



Scholars Research Library

Archives of Applied Science Research, 2014, 6 (1):199-208

(<http://scholarsresearchlibrary.com/archive.html>)



## Tax revenue allocation and its effects on consumption (VAT): A study of Calabar Municipal Council, Cross River State

<sup>1</sup>Sackey, Jacob Acquah and <sup>2</sup>Ejoh, Ndifon Ojong

<sup>1</sup>Department of Accountancy, Cross River University of Technology, Cross River State Nigeria  
<sup>1,2</sup>ACCA (Institute of Company and Commercial Accountants of Nigeria)

### ABSTRACT

*This research was carried out to investigate the effects of 'Tax Revenue Allocation on Consumption' as the economy grows and to determine the dynamics (stability) of the various tax revenue allocations to the Calabar Municipal Council with predetermined time covering a period of 23 years (1980 to 2002), and to partly observe inter-temporal changes, if any, in the behavior of revenue flexibility coefficients. Secondary data of tax revenue records were used for the study. The data collected was analyzed using the ordinary least square method to evaluate the impact of tax revenues allocation to the local government and its effect on consumption tax (VAT) also known as sales tax levied on the value added at each stage of production or distribution of goods and services and paid by the ultimate consumer. The emerging results, established that there was not sufficient tax revenue generated within the period of study through consumption (VAT), hence the inflexibility of Federal Government Tax Revenue Allocation, State Government Tax Revenue Allocation and Internally Generated Tax Revenue with respect to consumption. The implication of this result was that consumers could not easily shift their consumption due to the introduction of value-added tax by the federal, state and local governments. The study ended by making some recommendations thus: Local Governments should mobilize more revenue within their domain and in order to enhance the economic growth at the rural level, the federal and state government should discourage any fiscal policy that could cause a decline in revenue allocation to local government.*

**Key Words:** Revenue generation, revenue allocation, tax buoyancy (flexibility), tax stability (dynamics), consumption tax, Value Added Tax, tax elasticity,

### INTRODUCTION

Every organization saddled with responsibilities has some financial obligations to discharge. Finance is cardinal in all-functional organizations in any economy.

It is a crucial prerequisite, which enables an enterprise, public or private, to maintain it and effectively meet its commitment to individuals and groups who consume its output of goods and services according to Bello-Imam [1]. The Federal Republic of Nigeria recognized and accepted the local government as the third tier of government in the 1979 Nigerian constitution. Of course, local government being a public sector organization is assigned functions responsibilities for both maintaining itself and rendering its statutorily assigned functions to its citizens [1].

Indeed, under section 7, 4<sup>th</sup> schedule of the 1989 constitution, local governments were given power to provide the following services: provision and maintenance of primary schools, adult and vocational schools, development of agricultural and natural resources, other than the exploitation of minerals, establishment and maintenance of slaughter houses, markets, motor parks, public conveniences and health services, registration of birth, death, and marriages. In addition, they were to perform other functions and provide other services that the State House of Assembly might assign to them [4].

In order to discharge these responsibilities, the third tier of government is empowered to raise both tax and non-tax revenue in addition to statutory allocation from federation account [1]. It need be pointed out that in Nigeria; the bulk of the revenue is federally collected and paid into a common account; the Federation Account and Value Added Tax (VAT) Pool Account, before distribution is made to the three tiers of government based on the prevailing allocation formulae. Thus, in a federal system like Nigeria, revenue allocation is synonymous with the distribution of national revenue among the three tiers of government of the federation and is done in such a way to reflect the structure of fiscal federalism [5]. This indeed arises from the advantage, which the federal government has over the other tiers of government by virtue of the power it possesses to generate revenue.

Moreover, the amount of revenue allocated to local councils as well as the other tiers of government depends on what is generated within the whole economy for a period. The size of revenue generated, on the other hand, is influenced by the resource endowment (revenue base), level of economic activity (often provided by Gross Domestic Product, GDP), and the efficiency of the revenue collection machinery [2].

A tax is considered flexible, if its yield increases or decreases more than proportionately in response to an increase or decrease in GDP, with the tax parameter assumed unchanged. In other words, where the index of flexibility exceeds unity, the tax or tax group is GDP elastic or flexible. However, where the index of flexibility is less than unity, the tax is GDP inelastic or inflexible. Such an inflexible tax would suggest a resort over time to discretionary alteration of the tax rate/base if reliance must be placed on revenue productivity of the tax [3].

Consequently, the questions germane to the study are:

- 1) Does tax revenue structure in the Local Government Council have any shift in revenue productivity of taxes or tax type?
- 2) Is the share of tax revenue by the Local Government Council in national income sufficiently income elastic?
- 3) Does growing tax revenue match the highly elastic current expenditure at the grass root level but also to generate savings to finance local government capital expenditure programs?

This study attempts to provide answers to these questions and other related ones.

Specific objectives of the study are:

- i) To ascertain the responsiveness of the various tax revenue allocations to the local government council in relation to consumption (VAT) also known as sales tax levied on the value added at each stage of production or distribution of goods and services and paid by the ultimate consumer.
- ii) To attempt to appraise the existing and potential sources of income for local governments.
- iii) To make policy-related recommendations based on the findings.

As pointed out by Nyong [3] fiscal policy is concerned with changes in government expenditure and taxation for influencing the pace and direction of economic activity at any given time. The Keynesian income determinant theory forms the theoretical foundation of this study which is based on government active intervention policy in promoting development at all level. Hence we examined briefly the theory of income determination in an open economy with particular attention to the local government issues. According to Keynesian theory, growth in government expenditures leads to growth in general economy; that is government expenditure is largely governed or controlled by government revenue or taxation. As the economy and hence income grows, tax revenue would rise thereby enabling government expenditure to rise in line with gross national product.

## MATERIALS AND METHODS

### Data sources and limitations

The main limitation in the study which covered a period of 23 year is the inaccuracy of Nigerian data. For instance, the statistical bulletin of the current year may carry adjustments done to previous year's data. This invariably indicates that the data used may not be error free in its entirety. Therefore, we assume that the previous year's data

are more accurate than the current year's data because of possible error discoveries and corrections. The secondary data used for the study is presented in Appendix 1.

### Choice of functional form

The relationship for the variables as well as their estimated parameters has been established by means of ordinary least squares (OLS) method used in establishing the extent to which consumption (VAT) explains variations in tax revenue allocation to the local government council. The estimates were obtained by means of computer software package and were analyzed in terms of t-value, f-values, R-squares (adjusted), and D-W statistics. The statistical tests: t-values, standard error tests, and f-test were employed to check for statistical significance of the parameter estimates.

The validity of the estimated parameters were based on known accounting and economic theories, and statistical and econometrics interpretations of regression results. The interpretations specifically relate to the signs and magnitudes of the parameter estimates. In other words, these statistical tools were used in examining whether the exogenous variables explain well the variation in the endogenous variable, economic growth, in all the models.

However, because of the various casual factors in the model, it seems more appropriate to use the log-linear form of estimation. The log-linear captures the important fact that various casual factors in the model interact together to influence the dependent variables. Another advantage is that its estimation yields elasticity directly, thereby facilitating comparison of the relative impacts of variables.

The coefficient of determination ( $R^2$ ) measures the extent to which the variation in the dependent variable is caused by changes in the explanatory variables, and f-ratio also indicates the level of reliability of the  $R^2$  using the econometrics test. The Durbin Watson (DW) statistics is used in judging the evidence of serial correlation among the variables.

Given the exceeding complex, dynamic and unstable conditions, which the Nigerian local government areas are naturally prone, many unknown factors can exert certain influence on the magnitudes of those estimated variables. To capture those unpredicted influences, a stochastic variable is introduced in each of the functions.

To enable us articulate precisely and quantify these effects, some kinds of model, based on the theoretical foundations, were constructed and properly integrated with some indigenous variables to reflect the peculiarity of Nigerian local government councils.

### Assumptions for the model

The following assumptions are made to facilitate the formulation and analysis of the model. We assume that:

- 1) The variables with which the model is defined are the most important variables; other influences are absorbed by the stochastic error term. In addition, the numerical values of these variables are not distorted.
- 2) The relationships are correctly identified and the specified models are suitable for the analysis of Nigerian fiscal policy performance at local government level.
- 3) That rapidly growing tax revenue is needed to match highly elastic local government current and capital expenditures.

### Definition of key variables

In line with the focus of this study, certain key factors have been identified. These include the following:

- (a) Local Government Revenue Structure (explanatory) variables:
  - i) Tax Revenue Allocation from Federal Government (FAREV),
  - ii) Tax Revenue Allocation from State Government (SAREV)
  - iii) Internally Generated Tax Revenue (INTEREV)

The links between tax revenue allocation stability (dynamics) of the local government with respect to consumption (VAT) were regressed in sets using simple regression models. We have carefully examined and analyzed the estimates in line with theory.

**Specification of the model**

Based on the key variables of study, we have specified the relationship of consumption (VAT) at grass root level with the local government tax revenue structure in three models with respect to consumption (VAT).

The relationships are as follows:

i) Tax Revenue Allocation Buoyancy = F (Consumption VAT)

The function considering Tax Revenue Allocation Buoyancy of the local government with respect to Consumption (VAT) could be written in log-linear form as:

$$\text{LnFAREV}_t = d_0 + d_1 \text{LnCONST}_t + U_{1t} \dots\dots\dots (1)$$

$$\text{LnSAREV}_t = K_0 + K_1 \text{LnCONST}_t + U_{2t} \dots\dots\dots (2)$$

$$\text{LnINTREV}_t = j_0 + j_1 \text{LnCONST}_t + U_{3t} \dots\dots\dots (3)$$

Where;

$\text{LnCONST}_t$  = log form of total consumption (VAT) from year t

$\text{LnFTREV}_t$  = log form of total federal government tax revenue from year t

$\text{LnFAREV}_t$  = log form of revenue allocation from federal government from year t,

$\text{LnSAREV}_t$  = log form of revenue allocation from state government from year t

$\text{LnINTREV}_t$  = log form of internally generated revenue from year t.

$U_i$  are the stochastic error terms,

$d_i$  are constant parameters in equation 1

$k_i$  are constant parameters in equation 2,

$j_i$  are constant parameters in equation 3,

The parameters are expected to have the following signs:

$d_1 > 0$ : The higher the Consumption (VAT), the higher the amount of federally allocated tax revenue, hence the higher the level of tax revenue flexibility.

$K_1 > 0$ : The higher the Consumption (VAT), the higher the amount of state allocated tax revenue, hence the higher the level of tax revenue flexibility.

$j_1 > 0$ : The higher the Consumption (VAT), the higher the amount of internally allocated tax revenue, hence the higher the level of tax revenue flexibility.

The function considering the total tax revenue accruing to the Local Government council could be written in a linear form as:

$$\text{TOTREV}_t = \text{FAREV}_t + \text{SAREV}_t + \text{INTREV}_t$$

Where:  $\text{TOTREV}_t$  = the linear form of total tax revenue to the Local government from year t.

If the expected signs of all the parameters are positive it indicates that increase in any of the explanatory variables would lead to increase in the value of consumption (VAT), which would lead to increase in tax revenue buoyancy. These, of course, are our a priori expectations in the study. The estimates of the structural parameters will be obtained by solving the equation separately, using econometric method of ordinary least squares.

We therefore expect that as the level of local government revenue increases, consumption (VAT) also increase, the revenue productivity of taxes or the growth potential of the various sources of tax revenue to the local government council should increase.

**Model estimation technique and meaning of statistical tests used**

The empirical estimates of the parameters were analyzed based on the F-statistic and t-statistic. The F-statistic was used in testing the overall significance of the estimated regression. In other words, this statistical tool tests the model as a whole. The higher the value of the F-ratio calculated the greater the overall significance of the estimated regression model; where the calculated F-ratio is greater than table F-value, the F-statistic shows that there is a high degree of association between the dependent and independent variables.

Moreover, the T-statistic was used in examining the contribution of each independent variable to the variation in the dependent variables according to the absolute values of their T-values. If the t-calculated is greater than t-value in

the table at a given degree of freedom and the level of significance, then the variable is significant in explaining the variation in the dependent variable. Explanatory variable with low t-statistic value can be eliminated from the regression model without substantial decrease in the value of the R-squared that is co-efficient of determination or increase in the standard error of the regression. Durbin- Watson statistic tests the existence or not of auto-correlation among the explanatory variables.

### Regression results and test of hypotheses

#### The regression results

This section concentrates mainly on data presentation, analysis and interpretation of regression results, and testing of hypotheses. We evaluated the validity of the results against the theoretical expectations among the variables under study. The empirical results are presented in three separate models. The first model relates tax revenue buoyancy of federal government allocation with Consumption (VAT). The second model relates tax revenue buoyancy of state government allocation with Consumption (VAT). The third model relates tax revenue buoyancy of internally generated revenue of the local government with Consumption (VAT). Tables 1 to 3 summarize the estimated results, and their respective interpretations are brought to the fore in this section.

TABLE 1: Revenue from federal government allocation

Variable	Estimated Coefficient	Standard Error	t-statistics	p-value
Constant	-0.269817	2.58957	-0.104194	0.919
LnCONS	0.77655	0.185989	4.17526	0.000

#### Equation 1: Federal tax revenue allocation with respect to Consumption (VAT)

$$\text{LnFAREVt} = -0.269817 + 0.77655\text{LnCONS}$$

$$R^2 = 61.31\%, \bar{R}^2 = 57.79\%, F(1, 11) = 17.4328, \text{D-W stat} = 1.14883$$

Equation 1 of Table 1 presents the regression result of the relationship of federal allocated tax revenue, with Consumption (VAT). The model evaluates the contribution of Consumption (VAT) on federal allocated tax revenue at the grass root level. In the equation, the constant coefficient, which indicates autonomous (VAT) status is – 0.2698. This constant is independent of changes in other explanatory variables. It is a negative intercept in the model. It gives impression that where the magnitude of the coefficient of the explanatory variable changes or remains constant, VAT status would revolve around this autonomous level of the coefficient and it is not statistically significant at 5 percent and 10 percent level.

The estimated coefficient of the explanatory variable indicates an existence of a positive linear relationship between the independent and dependent variable. Specifically, the magnitude of (VAT), which is 0.77655 give impression that, ceteris paribus, a unit increase in (VAT), would cause 0.77655 percent increase in internally generated tax revenue. This invariably means that as consumption (VAT) grows revenue allocated federally to the local government increases. The sign of the estimated parameter is consistent with our postulate, and the coefficient is statistically significant at 10 percent and 5 percent level with 11 degrees of freedom, because calculated t-statistic of 4.1752 is greater than tabulated t-statistic of 1.363 and 1.796 respectively.

The coefficient of determination from the result shows that 61.31 percent variation in federal revenue allocation (FAREV) to the local government is explained by the explanatory variable (VAT) used in the model. This confirms that the model fits the data and that it explains well the variation in FAREV. The remaining 38.69 percent are captured by stochastic error term. This indicates an average level of association between federal allocated tax revenue in the local government and VAT. The calculated F-ratio of 17.4328 being greater than the table F-value of 4.84 at 5 percent level with 11 degrees of freedom confirms that the data fit the model.

However, the D-W statistic of 1.1488 falls into inclusive region and this means that we cannot conclude an existence or non-existence of auto-correlation among the explanatory variables. Therefore, the estimated result cannot be used for forecasting because of inappropriate correlation among the independent variable. However, it is useful, in analyzing the past performance of the federal revenue allocation in relation to consumption (VAT) at grass root level.

TABLE 2: Revenue from state government allocation

Variable	Estimated Coefficient	Standard Error	t-statistics	p-value
Constant	0.386088	1.76650	0.218561	0.831
LnCONS	0.505878	0.126874	3.98725	0.002

**Equation 2: State tax revenue allocation with respect to consumption (VAT)**

$$\text{LnSAREVt} = -0.386088 + 0.505878\text{LnCONS}$$

$$R^2 = 59.10\%, \underline{R}^2 = 55.38\%, F(1, 11) = 15.8982, D-W \text{ stat} = 1.16705$$

Equation 2 of Table 2 presents the regression result of the relationship of state allocation tax revenue, with Consumption (VAT). The model evaluates the contribution of Consumption (VAT) on state allocated tax revenue at the grass root level. In the equation, the constant coefficient, which indicates autonomous (VAT) status, is 0.386. This constant is independent of changes in other explanatory variables. It is a positive intercept in the model. It gives impression that where the magnitude of the coefficient of the explanatory variable changes or remains constant, VAT status would revolve around this autonomous level of the coefficient and it is not statistically significant at 10 percent and 5 percent level.

The estimated coefficient of the explanatory variable indicates an existence of a positive linear relationship between independent and dependent variable. Specifically, the magnitude of (VAT), which is 0.5058 gives, impression that, ceteris paribus, a unit increase in (VAT) would cause 0.5058 percent increase in state allocated tax revenue. This invariably means that as the economy grows revenue allocated by the state to the local government increases. The sign of the estimated parameter is consistent with our postulate, and the coefficient is statistically significant at 10 percent and 5 percent level with 11 degrees of freedom, because calculated-t statistic of 3.987 is greater than tabulated t-statistic of 1.363 and 1.796 respectively.

The coefficient of determination from the result shows that 59.10 percent variation in state allocated revenue (SAREV) to the local government is explained by the explanatory variable (VAT) used in the model. This confirms that the model fits the data and that it explains well the variation in SAREV. The remaining 40.90 percent are captured by stochastic error term. This indicates an average level of association between state allocated tax revenue in the local government and VAT. The calculated F-ratio of 15.898 being greater than the table F-value of 4.84 at 5 percent level confirms that the data fit the model. However, the D-W statistic of 1.167 falls into inclusive region and this means that we cannot conclude an existence or non-existence of auto correlation among the explanatory variables. Therefore, the estimated result cannot be used for forecasting because of inappropriate correlation among the independent variable. However, it is useful, in analyzing the past performance of the state revenue allocation in relation to consumption (VAT) at grass root level.

TABLE 3: Internally generated revenue at local government

Variable	Estimated Coefficient	Standard Error	t-statistics	p-value
Constant	0.404660	2.42206	-0.1670773	0.870
LnCONS	0.656611	0.173958	3.77455	0.003

**Equation 3: Internally generated tax revenue allocation with respect to consumption (VAT)**

$$\text{LnINTREVt} = -0.404660 + 0.656611\text{LnCONS}$$

$$R^2 = 56.43\%, \underline{R}^2 = 52.47\%, F(1, 11) = 14.2472, D-W \text{ stat} = 1.00843$$

Equation 3 of Table 3 presents the regression result of the relationship of internally generated tax revenue, with Consumption (VAT). The model evaluates the contribution of Consumption \*(VAT) on internally generated tax revenue at the grass root level. In the equation, the constant coefficient, which indicates autonomous (VAT) status, is -0.4046. This constant is independent of changes in other explanatory variables. It is a negative intercept in the model. It gives impression that where the magnitude of the coefficient of the explanatory variable changes or remains constant, VAT status would revolve around this autonomous level of the coefficient and it is not statistically significant at 10 percent and 5 percent level.

The estimated coefficient of the explanatory variable indicates an existence of a positive linear relationship between independent and dependent variable. Specifically, the magnitude of (VAT), which is 0.6566 give impression that, ceteris paribus, a unit increase in (VAT), would cause 0.6566 percent increase in internally generated tax revenue.



This invariably means that as consumption (VAT) increases, revenue generated internally in the local government increases. The sign of the estimated parameter is consistent with our postulate, and the coefficient is statistically significant at 10 percent and 5 percent level with 11 degree of freedom, because calculated-t statistic of 3.7745 is greater than tabulated t-statistic of 1.363 and 1.796 respectively.

The coefficient of determination from the result shows that 56.43 percent variation in revenue generated at the local government (INTREV) is explained by the explanatory variable (VAT) used in the model. This confirms that the model fits the data and that it explains well the variation in INTREV. The remaining 43.57 percent are captured by stochastic error term. This indicates an average level of association between internally generated tax revenue in the local government and VAT. The calculated F-ratio of 14.247 being greater than the table F-value of 4.84 at 5 percent level conforms that the data fit the model.

However, the D-W statistic of 1.008 falls into inclusive region and this means that we cannot conclude an existence or non-existence of auto-correlation among the explanatory variables. Therefore, the estimated result cannot be used for forecasting because of inappropriate correlation among the independent variable. However, it is useful, in analyzing the past performance of the internally generated tax revenue in relation to consumption (VAT) at grass root level.

Investigating into the buoyancy of the tax revenue allocation on consumption (VAT), consumption (VAT) was regressed on Federal Government Tax Revenue Allocation, State Government Revenue Allocation and internally generated revenue. These results are presented in equations 1 to 3.

*a) Tax revenue structure buoyancy with respect to consumption*

In equation 1 - 3, we investigated the effect of various tax revenue allocations, with respect to consumption (VAT).

The quantitative result shows that all the revenue allocations were inflexible (inelastic) with respect to consumption (VAT). Revenue generated from consumption (VAT) which is accorded to the Federal Allocation, State Allocation and Internally generated revenue is not much.

This implies that tax revenue within our period of study could not be generated much through consumption (VAT), as such the inflexibility of federal government tax revenue allocation, state government tax revenue allocation and internally generated tax revenue with respect to consumption. The implication of this result is that consumers could not easily shift their consumption due to the introduction of value-added tax by the federal, state and local government.

The responsiveness of the consumers to the federal government revenue allocation is 0.77655%. That is 1% increase in consumption will lead to 0.77655% increase in federal government revenue allocation *ceteris paribus*. This result is statistically significant at 5% level, meaning that consumption expenditure is an important source of revenue generation by the federal government. That increase in consumption tax will yield more revenue to the federal government than if the consumption tax is decreased.

In the case of the state government, the buoyancy of the tax from consumption is 0.505878, meaning that any 1% increase in consumption will lead to 0.505878% increase in revenue generated and allocated by the state government. This shows that consumption will respond sluggishly with increase in VAT. In other words, state government will generate more revenue with increase in consumption tax than with reduction in consumption tax. This result is also statistically significant at 5%, meaning that consumption tax is an important source of revenue to the state government.

With regard to the internally generated revenue, any 1% increase in consumption expenditure will lead to 0.6566% increase in internally generated revenue by the local government council (Calabar Municipality). This shows that the Calabar Municipality Council has the ability of generating more revenue with increase in consumption tax, than with the decrease in consumption tax. This result is also statistically significant at 5% level, meaning that consumption tax is an important source of revenue to the Calabar Municipality Council.

From the coefficient of our regression result, we observed that the Federal Government has the ability to generate more tax from consumption expenditure than the Local and State Government respectively.

**Research hypotheses**

The following hypotheses were tested in the study:

- i) There is a significant statistical relationship between consumption (VAT) at the local government and federal allocated tax revenue.
- ii) There is a significant statistical relationship between consumption (VAT) at the local government and state allocated tax revenue.
- iii) There is a significant statistical relationship between consumption (VAT) at the local government and internally generated tax revenue.

**a) Test of hypothesis 1**

In this section we test the null hypothesis  $H_0$ ;  $d_1 = 0$ , against alternative hypothesis  $H_1$ ;  $d_1 \neq 0$ .

$H_0$  means that  $d_1$  is not statistically significant and that there is no positive linear relationship between consumption (VAT) and federal government tax revenue allocation to the local government council (Calabar Municipality) in equation 1 of Table 1.

$H_1$  means that  $d_1$  is statistically significant and that there is a positive linear relationship between consumption (VAT) and federal government tax revenue allocation to the local government council (Calabar Municipality) in equation 1 of Table 1

Using t-statistic, to test the regression coefficient of consumption (VAT),  $t^* = 4.1752$  and  $t_{0.05} = 1.796$ . since  $t^*$  is greater than  $t_{0.05}$ , that is,  $4.1752 > 1.796$  with 11 d. f. at 5% level, we conclude that  $d_1$  is statistically significant, therefore the alternative hypothesis ( $H_1$ ) holds while we reject the null ( $H_0$ ).

**b) Test of hypothesis 2**

In this section we test the null hypothesis  $H_0$ ;  $K_1 = 0$ , against alternative hypothesis  $H_1$ ;  $K_1 \neq 0$

$H_0$  means that  $K_1$  is not statistically significant and that there is no positive linear relationship between consumption (VAT) and state government tax revenue allocation to the local government council (Calabar Municipality) in equation 2 of Table 2.

$H_1$  means that  $K_1$  is statistically significant and that there is a positive linear relationship between consumption (VAT) and state government tax revenue allocation to the local government council (Calabar Municipality).

Using t-statistic to test the regression coefficient of VAT, equation 2 of Table 2,  $t^* = 3.987$  and  $t_{0.05} = 1.796$ . since  $t^*$  is greater than  $t_{0.05}$ , that is,  $3.987 > 1.796$  with 11 d. f. at 5% level we conclude that  $K_1$  is statistically significant, therefore the alternative hypothesis ( $H_1$ ) is accepted while we reject the null ( $H_0$ ).

**c) Test of hypothesis 3**

In this section we test the null hypothesis  $H_0$ ;  $j_1 = 0$ , against alternative hypothesis  $H_1$ ;  $j_1 \neq 0$

$H_0$  means that  $K_1$  is not statistically significant and that there is no positive linear relationship between consumption (VAT) and internally generated tax revenue of the local government council (Calabar Municipality) in equation 3 of Table 3.

$H_1$  means that  $K_1$  is statistically significant and that there is a positive linear relationship between consumption (VAT) and internally generated tax revenue of the local government council (Calabar Municipality) in equation 3 of Table 3.

Using t-statistic to test the regression coefficient of VAT, equation 3 of Table 3,  $t^* = 3.7745$  and  $t_{0.05} = 1.796$ . since  $t^*$  is greater than  $t_{0.05}$ , that is,  $3.7745 > 1.796$  with 11 d. f. at 5% level, we conclude that  $j_1$  is statistically significant, therefore the alternative hypothesis ( $H_1$ ) is accepted while we reject the null ( $H_0$ ).



## CONCLUSION

### Summary of findings

In this study, our findings gave impression that the economic well being of those in the local government areas is enhanced by the value of revenue received by the local council. The following was the summary of the major findings of the study.

1. The effects of the buoyancy of tax revenue, accruing to the local government with respect to consumption (VAT); the quantitative results show that all the revenue allocations and generation in the local government council were inflexible (inelastic) with respect to consumption (VAT). The implication of the result is that consumers could not shift their consumption due to the introduction of value-added tax by the federal and state governments. As such, consumption tax could not generate much revenue within our period of study.
2. That consumption expenditure is an important source of revenue generation by the federal, state and local government and that more revenue could be generated with increase in consumption tax, than with decrease in consumption tax.
3. Comparatively, the stability (dynamics) of revenue allocation to the local government council(Appendix 2) shows that between 1980-89; federal tax revenue allocation was relatively stable than internally generated revenue and state allocated tax revenue in that order. Between 1990-94, revenue allocation from the state government was relatively stable than that of internally generated tax revenue and federal allocation in that order. This is also true for the period from 1994-2002. Based on this result; state allocation and internally generated tax revenue can be used for long term planning than federal government revenue allocation.
4. The percentage increase of internally generated revenue has declined significantly over the years under study.
5. We also discovered that local governments rely heavily on federal allocation instead of mobilizing and generating within their councils.

Based on the evidence presented and analyzed, the economy at the grass root level changes as the value of revenue received changes. This implies that revenue received in a local government area has a strong influence on the consumption growth process in the local government. In other words, the general economic activity in the local government area is stimulated by the amount of public expenditure.

### Policy implications and recommendations

The implications of the findings of this study are that:

- (1) The influence which the adequate revenue received by a local government wields on the economy is indicated by positive response of the total value of the local government expenditure.
- (2) Federal government policy, which could cause a decline in revenue allocated to the local government, is the policy that retards economic growth at the grass root level, given that federal allocation contributed significantly to the economic growth of the rural communities.
- (3) Fiscal policy that does not encourage revenue mobilization at the local government area causes a decline in economy, given that internally generated revenue related directly with economic growth indicators.
- (4) The provision of social and economic infrastructure in rural areas would decline and hence the entire economy at that level if the federal government reduces the allocation given to the local councils. This will happen since only federal revenue makes a significant contribution to the growth in the infrastructure.

## REFERENCES

- [1] Bello-Imam, I.B. (1990), Financial Transfer in Local Government Finance in Nigeria; Nigerian Institute of Social and Economic Research (NISER).
- [2] Uwatt, B.U. (1999), Revenue Performance and Productivity in the Nigeria Federal System, *Journal of Economics and Social Studies*, Vol. 41, No.2
- [3] Nyong, M.O. (2001), Public Policy, Public Sector Economics and Management in Nigeria, Calabar: University of Calabar Press
- [4] Anyanwu, J.C. (1995), Revenue Allocation and Stable Fiscal Federalism in Nigeria, *Journal of Economic Management* 2(2): 1-27
- [5] Central Bank of Nigeria (2000), The changing Structure of the Nigerian Economy and implications for Development.

## APPENDIX 1: Federal and state government revenue

	FREV	LFREV	CONS	LCONS		SAREV	FAREV	INTREV
1980	12993.00000	9.47217	36746.00000	10.51178	1980	1072.30005	444.70001	268.10001
1981	7511.60010	8.92420	41182.00000	10.62576	1981	901.59998	1268.09998	106.40000
1982	5819.10010	8.66890	43100.00000	10.67128	1982	987.00000	1225.50000	84.00000
1983	6272.00000	8.74385	48946.00000	10.79847	1983	493.50000	1185.09998	768.40002
1984	7267.20000	8.89113	54881.00000	10.91292	1984	345.50000	1261.69995	900.90002
1985	10001.00000	9.21044	61408.00000	11.02530	1985	128.39999	1576.59998	1492.40002
1986	7969.39990	8.94336	63691.00000	11.06180	1986	154.10001	1341.09998	2402.30005
1987	16129.00000	9.68837	85723.00000	11.35888	1987	231.10001	1676.40002	1598.50000
1988	15588.59961	9.65429	122320.00000	11.71440	1988	323.50000	2514.60010	1831.09998
1989	25893.59961	10.16175	148904.00000	11.91106	1989	420.60001	3771.89990	1944.00000
1990	38152.10156	10.54934	166742.59375	12.02421	1990	630.90002	5657.79980	1791.19995
1991	30829.19922	10.33622	234958.90625	12.36717	1991	458.29999	6978.79980	2149.39990
1992	53264.89844	10.88303	424613.90625	12.95894	1992	503.29999	11890.79980	2643.80005
1993	53493.60156	10.88732	597373.00000	13.30030	1993	905.90002	31097.50000	3436.89990
1994	90622.60156	11.41446	782570.00000	13.57034	1994	1721.19995	29408.00000	4124.29980
1995	249768.09375	12.42829	189848.00000	12.15398	1995	2151.50000	30348.90039	3401.69995
1996	369267.00000	12.81927	2511050.00000	14.73621	1996	2581.80005	28131.90039	3654.30005
1997	423215.00000	12.95564	2605890.00000	14.77328	1997	2366.69995	26412.50000	4750.60010
1998	353724.00000	12.77627	2961340.00000	14.90115	1998	1894.40002	39561.80078	7125.89990
1999	662585.00000	13.40390	2549440.00000	14.75138	1999	2280.60010	80020.29688	8573.50000
2000	597282.12500	13.30015	2895656.00000	14.87872	2000	2180.19995	161124.40625	18823.50000
2001	796976.68750	13.58858	3000000.00000	14.91412	2001	4142.39990	198035.50000	54083.19922
2002	714454.18750	13.47969	3500000.00000	15.06827	2002	5592.20020	211727.00000	27160.09961

  

	CONS	FREV	GDP	GDP1		TOTAL	FAT	SAT	INTT
1980	36746.00000	12993.00000	66186.60156	50848.60156	1980	0.4912	0.60069	0.15019	1.00000
1981	41182.00000	7511.60010	70395.89844	50749.10156	1981	0.55714	0.39612	0.046747	1.00000
1982	43100.00000	5819.10010	70157.20313	51709.19922	1982	0.53364	0.42978	0.036577	1.00000
1983	48946.00000	6272.00000	66389.50000	57142.10156	1983	0.48431	0.20168	0.31402	1.00000
1984	54881.00000	7267.20020	63005.39844	63608.10156	1984	0.50305	0.13775	0.35920	1.00000
1985	61408.00000	10001.00000	68916.29688	72355.39844	1985	0.49309	0.040158	0.46675	1.00000
1986	63691.00000	7969.39990	71075.89844	73061.89844	1986	0.34409	0.039538	0.61637	1.00000
1987	85723.00000	16129.00000	70741.39844	108885.1016	1987	0.47815	0.065916	0.45593	1.00000
1988	122320.00000	15588.59961	77752.50000	145243.2969	1988	0.53855	0.069284	0.39217	1.00000
1989	148904.00000	25893.59961	83495020313	224796.9063	1989	0.61467	0.068541	0.31679	1.00000
1990	166742.59375	38152.10156	90342.10156	260636.7031	1990	0.70023	0.078083	0.22169	1.00000
1991	234958.90625	30829.19922	94614.10156	324010.00000	1991	0.72798	0.047807	0.22421	1.00000
1992	424613.90625	53264.89844	97431.10156	549808.81250	1992	0.79072	0.033469	0.17581	1.00000
1993	597373.00000	53493.60156	100015.20313	697090.00000	1993	0.87746	0.025561	0.096977	1.00000
1994	782570.00000	90622.60156	101330.00000	914940.00000	1994	0.83419	0.048824	0.11699	1.00000
1995	189848.00000	249768.09375	103510.00000	1977740.00000	1995	0.84532	0.059927	0.094749	1.00000
1996	2511050.00000	369267.00000	107020.00000	2823900.00000	1996	0.81855	0.075122	0.10633	1.00000
1997	2605890.00000	423215.00000	110400.00000	2339650.00000	1997	0.78773	0.070585	0.14168	1.00000
1998	2961340.00000	353724.00000	113000.00000	2881310.00000	1998	0.81435	0.038974	0.14668	1.00000
1999	2549440.00000	662585.00000	116000.00000	3352650.00000	1999	0.88056	0.025096	0.094345	1.00000
2000	2895656.00000	597282.12500	120090.00000	4980943.00000	2000	0.88468	0.011971	0.10335	1.00000
2001	3000000.00000	796976.68750	116363.29688	5639865.00000	2001	0.77279	0.016165	0.21105	1.00000
2002	3500000.00000	714754.18750	117484.39844	4657819.00000	2002	0.86603	0.022874	0.11109	1.00000

Indicators Data: Local Government Revenue and Economic Growth.

Source: CBN Statistical Bulletin Vol. 12 December, 2002 Calabar Municipal Council Account Section

## APPENDIX 2: Test for dynamics (stability) of tax revenue allocation to the Calabar Municipal Council

Period	Uni-variate statistics	
1980 – 1989		
Variables	Standard deviation	Variance
FAT	0.10692	0.011432
SAT	0.19975	0.039900
INTT	0.18805	0.035363
1990 – 1994		
FAT	0.073198	0.0053579
SAT	0.020078	0.00040313
INTT	0.058620	0.0034363
1995 – 2002		
FAT	0.039374	0.0015503
SAT	0.023728	0.00056301
INTT	0.037219	0.0013852