
FEDERAL AND STATE GOVERNMENTS' SPENDING AND ECONOMIC GROWTH IN NIGERIA: IMPLICATION FOR A WAY OUT OF RECESSION

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Abstract

Governments at all levels in Nigeria tend to increase their spending during rising oil revenue and economic prosperity. The reverse is the case when there is a shock in oil prices and revenues. Thus, it is difficult to decipher the effects of the expenditures by states and the federal government independently on Nigeria's economic growth and conversely, on its recession. This study examines the relative impact of federal and state government expenditures on economic growth with the aim of drawing policy implication for a way out of economic recession. Autoregressive Distributive Lag (ARDL) Error Correction Modelling (ECM) approach was used for the study. The results of estimated models suggest that increase in state governments' expenditures have a relatively greater impact on economic growth compared to rise in federal government's expenditure of the same magnitude in the short-run. This implies that increase in state governments' expenditures presents greater chance of taking the Nigerian economy out of recession than the federal government expenditure.

Keywords: Federal, States, Spending, Economic Growth, Recession, Nigeria**JEL Classification:** O40, O43, O47, O55**Introduction**

Government expenditure in Nigeria follow pro-cyclical patterns and that makes it difficult to decipher the effects of state governments' spending and that of the federal government on Nigeria's economic growth and conversely, on recession. Government expenditure rise during periods of rising oil revenue and growth, and fall when oil revenue declines (CBN, 2015). Unfortunately, oil revenue which constitutes about 70 percent of government revenue shows a downward trend since 2012. Oil revenue declined from ₦ 6,793.8 billion in 2014 to ₦ 3,830.1 billion in 2015, representing a fall by 56.38 percent. This development translated in decrease in aggregate government expenditure by 4.7 percent; the state and local governments' expenditures by 12.9 percent and 35.1 percent respectively. Although, the federal government's expenditure increased by 8.8 percent (CBN, 2015), growth in real gross domestic product (GDP) plummeted from 6.2 percent in 2014 to 2.8 percent in 2015 (CBN, 2015). And by 2016, Nigerian economy plunged into a recession.

Keynesian economics blames fall in aggregate demand as the chief cause of recession and advises increased government spending as means of "jump starting" recovery. However, it was not explicit on the relative impacts of the expenditure by different levels of government. It was not clear between federal and state spending which impacts more on economic growth in a fiscal federal set-up like Nigeria; and conversely on the fall in which could drag an economy faster to recession.

The extant empirical studies on Nigeria instead delve more on the relative impacts of public capital and private capital investment, economic and functional components of public spending on economic growth (Ekpo, 1994; Odusola, 1996; Fajingbesi & Odusola, 1999; Adeoye, 2006 and Nurudeen & Usman, 2010). This studies also focused on federal government expenditure with little or none on the other tiers of government (states and local governments). The results from these studies largely provided policy guides on how adjustment of economic and functional composition of public spending by the federal government

affects economic growth. The federal government dominates the fiscal operations of the public sector in Nigeria. However, the other two levels of government are too important to be left out when investigating the relationship between public expenditure and economic growth. On the average, the federal government alone account for over 45 percent of the aggregate public expenditure in Nigeria, while the state and local governments accounts for less than 40 percent and 15 percent respectively over the last decade (CBN, 2013).

Amidst this situation, there is a dearth of empirical evidence on the relative impacts of spending by the federal and states on economic growth. Thus, the implication for decrease in federal and states spending on the recession was difficult to decipher. This study therefore filled this gap by examining the relative impact of public spending by the federal and the states governments on economic growth in Nigeria with a view to drawing implications of an increase in federal and state governments' spending as a way out of economic recession. The finding of this study also contributes to the recurrent debate on the call for devolution of power from national to sub-national governments.

Review of Empirical Literature

Most of the studies on public expenditure in Nigeria, such as those by Ekpo (1994), Odusola (1996), Fajingbesi and Odusola (1999), Nurudeen and Usman (2010), Usman *et al.* (2011), Adewara and Oloni, (2012), and Aladejare, (2013) focused on the impact of different functional and economic components of public expenditure on economic growth. The findings from these studies are mixed despite the commonality in their methodologies. For example Aladejare (2013) indicates that public capital expenditure has greater positive impact on economic growth than recurrent expenditure, while results of the studies of Adeoye (2006) and Nurudeen and Usman (2010) show that public investment has negative impact on economic growth. The findings in these studies thus raised fundamental issues bordering on efficiency of institutions shouldered with the responsibilities of implementing the budgets, the efficiency and productivity of public capital expenditure in the country.

Decomposition of public expenditure by functions in Nurudeen and Usman (2010), shows that government expenditure on transportation and communication have positive impact on economic growth, while Adewara and Oloni (2012) indicates that government expenditure on health and agriculture also have positive impacts on economic growth, while Nurudeen and Usman (2010), Usman *et al.* (2011) and Adewara and Oloni (2012) show that the impact of public expenditure on education was negative. The finding by Adeoye (2006) also contradicts both the theoretical and empirical expectations of the impact of government expenditure on economic growth.

Bogunjoko (2004) undertook a comparative assessment of the impacts of federal and state governments' expenditures respectively on economic growth between 1970 and 1995. This study used a Vector Autoregressive (VAR) model. The result of the estimated impulse response function shows that the response of outputs to shocks in the federal and state governments' expenditures are weak in the short-run. But in the long-run, the results show that federal government's spending, compared with the state governments' are more capable of increasing outputs in Nigeria.

The evidence from cross-country studies shows that capital expenditure also enhances economic growth. For example the studies by Devarajan, *et.al* (1996), Gupta *et. al.* (2005), and Bose, *et al* (2007) indicate that recurrent expenditure has negative or insignificant impact on economic growth. However, a comparison between the impacts of private investment and public investment on economic growth indicate that the former has greater impact on growth than the latter (see, Ghura & Hadjimacheal, 1996).

Haque and Kim, (2003), Bose *et al*, (2007), Beraldo *et al*, (2009), and Sutherland *et al*, (2009) were of the view that with respect to different functional components of public expenditure, economic growth

could be stimulated by public investments in infrastructure, particularly transport, telecommunication, energy generation, health and education.

The findings from country-specific studies also appeared mixed. Studies by Musila and Belassi, (2004) and Gharthey (2008) found that a long-run relationship exist between aggregate public expenditure and economic growth. Study by Glass (2009) found that public expenditure on public order and safety have no impact on economic growth, while Singh and Weber (1997) argued that public expenditure on health, social welfare in general, transportation and national defence have no significant impact on economic growth.

The reviews of some of empirical studies on the impact of different components of public expenditure on economic growth also produced mixed results that were related to governance. For example the studies by Devarajan, Swaroop and Zou, (1996), Ghura and Hadjimachael, (1996), Singh and Weber, (1997), Abu-Bader and Abu-Qarn, (2003), Al-Badawi, (2003), Haque and Kim, (2003), Musila and Belassi, (2004), Bose, Haque and Osborn (2007), Gharthey, (2008), Rajkumar and Swaroop, (2008), Bojanic, (2013), Sutherland, Araujo, Égert, and Koźluk, (2009) indicated that large government size, weak institutions, corruption and bad governance were among the chief reasons adduced for the negative or relatively lower growth effects of public expenditure.

Theoretical Framework and Research Methodology

This study used a modified augmented Solow (1956) model which was adapted from Mankiw, Romer and Weil (1992). The model incorporates human capital as an additional variable to the traditional neoclassical inputs (labour and capital). The model also assumed a Cobb-Douglas production function as specified in equation (1).

$$Y_t = K_t^\alpha H_t^\beta (A_t L_t)^{1-\alpha-\beta} \quad (1)$$

Where Y = output level in the economy, K = capital stock, H = human capital, A = level of technology, L = labour and AL = effective labour, t = time. L and A are also assumed to grow exponentially as presented in equation (2) and (3), n and g are the respective growth rates of L and A .

$$L_t = L_{(0)} e^{nt} \quad (2)$$

$$A_t = A_{(0)} e^{gt} \quad (3)$$

By expressing Y in relation to effective labour, equation (1) becomes;

$$y_t = k_t^\alpha h_t^\beta \quad (4)$$

Where $\frac{Y_t}{A_t L_t} = y_t$, $\frac{K_t}{A_t L_t} = k_t$ and $\frac{H_t}{A_t L_t} = h_t$, y_t = output per effective labour, k = capital per effective labour h_t = human capital per effective labour. The evolution of k and h are defined as $\dot{k}$ and $\dot{h}$ in equations (5) and (6) respectively. Equation (7) describes their respective values at steady state as;

$$\dot{k}_t = S_k y_t - (n + g + \delta) k_t \quad (5)$$

$$\dot{h}_t = s_h y_t - (n + g + \delta) h_t \quad (6)$$

$$\left[k^* = \left(\frac{s_k^{1-\beta} s_h^\beta}{n+g+\delta} \right)^{\frac{1}{1-\alpha-\beta}} \right], \quad \left[h^* = \left(\frac{s_k^\alpha s_h^{1-\alpha}}{n+g+\delta} \right)^{\frac{1}{1-\alpha-\beta}} \right] \quad (7)$$

By substituting (7) into (4) and taking its natural log, it becomes;

$$\ln y_t = \ln A_{(0)} + \frac{\alpha}{1-\alpha-\beta} \ln s_{kt} + \frac{\beta}{1-\alpha-\beta} \ln s_{ht} - \frac{\alpha+\beta}{1-\alpha-\beta} \ln(n_t + g + \delta) \quad (8)$$

Equation (8) summarises the predictions of Solow (1956), that saving and capital accumulation have positive impact on economic growth, while population growth and depreciation have negative impact on growth.

However, subsequent works on theories and empirics of economic growth, particularly Barro (1990), identified productive government expenditure as a relevant input for economic growth. A number of studies also stressed the importance of institutions on economic growth (e.g. North 1990, 1991; Hall & Jones, 1999; Rodrik, Subramanain & Trebbi, 2004; Pande & Udry, 2006; Acemoglu, Johnson & Robinson, 2010; and Huang, 2010, Acemoglu & Robinson, 2012 among others). Easterly and Levine (2001) concludes that “some other variables, such as government expenditure and institutions rather than capital accumulation” explain economic growth and its differences across countries.

Therefore, the inclusion of additional variables particularly, government expenditure and institutions to equation (8) become necessary. This constitutes one of the modifications to the Mankiw, Romer and Weil (1992) model adapted by this study.

By adding these variables to equation (8), $\ln A_{(0)}$ was modified to be equal to $(\Gamma + \ln \Theta)$. Thus equation (8) becomes;

$$\ln y_t = \Gamma + \ln \Theta_{(t)} + \frac{\alpha}{1-\alpha-\beta} \ln sk_t + \frac{\beta}{1-\alpha-\beta} \ln sh_t - \frac{\alpha+\beta}{1-\alpha-\beta} \ln(n_t + g + \delta) \quad (9)$$

From equation (9), it is assumed that $\Theta_{(t)} = I + g$, where y = output of the economy, I = vector of institutional variables, and g = vector of public expenditure .

By substitution, equation (9) can be expressed as;

$$\ln y_t = \Gamma + \xi_1 \ln I_t + \xi_2 \ln g_t + \Omega_1 \ln Sk_t + \Omega_2 \ln Sh_t + \Omega_3 \ln((n_t + g + \delta)) \quad (10)$$

Assuming $g + \delta$ are constants, then $(n_t + g + \delta)$ in equation (10) equals P . Therefore change in P at any period would be defined by the change in the value of n_t , growth rate of active labour force.

Hence, equation (11) becomes the baseline Solow (1956) and aims at examining the impact of the neoclassical production inputs on economic growth. In equation (12), vectors of government expenditure (g_j) were added to examine the impacts of federal and state governments' expenditures on the growth of Nigeria's economy, while equation (13) incorporates measure of political institutions (I) as additional to discern the effect of institutions on economic growth; and equation (14) examines the impact of the interaction between institutions and government expenditure on economic growth.

$$\ln y_{mt} = \Gamma + \Omega_1 \ln Sk_t + \Omega_2 \ln Sh_t + \Omega_3 \ln p + \mu_t \quad (11)$$

$$\ln y_{mt} = \Gamma + \Omega_1 \ln Sk_t + \Omega_2 \ln Sh_t + \Omega_3 \ln p + \xi_1 \ln g_{jt} + \epsilon_t \quad (12)$$

$$\ln y_{mt} = \Gamma + \Omega_1 \ln Sk_t + \Omega_2 \ln Sh_t + \Omega_3 \ln p + \xi_1 \ln g_{jt} + \xi_2 \ln I_t + \epsilon_t \quad (13)$$

$$\ln y_{mt} = \Gamma + \Omega_1 \ln Sk_t + \Omega_2 \ln Sh_t + \Omega_3 \ln p + \xi_1 \ln g_{jt} + \xi_2 \ln I_t + \vartheta M_t + \eta_t \quad (14)$$

y_m, g, I and Q are vectors of variables representing different measures of output, components of public expenditure, indices of political institutions and physical infrastructure respectively. M = vector of variables that capture the interaction between federal and state governments' expenditures and institutions. t = period, $\mu_t, \epsilon_t, \epsilon_t$ and η_t represent the stochastic error terms. All the parameters are expected to be greater than 0, except Ω_3 , which is the coefficient for population growth. The stochastic error terms are expected to be white noise. Note that detailed description of the vectors of the variables and the acronyms/proxies used for estimating different variants of the models are provided in Table 1.

Autoregressive Distributive Lag-Error Correction Model (ADL-ECM)

The use of ARDL-ECM is consequent upon the results of the unit root and co-integration tests. This approach is recommended given that all the variables in the models are I(1) and are co-integrated (Hill, Griffiths & Lim, 2012). The unit root tests on each of the variables in the models were conducted using Augmented Dickey-Fuller (ADF) and Philip-Peron (PP) tests (See Appendix I). There was agreement between the two tests that all the series are I(1). Engle and Granger (1987) which was used to investigate existence of co-integration among the series presents evidence of co-integration.

The general of form of ARDL-ECM specification for equations (11) – (14) are presented in equations (15) – (19) as Model 1, Model 2, Model 3 and Model 4. (See, Table 2 and Appendix II for the estimation results).

Model 1:

$$\Delta \ln y_{m,t} = \alpha + \sum_{i=0}^L \tau_i \Delta \ln y_{m,t-(i+1)} + \sum_{i=0}^L \Omega_{1i} \Delta \ln Sk_{t-i} + \sum_{i=0}^L \Omega_{2i} \Delta \ln Sh_{t-i} + \sum_{i=0}^L \Omega_{3i} \Delta P_{t-i} + \partial Ect_{t-1} + \varepsilon_t \quad (15)$$

Model 2:

$$\Delta \ln y_{m,t} = \alpha + \sum_{i=0}^L \tau_i \Delta \ln y_{m,t-(i+1)} + \sum_{i=0}^L \Omega_{1i} \Delta \ln Sk_{t-i} + \sum_{i=0}^L \Omega_{2i} \Delta \ln Sh_{t-i} + \sum_{i=0}^L \Omega_{3i} \Delta P_{t-i} + \sum_{i=0}^L \xi_{1j} \Delta \ln g_{j,t-i} + \partial Ect_{t-1} + \varepsilon_t \quad (16)$$

Model 3:

$$\Delta \ln y_{m,t} = \alpha + \sum_{i=0}^L \tau_i \Delta \ln y_{m,t-(i+1)} + \sum_{i=0}^L \Omega_{1i} \Delta \ln Sk_{t-i} + \sum_{i=0}^L \Omega_{2i} \Delta \ln Sh_{t-i} + \sum_{i=0}^L \Omega_{3i} \Delta P_{t-i} + \sum_{i=0}^L \xi_{1i} \Delta \ln g_{j,t-i} + \sum_{i=0}^L \xi_{2i} \Delta I_{z,t-i} + \partial Ect_{t-1} + \varepsilon_t \quad (17)$$

Model 4:

$$\Delta \ln y_{m,t} = \alpha + \sum_{i=0}^L \tau_i \Delta \ln y_{m,t-(i+1)} + \sum_{i=0}^L \Omega_{1i} \Delta \ln Sk_{t-i} + \sum_{i=0}^L \Omega_{2i} \Delta \ln Sh_{t-i} + \sum_{i=0}^L \Omega_{3i} \Delta P_{t-i} + \sum_{i=0}^L \xi_{1i} \Delta \ln g_{j,t-i} + \sum_{i=0}^L \xi_{2i} \Delta I_{z,t-i} + \theta \Delta M + \partial Ect_{t-1} + \varepsilon_t \quad (18)$$

Δ = difference operator, $\Delta \ln y_m$ = first difference of logged real GDP or real GDP per capita, $\Delta \ln Sk$ = first difference of logged real gross fixed capital formation, $\Delta \ln Sh$ = first difference of logged human capital proxy by secondary school enrolment, P = population growth rate, $\Delta \ln g_j$ = first difference of logged j^{th} component of public expenditure, ΔI_z = first difference of z^{th} measure of political institution, Ect_{t-1} = the error correction term, which represents the lagged values of the saved residual from the static regression models containing the concerned variables at levels. $m = 1, 2$; $i = 0, 1$; $s = 1, 2$; $j = 1, 2$ and $z = 1, 2, 3$. The different acronyms used for each of the variables in the respective vectors in equations (15) to (18), their measurement and sources of data are presented in Table 1.

By using the first difference of the dependent and independent variables in the above ARDL-EC M, it implies that non-stationarity of series is no longer an issue to worry about, while the inclusion of Ect_{t-1} preserves the information obtained from the long-run regression at levels (Asteriou & Hall, 2007). Each coefficient in the models measures the “short-run effect” of a change in an explanatory variable on the dependent variable, except the coefficient of Ect_{t-1} , i.e. ∂ which measures the percentage of previous disequilibrium corrected per period “t”. The coefficient of Ect_{t-1} (∂) must be negative and statistically significant to ensure long-run convergence to the equilibrium (Asteriou & Hall, 2007). However, the reverse is the case for the estimated coefficients of each of the variables in the static forms of the models presented in equations (11) to (14). Incidentally, these are embedded in values of the residuals (Ect_{t-1}) obtained from the long-run static models. A negative coefficient of an independent variable indicates divergence, while a positive coefficient indicates convergence, and the magnitude indicates the average speeds in adjustments.

Model Estimation

Since the variables are stationary based on the unit root tests (presented in Appendix I), the use of Ordinary Least Squares (OLS) estimators is appropriate, but other econometric problems with OLS such as serial correlation, heteroskedasticity and multicollinearity cannot be ruled out. These problems directly affect the variance of the stochastic error term and standard errors of the estimated coefficients. Consequently, the statistical inference about the estimated parameters becomes unreliable. To guard against this, the ARDL-ECM models (Models 1 to 4 for this study presented in equations (15) to (18)) were estimated using the OLS with Heteroskedasticity and Autocorrelation Consistent (HAC), Standard errors and Covariance estimator proposed by Newey and West (1987). This estimator produces relatively more robust covariance and standard errors that are consistent in the presence of both serial correlation and heteroskedasticity compared to either conventional OLS or OLS with White covariance and standard errors. Table 2 and 3 present the results of the models.

Note that each model is estimated in different variants. Table 2 shows the results of different variants of Model 1 to 4 with first difference of natural log of real GDP as dependent variable, while Appendix II presents those with first difference of natural log of real GDP per capita as the dependent variable. The results of Model 1 and Model 2 based on the two alternative measures of growth are presented in columns I and II in Table 2 and Appendix II respectively, while columns III and V and VI and VII show those of Model 3 and Model 4 respectively. Overall, the results in Table 2 and Appendix II are similar to a very large extent.

Data and Sources

The data for estimating the models are annual time series on the proxies for physical capital, human capital and different components of actual public expenditure and political institutions covering the period between 1960 and 2012. The specific data used for the study, how they are measured and their respective sources are presented in Table 1. All the variables are quantitative and continuous in nature, except indices for political institutions (i.e. Polity II, xconst and dummydemoc). Polity II and xconst are concept variables used to measure political institutions or what was referred to as “polity characteristics” of a country. Interestingly, Polity IV database provides numerical codes for Polity II and xconst, while dummydemoc is a dummy variable that captures type of political regime (with democracy =1, military regime =0).

The concept variable, “xconst” indicates the extent of checks and balances between the various parts of the government (Polity IV Users Manual, 2012). In other words, it is the degree to which the system of governance allows for institutionalised checks and balances on decision-making powers of the chief executives. The “xconst” codes range between 1 and 7. Code 1 indicates that the executives have unlimited authority. Code 3 is used when the executives have slight to moderate limitations, while code 5 is where the limitations are substantial. Code 7 describes a situation where a chief executive cannot make any major decision without the approval of the institutionalised accountability groups (e.g. legislature, opposition parties or ruling party), or where the continued support of the groups is required for the executive to remain in office. The codes 2, 4 and 6 are the codes allocated to the intermediary category describing cases of overlapping features or transition period from 1 to 3, 3 to 5 and 5 to 7 respectively (Polity IV User Manual, 2012).

However, most polities have some elements of both autocracy and democracy (Polity IV Users’ Manual, 2012). Therefore, the study used Polity II values to measure the mixed authority traits in polity. Values of Polity II variable are obtained by subtracting the “autoc” score from “democ” score. Polity II values range from -10 to +10. The more democratic the polity is, the higher the score, and the greater the traits of autocracy, the lower the score.

Table 1: Description of Variables, Measurements, and Data Sources on Federal and State Governments' Spending on Economic Growth

Class of Variable	Vector	Variable	Acronym/proxy for Model estimation	Measurements/indices	Data Source
Real Output	y_m	Real Gross Domestic Product (GDP)	Lnrgdp	log of real gross domestic product	CBN Statistical Bulletin, 2011 & 2012
			Lnrgdppc	log of real gross domestic product per capita	CBN Statistical Bulletin, 2011 & 2012
Traditional neoclassical inputs	sk	Capital	Lngcf	log of real gross fixed capital formation	CBN Statistical Bulletin, 2011 & 2012
	sh	Human Capital Development	Lnsenrol	log of secondary school enrolment	National Bureau of Statistics (NBS) for various years and African Development Indicators (ADI) and World Development Indicators (WDI) for various years.
Population	p	Population	Pgrt	population growth rate	National Bureau of Statistics (NBS) for various years and African Development Indicators (ADI) and World Development Indicators (WDI) for various years.
Public Expenditure	g	Federal Government Expenditure	Lnfgae	log of real federal government aggregate expenditure	National Bureau of Statistics (NBS) for various years and African Development Indicators (ADI) and World Development Indicators (WDI) for various years.
		Aggregate state government expenditure		log of real state government aggregate expenditure	National Bureau of Statistics (NBS) for various years and African Development Indicators (ADI) and World Development Indicators (WDI) for various years.

Political institution	I_z	Polity II	I_1	Measure of political regime characteristics	Polity IV Database, 2012
		Xconst	I_2	Measure of constraints on executives' powers	Polity IV Database, 2012
		Dummydemoc	I_3	Political regime type	Author

Source: Author's (2015)

Regression Results, Interpretation and Discussion

The results of the Model1 in Table 2 show that the neoclassical production inputs accounted for about 30 percent of the total variation in the real growth in output. Individually, only the coefficient of capital was significant at 5 percent significance level, human capital and population growth were significant at 10 percent significance level. Increase in capital by one percent would increase the growth of real GDP by about 0.42 percent, while similar increase in human capital would result in 0.34 percent rise in real GDP. The coefficients of both aggregate federal government ($\ln g_1$) and state government ($\ln g_2$) spending in column II were positive and significant at 1 percent. The adjusted R^2 which was about 30 percent in Model 1 increased to about 78 percent due to the inclusion of federal and state governments' expenditures. This suggests that federal and state governments' expenditures matter individually and collectively for economic growth in Nigeria. For instance, the result of the estimated models presented in column II of Table 2 indicates that an increase in the growth of federal and state governments' expenditures by 1 percent would result to about 0.34 percent and 0.27 percent increase in the growth of real GDP respectively. However, the results of the three variants of Model 3 presented in column III and V show that a percent increase in state governments' spending has relatively greater effect on growth of real GDP and real GDP per capita. An increase in state governments' expenditures by one percent would lead to an increase in the growth of real GDP by about 0.03 to 0.12 percent and real GDP per capita by 0.05 to 0.15 above what one percent increase in federal government spending would cause.

The relative larger coefficient of state governments' spending compared to the federal government in most of the estimated models might be partly due to inclusion of institutions variables in the models and the larger spread and closeness of state governments to the grass roots. Most of the projects embarked upon by states have more direct impact on productive activities in the rural areas where the bulk of the populace live. Although, the share of federal government in the total expenditure is larger, it's spending tends to be concentrated on major physical infrastructures and in urban areas. In comparison with related studies on Nigeria, this finding is contrary to Bogunjoko (2004) which found that the impact of federal government's spending on output was greater than the state governments' expenditure.

The results of Model 3 in all its variants III –V presented in Table 2 shows that Polity II (I_1) and xconst (I_2) as indices of political institution were not significant. Only the dummy for democracy (I_3) was significant in variant V but with a negative sign. However, the coefficient capturing the interaction between democracy and state government expenditure i.e., $\Delta(\ln g_2 * I_3)$ in column VII was weakly significant, respectively but that of federal government was significant but with a negative sign. This suggests that the political institutions in the country are still too weak or the minimum threshold of institutional qualities are yet to be achieved for them to have the desirable and significant impact on economic growth in Nigeria. These results are in conformity with the views of Yaru, Mobolaji, Kilishi and Yakubu (2014) that show that the change in budgetary institution occasioned by change in type of political regime had no significant impact on fiscal discipline at the sub-national levels in Nigeria. Likewise, Papaioannou and Siourounis (2008) argued that the impact of democracy on economic growth is not spontaneous, but long-run and might be unpredictable. This may depend on the type of regime;

stage of tenure of office, and other institutional changes that accompany such as operation of rule of law, improvement in regulatory institutions and good governance.

Table 2: Results of the Impact of Federal and State Governments' Expenditures on Economic Growth in Nigeria

Variable	Model 1	Model 2	Model 3			Model 4	
	I	II	III	IV	V	VI	VII
Intercept (N)	0.023254 (0.048456)	0.017623 (0.027469)	0.001559 (0.027258)	0.000104 (0.026494)	-0.013296 (0.021420)	0.011117 (0.029389)	-0.026919 (0.033822)
$\Delta \ln sk_t$	0.390160* (0.201289)	0.163937* (0.087309)	0.183983** (0.083217)	0.180091** (0.082929)	0.244437** (0.097435)	0.206889** (0.089517)	0.288406** (0.130410)
$\Delta \ln sh_t$	0.310032 (0.185156)	-0.066946 (0.061505)	0.003455 (0.146423)	0.032431 (0.146481)	-0.022364 (0.073251)	-0.252211 (0.163016)	0.360205* (0.206490)
ΔP_t	1.042907* (0.560183)	0.034476 (0.235303)	-0.063091 (0.299343)	-0.084287 (0.315042)	-0.152082 (0.337550)	-0.780755 (0.725907)	0.006602 (0.356317)
$\Delta \ln y_{1t}$	0.185673** (0.08368)	0.006042 (0.111497)	-0.018782 (0.114712)	-0.020688 (0.114756)	-0.010072 (0.108195)	-0.037469 (0.118806)	0.192136 (0.156861)
$\Delta \ln sk_{t-1}$	-0.156289 (0.137530)	-0.136575 (0.101280)	-0.115711 (0.104141)	-0.113670 (0.105500)	-0.137847 (0.102635)	-0.189789* (0.106181)	-0.185312 (0.116958)
$\Delta \ln sh_{t-1}$	-0.270046 (0.259066)	-0.137007 (0.116882)	-0.007663 (0.149883)	-0.010315 (0.151264)	0.156750 (0.133912)	0.054733 (0.197969)	0.260371** (0.122128)
ΔP_{t-1}	-0.795971 (0.813351)	-0.423014 (0.265126)	-0.396846* (0.231195)	-0.391995* (0.231003)	-0.398289* (0.205989)	-0.277970 (0.357144)	-0.467483** (0.208158)
$\Delta \ln g_{1t}$		0.314511*** (0.083318)	0.281247*** (0.092316)	0.269336*** (0.093868)	0.218581*** (0.070500)	0.687347*** (0.106664)	
$\Delta \ln g_{2t}$		0.291904*** (0.096114)	0.322184*** (0.114664)	0.333319*** (0.114341)	0.389588*** (0.097555)		0.531391*** (0.077883)
$\Delta \ln g_{1t-1}$		0.071728 (0.123320)	0.057139 (0.131157)	0.063852 (0.128166)	0.086901 (0.123267)	0.067096 (0.132231)	
$\Delta \ln g_{2t-1}$		-0.109443 (0.085517)	-0.081802 (0.091014)	-0.083062 (0.086399)	-0.102254 (0.075133)		-0.165028* (0.094196)
ΔI_{1t}			-0.003680 (0.009441)				
ΔI_{1t-1}			-0.007680 (0.009495)				
ΔI_{2t}				-0.013535 (0.021716)			
ΔI_{2t-1}				-0.016646 (0.023147)			
ΔI_{3t}					-0.018600 (0.029880)	0.422252** (0.190232)	-0.336810 (0.236367)
ΔI_{3t-1}					-0.258588** (0.108561)	-0.222554 (0.144234)	-0.379673*** (0.081187)
$\Delta(\ln g_{1t} * \Delta I_{3t})$						- (0.036661)	
$\Delta(\ln g_{2t} * I_{3t})$							0.064175 (0.043630)
ECT(-1)	-0.420972** (0.159304)	- (0.422997*** (0.127399))	- (0.378789*** (0.123997))	- (0.373089*** (0.124376))	- (0.318499*** (0.115061))	- (0.738381*** (0.188194))	-0.234759*** (0.135725)
R ²	0.40	0.832321	0.836931	0.837332	0.863470	0.808195	0.842075
Adjusted R ²	0.29	0.779369	0.773516	0.774072	0.810374	0.740804	0.786587
DW test	2.11	1.93	1.93	1.91	1.76	1.85	2.00

*significant at 10%, ** significant at 5%, *** significant at 1%

Source: Author's computation, (2015)

Conclusion and Recommendations

This study examined the relative impact of expenditures of federal and the state government on economic growth in Nigeria, with a view of drawing policy inference for a way out of recession. The study concludes that an increase in aggregate state governments' expenditure exerts greater impact on Nigeria's economic growth in the short-run compared to an increase in federal government's spending. The changes in political institutions as well as their interaction with government expenditure have yet to have a desirable and significant impact on economic growth in Nigeria.

Thus, drawing from above, the quickest fiscal strategy to get Nigeria out of a recession is a substantial increase in the aggregate expenditure of the state governments. This finding also seems to suggest that the bailout given to the states aimed at assisting the states to settle salary arrears is a good step and may have accelerated the speed of recovery of Nigerian economy from the recession experienced in 2016.

It is also imperative for the federal government to devolve more revenue and expenditure powers to the states to enable state spend more. The insignificant impact of political institution on economic growth also calls for institutional reforms to enhance the rule of law, free and fair election and ensure a more effective fight against corruption.

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Appendix I

Results of Augmented Dickey Fuller (ADF) Unit Root Tests of Federal/State Governments' Expenditures and Economic Growth in Nigeria

ADF Test Statistics (with trend and intercept)						
S/No.	Variable	Level	Prob.	First difference	Prob.	Order of Integration
1	lnrgdppc	-1.34292	0.8658	-6.58890***	0.0000	I(1)
2	lngcf	-2.99016	0.1450	-5.30643***	0.0003	I(1)
3	lnsenrol	-1.92223	0.6285	-5.78655***	0.0001	I(1)
4	pgrt	-0.28041	0.9891	-5.78747***	0.0001	I(1)
5	lnfgae	-1.07933	0.9227	-5.76334***	0.0001	I(1)
6	lnsgae	-1.54870	0.7994	-5.52625***	0.0002	I(1)
7	polity ii	-2.75036	0.2219	-6.16834***	0.0000	I(1)
8	xconst	-2.70468	0.2392	-6.165420***	0.0000	I(1)

Results of Phillips-Perron (PP) Unit Root Tests of Federal/State Governments' Expenditures and Economic Growth in Nigeria

PP Test Statistics (with trend and intercept)						
S/No.	Variable	Level		Level		
1	lnrgdppc	-1.36541	1	lnrgdppc	-1.36541	1
2	Lngcf	-2.49644	2	Lngcf	-2.49644	2
3	lnsenrol	-1.72553	3	lnsenrol	-1.72553	3
4	Pgrt	-0.50105	4	Pgrt	-0.50105	4
5	Lnfgae	-0.96096	5	Lnfgae	-0.96096	5
6	lnsgae	-1.69373	6	lnsgae	-1.69373	6
7	polity ii	-2.43007	7	polity ii	-2.43007	7
8	xconst	-2.40017	8	xconst	-2.40017	8

Source: Author's Computation, (2015). *** Significant at 1 percent.