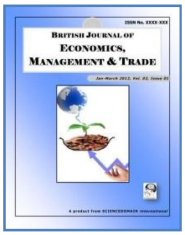


British Journal of Economics, Management & Trade
5(4): 442-449, 2015, Article no.BJEMT.2015.037
ISSN: 2278-098X

SCIENCEDOMAIN *international*
www.sciencedomain.org

Fiscal Federalism in Nigeria: Implication for Growth

Ojide MakuaChukwu Gabriel[1*] and Ogbodo Joseph Charles[2]

[1]Department of Economics, Faculty of Social Sciences, University of Nigeria, Nsukka, Enugu State, Nigeria.
[2]Department of Economics, Faculty of Social Sciences, Enugu State University of Science and Technology, Enugu State, Nigeria.

Authors' contributions

Author OMCG designed the study, performed the statistical analyses, wrote the protocol, and wrote the first draft of the manuscript. Author OJC managed the data collection and literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/BJEMT/2015/5859
Editor(s):
(1) John M. Polimeni, Associate Professor of Economics Albany College of Pharmacy & Health Sciences, New York, USA.
Reviewers:
(1) Anonymous, Atatürk University, Turkey.
(2) Angeliki Papana, Department of Economics, University of Macedonia, Thessaloniki, Greece.
(3) Anonymous, Nigde University, Turkey.
(4) Anonymous, University of Malawi, Malawi.
(5) Anonymous, Obafemi Awolowo University, Nigeria.
Complete Peer review History: http://www.sciencedomain.org/review-history.php?iid=810&id=20&aid=7028

Original Research Article

Received 5th July 2013
Accepted 13th January 2014
Published 21st November 2014

ABSTRACT

Aims: This paper examines growth evidence of federal government allocation share, state governments' allocation share, and state governments' internally generated revenue in Nigeria.
Study Design: Dynamic Model and Correlation were used.
Methodology: We used aggregate annual data obtained from the Central Bank of Nigeria, Annual Statistical Bulletin. The period covered in the study is 1970 to 2009. Econometrics approach was used.
Results: At 5% level of significant, the regression result shows that allocations to the federal government (FGAS), allocations to the state governments (SGAS) and state governments' internally generated revenue (SIGR) significantly impact growth. However, while allocations to the federal government (FGAS) and state governments' internally generated revenue (SIGR) impact positively on growth; allocations to the state governments (SGAS) has negative impact. In addition, civilian administration as against military rule, has led to about 0.35% increase in growth vis-à-vis the management of federation account.
Conclusion: The revenue allocation formula in Nigeria should not be reviewed in favour of the

**Corresponding author: Email: embracegod1@yahoo.com;*

state governments. The state governments should rather enhance their business environment to generate more internal revenue.

Keywords: Sustainability; growth; co-integration; stationarity; government; revenue.

1. INTRODUCTION

Nigeria is a federation with 36 states, 774 local governments, and a federal capital territory. This fiscal structure is meant to enhance macroeconomic development and stability. The success of Nigeria's federal system for effective governance depends on an appropriate division of responsibilities and resources among federal, state and local authorities supported by a sufficient institutional capacity at each of these levels to carry out its assigned functions [1]. Critical to this success, also, is financial capacity of each level of government to carry out its assigned functions.

Nigeria can be described as a mono-economy, especially, in terms of the federally collected revenue. For instance, oil revenue constituted 83 per cent of federally collected revenue in 2008 [2]. Each of the different levels of government depends largely on its share of the federally collected revenue to carry out its functions apart from Lagos State and Rivers state which have maintained high internally generated fund over the past few years.

Thus, most of the other states depend mainly on their shares of federal allocations to carry out their functions. The revenue allocation formula now in use came into effect on 10 July 1992 with the promulgation of the "allocation of revenue (Federation Account etc) (amendment) decree of 1992. This formula was adopted by the current democratic government in 1999. It provides as follows: 48.5% for Federal Government, 24% for the state governments, 20% for local government, and 7.5% for Special fund.

Recently, there have been agitations to amend the allocation formula to favour the states given the argument that state governments are the level of government closer to the people than the federal government, and therefore, will be more responsive to the particular preferences of their constituencies as they easily find new and better ways to provide these services [3,4]. Thus, it becomes necessary to examine if the allocations to the states have contributed to economic growth in Nigeria. The follow questions were examined in this paper:

- What is the correlation between federal government allocation share from the federation account as well as that of the state governments, and growth?
- What are the impacts of federal government and state governments' allocation shares from the federation account on growth?
- Is there growth evidence of state governments' internally generated revenue?

Thus, the following two null hypotheses were tested:

- Federal government and state governments' allocation shares from the federation account have no impact on growth.
- There is no growth evidence of state governments' internally generated revenue.

The basic foundations for the initial theory of Fiscal Federalism were laid in [4]. In addition, [5] provided the framework for what became accepted as the role of the state in the economy. The theory was later to be known as "Decentralization Theorem" [6]. Within this framework, three roles were identified for the government sector. These are the roles of government in correcting various forms of market failure, ensuring an equitable distribution of income and seeking to maintain stability in the macro-economy at full employment and stable prices [4].

Fiscal federalism involves intergovernmental fiscal relationship with consideration on which functions and instruments are best centralized and which are best placed in the sphere of decentralized levels of government [7]. An important part of fiscal federalism is the system of transfer payments or grants by which a central government shares its revenues with lower levels of government [4].

As noted earlier, Nigeria has a revenue distribution system in which the federal government shares revenue with the states and local governments. Nigeria has had different

allocation formulas at different times. Likewise, different ad hoc commissions had been set up to determine the allocation formula and criteria. For instance, between 1946 and 1979, there were eight of such commissions; namely Phillipson – 1946, Hicks-Phillipson – 1951, Chick – 1953, Raisman – 1958, Binns – 1964, Dina – 1968, Aboyade – 1977, and Okigbo – 1980 as cited in Olofin, Olubusoye, Bello, Salisu and Olalekan [8]. However, in 1988, Nigerian government established the *National Revenue Mobilization, Allocation, and Fiscal Commission (NRMAFC)* to monitor, review, and advise the government on revenue allocation system on a continuing basis. The NRMAFC is enshrined in the Constitution [8].

According to the Nigerian constitution, the two major functions of government are: Provision of security and welfare to the citizenries. In terms of welfare, the government provides public goods such as roads, education, healthcare services, power and so on. Most scholars believe that increase in government expenditure on socio-economic and physical infrastructures encourages economic growth [9-13].

For instance, a study to investigate the relationship between government expenditure and GDP per capita growth in developing countries in Asia using panel regression suggests that positive relationship exists between government expenditure and GDP per head growth [14]. Using available data going back to 1792, [15] studied whether there is statistical evidence for a causal relationship between federal government expenditures and growth in real per-capita GDP in the United States. They found causal evidence supporting Wagner's Law, but no evidence was found supporting the common assertion that a larger government sector leads to slower economic growth. Similarly, [16] examined the relationship between economic growth and government spending. He applied two different panel data methodologies to seven transition economies in the South Eastern Europe (SEE). His research result revealed evidence that government spending on capital formation, development assistance, private investment and trade-openness have positive and significant effect on economic growth.

However, [17] studied the effects of volatility of government revenue and spending on growth in OECD and EU countries. They found that both variables are detrimental to growth. In otherwise, government expenditure can lead to growth and it can also reverse growth based on certain factors. Well, these factors are outside the scope of this present study.

Most literature on revenue allocation in Nigeria focuses on justifying a particular sharing formula or proposing a new one. Among these researchers are [18,19]. On the other hand, [20,21,22] seem to discuss generally about fiscal federalism by diagnosing the Nigeria situation and proffering solutions; while, [23] examined the role of fund sources of Nigerian state governments in the financing of their real asset investments. Using OLS technique, the paper finds that federal allocation and stabilization fund are significant in the financing of real asset investments at both 5% and 1% levels of significance [24].

In addition, used OLS technique, [25] investigate impact of fiscal decentralization on economic growth in Nigeria. The study finds evidence of high concentration ratio of both expenditure and revenue. It also finds evidence of mismatch in spending and taxing responsibilities with states being harder hit. In a similar vein, [26] provides statistical evidence on the impact of the extent of decentralization of government expenditures and revenue collection on the levels of economic activities in Nigeria. Based on regression analysis, the paper finds that more decentralized governance, especially in terms of increased in the number of local governments and increased transfer of revenues to lower tiers of government would stimulate economic activities and economic growth. Unlike these studies, this paper is concerned with the behaviour of growth given the allocation of money to the federal government and the state governments from the federation account.

Similar to this study is the work of [27]. He studied fiscal federalism and economic growth process in Nigeria using growth rate of share of federal government from the federation account, growth rate of share of rate of state government from the federal account, and growth rate of shares of local government from the federal account. Based on regression analysis, he concluded that during the period under review (which was omitted in his paper), the share of local and federal governments from the federation account contributed to the economic growth process of Nigeria. On the other hand, the share of state governments from the federation account did not impact growth

process. According to him, the scenario at the state level may be due to mismanagement and embezzlement of fund. In any case, based on his analysis, we could not justified his conclusions given that all the three variables (representing federal, state and local governments) were found to be statistically insignificant. Hence, the need for this further study which covers the period between 1970 and 2009. Local government started receiving allocation from the federation account from 1993 after it was added as the third tier of government in Nigeria. Thus, we did not include local government in this study.

2. METHODOLOGY

This paper uses distributed lag (DL) model to analyze the relationship between allocation (federal and state governments) and economic growth. Allocations from the federation account to the federal government and the state governments are major components of expenditures by these levels of government. The theoretical framework for the study is based on the Keynesian growth models which states that expansion of government expenditure accelerates economic growth. The focus of this paper is on the expenditure of the allocations to the federal government (FGAS) and the state governments (SGAS) from the federation account as well as state governments' internally generated revenue (SIGR) and how these variables impact on economic growth in Nigeria. Growth, here, is measured using change in the log of real gross domestic product (LG). The model, therefore, expresses economic growth (LG) as a function of allocations from the federation account to the federal government and the state governments as well as the state governments' internally generated revenue.

In addition, a dummy (GR) was included to capture the effect of different government regimes (0 for military and 1 for civilian). Of course, output expands over time for reasons unrelated to government expenditure. Therefore, to control for output expansion, trend (T) was introduced in the model - defining the first year examined, 1970, with the value one and the value 40 for the last year examined, 2009.

Thus, the growth model is specified as:

$$LG = \beta_0 + \beta_1 FGAS + \beta_2 SGAS + \beta_3 SIGR + \beta_4 GR + \beta_5 T + \mu \quad (1)$$

Change in federal government allocation share (FGAS), state governments' allocation share (SGAS), and the state governments' internally generated revenue (SIGR) were used after these variables were logged. Thus, equation (1) translates to equation (2) below:

$$LG = \beta_0 + \beta_1 LFGAS + \beta_2 LSGAS + \beta_3 LSIGR + \beta_4 GR + \beta_5 T + U \quad (2)$$

2.1 Data Sources and Description

All variables used in this paper, excluding the dummy and trend, were obtained from the Central Bank of Nigeria, Annual Statistical Bulletin 2011. The basic descriptive statistics of the core independent variables are presented in Table 1 below.

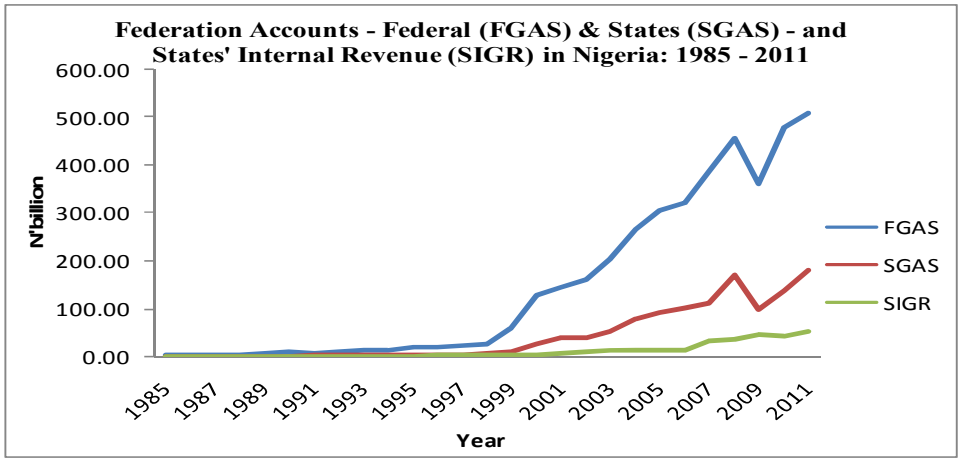
Table 1. Descriptive statistics of variables (1985 – 2011)

	FGAS	SGAS	SIGR
Mean	932005.6	278261.1	69177.54
Median	61032.10	18060.50	2971.450
Maximum	5085260.	1786254.	509290.8
Minimum	582.4000	164.1000	38.00000
Std. Dev.	1549412.	493673.5	134844.2
Skewness	1.517627	1.780666	2.189739
Kurtosis	3.863927	5.013767	6.543127
Jarque-Bera	17.42848	29.29210	55.53377
Probability	0.000164	0.000000	0.000000
Observations	42	42	42

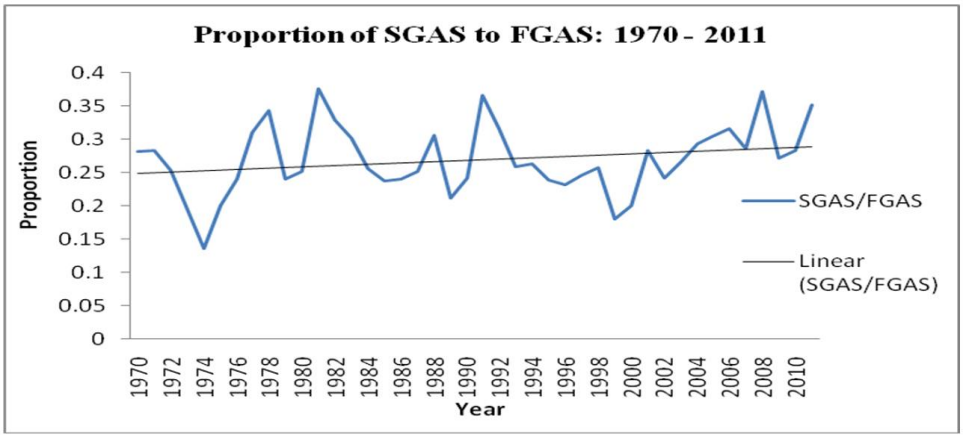
Graph 1 reveals that the three variables maintained upward trends during the period 1985 to 2011. Within this period, the proportion of SGAS to FGAS was relatively stable. This is further shown in Graph 2.

2.2 Stationarity Test (Unit Root Test)

Regressing non-stationary data on one another often lead to spurious result. Thus, stationarity test was conducted to examine the nature of time series. Augmented Dickey Fuller (ADL) unit root test was employed at 1% for this examination. Results of the tests are presented in Table 2 below:



Graph 1



Graph 2

Table 2. Augmented dickey-fuller unit root test of the variables: 1970 – 2009

Variable	Critical value (1%)	ADf-stat	Order of integration
LG	-3.6171	-4.638792**	I(1)
LFGAS	-3.6171	-4.187542**	I(1)
LSGAS	-3.6171	-3.647924**	I(1)
LSIGR	-3.6171	-4.638792**	I(1)

***significant at 1 percent level*

As shown in Table 2, all the variables achieved stationary after the first difference. Evidence of co-integration was tested for using the residue (resid01) of the regression between the dependent variable (LG) and the independent variables (LFGAS, LSGAS, and LSIGR). The summary of the result is presented in Table 3.

Given that the residue (resid01) of the regression between the dependent variable (LG) and the independent variables (LFGAS, LSGAS, and LSIGR) does not show evidence of stationarity (co-integration), error correction mechanism (ecm) was not used in the dynamic model in Table 4.

Table 3. Augmented dickey-fuller unit root test of the residue

Variable	Critical value (1%)	ADf-stat	Order of integration
Resid01	-4.2242	-3.801409	I(0)

***significant at 1 percent level*

3. RESULTS AND DISCUSSION

To provide for the time lag necessary for evaluating the impacts of the independent variables on growth, LFGAS, LSGAS, and LSIGR were estimated using distributed lag 2. The estimation was done with Eview. After

simulating the model, LFGAS, LSGAS, and LSIGR were each found to significantly impact growth at their lag 2 using 5% level of significance. Thus, this leads to the rejection of the two null hypotheses of this study. Government regime and time variables also impact significantly on growth as shown in Table 4.

Table 4. Regression analysis used to explain growth in the light of federation allocation and state governments' internally generated revenue, Nigeria, 1970-2009

Dependent Variable: LG			
Sample(adjusted): 1973 2009			
Included observations: 37 after adjusting endpoints			
Variable	**Coefficient**	**t-Statistic**	**Prob.**
Constant	0.339049	2.850223	0.0077
LFGAS(-2)	0.549062	2.339938	0.0259
LSGAS(-2)	-0.639679	-2.515461	0.0173
LSIGR(-2)	0.168393	2.753576	0.0098
GR	0.351950	3.036618	0.0048
T	-0.016950	-3.309988	0.0024
R-squared	0.427727	F-statistic	4.633997
S.E. of regression	0.287678	Prob (F-statistic)	0.002841
Sum squared resid	2.565509	Durbin-Watson stat	2.058806

The regression result suggests that the federal government allocation share and the state governments' internally generated revenue have positive and significant impact with growth, while state governments' allocation share has a negative and significant impact with growth. This is further shown in the correlation matrix in Table 5.

Table 5. Correlation among real gdp, federal government allocation share, and state governments' allocation share impact

	D(RGDP)	**D(FGAS)**	**D(SGAS,2)**
D(RGDP)	1.000000	0.096761	-0.108632
D(FGAS)	0.096761	1.000000	0.812704
D(SGAS,2)	-0.108632	0.812704	1.000000

Note that the correlation result was obtained with the actual allocation values and real GDP after each of the variables was corrected for seasonal variation. The state governments' allocation share has a high and positive correlation with the federal government allocation share with the correlation coefficient of about 0.813 on the scale of -1 to 1: where -1 implies perfect negative correlation, 0 implies lack of correlation, and 1 implies perfect positive correlation. This high positive correlation between the allocation shares of the state governments and the federal government is understandable since the shares were obtained using stipulated ratios over the period of this study. The federal government allocation share shows a positive correlation with real GDP. This correlation, however, is relatively low with the correlation coefficient of about 0.10. On the contrary, the state governments' allocation share has a negative correlation with real GDP with a correlation coefficient of about -0.11.

The regression analysis suggests the following observations. First, it takes about two years for the federal and state governments' allocation shares and the state governments' internally generated revenue to impact on economic growth. Second, increase in the federal government allocation share may lead to increase in growth. For instance, the result shows that 1% increase in federal government allocation share can lead to about 0.55% growth. Third, increase in the state governments' allocation share may lead to decline in economic growth. For instance, the result suggests that 1% increase in state governments' allocation share may reduce growth by about 0.64%. Fourth, increase in the state governments' internally generated revenue, say by 1%, may lead to growth of about 0.17%. Fifth, civilian administration as against military rule, has led to about 0.35% increase in growth vis-à-vis the management of federation account. Final, the test on the possible output expansion over time for reasons unrelated to government allocation or its expenditure suggests that Nigeria has rather had a negative growth of about 0.02% between 1970 and 2009. In other words, other factors apart from government, which ought to grow the economic, may have rather led to decline in growth. These other factors, based on national income identity, may include consumption expenditure, investment and foreign trade.

4. CONCLUSION

This present study has investigated the growth impact of the federation allocation shares (federal and state governments) and state governments' internally generated revenue in Nigeria, for the period 1970-2009, using a dynamic model. The aggregate state governments' allocation share and the aggregate state governments' internally generated revenue were used.

The significant findings of this study are as follows:

- In the long run, economic growth can be influenced significantly by the sharing of the federation account. The share to the federal government will likely benefit economic performance of the nation more than the share to state government would do.
- The effect of state governments' internally generated revenue on economic growth is better than that of the state governments' allocation share.
- The state governments' allocation share, on the aggregate, may be counterproductive in the long run. This may be as a result of the fact that a greater number of people are given this money to administer, which increases the chances of misappropriation and theft.

These findings are limited to the annual data of the federal and state governments obtained from the Central Bank of Nigeria (CBN). In addition, they are limited to the statistical methods used in this study.

Given the findings of this study, we make the following recommendations:

- The revenue allocation formula should not be reviewed in favour of the state governments.
- The state governments should be encouraged to generate more revenue internally by enhancing business environment within their states. Following the principle of voting by leg, a state with business friendly-environment will most likely attract more investors which will result in more revenue to the state government through taxations and business levies. For instance, Lagos state which had the highest rating on 'business development support and investment promotion' in 2010 has over the years recorded the highest internally generated revenue among states in Nigeria (African Institute for Applied Economics - AIAE, 2010).
- The federal government should be more responsive to its obligations, especially, within each state. For instance, the maintenance of federal roads within each state and adequate funding of Nigerian Police Force operating within each state should not be left as additional burden to the state governments.
- Governments at both state and federal levels should enhance prudence, transparency and accountability in the management of public funds.

COMPETING INTERESTS

The sole author designed, analyzed and interpreted and prepared the manuscript.

REFERENCES

1. Stevens Mike, Barkan Joel D, Gboyega Alex. State and Local Governance in Nigeria. World Bank; 2001. Accessed 15 July 2012. Available: http://info.worldbank.org/etools/docs/library/5783/State_and_Governance_Nigeria.htm
2. CBN. Annual Statistical Bulletin. Nigeria: Central Bank of Nigeria; 2011.
3. Sharma CK. The Federal Approach to Fiscal Decentralization: Conceptual Contours for Policy Makers. Loyola Journal of Social Sciences. 2005;109:2.
4. Arowolo Dare. Fiscal Federalism in Nigeria: Theory and Dimensions. Afro Asian Journal of Social Sciences; 2011.
5. Musgrave RM. The Theory of Public Finance. NY: McGraw-Hill;1959.
6. Ozo-Eson. Fiscal federalism: Theory, issues and perspectives. Daily Independent; 2005.
7. Oates WE. An essay on fiscal federalism. America: Journal of Economic Literature, JSTOR. 1999;37(3).
8. Olofin Sam O, Olubusoye Olusanya E, Bello Ajide K, Salisu Afees A, Olalekan Akinola S. Fiscal federalism in Nigeria: A cluster analysis of revenue allocation to states and local government areas, 1999 – 2008. CBN Journal of Applied Statistics. 2012;3(1).
9. Nurudeen Abu, Usman Abdullahi. Government expenditure and economic growth in Nigeria, 1970-2008: A disaggregated analysis. Business and Economics Journal; 2010. Accessed 25 July 2012. Available: http://astonjournals.com/manuscripts/Vol2010/BEJ-4_Vol2010.pdf
10. Abdullah HA. The relationship between government expenditure and economic growth in Saudi Arabia. Journal of Administrative Science; 2000.

11. Al-Yousif Y. Does government expenditure inhibit or promote economic growth: Some empirical evidence from Saudi Arabia. Indian Economic Journal; 2000.
12. Ranjan KD, Sharma C. Government expenditure and economic growth: Evidence from India; 2008. The ICFAI University Journal of Public Finance. Accessed 16 January 2013. Available: http://ssrn.com/abstract=1216242
13. Cooray A. Government expenditure, Governance and economic growth. Comparative Economic Studies; 2009. Accessed 20 September 2012. Available: http://www.ingentaconnect.com/content/pal/ces;jsessionid=q1g8lgkzfvms.alice
14. Hakro Ahmed Nawaz. Size of government and growth rate of per capita income in selected asian developing economics. International Research Journal of Finance and Economics; 2009. Accessed 10 January 2013. Available: http://www.eurojournals.com/finance.htm
15. Guerrero Federico, Parker Elliott. The effect of federal government size on long-term economic growth in the united states, 1792-2004. UNR Economics Working Paper Series; 2007.
16. Alexiou Constantinos. Government spending and economic growth: Econometric evidence from the South Eastern Europe (SEE). Journal of Economic and Social Research; 2009.
17. Afonso António and Furceri Davide. Government size composition, volatility and economic growth. European Central Bank; 2008. Accessed 11 October 2012. Available: http://www.ecb.europa.eu
18. Phillips AO. Managing fiscal federalism: Revenue allocation issues. Oxford Journals Social Sciences, Publius. 1991;21(4).
19. Aluko ME. The fight between federal and state governments over revenue allocation. New Age Online; 2004.
20. Anyanwu John C. Fiscal relations among the various tiers of government in Nigeria. NES selected paper presented at the 1999 annual conference; 1999.
21. Ebajemito JO, Abudu MI. Intergovernmental fiscal relation in a federal system: The Nigerian experience. NES selected paper presented at the 1999 Annual Conference; 1999.
22. Okoh RN, Egbon PC. Fiscal federalism and revenue allocation: The poverty of the Niger Delta. In Fiscal Federalism and Nigeria's Economic Development, Ibadan, Nigeria: The Nigerian Economic Society; 1999.
23. Akujuobi LE, Kalu IU. State government finances and real asset investments: The Nigerian experience. African Journal of Accounting, Economics, Finance and Banking Research. 2009;4(4).
24. Olofin Sam O, Olubusoye Olusanya E, Bello Ajide K, Salisu Afees A, Olalekan Akinola S. Fiscal Federalism in Nigeria: A cluster analysis of revenue allocation to states and local government areas, 1999 – 2008. CBN Journal of Applied Statistics. 2012;3(1).
25. Aigbokhan BE. Fiscal federalism and economic growth in Nigeria. NES selected paper presented at the 1999 annual conference; 1999.
26. Jimoh A. Fiscal policy and growth in Africa (Fiscal Federalism: The Nigerian Experience*)*. Addis Ababa: Economic Commission for Africa; 2003.
27. Usman Owolabi. Fiscal federalism and economic growth process in Nigeria. European Journal of Business and Management. 2011;3(4).

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sciencedomain.org/review-history.php?iid=810&id=20&aid=7028