Growth? Comparison of Developed and Developing Countries. Se Pak J Commer Soc Sci Pakistan. *Journal of Commerce and Social Sciences*.

[17] Jaiyeoba, S. V., 2015. Human Capital Investment and Economic Growth in Nigeria. *African Research Review,An International Multidisciplinary Journal, Ethiopia,* 9(1):30-46.

[18] Jemec, N., Kastelec, A. S. and Delakorda, A., 2011. How do Fiscal Shocks Affect the Macroeconimic Dynamics in the Slovenian Economy. Internal Bank of Slovenia seminar and of the Public Finance Workshop.

[19] Jhingan M.L., 1997. *The Economics of Development and Planning* Virand Publications (P) LTD.

[20] Keynes, J. M., 1936. The General Theory of Employment, Interest and Money. Harcourt Brace and Co. New York.

[21] Kizito, E. U., 2013. Education, Economic Growth & Poverty Rate in Nigeria: Any Nexus? *Journal of Social and Development Sciences*, 4(12):544-553.

[22] Leonte, A. and Stoica, T., 2012. Assessing the effect of public spending on output in Romania using a vector autoregression Framework, *African Journal of Business Management Vol.6 (21), pp.6318-6323.*

[23] Lozano, I. and Rodríguez, K., 2009. Assessing the Macroeconomic Effects of Fiscal Policy in Colombia. Borradores de Economia No. 552.

[24] Mallick, L. and Dash, D.P., 2015. Does Expenditure on Education Affect Economic Growth in India? Evidence from Cointegration. *Theoretical and Applied Economics* 4(605):63-74.

[25] Obi, Z. C. and Obi, C. O., 2014. Impact of government expenditure on education: The Nigerian experience. *International Journal of Business and Finance Management Research,* 2:42-48.

[26] Ohwofasa, B. O., Obeh, H. O. and Atumah, M., 2012 .Impact of Government Expenditure in Education on Economic Growth in Nigeria, 1986-2011: A Parsimonious Error Correction Model. *African Journal of Scientific Research Vol.10, No.1.*

[27] Omojimite, Ben U., 2010. Education and Economic Growth in Nigeria: A Granger Causality Analysis. African Research Review, *An International Multi-Disciplinary Journal, Ethiopia* Vol. 4 (3a) July, 2010.

[28] Oseni, I. O. and Onakoya, A. B., 2013. Empirical Analysis of Fiscal Policy Shocks and Current Account Dynamics in Nigeria. *International Multidisciplinary Journal, Ethiopia Vol. 7 (1), Serial No. 28,*

[29] Parky, O. and Vehbi, T., 2013. The Effects of Fiscal Policy in New Zealand: Evidence from a VAR Model with Debt Constraints, *Centre for Applied Macroeconomic Analysis Working Paper 04/2013.*

[30] Perrotti, R., 2002. Estimating the Effects of Fiscal Policy in OECD Countries, European Network of Economic Policy Research Institutes Working Paper no. 15.

[31] Perrotti, R., 1999. Fiscal Policy in Good Times and Bad. *Quarterly Journal of Economics, vol. 114, issue 4.*

[32] Sbaouelgi, J., 2016. Higher Education and Economic Growth Nexus. International Journal of Applied Research 2016; 2(1): 709-715.

[33] Todavo, I., 2015. Fiscal Policy and Economic Growth – the Crisis Aftermath. *Bulgarian Economic Papers ISSN: 2367-7082.*

[34] Taiwo, O., 2010. Education and Economic Growth Nexus: Does Proxy Matter. *Case Studies Journal* – Volume 3, Issue3.

[35] World Development Indicators (WDI), 2017.

[36] Yahia, A. K., 2019. The Macroeconomic Effects of Fiscal Policy Shocks in Algeria, 1970-2015: Structural VECM Approach. International Journal of Economics & Management Sciences Volume 7 • Issue 2 • 1000512.