

## **STATE GOVERNMENT FINANCES AND REAL ASSET INVESTMENTS: THE NIGERIAN EXPERIENCE**

**Linus Eze Akujuobi<sup>1</sup>**

*Federal University of Technology, Owerri, Nigeria*

Email: [leakujuobi@yahoo.com](mailto:leakujuobi@yahoo.com).

**I.U. Kalu<sup>2</sup>**

*Abia State University Uturu, Nigeria*

E-mail: [iukalu@yahoo.com](mailto:iukalu@yahoo.com)

### **ABSTRACT**

State governments in Nigeria are saddled with a lot of responsibilities that are geared towards the development of their areas. To do this, they engage in real asset investments that are at times overwhelming, especially when compared with their limited financial resources. This problem of insufficient funding sources and over-dependence on external sources was investigated for the period 1984-2008 by this study using multiple regression analysis technique. From the study it is found that Federal allocation and stabilization fund are significant in the financing of real asset investments at both 5% and 1% levels of significance. Internally-generated revenue (IGR), loans (LNS), Grants (GT) and value added tax (VAT) are found insignificant in the financing of the real asset investments of Nigerian state governments for the period 1984-2008. The implication is that without federal allocation, and to some extent, stabilization fund Nigerian state governments would find it difficult to implement their programmes through real asset investments.

**Key words:** Financing sources, real asset investments, economic development, state governments

---

<sup>1</sup> Linus Eze Akujuobi Ph.D., ACTI, MNIM is a Senior lecturer (Finance), Department of Financial Management Technology, School Of Management Technology, Federal University Of Technology, Owerri, Nigeria, Postal Address: P.O Box 632 Owerri, Nigeria.

<sup>2</sup> I.U. Kalu Ph.D, FNIVS is an Associate Professor of Real Estate & Dean, Faculty Of Environmental Studies, Abia State University Uturu, Nigeria, Phone: 2348033281058

## **I. INTRODUCTION**

The Nigerian Federation is made up of the Federal Government, State Governments and Local Governments. These tiers of governments, through their budgetary actions, collectively strive towards the economic development of the nation. To achieve this, they embark on real asset investments, which are financed with ever reducing financial resources. This is in line with economic development theories that link accumulation of capital and economic development. (Todaro and Smith, 2006). Also, Jud (2005) while studying the impact of real estate development in Guilford County, N.C., United States of American found out that real estate development represents an addition to the capital stock of the County. In addition Chapman and Facer (2005) in their study opined say that there is a relationship between economic development and infrastructure spending and listed infrastructure to be the vast network of capital-intensive services including roads, water provision, sewage services and electricity supply.

It would be recalled that public revenue in Nigeria is mainly dependent on oil component that is unstable as a result of highly volatile prices. Even if stable, lower-level governments do not have enough share of it for their use. In line with this, Jimoh (2003) found out that between 1960 and 1999 an average of about 70 percent of federally-collected revenue was allocated to the Federal Government. He also highlighted that between 1980 and 1999, about 61 percent of total Nigeria government revenues were allocated to the Federal Government. This relative scarcity of funding puts enormous pressure on state governments on the most efficient funding strategy of real asset investments.

As a result of this scarcity of funding and the need for more efficient financing strategy, there is the problem of state governments in Nigeria misapplying the available financing sources in the funding of real asset investments. For instance, people believe that while real assets are yearning for funding, some state governments (for selfish reasons) borrow heavily to finance recurrent items that obviously do not impact on the economic development of their state. This study, therefore, has the general objective of examining the role of the financing sources of Nigerian state governments in the financing of their real asset investments.

The analysis is done on the null hypothesis that the financing sources namely federal allocation, internally – generated revenue, loans, grants, stabilization funds and value-added tax do not significantly affect the real asset investments of the Nigerian state governments. This is done for the period 1984-2008 with a view to seeing how the state governments have fared in investing in real assets that have the potential of stimulating the economy. This paper has four parts. It starts with the introduction in part one followed by review of related literature in part two, empirical evaluation in three and the last part that has conclusion and recommendation.

## **II. LITERATURE REVIEW**

To satisfy wants, governments encourage the production of goods and services, distribution of these goods and stabilization of the economy. In modern societies the government (or public sector) and the market (or private sector) allocate resources. If the private sector is taking the decision of allocation, it does this through the forces of supply and demand and price mechanism. It should be noted that this is largely determined by

consumer sovereignty and producer profit motives. If however, the public sector is taking the allocation decision, it uses the revenue and expenditure activities of the governments in doing this. It should be pointed out that rarely any economic society uses either solely the market or the government for such decisions. There is always a combination of both the private and public sector in world economies. However, while some tilt more towards government-determined economies, others rely more on private sector.

In addition to the allocation function, distribution and stabilization functions are also performed by the economic system, whether public or private sector. After production of goods and services, they have to be distributed to the people for satisfaction of wants to be achieved. It is only when this is done that production or allocation is said to have been completed. This is the distribution function of economics and it concerns itself with the way in which the effective demand over economic goods is divided among the various individuals and family spending units of the society.

The economic function of stabilization is concerned with how the national economy achieves high levels of labour employment and capital utilization under stable prices, a good balance of international payments performance and adequate rate of growth in per capita output over a period of time. These three economic goals of allocation, distribution and stabilization are pursued by national governments through various policies. They are, therefore also said to be the main objectives of any public sector economy.

Historically Adam Smith (1913) justified government intervention on four reasons of national defense, administration of justice, provision of heavy public works, and duty of meeting the expenses necessary for the support of sovereignty of nations.

Some modern reasons for government intervention include what Herber (1979) and Musgrave and Musgrave (2006) call production cost conditions, the existence of joint consumption and non-exclusion goods and other imperfect supply conditions that require actions. Also, Keynes (1936) find stabilization conditions like stagflation as requiring intervention. The issue of inadequate economic growth has been shown to also require government intervention. Fischer (1993) for instance, believes that a stable macroeconomic environment is conducive to sustained growth. In support of this, Carallo and Mondino (1996) while studying Argentina found among other things, that macro-economic instability contributed to slow economic growth in the country, especially in its earlier period of economic life. Musgrave (2006) suggested that governments should intervene so that those who produce more should be rewarded more and minimum standard of consumption maintained regardless of potential. Furthermore, scholars like Herber (1979), Margolis (1968), Killick (1983), Chambers, Wedel and Rodwell (1992) and Broadway (1979) in their work on externality concept see the need for some intervention. Pigou (1920) can be given the credit for pioneering the work on the relationship between externality and public sector.

Andersen (2005) on his own opined that if aggregate demand plays a role for the determination of activity in the short run, it follows that temporary variations in public consumption or taxation can have important effects and can be used to stabilize the economy. In addition, Muscatelli and Tirelli (2005) observed that New Keynesian models have evolved to the point where a role can be found for fiscal policy and empirically estimated models suggest that such policies could be welfare enhancing.

This intervention is mainly achieved through investments in real assets of various tiers of governments. This is because it is through these that value is added to the economy and depressed economies resuscitated. Furthermore, Akujuobi (2006) asserts that investment in capital projects has always been advocated even by economic development models.

Some researchers have done some work in the area of finance and real estate investments. For instance, Bond, Korolyi and Sanders (2003) examined the regional and country risk and return related components of international real estate investments. Jones, Lang and LaSalle (2008) in their report expected global investment overall to decline approximately 30% in 2008 from 2007, after very rapid growth over the past three years. On the other hand, Hamelink and Hoesli (2004) found that country-related factors are dominant over size or value / growth factors international real estate returns.

Christner (2009) on his part concentrated on the risk management approach to international real estate investment. On the Nigerian scene, Olaleye and Aluko (2007) studied managers' diversification of real estate portfolios and found that diversification improved performance. From these, it can be seen that no research has been done to find out how the finances of state governments in Nigeria have impacted on their real asset investments and this is what this study did. While allocations and other revenue sources regularly accrue to states it is yet to be determined the extent of real asset financing by these States. It is argued that the misapplication of funds to real asset sector is responsible for the absence of the needed stimulus for economic growth of the states.

Having confirmed the need for government intervention Akujuobi and Akujuobi (2006) while studying Nigerian situation, were of the opinion that there should be sufficient government decentralization to enable different tiers intervene where they have more advantage of doing so. In addition to this Ashwe (1986) and Jimoh (2003) showed the need to give the different tiers corresponding revenue sources to take care of their responsibilities, while also intensifying efforts to generate enough revenue internally.

### **III. DATA AND METHODOLOGY**

#### **Methodology and Data source**

From the review of empirical works, the identified variables are real asset investment (REAINV), internally-generated revenue (IGR), Federal allocation (FEDAC), loans (LNS), value added tax (VAT) stabilization fund (STF) and Grants (GTS).

With statistical package for Social Science (SPSS 15.0), the model is estimated using data from 1984 to 2008. The statistics are compiled from various issues of the Central Bank of Nigeria (CBN) Annual Reports and Statistical Bulletin for the years. Ordinary Least Squares (OLS) method of multiple regression models is used to test the joint and individual contributions of the independent variables to the real asset investments of the state governments.

#### **Data Presentation**

The data for the analysis are as presented on table 1

**Table 1: Federal Capital Territory and States' Revenue and Real Asset Investment Profile for the period 1984-2008.**

	Real Asset Investments REAINV	FED. Alloc. FEDAC	Internally-generated Revenue	Loans LNS	Grants GTS	Stabilization Fund STF	Value added Tax VAT
--	----------------------------------	----------------------	------------------------------	--------------	---------------	---------------------------	------------------------

	(N '000)	(N '000)	IGR (N '000)	(N '000)	(N '000)	(N '000)	(N '000)
1	2424.00	2722.00	678.90	1639.10	170.40	.00	.00
2	1034.00	3260.80	1584.10	.00	487.50	.00	.00
3	1130.40	2843.80	1818.00	.00	460.80	.00	.00
4	1955.00	6197.10	1956.40	.00	596.70	.00	.00
5	3585.10	8181.30	2178.80	973.70	.00	.00	.00
6	4834.10	9899.80	1602.30	2064.50	.00	.00	.00
7	5355.90	15943.80	2726.20	2976.30	330.50	.00	.00
8	11351.40	19742.20	3181.20	435.30	1382.00	466.80	.00
9	16280.30	24497.30	5244.70	245.80	957.30	1974.30	.00
10	15841.00	29363.50	7602.30	1845.30	3492.20	1875.00	.00
11	18144.00	29017.50	9900.80	2358.30	4456.60	842.40	5028.70
12	24743.10	38385.20	15405.90	5280.30	2698.70	876.60	6319.70
13	.29182.60	41626.40	9602.90	4395.20	16652.30	630.80	11290.00
14	33739.10	50902.50	27368.20	371.80	4337.30	449.30	13905.30
15	68044.10	66067.10	29213.90	4395.30	31477.80	236.90	16206.80
16	65206.00	10357.30	34109.00	4775.10	6551.70	921.60	23750.50
17	162886.5	251570.3	37788.50	3990.90	33289.30	5780.50	30643.80
18	302246.9	404094.0	59416.00	20642.30	58064.60	7060.90	44912.90
19	300341.8	388294.7	89606.90	48331.00	129714.4	6569.70	6569.70
20	375851.0	535129.9	118753.5	85711.30	134179.3	996.80	65887.60
21	568244.7	1113944	134195.3	4396.90	104344.8	2000.00	96195.00

	<b>Table 1 contd.</b>						
22	689458.0	1419637	122737.8	22557.10	137445.3	10775.30	87449.80
23	692476.7	1543770	125228.9	26954.00	125323.1	11885.20	110566.8
24	748527.0	1612301	132406.0	28460.90	135406.0	12128.10	120560.0
25	830972.0	1701402	144320.0	29114.20	140281.0	13468.20	126112.0

**Source:** Researchers' compilation from CBN statistical bulletin and Annual Reports of various years.

In the study, F-test is used to test the overall significance of the explanatory variables taken together. Student t-test is used to test for the significance of each explanatory variable contributing to the financing of the state government real asset investments, because the number of years covered in the research is twenty five years which is below thirty. The co-efficient of multiple determination ( $R^2$ ) is used to test goodness of fit of the study.

### **Model Specification**

The following model is specified in order to evaluate the financing of the real asset investments of the state governments and the functional form is given thus:

$$REAINV = f(\text{FEDAC, IGR, LNS, GT, STF, VAT, } \mu_t)$$

Where

REAINV	=	Real Asset Investments
FEDAC	=	Federal Statutory Allocation
IGR	=	Internally-generated Revenue
LNS	=	Loans
GT	=	Grants
STF	=	Stabilization Funds
VAT	=	Value added Tax

### **Mathematical Form of the Model**

The Ordinary Least Squares regression model (Multiple Regression Model) adopted for the study is mathematically represented as follows:-

$$REAINV = B_0 + B_1FEDAC + B_2IGR + B_3LNS + B_4GT + B_5STF + B_6VAT + \mu_t$$

The term  $\mu_t$ , otherwise known as the stochastic term to the regression is introduced to represent the random or unexplained variation encountered in the modeling since in real life which we are trying to mimic through this estimation, chance events do occur which would make the model not to be 100% deterministic. Where:

$B_0$	=	the intercept
$B_1$	=	regression coefficients
$\mu_t$	=	stochastic term of the regression

In choosing the above model, we state that the following principal assumptions about our population disturbance term,  $\mu_t$  exist. These assumptions about the distribution of the values of  $\mu_t$  are very crucial for the estimates of the regression. These include the assumption of randomness, zero mean, constant variance and normal distribution, among others.

#### IV. EMPIRICAL RESULTS

##### Analysis Of Variance (ANOVA)

This technique is used to test the significance of the model as a whole. At this point it is very important to test the significance of the regression model as a whole. This is done through the statistical method of analysis of variance (ANOVA) computed by the researchers. The test of the significance of the regression model is therefore a test of the hypothesis stated below.

Here the null hypothesis ( $H_0$ );  $B_0 = B_1 = B_2 = B_3 = B_4 = B_5 = B_6 \dots \dots B_K = 0$  where  $K = 1 \dots 6$

This means that all the coefficients of the explanatory variables in the regression are zero, which can be interpreted as all state government revenue sources have no significant effect on the real asset investments for the 25 years studied.

**Alternative:** ( $H_1$ ) is saying that at least one of the explanatory variables has a significant effect on the dependent variable i.e.  $B_0 = B_1 = B_2 = B_3 = B_4 = B_5 = B_6 \dots \dots B_K \neq 0$  where  $K = 1 \dots 6$

$B_0 = 0$ . That is to say that at least one revenue source has a significant effect on the capital expenditure for the period.

##### Decision Rule

If F-statistic calculated from the regression done by the computer is greater than F-statistic tabulated we reject  $H_0$  and conclude that the regression is significant. This means that the independent variables (explanatory) are significant factors for the variation in the dependant variables. From the analysis the F-statistic calculated is 1371.173. To make this work meaningful we compare this value with values from the table at 1% and 5% levels of significance respectively.

$F_{0.05}(6, 18) = 2.66$

From the values obtained F- Calculated  $1371.173 > F_{0.01}(6, 18) 4.01$

for 1% level of significance and F- calculated  $1371.173 > F_{0.05}(6, 18) 2.66$  at 5% level of significance.

We therefore accept the alternative hypothesis, which states that the model estimate significantly explains the variation in the dependent variable (real asset investments) for the various years under study.

**Table 2: ANOVA**

Model	Sum of squares	ANOVA <sup>b</sup>			
		df	Mean Square	F	Sig.
Regression	1.9E+012	6	3.161E +011	1371.173	.000 <sup>a</sup>
Residual	4.1E+009	18	230551468.24		
Total	1.9E+012	24			

a. Predictors: (Constant), VAR00007, VAR00006, VAR00005, VAR00002, VAR00003

b. Dependent Variable: VAR00001

**Hypotheses Testing**

The hypotheses stated earlier are tested and the results shown on table 3 below

**TABLE 3: Regression Output and Results of Real Asset Investments and Revenue Sources of Nigerian State Governments, 1984-2008**

Independent variables	X <sub>1</sub> Federal Allocation FEDAC	X <sub>2</sub> Internally-generated Revenue IGR	X <sub>3</sub> Loans LN	X <sub>4</sub> Grants GT	X <sub>5</sub> Stabilization Fund STF	X <sub>6</sub> value Added Tax VAT
Coefficient of the parameter	0.210	1.109	-0.443	0.821	6.120	0.908
Standard Error	0.041	0.550	0.447	0.540	1.767	0.536
t-statistic calculated	5.12	2.016	-0.991	1.520	3.463	1.694
t-calculated 2-tailed df 5% ie 0.025/ tail	2.101	2.101	2.101	2.101	2.101	2.101
t-tab (two-tailed) d.f @ 1% ie 0.005/ tail	2.878	2.878	2.878	2.878	2.878	2.878
Decision	S.	N.S	N.S	N.S	S	N.S

**Constant =-6119.770**

**Source:** Researchers' Computation from Data

It can also be seen that the regression equation is given as:-

$$REAINV = - 6119.8 + 0.21FEDAC + 1.109IGR + 0.443LNS + 0.821GTS + 6.12STF + 0.908VAT. + \mu$$

and the degrees of their significance as shown by their t-ratios (calculated) are shown as:

$$FEDAC > STF > IGR > VAT > GTS > LNS \quad \text{ie} \\ 5.106 > 3.463 > 2.016 > 1.694 > 1.519 > -0.991.$$

From the equation of real asset investments of the Nigerian state governments, levels of financing needed from each of the financing sources can be estimated, if a desired level of real asset investment is given as what is required.



**Table 4: Real Asset Investments and financing sources Correlations**

		REAI NV	FEDA C	IGR	LNS	GTS
Pearson Correlation	REAINV	1.000	.989	.966	.571	.937
	FEDAC	.989	1.000	.928	.484	.891
	IGR	.966	.928	1.000	.693	.972
	LNS	.571	.484	.693	1.000	.781
	GTS	.937	.891	.972	.781	1.000
Sig. (1-tailed)	STF	.895	.895	.800	.444	.810
	VAT	.972	.970	.939	.511	.869
	REAINV	.	.000	.000	.001	.000
	FEDAC	.000	.	.000	.007	.000
	IGR	.000	.000	.	.000	.000
N	LNS	.001	.007	.000	.	.000
	GTS	.000	.000	.000	.000	.
	STF	.000	.000	.000	.013	.000
	VAT	.000	.000	.000	.005	.000
	REAINV	25	25	25	25	25
	FEDAC	25	25	25	25	25
	IGR	25	25	25	25	25
	LNS	25	25	25	25	25
	GTS	25	25	25	25	25
	STF	25	25	25	25	25
	VAT	25	25	25	25	25

## V. CONCLUSION

From table 3 and 4, it can be seen that Federal allocation and stabilization fund are significant in the financing of real asset investments at both 5% and 1% levels of significance. Internally-generated revenue (IGR), loans (LNS), Grants (GT) and value added tax (VAT) are found insignificant in the financing of the real asset investments of Nigerian state governments for the period 1984-2008. The implication is that without federal allocation, and to some extent, stabilization fund, Nigerian state governments would find it difficult to implement their programmes through real asset investments. The ideal situation would have been to finance this through internally generated revenue instead of through the external sources stated earlier. The absence of grants in financing the real assets is very glaring and does not show that the state governments have fully exploited the various international grants available to their developmental advantage. As for loans, they do not use this source for real asset financing and this may not be

unrelated to the fact that their eyes are mainly on Federal allocations and fear of mismanagement of the loans. From the study, it is obvious that state governments depend on external financing of Federal Allocation and stabilization funds to finance their real asset investment. This may be why economic development in these areas fluctuates a great deal with external situations. It would be recalled that many state governments in Nigeria, for instance, have not exploited the use of bonds in financing their projects.

For the state governments to develop economically, they need policies that would help them fund their real asset investments internally. This calls for an urgent overhaul of the various boards of internal revenue. Financial leakages should be blocked wherever noticed. In addition, state governments should make conscious efforts to be aware of some of the international grants they can access for development projects.

## REFERENCES

- Akujuobi, L.E. (2006), *Investment Analysis*, Owerri: Osprey Publication Centre.
- Akujuobi, L.E. and Akujuobi A.B.C. (2006) Fiscal federalism and resource control: The way out of Nigerian marginalization problem, *Journal of Economic and Financial Research* (1) pp 15-24.
- Andersen, T.M. (2005), Is there a role for an active fiscal stabilization policy? *CES info Economic Studies*, 51 (4) pp 511-547
- Ashwe, C. C. (1986), *A critique of Nigeria's idlest revenue scheme*, Cambera: The Australian National University.
- Bond, S.G. Karolyi, A. and Sanders, A.B. (2003) International real estate returns: A Multifactor, Multicountry Approach, *Real Estate Economics*, pp. 481-500.
- Broadway, R.W. (1979), *Public Sector Economics*. Cambridge: Winthrop Publishers Inc.
- Chambers, D.E., Wedel, K.R. and Rodwell. M.K. (1992), *Evaluating social programs*, Boston: Allyn and Bacon J.P.
- Chapman, J. and Facer, R. L. (2005), *Connections between economic development and Land Taxation, Land Lines*, Lincoln Institute of Land Policy, 17 (4), pp1-3
- Christner R. (2009), A risk management approach to international real estate investment. *International Journal of Economics and Businesses Research*, Vol. 1(1), pp43-60
- Federal Government of Nigeria (1991) Model Financial Memoranda for Local Government (2 ed). Abuja, State & Local Government Affairs Office, Presidency.
- Fischer, S. (1993), The role of macroeconomic factors in growth, NBER Working paper 4565, National Bureau of Economic Research Cambridge, Massachusetts.
- Hamelink F. and Hoesli M. (2004) 'What factors determine international real estate security returns? *Real Estate Economics*, fall 2004, pp. 437-462.
- Herber, B. P. (1979) *Modern Public Finance*, Homewood: Richard D. Irwin Inc.
- Jimoh, A. (2003) *Fiscal Policy and Growth in Africa: Fiscal Federalism, Decentralization and the Incidence of Taxation: Fiscal federalism: The Nigerian Experience. Fiscal Policy and Growth in Africa (Fiscal Federalism: The Nigerian Experience)*, Addis Ababa: Economic Commission for Africa pp26.
- Jones, Lang and Lasalle (2008) *Global Real Estate Capital Report*, Available at: [www.joneslanglasalle.com/globalreports](http://www.joneslanglasalle.com/globalreports).
- Jud, G.D. (2005), Economic impact of real estate development in Guilford County. N.C.

- USA, Report for Triad Real Estate and Building Industry Coalition (TREBIC).
- Killick, T. (1983), *Policy economics: A textbook on applied economics on developing countries*, London: Heinemann.
- Margolis, I. (1968), The demand for urban public services in Perloffs, T.L. S. and Wingo, L. (eds) *Issues in Urban Economics*, Baltimore: The John Hopkins Press.
- Mbachu, A.U. (1991), Expanding local governments sources of revenue via the capital market: Analysis and synthesis in Nzelibe C.G.O (ed) *Current Issues in Public and Local Government Administration*, Enugu: Fourth Dimension Publishers
- Musgrave, R. and Musgrave, P.B. (2006), *Public Finance in Theory and Practice*, New York: Harcourt, Brace and Jenovich.
- Muscatelli, V.A and Tirelli, P. (2005), “Analyzing the interaction of monetary and fiscal policy: Does fiscal policy play a valuable role in stabilization? *CES info Economic Studies* 51(4) pp. 549-585
- Olaleye, A.A. and Aluko, B. T. (2007), Evaluating managers’ diversification of real Estate portfolios: evidence from Nigeria, *International Journal of Property Management*, <http://www.entrepreneur.com/tradepubs/article/1676966.html>, retrieved on 12/17/2007.
- Pigou, A C. (1920), *The Economics of Welfare*, London: Macmillan & Co.
- Smith, Adam (1913), *The Wealth of Nations*, London: Macmillan.
- Todaro, M. P. and Smith, S. C. (2006), *Economic Development* (8 ed.). London: Pearson Education Ltd.