Original Research Article

Value-Added Tax, Government Incomes and Consumption Patterns

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Abstract

In this paper, we empirically assessed whether value-added tax contributes to government incomes and moderates consumption patterns in Nigeria. Quarterly time-series data of value-added tax, government incomes and consumption patterns were obtained from the Central Bank of Nigeria statistical bulletin during the period 2000-2018. Ordinary least square (OLS) estimation technique was adopted in the analysis of data and findings revealed that while value-added tax contributes significantly to government revenue, largely; value-added tax moderates consumption patterns in Nigeria. In view of the findings, we recommended among others that the government via its regulatory agencies should inject some fairness in the tax system in the area of consumption tax so that the burden of income tax would lessen on those with a low-income level. Moreover, the regulatory agency charged with the sole tasks of collecting value-added tax should further be strengthened to enforce compliance by taxpayers.

Keywords: Value added tax; Government income; Consumption patterns; Finance Act 2019

JEL Classification Codes: E62, E63

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I. INTRODUCTION
Taxation is a microeconomic and fiscal policy instrument, which involves the transfer of resources from private to public sectors for the accomplishment of economic and social goals. One form of tax used by the government to accomplish economic and social goals is the value-added tax (VAT) (Wambai & Hanga, 2013). In Nigeria, the match towards VAT started with the acceptance of the recommendation of a study group on indirect tax in November 1991. The decision to accept the recommendation was made public in 1992 budget speech of the then Head of State. This resulted in setting up the modified VAT (MVAT) committee on 1st June 1992, as recommended by the study group (Apere, 2013). The government rejected the recommendation of the committee that an independent commission should administer VAT. According to Salami et al. (2015), VAT administration was, however, given to the Federal Inland Revenue Services (FIRS), which was already charged with the responsibility of administering other taxes in Nigeria.

In recent times, value-added tax (VAT) expression has been substituted from 5 per cent to 7.5 per cent due to Finance Act 2019. According to Finance Act (2019), VAT is an indirect tax chargeable and payable on supplies of all goods and services within the country other than those listed in the first schedule of the Finance Act of 2019. VAT is a tax on the supply of goods and services, which is eventually burned by the final consumer but all collected at each stage of production and distribution chain. In the view of Olaoye (2009), the administration of VAT has worsened as importers and exporters of vatable goods and services avoid and evade VAT that ordinarily would have increased government income and moderate consumption pattern of consumers.

More worrisome is the fact that the evasions of VAT decrease government incomes and in turn reduces economic growth, which ordinarily would have made government provide basic amenities needed by importers and exporters of goods and services and perhaps, citizens (Ferede & Dahlby, 2012). Prior studies have shown that value-added tax increases the revenue base of government (Inyiama & Ubiesie, 2016; Adereti, Sanni & Adesina, 2012; Salami et al., 2015); however, whether VAT will moderate consumption patterns is an issue that has not gained considerable attention in tax literature. Moreover, the fear that soon Nigerians will pay VAT on everything alongside VAT increase has spiked academic research in this area. It is on this note that this paper calls for a reassessment of VAT to see if it ameliorates government incomes as well as moderating consumption patterns in Nigeria.

2. LITERATURE REVIEW
Overview of Value Added Tax
VATs are imposed on goods and services, and there are two types – input and output VAT. Input VAT is VAT paid on materials, goods/services used in producing goods while output VAT charges on sales of goods/services which is to be remitted to FIRS after off settable VAT input have been deducted (Ferede & Dahlby, 2012). According to Bhartia (2009), there are numerous advantages of VAT, which among others include administrative advantages (easy in assessing tax liability), tax efficiency (conduciveness), and encourages export in order to get a competitive edge over other nations. There are disadvantages of VAT like double tax and manufacturers taking undue advantage
of VAT to inflate prices of goods and services, which eventually creates economic hardship on consumers. Perhaps, this may increase the income of the government as VAT increases, whereas, such increase may decline the consumption patterns of citizens.

In Nigeria, the objectives for the imposition of VAT encompassed ensuring that the market friction and other imperfections do not distort the whole economy, improvement of the economy and encouraging rewards for efforts by reducing the burden of direct taxes and promoting consumption tax (Dandago & Alabede 2011; Ogbonna & Appah, 2012; Wambai & Hang, 2013). Over the years, income resulting from VAT has been scanty, and no physical development actually took place; hence the impact on the poor is not being felt (Aguolu, 2014). Perhaps, this has been blamed on VAT administration; the need to boost the revenue base of the government via VAT has become a matter of utmost consideration and significance in Nigeria.

**Theoretical Framework**

The theoretical framework of this paper is anchored on three prominent tax-related theories - Laffer, IBN Khaldun and Fiscal Adequacy or Productivity theories. These theories are briefly discussed as follows:

**Laffer Theory**

Laffer theory is a theoretical picture of the connection between government incomes raised by levies and all possible rates of taxation. This theory is demonstrated with a curve (i.e. Laffer curve); it considered the amount of tax revenue raised at the extreme tax rates of 0% and 100%. The theory emphasizes that a 100% tax rate raises no revenue in the same way that a 0% tax rate raises no revenue, and this is because, at 100% rate, there is no more extended incentive for a rational taxpayer to receive any income (Laffer, 2004).

Consequently, the revenue raised will be 100% of nothing. The underlying philosophy of the Laffer theory is that there must exist, at least one rate in between where tax revenue would be a maximum (Laffer, 2004). One potential result of the theory is that growing the tax rate further than a certain point will become counterproductive for raising further tax revenue because of diminishing returns.

**IBN Khaldun Theory**

This theory was explained in terms of two different effects that is the arithmetic effect and the economic effect which the tax rates have on revenues. In a situation where rates are increased or decreased, the two effects will have opposite results in income. The Arithmetic effect of the tax is that, if rates are lowered, tax returns will be dropped by the amount of the decrease in the rate and vice versa for the increase in tax rates. The economic effect, however, recognized the positive impact that lower tax rates have on work, output and employment and thereby the tax rate base used in providing incentives to increase these activities whereas raising tax rates here the opposite economic effect is used by penalizing participation in the taxed activities. At a very high tax rate, negative economic effect dominates the positive arithmetic effect, thereby, the tax revenue declines (Islahi, 2006).

**Fiscal Adequacy or Productivity Theory**

Economic adequacy or productivity theory implies that a tax should yield sufficient revenue to cover the government expenditure; otherwise, the government will be in deficit when its cost exceeds the
income realized from tax. A tax should not have adverse effects on the economic progress of the country and should not also restrain trade and industry. Any tax that discourages people from working, saving, investing and entangles production is uneconomical and counterproductive. Meaning, a heavy tax on raw materials and spare parts will increase the cost of production and affect the quality and quantity of output, and this is not of the whole interest of the economy of a nation whereas, faculty theory also referred to as the ability to pay dictates that every taxpayer should be taxed according to his ability to pay.

The theory implies that those who are better-off should pay heavily and vice versa irrespective of whether or not they benefit more from government expenditure. This theory ensures justice and equity in taxation because people with equal abilities to pay the same amount of tax (horizontal equity) and people with different skills to pay should pay a different amount of tax. That is, people with less ability should pay less tax than those with a more exceptional ability (vertical equity).

**Empirical Studies**

There are scanty empirical studies on assessment of VAT, government incomes and consumption patterns in Nigeria. For instance, Inyiama and Ubesie(2016) examined the effect of VAT and custom and excise duties on Nigeria economic growth. Using simple regression technique, the study finds that all non-oil tax revenue affects Nigeria gross domestic product. On the side of the relationship among the variables, the strength of the relationship was very high for all variables.

Jina, Lawrence, and Benzum (2016) investigated the relationship between petroleum profits tax and economic growth in Nigeria over the years 1999 to 2015. Relevant data on the real gross domestic product, petroleum profits tax, companies' income tax and value-added tax were collected from the Central Bank of Nigeria Statistical Bulletin, 2015 edition, the Annual Report and Accounts of the CBN, for 2014. The ordinary least squares (OLS) was used to estimate the regression line, the Correlogram Q Statistic was used to test for stationarity of the variables, the Johansen Cointegration test was used to establish any long-run relationship among the variables of the research, and the granger causality test was used to determine the nature and direction of causality between petroleum profits tax and economic growth in Nigeria over the relevant years. The study found that petroleum profits tax has a significant positive relationship with economic growth, but does not granger cause economic growth over the years under consideration.

Dennis and Okoye (2014) assessed the impact of taxation on revenue generation in Nigeria, with reference to FCT and some selected states in the country. Secondary data was employed, and data analyzed via regression analysis. The study found that taxation has significantly contributed to the level of revenue generation in Nigeria.

Ayuba (2014) studied the impact of non-oil tax revenue on economic growth from 1993 to 2012 in Nigeria. Central Bank of Nigeria (CBN) 2012 was the primary source of time series secondary data employed for the analysis, using the ordinary least square (OLS) regression method. A positive impact of non-oil tax revenue on the economic growth in Nigeria was ascertained in the study. Wambai and Hanga (2013) examined
taxation and social development in Nigeria. Using the chi-square statistical tool, the study found that taxation affects social development. Hence the attitude of the government on taxation need to change by ensuring that tax establishes simplicity, predictability, and neutrality. Nwakanma and Nnamdi (2013) assessed taxation and national development via the ordinary least square estimation method. The study revealed that petroleum profit tax, company income tax and excise tax exhibit a positive relationship with the level of national development, and a negative relationship between the human development index and corporate tax.

Chiumia and Simwaka (2012) analyses the effect of taxation in sub-Saharan Africa and found that taxes levied on personal and corporate income reduces economic growth. The study used regression estimation technique. Olusanya et al. (2012) investigated taxation as a fiscal policy instrument for income redistribution among Lagos State civil servants. Using the spearman's rank correlation coefficient, a positive relationship between taxation and fiscal policy instrument and income redistribution was established. Adereti et al. (2012) assessed the link between VAT and economic growth in Nigeria. The result found no causality between VAT revenue and economic growth, and a positive and significant correlation between VAT revenue and GDP was found. Worlu and Emeka (2012) investigated the relationship between tax revenue and economic growth in Nigeria using a three-stage least square estimation technique. Findings indicated that tax stimulates economic growth via infrastructural development and thus impact on economic growth in Nigeria.

Ferede and Dahlby (2012) tested the impact of Canadian provincial governments’ tax rates on economic growth using panel data covering from 1977 -2006. The study found that higher provincial statutory corporate income tax rate is linked with lower private investment and slower economic growth. Dackehag and Hansson (2012) studied how statutory tax rates on corporate and personal income affect economic growth using panel data from 1975-2010 for twenty-five rich OECD nations. They found a negative influence on economic growth from both taxations of corporate and personal income. Moreover, the study revealed a more robust economic growth in correlation with corporate income tax.

Saeed, Ahmad and Zaman (2012) researched the effect of VAT in the SAARC region by utilizing panel data from 1995-2010 on various macroeconomic variables. The results show a thriving set of determinants of VAT adoption as it proves to be a dynamic mechanism to collect tax and boost revenue ratio. The result revealed that most of SARRC nations that adopted VAT had gained a reasonable, effective tax instrument to upgrade GDP to revenue ratio. Similarly, Zaman, Okasha and Iqbal(2012) examined the impact of VAT on Pakistan's economy. The study adopted household survey data to grasp the effect of VAT on the social and economic life of the populace and regression result showed that VAT interrupts the economic order of Pakistan's economy. Xing, (2011), in his study, examined whether tax structure affects economic growth using panel data for seventeen OECD nations over the period 1970-2004. The study did not obtain compelling evidence in favour of consumption taxes over income taxes or personal income taxes over corporate taxes.
The robust result appears to be that shift in tax revenue towards property taxes are associated with a higher level of income per capita in the long run.

Adereti, Sanni, and Adesina (2011) examined the relationship between VAT and economic development proxy by GDP in Nigeria. Their findings show that VAT revenue to total tax revenue averaged 12.4%, which the study considered low compared to other African countries such as Ivory Coast, Kenya and Senegal that had 30%. Another observation was that a positive and significant correlation between VAT and GDP exists. Smith, Islam and Moniruzzaman (2011) attempt to analyze the contribution and performance of VAT in Bangladesh compared to other developing countries. The result shows that the performance of VAT was entirely satisfactory in the initial years; VAT collection remained stationary at a certain level. The study finds that a small number of VAT payers, a general lack of awareness, and a weak monitoring system caused stagnation.

Luthuanian, Bikas, and Rashkauskas (2011) studied the impact of VAT standard tariffs, reduced tariffs and shadow economy on income from this tax. The Lithuanian VAT structure, the dynamics of revenue from this tax and amendments in the Law on Value Added Tax in terms of narrowing and widening the taxable base according to the theoretical analysis of the sources were analyzed using multiple regression, correlation, and optimization and Cost-effectiveness ratio analysis. The report reveals that the amendments in the Law on Value Added Tax in terms of narrowing and widening the taxable base has influenced the amount of income from VAT collected to the budget.

Samimi and Abdolahi (2011) investigated the relationship between value-added tax and the export of goods and services in some selected countries. The result of the study revealed a significant positive relationship. Denis (2010) assessed the link between VAT and GDP in Nigeria and finds that VAT is ineffective as a revenue booster. Moreover, the regression result showed that significant parts of GDP, which represent aggregate national income, as well as aggregate national expenditure, are not collected as tax.

Salti and Chabaan (2010) explored the effect of an increasing rate of VAT by targeting poverty and inequality. To study the impact, a scientific model based on consumer theory of demand was established. Simulation results show that the increased rate of VAT would have a significant negative impact on poverty. Even though the increased rate would have a negative impact on overall consumption, its effect on the poor is higher compared to the rich. Koester and Kormendi, (2009) measured on average and marginal income tax rates by regressing tax revenue on GDP, and they summed the measures in a growth regression. They detected no statistically significant link between taxes and economic growth. Moreover, they found that tax rates seem to have a negative impact on the growth rate, though with marginal tax rate having a negative effect on the level of activity.

Michael and Ben (2007) investigated the causes and consequences of the spread of value-added tax (VAT) via a panel study of 143 countries for 25 years. The result showed that VAT has a substantial but mixed impact. It implies that from the adoption of VAT, some nation-states would have gained revenue while others would
not. The adoption of VAT had a long-run increase in overall revenue to GDP ratio of about 4.5 per cent collectively. Though, allowing the impact of VAT to vary with country specifics will shift the effect to become negative while acting in the opposite direction are gains that tend to be greater in higher income and more open economies. Osoro (2003) investigated tax reforms in Tanzania using double log form equation and tax revenue elasticity were utilized in estimating tax buoyancy via the proportional adjustment method. The idea for the use of the proportional method was that a series of discretionary changes had taken place during the sample period, 1979 to 1989, making the use of fictitious variable technique challenging to apply. For the period of study, the overall elasticity was 0.76, with a buoyancy of 1.06. The study shows that tax reforms in Tanzania had failed to raise tax revenues. These results were attributed to the government granting numerous tax exemptions and poor tax administration.

Milambo (2001) used the Divisia Index method to study the revenue productivity of the Zambian VAT structure for the period 1981 to 1999. The results showed elasticity of 1.15 and buoyancy of 2.0, which confirmed that VAT reforms had improved the revenue productivity of the overall tax system. Conversely, the results were not dependable because time trends were used as proxies for discretionary changes, and it was the study’s major weakness. Given the empirical studies, we acknowledged that while there are studies on VAT and government revenue, there are scarcity studies on whether VAT moderate pattern of consumption in Nigeria.

III. METHODOLOGY
The methodology provides details on the design and methods applied in the paper. The expo-facto design was adopted, and quarterly time-series data of VAT, government incomes and consumption patterns were obtained from the Central Bank of Nigeria statistical bulletin during the period 2000-2018. Our model is based on the suggestions of Inyiama and Ubesie(2016); Saeed, Ahmad and Zaman (2012); and Zaman, Okasha and Iqbal (2012). Simple regression models were estimated, expressing government incomes and consumption pattern as a function of VAT. The models for the study are expressed as:

\[ GOVINC = f(VAT) \quad \text{eq. 1} \]
\[ CP = f(VAT) \quad \text{eq. 2} \]

Assuming a linear relationship between variables in equations 1-2, the specific forms of equations 1-2 are given as:

\[ GOVINC_t = \alpha_0 + \beta_1 \text{VAT}_t + \varepsilon_{it} \quad \text{eq. 3} \]
\[ CP_t = \alpha_0 + \beta_1 \text{VAT}_t + \varepsilon_{it} \quad \text{eq. 4} \]

Where: VAT (Value added tax); GOVINC (Government income); CP (Consumption patterns); \( t \) (Time dimension); VAT is the independent variable; \( \beta_1 \), is the regression coefficient with unknown value to be estimated; GOVINC and CP are the dependent variables. VAT\(_t\) is measured at the end of December at year \( t+1 \) as well as the independent variables. The statistical analysis was carried out via the Statistical Package for Social Sciences (SPSS 23.0 version).
IV. ESTIMATION RESULTS AND DISCUSSION OF FINDINGS

Table 1: Response of Government Income (GOVINC) and Consumption Patterns (CP) to Value Added Tax (VAT)

<table>
<thead>
<tr>
<th>Period = 57</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min. Value</th>
<th>Max. Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAT</td>
<td>28.91</td>
<td>10.55</td>
<td>5.93</td>
<td>9.92</td>
</tr>
<tr>
<td>GOVINC</td>
<td>32.09</td>
<td>11.71</td>
<td>-10.35</td>
<td>32.39</td>
</tr>
<tr>
<td>CP</td>
<td>57.76</td>
<td>11.13</td>
<td>18.02</td>
<td>67.20</td>
</tr>
</tbody>
</table>

Source: Researcher's Computation, 2020 via SPSS

Table 1 presents the response of government income and consumption patterns to VAT, and it can be observed that VAT coefficient for the sampled period range between 5.93 and 9.92 of minimum and maximum values respectively with mean and standard deviation values of 28.91 and 10.55 respectively. Moreover, it can be seen that government income coefficient range between -10.35 and 32.39 of minimum and maximum values respectively, with mean and standard deviation values of 320.89 and 117.06, respectively. Moreover, consumption pattern range between 18.02 and 67.20 of minimum and maximum values with mean and standard deviation values of 57.76 and 11.13, respectively. This implies that government incomes responded to VAT by 321% while consumption patterns, by 58%.

Table 2: Goodness of fit through R Square

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOVINC</td>
<td>.988</td>
<td>.976</td>
<td>.980</td>
<td>13535.75</td>
</tr>
<tr>
<td>CP</td>
<td>.894</td>
<td>.883</td>
<td>.887</td>
<td>12249.86</td>
</tr>
</tbody>
</table>

Source: Researcher's Computation, 2020 via SPSS

As shown in Table 2, both R² and R² adjusted measure the fitness of the model, but since adjusted R² is the modification for limitation of R², the value of adjusted R² is used to measure fitness of the model. Thus, the value of R² adjusted is .980(GOVINC) and .887(CP), indicating that VAT explained 98% and 89% variations in GOVINC and CP. Thus, we can understand that the model is providing a good fit to the data.

Table 3: Regression Result for VAT and GOVINC

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F-Value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Regression</td>
<td>57254.23</td>
<td>1</td>
<td>19084.74</td>
<td>10.4165</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>1465.7343</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>58719.96</td>
<td>57</td>
<td>91.60839</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researcher's Computation, 2020 via SPSS

The f-value was used to validate whether value added tax affects government income. Given the computed f-value (10.4165) with significance level (.000<0.05), suggests that the variables are highly significant. Impliedly, value added tax has contributed significantly to government income in Nigeria during the period investigated.
Table 4: Regression Result for VAT and CP

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F-Value</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Regression</td>
<td>12601.65</td>
<td>1</td>
<td>4200.552</td>
<td>21.8747</td>
<td>.000</td>
</tr>
<tr>
<td>Residual</td>
<td>322.61</td>
<td>56</td>
<td>4200.552</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>25848.52</td>
<td>57</td>
<td>20.16301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Researcher's Computation, 2020 via SPSS

Given the computed f-value (21.87) with a significance level (.000<0.05), suggests that the variables are highly significant. Impliedly, value-added tax moderates the patterns of consumption in Nigeria during the period investigated.

5. CONCLUSION AND RECOMMENDATIONS

Value-added tax is an indirect tax imposed by the government for revenue generation to enable the government provides necessary infrastructure and services for essential households and firms. Consequently, Nigeria is indeed in dire need of an effective and efficient value-added tax system in order to stimulate its revenue base. However, this study was carried out with the view to assessing whether value-added tax affects government revenue and the extent to which it moderates consumption patterns in Nigeria. Given the results of the study, we found that while value-added tax contributes significantly to government revenue, primarily, it moderates consumption patterns in Nigeria. Our result corroborates with prior studies done by Inyiama and Ubesie(2016); Saeed, Ahmad and Zaman (2012); and Zaman, Okasha and Iqbal (2012).

Given these findings, the government via its regulatory agencies should inject some fairness in the tax system in the area of consumption tax so that the burden of income tax would lessen on those with a low-income level. Moreover, the government should inaugurate a fully independent and self-sustaining commission established to administer VAT. Also, the regulatory agencies charged with the sole task of collecting value-added tax should further be strengthened to enforce compliance by taxpayers. Furthermore, revenue obtained from the value-added tax should be distributed appropriately so that economic growth can be harnessed, especially in providing basic social amenities as well as infrastructures in the country. Our study contributes to knowledge by showing that while value-added tax affects government revenue, it makes moderate consumption patterns.

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