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THE IMPACT OF VALUE ADDED TAX ON THE ECONOMIC GROWTH OF NIGERIA: AN EMPIRICAL ANALYSIS

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ABSTRACT

The significant impact of Value added Tax (VAT) on the development of nations cannot be overemphasized yet; most prominent Nigerians and interest groups had spoken against its introduction. Hence, the objective of this study is to empirically analyze the impact of value added tax on the economic growth of Nigeria. To investigate the relationship, it employed the least square method of estimation and found that value added tax has a positive and significant effect on economic growth. It also found a long run relationship between total revenue collections on economic growth. Granger causality test revealed the existence of a unidirectional and bi-directional causation effects between VAT and GDPR and between TRC and GDPR respectively. This study concluded by recommending that government should create enabling environment to ensure that the cooperation of revenue collection especially Value Added Tax has a good chance of working environment. Government should systematically fight corruption within the tax collectors by ensuring that functional tax offices in every council area coordinate a vigorous campaign to educate people and seek their cooperation. This will no doubt erode the negative attitude that some tax payers have developed towards revenue collection.

Keywords: Value added Tax, total revenue collection, Nigeria

INTRODUCTION

Nigeria operates federal system; hence its fiscal governance also adheres to the same principle (Odusola, 2006). This has serious implications on how the tax system is managed in the country. In Nigeria, the government's fiscal power is based on a three-tiered tax structure divided between the federal, state and local governments, each of which has different tax jurisdictions. Dwindling revenue generation as typified by yearly budget deficits and insufficient funds for economic growth and development are some of the recurrent problems of the three-tier structure of the government in Nigeria (Naiyeju, 2009). The Revenue base, fiscal resources available and

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the way these resources are generated and utilized are the major determinants of the financial control of any government (Umeora, 2013).

It is therefore, the obligation of the government to sufficiently mobilize potential revenue across the country to prevent economic stagnation. This mobilization involves the adoption of economically and politically acceptable taxes that would ensure easy administration, accounting, verification, auditing and investigation based on the equality, neutrality and other attributes of a good tax (Onaolapo,Aworemi & Ajala,2013). This has a wider coverage since it is a Federal Government tax, which is administered using the existing machinery of the Federal Inland Revenue Services. Besides, the cause of adverse variance can be adequately controlled under proper administration (Leach, 2003).

The revenue generated from Value Added Tax (VAT) can help to boost the GDP of any economy. Prior to the introduction of this VAT in Nigerian economy in 1st January 1994, the federal government has been working relentlessly on how to revamp the Nigeria economy (Amedu, 2013). The introduction was based on the report of the study group set up in 1991 by government to review the system of indirect tax in Nigeria. The Second-Tier Foreign Exchange Market (SFEM), Structural Adjustment Programme (SAP), and Foreign Exchange Market (FEM) were among the economic measures introduced to revamp the Nigeria economy but all were to no avail as the economy seems to be an ailing child that has defied all economic therapy or fiscal measures (Igweonyia, 2011). The registration of VAT is to cover all the business activities of the vatable persons (Onodugo,Ugwuonah& Ebbinne,2010). Therefore all domestic manufacturers, wholesalers, distributors, importers and suppliers of goods and services in Nigeria are expected to register for VAT within six months after the commencement of the decree or six months from the beginning of business, whichever is earlier.

Thus, the VAT is a revenue mobilization strategy to cover up the deficiencies, experienced with the former sales tax because of its progressive nature. Nevertheless, government ability to adequately and effectively retrieve the proceeds from companies and other agents of collection remains a problem. It would appear that VAT is froth with some problems. It does not come into view as if there is enough technology for well scrutinizing of the payment of the tax withheld to the relevant tax authorities, this means that the federal Inland Revenue lacks the logistic support and this invariably will give room for tax evasion and avoidance. For the above purpose, this paper empirically analyses the impact of value added tax on the economic growth of Nigeria: an empirical analysis. The remaining part of this study is structured into four sections. In section two, the conceptual issues, theoretical basis and empirical are reviewed. Section three highlights the methodological issues. Section four presents and analyses the result while section five concludes and proffer recommendations.

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LITERATURE REVIEWS

VAT can only be shunned by the buyer if he keeps away from patronizing any of the vat able goods or services that is an item on which VAT is paid (Igweonyia, 2011). VAT is a consumption tax whereby the consumer is made to bear the tax burden (Nworji in Chima, 1996). The tax burden is passed from the manufacturer to wholesaler to retailer and finally to the consumer who has been designed to bear it without complaints (Lisa, 2007). VAT is an indirect tax imposed on each sale beginning at the start of the production and distribution cycle and culminating in the sales to the consumer (IMF, 2002).

It went further to create the impression that it is the consumer that absorbs the VAT as part of the sales prices, showing that VAT essentially is a consumption tax collected, throughout the production chain. VAT is a supplementary generally bottom tax on consumer expenditure. With a few exceptions, it is levied in all goods and services at the rate which differ from one country to another (Igweonyia, 2011).

THEORETICAL FRAMEWORK

This study is hinged on two theories were propounded by Adam Smith in the year 1776:

Cost of Service Theory of Taxation: the postulation of this theory is that Government should tax the citizens according to the cost of service rendered by it. Some economists were of the opinion that if the state charges actual cost of the service to be rended from the people, it will satisfy the idea of equity or justice in taxation. The cost of service principle can no doubt be applied to some extent in those cases where the services are rendered out of prices and are a bit easy to determine.

Benefit Theory: The postulation of this theory is that the state should levy taxes on individuals according to the benefit conferred on them. The more benefits a person derives from the activities of the state, the more he should pay to the government.

EMPIRICAL STUDIES

Among the few studies carried out in Nigeria are, the study carried out by Adereti, Adesina & Sanni (2011) and Aworemi and Ajala (2013), who investigated the impact of Value Added Tax on the economic growth of Nigeria using multiple regression technique. The results of the analysis revealed that the ratio of VAT Revenue to GDP averaged 1.3% compared to 4.5% in Indonesia and indicated a positive and significant correlation between VAT Revenue and GDP.

In the works of Onwuchekwa and Aruwa (2014) studying the impact of value added tax (VAT) on the economic growth of Nigeria. Ordinary Least Square technique was applied to test the

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formulated hypotheses and they found out that VAT have contributed significantly to the total tax revenue of government as well as the economic growth of Nigeria . In the same vein Olatunji (2009), in his work titled "effectiveness of the administration of VAT to improve government revenue and boost economic growth in Nigeria" using simple percentage and chi-square for data analysis. The findings reveal that a positive correlation between VAT and GDP existed.

Effect of VAT on output growth in Nigeria was examined by Bakare (2013) using the Ordinary least Square regression technique. A positive and significant relationship between VAT and output growth in Nigeria was found. Likewise, Okoli and Matthew (2015), in their paper investigate the extent to which VAT had contributed to Nigeria's total federally collected revenue and its position among the other tax components from 1994-2012 using the Error Correction Model (ECM) for the analysis. The results show that VAT contributes positively and significantly on the total federally collected revenue and as well the GDP.

Izedonmi and Okunbor (2014) in their study titled "Contribution of VAT to the development of the Nigerian economy" used multiple regression observe that a positive but insignificant correlation between VAT Revenue and GDP.

METHODOLOGY

Model Specification: The model specified in this study is an adaptation of that of Ichoku and Fonta (2006) and it is specified as show below:

$LOGGDPR = b_0 + b_1\ VAT + b_2 TRC + U$.....i

Where:

LOGGDPR = Gross Domestic Product Growth Rate

VAT = Value Added Tax

TRC = Total Revenue Collection.

U = the Stochastic Error term

b_0 = Intercept

b_1, b_2, and b_3 are parameters to be estimated

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Estimation Procedures

This study adopted the Error Correction Models (ECMs) as its analytical framework. Error Correction Models (ECMs) are a category of multiple time series models that directly estimate the speed at which a dependent variable (GDPR) returns to equilibrium after a change in an independent variable (VAT & TRC).ECMs are useful for estimating both short term and long term effects of one time series on another. ECMs are useful models when dealing with integrated data, but can also be used with stationary data.

The basic structure of an ECM is:

$\Delta Yt=\alpha +b\Delta Xt-1 -\beta ect-1+\epsilon t$.....ii

Where EC is the error correction component of the model and it measures the speed at which previous deviations from equilibrium are corrected. Error correction models can be used to estimate the following quantities of interest for all X variables.

Short term effects of X on Y

Long term effects of X on Y (long run multiplier)

The speed at which Y returns to equilibrium after a deviation has occurred

Unit Root Test

Prior to determining Co integrating Relationships, tests for unit roots are often undertaken to determine the time series behavior of the variable i.e. whether a time series variable have unit roots (non-stationary) or is a stationary variable. The unit root tests ascertain the order of integration for a given variable.

The study tested for the presence of unit root using Augmented Dickey-Fuller test in order to overcome the problem of spurious regression often associated with non-stationary time series which are misleading and makes prediction unreliable. The starting point for stationarity test is to find the order of integration of both dependent and independent variables of the model. The order of integration which would help us ascertain the number of times a variable will be differenced to arrive at stationarity. It will also give us the standing ground to make meaningful inferences from the estimation of the variables under investigation. The Augmented Dickey Fuller (ADF) tests were used to examine the characteristics of the data samples at level, constant, and constant and trend. The ADF test is implemented by OLS estimate as presented in Equation.

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$Yt=\alpha+bt+\beta 0Yt-1+\sum\alpha\Delta Yt-1+\epsilon t$.....3

Where; Δ = first difference operator, t = the trend variable, Y_t = the variable under consideration, ε_t = a white noise error term. In the case of equation (3.9), the null hypothesis is: H_0: b = 0 (i.e. there is a unit root or the time series is non Stationary). Alternative hypothesis is H_1: b < 0 (i.e. the time series is stationary possibly around a stochastic trend). Usually, a null hypothesis (H_0) of non-stationary is rejected if the computed t-statistics is greater than the critical t-values at a chosen level of significance. The lag length is strictly an empirical issue base on the various information selection criteria.

Cointegration Test

However, as noted above, for integration to exist, the non-stationary series must be integrated of the same (higher) order. Testing for co-integration involves using the Engle-Granger two step procedures due to its simplicity. Other co-integration test procedures exist which are in fact superior to the Engle-Granger procedure but were not employed due to their complexity.

Granger Causality Test

The null hypothesis is therefore that x does not Granger-cause y in the first regression and that y does not Granger-cause x in the second regression.

EMPIRICAL RESULTS

Unit Root Test Results

Augmented Dickey Fuller (ADF) unit root test was carried out to determine some stochastic properties of the data employed in this study. Table 4.1 below shows that all the variables were stationary at First difference. Therefore, they are integrated at order of one (1).

Table 4.1: Stationarity test results

Variable	Level	First Difference	Order of Integration
LOGGDPR	-1.8317	-2.1792	I(1)
TRC	-1.1643	-4.6324	I(1)
VAT	-2.3520	-12.213	I(1)

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Cointegration Test Results

This study employed Johansen Cointegration test to test foe long run relationship among the variables of interest and the results of the test is presented in Table 2.

Table 2: Long-run relationship test results

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.834281	72.76139	47.21	54.46
At most 1 **	0.619411	36.81217	29.68	35.65
At most 2 *	0.415784	17.49145	15.41	20.04
At most 3 **	0.286154	6.741773	3.76	6.65

*(**) denotes rejection of the hypothesis at the 5%(1%) level
Trace test indicates 4 cointegrating equation(s) at the 5% level
Trace test indicates 2 cointegrating equation(s) at the 1% level

The result indicates at least two Cointegration equations at one (1) percent level of significance. Therefore, there is a long run relationship among the variables employed in this study.

Ganger Causality Test Results

It also revealed that VAT granger causes LOGGDPR but LOGGDPR does not granger cause MPR. This is a case of unidirectional causality. There is the presence of two-way causation effect between TRC and LOGGDPR as both grangers cause the other. These findings corroborated the argument that there is a feedback effect between the value added tax and economic growth and vice versa.

Table 3: Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Probability
VAT does not Granger Cause LOGGDPR	17	4.25808	0.03431
LOGGDPR does not Granger Cause VAT		0.65105	0.53562
TRC does not Granger Cause LOGGDPR	17	5.10216	0.00351
LOGGDPR does not Granger Cause TRC		4.11965	0.04807

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Error Correction Model Results

The parsimonious Error Correction Model (ECM) presented below was derived from the over-parameterized model by systematically eliminating those variables that have high standard error and those who yielded signs different from the expected theoretical values (A priori Expectation). The Over-parameterized Model is presented in the appendix.

The parsimonious error correction model revealed that past value of Value Added Tax (VAT) positively impact on Gross Domestic Product. This impact is statistically significant as well. This conforms to the a priori expectation. Also, Total revenue generation (TRC) has positive impacts on company income tax. These impacts are statistically significant. A unit increase in VAT and TRC will result in 3.28 and 7.95 units increase in company income tax as proxy by LOGGDPR respectively. These also conform to the a priori expectations concerning their signs.

Table 4: Parsimonious Error Correction Model

Dependent Variable: LOGGDPR
Method: Least Squares
Date: 03/22/18 Time: 22:24
Sample(adjusted): 2000 2016
Included observations: 15 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.76432	37.71290	0.311944	0.7600
LOGGDPR(1)	0.623392	0.291820	2.136227	0.0002
VAT(2)	3.284744	0.688927	4.767908	0.0000
TRC(2)	7.956829	2.329602	3.426721	0.0000
ECM(-1)	-0.149384	0.036292	-4.116167	0.0000
R-squared	0.719007	Mean dependent var		4.065043
Adjusted R-squared	-0.685060	S.D. dependent var		6.724656
S.E. of regression	7.623105	Akaike info criterion		7.152334
Sum squared resid	755.4524	Schwarz criterion		7.450578
Log likelihood	-61.94717	F-statistic		4.201424
Durbin-Watson stat	2.032736	Prob(F-statistic)		0.000000

Source: Author's Computation

The Speed of adjustment (ECM) revealed that 14.9% of disequilibrium is corrected annually. Therefore disequilibrium in the system will even-out in less than seven (7) years. Adjusted R-

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squared statistic value of 0.6860 revealed that the model is a good fit as the model explains over 68% of systematic variation in inflation. F-Statistic also shows that the whole model is statistically significant given the F- statistic value of 4.20 and the accompanying probability value of 0.0000. Finally, DW statistic value of 2.03 which is approximately equals to two (2). This signifies the absence of autocorrelation.

CONCLUSION

This study assessed the interaction between value added tax and gross domestic product in Nigeria between the periods of 2000 to 2016. This study found bidirectional causality between capital flight proxy variables.

Value added tax and total revenue collection all have a direct positive and significant effect on gross domestic product Based on the findings on this study, the following recommendation is hereby put forward:

On the basis of the result therefore, the following recommendations were provided

i. VAT collection can thrive effectively and efficiently through the honest corporation of tax authorities but if people continue to evade tax, no meaningful achievement would be made. Therefore, supervision by government at all consumption goods by corporate organisations as this has the prospect of increasing revenue generation accruing to Nigeria through value added tax.

ii. Efforts should be put in place by government to systematically decrease the rate of corruption within the tax collectors by ensuring those Seminars and workshops are organized on the best way approach to adopt in order that there should be functional tax offices in every council area to coordinate a vigorous campaign to educate people and seek their cooperation. This will no doubt erode the negative attitude that some of the tax payers have developed towards revenue collection.

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UNIT ROOT TEST

LOGGDPR AT LEVEL

Null Hypothesis: LOGGDPR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.831783	0.1291
Test critical values:	1% level	-3.788030	
	5% level	-3.012363	
	10% level	-2.646119	

LOGGDPR AT FIRST DIFFERENCE

Null Hypothesis: D(LOGGDPR) has a unit root
Exogenous: Constant
Lag Length: 4 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.179253	0.2201
Test critical values:	1% level	-3.920350	
	5% level	-3.065585	
	10% level	-2.673459	

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TRC AT LEVEL

Null Hypothesis: TRC has a unit root
Exogenous: Constant
Lag Length: 6 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-1.164319	0.6602
Test critical values:	1% level	-3.959148	
	5% level	-3.081002	
	10% level	-2.681330	

TRC AT FIRST DIFFERENCE

Null Hypothesis: D(TRC) has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.632487	0.0008
Test critical values:	1% level	-4.057910	
	5% level	-3.119910	
	10% level	-2.701103	

VAT AT LEVEL

Null Hypothesis: VAT has a unit root
Exogenous: Constant
Lag Length: 8 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.352069	0.1730
Test critical values:	1% level	-4.121990	
	5% level	-3.144920	
	10% level	-2.713751	

VAT AT FIRST DIFFERENCE

Null Hypothesis: D(VAT) has a unit root
Exogenous: Constant
Lag Length: 7 (Automatic based on SIC, MAXLAG=8)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-12.21345	0.0000
Test critical values:	1% level	-4.004425	
	5% level	-3.098896	
	10% level	-2.690439	

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JOHANSEN COINTEGRATION TEST RESULTS

Unrestricted Cointegration Rank Test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.834281	72.76139	47.21	54.46
At most 1 **	0.619411	36.81217	29.68	35.65
At most 2 *	0.415784	17.49145	15.41	20.04
At most 3 **	0.286154	6.741773	3.76	6.65

*(**) denotes rejection of the hypothesis at the 5%(1%) level
Trace test indicates 4 cointegrating equation(s) at the 5% level
Trace test indicates 2 cointegrating equation(s) at the 1% level

Granger Causality Test Results

Null Hypothesis:	Obs	F-Statistic	Probability
VAT does not Granger Cause LOGGDPR	20	4.25808	0.03431
LOGGDPR does not Granger Cause VAT		0.65105	0.53562
TRC does not Granger Cause LOGGDPR	20	5.10216	0.00351
LOGGDPR does not Granger Cause TRC		4.11965	0.04807

Source: Author's Computation

OVERPARAMETERICIZED ERROR CORRECTION MODEL

Dependent Variable: LOGGDPR
Method: Least Squares
Date: 03/22/18 Time: 22:21
Sample(adjusted): 2000 2016
Included observations: 15 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.006039	42.29070	-0.000143	0.9999
LOGGDPR(1)	-0.254702	0.392155	-0.649494	0.5322
LOGGDPR(2)	-0.300230	0.438986	-0.683916	0.5113
VAT(1)	10.44805	8.674977	1.204390	0.2592
VAT(2)	2.452979	9.125026	0.268819	0.7941
TRC(1)	2.574391	13.55328	0.189946	0.8536
TRC(2)	-1.967431	14.84590	-0.132524	0.8975
ECM(-1)	0.001098	0.429877	0.002555	0.9980

R-squared	0.252463	Mean dependent var	4.065043
Adjusted R-squared	-0.495074	S.D. dependent var	6.724656
S.E. of regression	8.222454	Akaike info criterion	7.357032
Sum squared resid	608.4788	Schwarz criterion	7.854105
Log likelihood	-59.89180	F-statistic	0.337726
Durbin-Watson stat	1.955717	Prob(F-statistic)	0.939227

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PARSIMONIUOUS ERROR CORRECTION MODEL

Dependent Variable: LOGGDPR
Method: Least Squares
Date: 03/22/18 Time: 22:24
Sample(adjusted): 2000 2016
Included observations: 15 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.76432	37.71290	0.311944	0.7600
LOGGDPR(1)	0.623392	0.291820	2.136227	0.0002
VAT(2)	-3.284744	0.688927	4.767908	0.0000
TRC(2)	-7.956829	2.329602	3.426721	0.0000
ECM(-1)	-0.149384	0.036292	-4.116167	0.0000

R-squared	0.719007	Mean dependent var	4.065043
Adjusted R-squared	-0.685060	S.D. dependent var	6.724656
S.E. of regression	7.623105	Akaike info criterion	7.152334
Sum squared resid	755.4524	Schwarz criterion	7.450578
Log likelihood	-61.94717	F-statistic	4.201424
Durbin-Watson stat	2.032736	Prob(F-statistic)	0.000000

