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Reference: Okoror, J. A./Onatuyeh, E. A. (2018). Value-added tax and economic growth : new evidence from Nigeria. In: Accounting and taxation review 2 (4), S. 99 - 112.

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ZBW Leibniz-Informationszentrum Wirtschaft
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Mitglied der Leibniz-Gemeinschaft

ISSN: 2635-2966 (Print), ISSN: 2635-2958 (Online).
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Available online at http://www.atreview.org

Original Research Article

Value-Added Tax and Economic Growth: New Evidence from Nigeria

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Received: 07/11/2018 Accepted: 30/12/2018

Abstract

The study investigates the nexus between value-added tax and economic growth against the backdrop of the active presence of informal sector activities in the economy of African countries with particular reference to Nigeria. The study is anchored on the deductive research approach and driven by the positivist philosophy. Archival data were sourced from the Central Bank of Nigeria statistical bulletin (growth rate in gross domestic product, investment to GDP ratio, labour force participation, and openness), Nigeria Population Commission (population growth rate), and Federal Inland Revenue Service (value-added tax). The data were tested for stationarity using the Augmented Dickey-Fuller approach, subjected to diagnosis tests, and analysed using the Ordinary Least Square regression technique. The result of the analysis shows that value-added tax is negatively related to economic growth. To test the robustness of the result, we substituted the dependent variable with total tax revenue and total federally collected revenue. Both results were negative and statistically significant. The negative relationship shows that there are leakages arising from the poor administration of value-added tax in Nigeria. To overcome the leakages it is recommended that the FIRS should embark on sensitization, human resource development to meet the growing challenges of effective tax administration in Nigeria.

Keywords: Value-added tax, economic growth, transitory growth, labour force participation, compulsory levy.

JEL Classification Codes: *H200, H290, O400, 470*

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Citation: Okoro, J & Onatuyeh, E.A. (2018). Value-added Tax and Economic Growth. *Accounting and Taxation Review, 2*(4), 99-112

1.0 INTRODUCTION

The success or otherwise of any economy, whether developed, developing or underdeveloped, is a function of the availability of revenue to match the cost of governance. It is a conventional wisdom that government can only function when there is adequate revenue to finance its expenditure. In Nigeria, government revenue has been sourced majorly from oil and other petroleum products. Hence, the Nigerian economy has been adjudged to be overly dependent on petroleum and petroleum products. Against the backdrop of the negative implications of this overly dependence on oil revenue, there has been the serious need to diversify the economy of Nigeria, without which the economy will collapse (Okonjo-Iweala, 2015). Taxation became handy in diversifying the economy of Nigeria away from petroleum and petroleum products.

Taxes exist in different forms. Either as direct taxes (levied on income, profits, wealth) or indirect taxes (levied on commodities, transactions, rights etc.). In Nigeria, The National tax policy has emphasized indirect taxation with emphasis on value added tax. The Federal Inland Revenue Service (1995:2) defined value added tax as a consumption tax payable on goods and services consumed by any person whether government agencies, business organisations, or individuals. While value added tax has been widely accepted in different countries in the world, it is important to reflect on the worries of Emran and Stiglitz (2005) who opined that the present agreement that favour the gradual replacement of sales tax with value added tax in the developing economies of the world is built on a fragile premise which is as a result of an incomplete model that relegates the presence of informal or shadow economy in the developing economies. Even though this opinion has been expressed some decades ago, it has not been effectively debunked.

Fiege (1979) defined informality as currently unregistered economic activities that do not contribute to the officially calculated (or observed) gross national product. It refers to market based production of goods and services, whether legal or illegal, which escapes detection in the official estimates of GDP (Smith, 1984). According to Mbaye (2014) informality accounts for about 80% of the GDP of developing countries including Nigeria. With the presence of a relatively active informal sector in Nigeria, it is imperative to investigate the growth implications of value added tax. Even though a robust consideration has been given to this issue in Nigeria (Abdul-Rahman, Joshua, &Ayorinde, 2013; Ajakaiye, 1999; Iyoha&Oriakhi, 2010; Onwuchekwa&Aruwa, 2014; Ugochukwu & Azubike, 2016) the findings have been relatively polarized between negative relationship and positive relationship between value added tax and economic growth. This inconsistencies means that the value-added tax-growth dynamics in Nigeria has not been foreclosed. Therefore, this current contribution will help to expand the existing body of literature on the nexus between value-added tax and economic growth in Nigeria. In addition the paper explores the relationship between value added tax, total tax revenue and federally collected revenue.

A preview of the result of the relationship between value-added tax and economic growth in Nigeria shows a negative and statistically insignificant result. To test the

robustness of the result, we substituted the dependent variable of economic growth with total tax revenue and federally collected revenue. The result shows negative and significant relationship with value-added tax.

Following the introduction, section two conceptualises value-added tax and economic growth. Section three focuses on the methodology with emphasis on the research design, theoretical framework and modelling. Section four presents the estimation results and discussion of findings while section five brings up the conclusion.

2.0 REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

Taxation and Value Added Tax

The Nigerian National Tax Policy defined taxation as the process of collecting taxes within a particular location. The term tax has been defined differently by different writers. The Organisation for Economic Cooperation and Development (1996) define tax as a compulsory, unrequited payments to government. Unrequited means that the benefits accruable to taxpayers from government are not directly proportional to the taxes paid. The Nigerian National Tax Policy defines tax as a monetary charge imposed by a state of the components of a state on persons, entities, property, and transactions. Anyaduba (1999) describe tax a compulsory levy imposed by a public authority on the income, profits or wealth of an individual, family, community, corporate or unincorporated body for public purposes. Ilaboya (2012) conceptualized tax as a compulsory levy imposed by a legitimate authority (guided by specific regulations) on persons, group of persons, property, income, transactions and commodities for the purpose of financing government expenditure.

Taxes are generally classified into two broad categories as direct taxes and indirect taxes. While the burden of the former cannot be shifted from the taxpayer to other individuals, the burden of the latter can be shifted from the taxpayers to the final consumers of the vatable goods and services. Examples of direct taxes are: Companies income tax, personal income tax, petroleum profit tax, and education tax. While indirect taxes includes sales tax, stamp duties, custom and excise duties, and value added tax. For the purpose of this study, emphasis is on the value added tax.

Value-added tax according to the FIRS (1995:2) *is a consumption tax payable on the goods and services consumed by any person, whether government agencies, business organisations, or individuals.* Jennings (1984) is of the opinion that value-added tax is levied at each stage when supply change hands. In the case of the manufactured items, this would be at the primary producer, manufacturer, wholesaler, and retailer stages. It is ultimately borne by the consumer who not being registered for VAT purposes is unable to reclaim it (P.379).

Value-added tax debuted in Nigeria in the year 1993 through the Value-Added Tax Act of 1993, which was essentially a replacement of the then Sales Tax Act of 1986. Even though the Value Added Tax Act was enacted in 1983, it became operational on the 1st of January 1994. The Act is now currently referred to as the Value Added Tax Act Cap. VI LFN 2004.Nigeria operates a unitary or single tax rate of 5% on all vatable goods and services. Even though in some countries, there exist multiple VAT rates on different goods and services Compared to other countries where VAT is operational, the Nigerian VAT rate of 5% seems to be moderately low compared to the average VAT rate of 20% in Europe, 12.5% in Asia, 13% in Oceania and 5% in Canada, Taiwan,

Zambia. The VAT tax rate in Hungary is high as 27% (Pomerleau, 2 015).

While it is expressly entrenched in the law establishing the value-added tax, that all goods and services are subject to tax, there are some few exemptions of goods and services not subject to value added tax. In Nigeria, basic food items, medical and pharmaceutical products, baby products, books and educational materials, property, plant and equipment for export processing or in the untilisationof gas in the downstream operation of the Nigerian petroleum sector, or for agricultural purposes, all exports of products and services, entertainment services that form part of learning, and services of community banks and mortgage institutions.

Economic Growth

The concept of economic growth has been relegated by some to the vocabulary of the biological sciences. This is because growth can only be ascribed to living being. In this regard, Kuznets (1955:16) stressed that growth is a concept whose proper domicile is in the study of organic units, and the use of the concept in economics is an example of the irrelevant employment of anology differently. But in recent times, the position of Kuznets has been seriously undermined maybe because it was founded on a wrong premise. According to Myles (2000), economic growth is the basis of increased prosperity. And since incremental growth is not restricted to organic units, the Kuznets' position of economic growth cannot stand the test of time. Iyoha (2004) defined economic growth from a time dimension when he opined that economic growth is the increase in output or per capita income over time. He further described economic growth as means of analyzing the economic performance of advanced countries over time.

The concept of economic growth has been rooted on different theoretic ranging from the neoclassical growth theory of Solow (1956) which believed that taxes can hamper economic growth. Rather than long run tax implication, it proposed a transitory growth (Hall &Jengenson, 1967). The endogenous growth model was a direct affront on the neoclassical theory of economic growth. The endogenous growth theory advanced a steady growth which presurposes that policy changes can result in savings (King &Rebelo, 1990). According to the endogenous growth theory, government policy, including taxation, can permanently result to increase in per capita output where there is high level of innovation. The implication of the theory is that taxes and other fiscal policies of government can persistently increase per capita output (Lucas, 1990; Mendoza, Milesi-Ferretti, &Asea, 1997). Beyond the neoclassical and the endogenous theory of economic growth lies the unified and the new theory of economic growth. The unified theory of economic growth was propounded by Galor (2005) as an offshoot of the endogenous growth theory. The Galor contribution emphasized that the problems of the developing can only be gleaned from a complete understanding of the forces that propelled the developed economies to their present state. The new growth theory on the other hand was popularized by Romer (1994). The unified growth theory internalized technological development into a model of how market functions. The theory believed that knowledge and technological development drives the growth of any economy. This current contribution is anchored on the endogenous theory of economic growth.

The Relationship between Value-Added Tax and Economic Growth.

No doubt, the relationship between value added tax and economic growth has been largely explored, but the inconsistencies in the

research report has made the issue still open for further research. The active informal sector of the developing economy such as Nigeria, has been criticised as one of the limitations of the introduction of value added tax. The argument of the informal sector dominance may have resulted in the negative relationship established by Ajakaiye (1999) in his investigation of the influence of value added tax on the economic growth of Nigeria, using the Equitable General Equilibrum approach. According to Emran and Stiglitz (2005), the argument infavour of the replacement of sales tax with value-added tax, as an instrument of indirect tax in most developing countries, is built on a fragile result that relegates the presence of the active informal sector. Weller and Rao (2002), in their investigation of the growth implications of progressive taxes, established that progressive taxes affords policy makers the opportunity to pursue counter-cyclical policies that drives economic growth. According to them, value-added tax can only have positive implication on economic growth if the implementationprocedure are well managed.Ugochukwu and Azubike (2016) investigated the relationship between value added tax, government revenue and economic development. The result of the study shows a negative relationship between value- added tax and economic development. The poor result of the study maybe attributable to the proxy for economic. Focusing on the economy of Kenya, Njogu (2015) examined the relationship between value-added tax and economic growth and found a negative and statistically significant relationship between value-added tax and the Kenyan economic growth. The result of the study of the nexus between VAT and Nigerian economic growth was also negative according to Madugba and Joseph (2016).

Contrary to the negative relationship reported by the previous researches, Iyoha and Oriakhi(2010), relying on Nigerian archival data from 1991 to 2006, found a positive and significant relationship between value added tax and Nigerian econmomic growth. The result of the study shows a tax buoyancy rate of 1.12 which appears to be the highest compared to other forms of taxes (petroleum profit tax with a coefficient of 1.1 and companies income tax with a bouyancy rate of 0.996). Focusing on the economy of Lagos, Owolabi and Okwu (2011) also reported a significant positive relationship between value-added tax and the growth of Lagos economy.

In the same vein, Onwuchekwa and Aruwa (2014) reported a significant positive relationship between value-added tax and economic growth in Nigeria. Smith, Islam and Moniruzzaman (2011) investigated the relationship between VAT and economic growth in Bangledesh and found a satisfactory growth implication of value added tax in the initial years of implementation. Relying on varoius growth indices, Samimi and Abdilahi (2011) investigated the growth implication of value-added tax and found a positive and significant relationship between value adeed tax and the different export indices, and by implication the growth of the national economy. Adereti, Sanni, and Adesina (2011), relying on macroeconomic data from Nigeria, investigated the relationship between VAT and economic growth and reported a positive and significant relationship between the two variables.

The Relationship Between Value-Added Tax And Tax Revenue.

In addition to the relationship between value added tax and economic growth explored in the initial section of the review, we also focused on the relationship between value added tax and federally collected revenue in Nigeria. Luqman (2004) investigated the

relationship between value added tax and government revenue in Nigeria, focusing on secondary data from 1994 to 2004. The result of the study revealed a positive and significant relationship between value- added tax and federal revenue. In the same vein, Muhibat, Abdul-Azeez, and Tope (2013) explored the relationship between value added tax and government revenue generation and economic growth. The result of the study revealed a positive and significant relationship between the dependent variable of government revenue generation in Nigeria. Ugochukwu and Azubike (2016) used archival data from Nigeria to investigate the relationship between value-added tax and government revenue. The result of the study was positive and significant at the 5% level. The same positive relationship was reported by Abdul-Rahman, Joshua, and Ayorinde (2016) in their study of the relationship between value added tax and government revenue in Nigeria.

Basila (2010) investigated the relationship between value added tax and government revenue generation in Nigeria. The result of the study was negative. The implication of the finding is that increase in value added tax has tendency to reduce government revenue in Nigeria. *Against the backdrop of the different theoretical and empirical expositions, we hypothesised in null form of no significant relationship between value-added tax and economic growth in Nigeria.*

3.0 METHODOLOGY

Analytical Framework and Model Specification

The relationship between valu-added tax and economic growth is anchored on the endogenous theory of economic growth where taxation and other government forces intervene to drive increase in per capita. As mentioned earlier, the growth implications of the endogenous growth theory was first popularised by King &Rebelo, 1990).Adopting the Feder (1982) two-sector approach, we represent the public and private sectors of the Nigerian economy in the usual twice differential production functions of Labour and Capital:

Government = f(Lg, Kg) ---------- eqn i

Private = f(LpKp) ---------- eqn ii

Labour and capital inputs are assumed to be consumed in the economy. Hence,
LE = Lg + Lp ---------- eqn iii

KE = Kg + Kp ---------- eqn iv

In any given economy, both sectors are subject to government control hence,

Y = f(LE + KE + G) ---------- eqn v

Relying on the assumption of Koch et al (2005), Government is assumed to be equal to Taxation. Hence, G = T ---------- eqnvi

Therefore, equation v is modified to incorporate taxation as:

Y = f(LE, KE, T) ---------- (eqn vii)

Decomposing T into Value-added tax, equation vii is transformed into:

Y = f(LE, KE, VAT) ----------(eqn viii)

Incorporating the usual control variables of openness and population growth rate, we have

Y = f(LE, KE, VAT OPNPGR) ------ (eqn ix)

Equation ix is expressed in econometric form as:

$$GDPGR_t = \beta_0 + \beta_1 LFP_t + \beta_2 INV_GDP_t + \beta_2 VAT_t + \beta_3 OPN_t + \beta_4 PGR_t + \mu \quad \text{---------- (eqn x)}$$

Where GDPGR is growth rate in gross domestic product (a proxy for economic growth), LFP is labour force participation (a proxy for Labour in the endogenous growth model), INV_GDP is the share of investment in GDP (a proxy for capital in the endogenous growth model), VAT is value added tax (a proxy for the government policy), OPN is openness, and PGR is population growth rate.

The study is a time series study anchored on the positivist philosophy and based on the deductive research approach. In the study, we employ archival data form the Central bank of Nigeria Statistical bulletin (labour force participation, investment-GDP, and openness), Federal Inland revenue Service (value-added tax) and the National Population Commission (population growth rate). The data span a period of twenty four years from 1994, when VAT was implemented in Nigeria to 2017. The period is considered long enough for the independent variable of interest to effectively influence the dependent variable of economic growth.

4.0 ESTIMATION RESULTS AND DISCUSSION OF FINDINGS

UNIVARIATE ANALYSES

Table1: The Results of the Stationarity Test of the Regression Variables

Variables	ADF Test	Critical values	Order of Integration	Inference
GDPGR*	-5.88295	-3.004861	1(1)	Stationery
VAT***	-3.644835	-3.012363	1(1)	Stationery
LFP*	-4.044476	-3.00486	1(1)	Stationery
INVEST-GDP*	-5.088707	3.021363	1(1)	Stationery
PGR*	-4.838694	3.021363	1(1)	Stationery
OPN*	-3.911835	3.021363	1(1)	Stationery

The time series nature of the data necessitates the need for stationarity test which we conduct using the Augmented Dickey-Fuller Test. The number of asterisk indicates the order of stationarity. VAT is stationary at second difference. All other variables gained stationarity at first difference

Table 2: Results of the Descriptive Statistics

	GDPGR	VAT	LFP	INVEST_GDP	PGR	OPN
Mean	5.809583	352.8504	55.93333	21.05042	2.898333	53.35000
Median	5.690000	212.7000	55.30000	22.67500	3.095000	59.48000
Maximum	21.18000	972.3000	65.00000	30.47000	3.440000	83.01000
Minimum	-1.600000	7.260800	53.00000	13.24000	1.620000	14.02000
Std. Dev.	4.474053	325.5075	2.430006	5.333039	0.508225	19.67552
Skewness	1.523251	0.516931	2.526290	-0.070400	-0.969315	-0.600603
Kurtosis	6.972375	1.709690	9.856024	1.713148	3.020462	2.252948
Jarque-Bera	25.06094	2.733769	72.53362	1.675813	3.758702	2.000981
Probability	0.000004	0.254900	0.000000	0.432615	0.152689	0.367699
Sum	139.4300	8468.410	1342.400	505.2100	69.56000	1280.400
Sum Sq. Dev.	460.3945	2436968.	135.8133	654.1501	5.940733	8903.897

Observations	24	24	24	24	24	24

The results of the descriptive statistics are presented in Table 2. The average GDP growth rate is 5.809583% with a maximum growth rate of 21.18000% and minimum growth rate of -1.600000. The mean VAT collection for the period covered by the study is #352.8504Billion with a maximum value of #972.3000Billion and a minimum value of #7.260800Billion. The mean labour force participation is 55.93333 with a maximum value of 65.00000 and a minimum value of 53.00000. The mean investment to GDP rate is 21.05042%, with a maximum value of 30.47000% and a minimum value of 13.24000%. The mean population growth rate is 2.898333% with a maximum value of 3.095000% and a minimum value of 1.620000%. The mean openness is 53.35000 with a maximum value of 83.01000 and a minimum value of 14.02000. With the exception of VAT (with a standard deviation of 352.8504) all other variables reported relatively small standard deviation values which is an indication of small dispersion of the variables from their respective means. The small dispersion is a loose measure of the quality of the regression variables. The results of the normality, skewness and kurtosis of the regression data is presented in Figure 1.

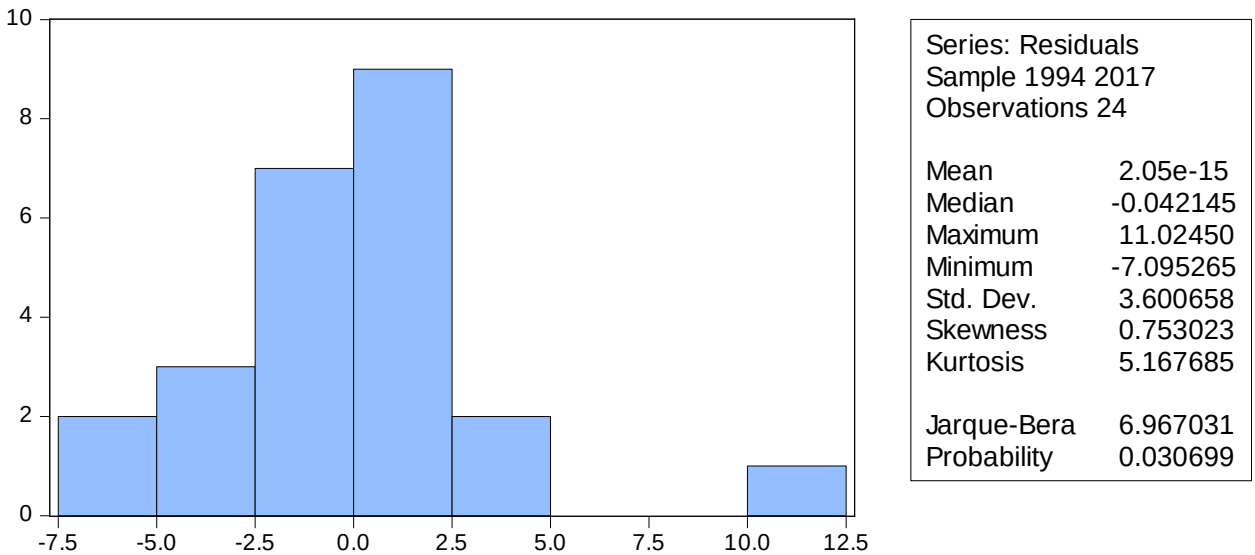

Figure 1 presents the results of the normality, skewness, and kurtosis of the regression variables. The bell-shaped histogram is an evidence of the normality of the regression variables. The mean Jarque-Bera statistic is 6.967031 with a significant probability value of 0.030699 indicating that the variables are normally distributed. The mean positive skewness of 0.753023 is indicative of a right-ward skewed distribution and the mean kurtosis of 5.167685 shows leptokurtic distribution (i.e positive and in excess of the 3.0 benchmark).

Table 3: Results of the Correlation Analyses

Covariance Analysis: Ordinary
Date: 11/29/18 Time: 05:52
Sample: 1994 2017
Included observations: 24

Correlation t-Statistic Probability	GDPGR	VAT	LFP	INVEST_GDP	PGR	OPN
GDPGR	1.000000					

VAT	-0.173134	1.000000	.			
	-0.824521	-----				
	0.4185	-----				
LFP	-0.152661	0.155002	1.000000			
	-0.724535	0.735918	-----			
	0.4764	0.4696	-----			
INVEST_GDP	0.538282	-0.533889	-0.214945	1.000000		
	2.995818	-2.961557	-1.032309	-----		
	0.0067	0.0072	0.3131	-----		
PGR	0.144368	-0.605857	-0.160630	0.245295	1.000000	
	0.684317	-4.673877	-0.763335	1.186795	-----	
	0.5009	0.0001	0.4534	0.2480	-----	
OPN	0.213825	-0.643732	-0.252018	0.362275	0.360006	1.000000
	1.026675	-3.945598	-1.221496	1.823059	1.809932	-----
	0.3157	0.0007	0.2348	0.0819	0.0840	-----

The results of the correlation analysis is presented in Table 3. The correlation coefficients are mixed. The variable of interest VAT is negatively correlated with the dependent variable, with a coefficient of -0.173134. The association between labour force participation and the dependent variable of GDP growth rate is negative, with a correlation coefficient of -0.152661. Between investment GDP and GDP growth rate is 0.538282, between population growth rate and the dependent variable is 0.144368 and the correlation coefficient between openness and GDP growth rate is 0.213825. The largest correlation coefficient of -0.643732 is between the explanatory variable of openness and the dependent variable of GDP growth rate. The correlation coefficient are relatively low and indicative of the absence of the problem of multicollinearity. The result is further reinforced with the result of the variance inflation factor.

Table 3: Results of the Test of Variance Inflation Factor

The test of variance inflation factor was conducted to further reinforce the results of the correlation analysis. The results of the centered VIF of the explanatory variables shows the absence of the problem of multicollinearity. The centered VIF of the variable of interest VAT is 3.930423, LFP (1.120220), Invest_GDP (1.522266), PGR (2.208652), and OPN (1.853710). The

centered VIF of the variables are relatively small and well below the benchmark of 10.00. The result of the variance inflation factor is a reinforcement of the absence of the problem of multicollinearity reported in correlation analysis in Table 2.

Table 4: Results of the Regression Diagnostics

TEST TYPE	F-statistic	Probability	Remark
HETEROSKEDASTICITY	1.691401	0.1877	Homoskedastic
RAMSEY RESET TEST	0.345729	0.5643	Not mis-specified
SERIAL CORRELATION	1.278421	0.3054	Not correlated

The classical regression assumption tests were effected to establish the accuracy of our model. The Breusch-Godfrey serial correlation test, indicates the absence of serial correlation in the regression variables with F-value of 1.278421 and probability value of 0.3054. The result of the Ramsey RESET test (F-statistic of 0.345729 and probability value of 0.5643) shows that the regression model was well specified. The result of the test of heteroskedasticity shows homoscedastic residuals with a probability value of 0.1877 and F-statistic of 1.691401.

Table 5: Results of the Regression Analysis

Dependent Variable: GDPGR
Method: Least Squares
Date: 11/29/18 Time: 05:54
Sample (adjusted): 1995 2017
Included observations: 23 after adjustments
Convergence achieved after 19 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.336979	25.36742	-0.131546	0.8970
VAT	-0.003253	0.008152	-0.398965	0.6952
LFP	0.093491	0.337385	0.277103	0.7852
INVEST_GDP	0.384188	0.227805	1.686477	0.1111
PGR	0.016979	2.611392	0.006502	0.9949
OPN	-0.045882	0.093398	-0.491255	0.6299
AR(1)	0.386647	0.230146	1.680009	0.1124

R-squared	0.775184	Mean dependent var	6.017826
Adjusted R-squared	0.678378	S.D. dependent var	4.454094
S.E. of regression	3.783678	Akaike info criterion	5.745060
Sum squared resid	229.0595	Schwarz criterion	6.090645
Log likelihood	-59.06819	Hannan-Quinn criter.	5.831974
F-statistic	4.414482	Durbin-Watson stat	1.851264
Prob(F-statistic)	0.044415		

Inverted AR Roots	.39

Table 5 presents result of the regression analysis. Our preliminary investigation revealed a coefficient of multiple determination of 0.775184 and an adjusted value of 0.678378 which shows that about 67% of the systematic variation in the dependent variable of growth rate in GDP a proxy for economic growth, is accounted for by the explanatory variables, with emphasis on value-added tax. The F-statistic of 4.414482 and the associated probability value of 0.044415 shows that a significant linear relationship exist between the dependent and the explanatory variables. The Durbin-Watson statistic of 1.851264 is substantially close to the benchmark of 2.00 and shows the absence of autocorrelation.

The relationship between the variable of interest (value-added tax) and economic growth is negative, with a coefficient of -0.003253 and t-Statistic of -0.398965. The result indicates that value-added tax has a negative effect on the growth of Nigerian economy.The negative relationship between value-added tax and economic growth is in tandem with the positions of Madugba and Joseph (2016); Njogu (2015), and Ugochukwu and Azubike (2016). The negative relationship also corroborates the position of Emran and Stiglitz (2005), who opined that the replacement of sales tax with value-added tax in developing economies with active informal sector is based on a shaky premise. In Nigeria, informality is thought to account for about 80% of the annual GDP. In addition, the tax revenue to GDP ratio in Nigeria is as low as 6% in the year 2017. Therefore, it will almost be counter intuitive for taxation (with emphasis on value added tax) to be positively and significantly related to economic growth in Nigeria. This position is however without prejudice to those (Adereti, Sanni, &Adesina, 2011; Aruwa, 2014, Oriakhi and Iyoha, 2010) who reported a positive relationship between value added tax and economic growth in Nigeria.

The result of the relationship between the other growth variables and GDP growth rate are mixed. Labour force participation, investment- GDP and population growth rate were all positively related to economic growth, even though the results were not statistically significant to reject the null hypotheses. The relationship between openness and economic growth in Nigeria is negative. This means openness has a reducing effect on the economic growth of Nigeria. The reason may not be unconnected with the poor value of the Nigerian naira which makes the economy less competitive compared to other economies in Africa and even worse, European economies.

In addition to the growth implication of value-added tax in Nigeria, we also testedthe relationship between value-added tax and Nigerian tax revenue, as well as the relationship between value-added tax and total federally collected revenue in Nigeria. The result of the analysis is consistent with the negative relationship earlier established in the test of the relationship between value-added tax and economic growth. In the case of the former, VAT reported a t-Statistic of -2.709293 and a significant probability value of 0.0135. While in the case of the latter, VAT reported a robust t-Statistic of -2.337000 and a significant probability value of 0.0300 (see appendix 1).

5.0 CONCLUDING REMARKS

In this contribution, we provide confounding evidence that Nigeria' economic growth does not vary with increase in value-added tax. The relationship between value-added tax and economic growth in Nigeria is negative even though it is statistically insignificant. To establish the robustness of the result of the study, we tested the relationship between

value-added tax and Nigeria' tax revenue and the nexus between value-added tax and the federally collected revenue. In both cases, the results were negative and significant, which means the negative growth implication of value-added tax is beyond the likelihood of chance.

The results of the study corroborates the fragile premise of Emran and Stiglitz (2005) which may not be unconnected with the large presence of informal or shadow economy in Nigeria, even though this assertion is still within the realm of casual empiricism. The leakages arising from the poor implementation of value-added tax may have accounted for the negative relationship. While the issue of informal sector remainsacrosanct in the value-added research in Nigeria, there appears to be no empirical consideration on the moderating role of informal activities on the relationship between value-added tax and economic growth.

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APPENDIX 1

Dependent Variable: TTR_GDP
Method: Least Squares
Date: 11/29/18 Time: 05:41
Sample (adjusted): 1995 2017
Included observations: 23 after adjustments
Convergence achieved after 4 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	14.37925	2.373152	6.059138	0.0000
VAT	-0.012221	0.004511	-2.709293	0.0135
AR(1)	0.447930	0.198569	2.255791	0.0354

R-squared	0.572154	Mean dependent var	9.583913
Adjusted R-squared	0.529369	S.D. dependent var	5.845185
S.E. of regression	4.009946	Akaike info criterion	5.736540
Sum squared resid	321.5934	Schwarz criterion	5.884648
Log likelihood	-62.97021	Hannan-Quinn criter.	5.773789
F-statistic	13.37287	Durbin-Watson stat	1.569112
Prob(F-statistic)	0.000206		

Inverted AR Roots	.45

Dependent Variable: TFR_GDP
Method: Least Squares
Date: 11/29/18 Time: 05:42
Sample (adjusted): 1995 2017
Included observations: 23 after adjustments
Convergence achieved after 6 iterations

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	35.05998	5.928123	5.914179	0.0000
VAT	-0.025711	0.011002	-2.337000	0.0300
AR(1)	0.524845	0.185101	2.835459	0.0102

R-squared	0.572464	Mean dependent var	25.17826
Adjusted R-squared	0.529711	S.D. dependent var	12.31315
S.E. of regression	8.444068	Akaike info criterion	7.225913
Sum squared resid	1426.046	Schwarz criterion	7.374021
Log likelihood	-80.09800	Hannan-Quinn criter.	7.263162
F-statistic	13.38985	Durbin-Watson stat	2.076339
Prob(F-statistic)	0.000204		

Inverted AR Roots	.52