The Effect of Value-Added Tax on Economic Growth of Nigeria

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Abstract
The paper examined the effect of VAT on economic growth in Nigeria between 1994 and 2020 using consumer price index (CPI) as a threshold. A technique of Threshold Vector Autoregressive (TVAR) was employed and the results reveal that a VAT above the 10 percent threshold value endangers the economy while a VAT below the 7.59 percent threshold value does not harm the economy; rather, it improves people's well-being. It is therefore recommended that Nigerian economy should maintain the lower VAT threshold to cushion the effect of ever rising CPI on the citizens.

Keywords: Value-Added Tax (VAT), economic growth, welfare, threshold, effect
JEL Classification Codes: C50, H20

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1.0 Introduction
The whole essence of governance is to promote welfare of the entire citizenry. The Constitution of the Federal Republic of Nigeria, in many of its provisions affirms this position. The problem of paucity of fund to prosecute welfare programmes by government can be solved, using a fair and effective tax administration (Balogun, 2015). Nigeria’s current democratic experiment places greater responsibility on government to look for ways of improving its revenue generation.

There is no doubt that the revenue generating ability of the government in the developing nations of the world is a far cry from being desirable. The Indirect Taxes (especially those from Import and Export Duties) which ought to contribute the highest percentage to the revenue are not even reliable (Abialo and Asiweh, 2012). This is because of the imbalance emanating from business transactions between the less developed and the developed countries. Excessive export duties may discourage local production while import will be discouraged if the import duties are too high to cope with (Moore, 2014). That the government has to strike a balance between the desire to raise revenue and incentive for economic growth is in indeed a major problem.

In an attempt to proffer solution to this problem, Naiyeju (1996) and Bikas, Andruaite, (2013) asserted that the wealth-poverty gap widens in the developing nations because their economic reforms become trenchant. Governments are compelled to continue to explore all means of redistribution of resources and improving the welfare of citizens. The resultant effect is to look inward which motivated the introduction of such an Indirect tax known as the Value-Added Tax (VAT).

The suggestion of Value-Added Tax (VAT) as a way out of the dilemma is predicated on the fact it is capable of generating substantial revenue, since evasion is difficult and the base is wide (Omesi and Nzor, 2015). Another reason for suggesting, VAT is the belief that it is a weapon that is capable of reducing the wealth-poverty gap. Gordon and Nielsen, (2017) are optimistic on the effectiveness and equity of VAT has strong supports in some earlier works of tax experts.

Value added tax (VAT) is simply called the Goods and Services Tax (GST). It is a consumption tax payable on the goods and services consumed by any person, business organizations or individuals (Clement, Osaro, Igbinosa, Raphael and Oghogho, 2019). VAT can also be defined as a tax on spending/consumption which is levied at every stage of transaction but eventually borne by the final consumer of such goods and services (Ugwa and Embuka, 2012). The concept of VAT in Nigeria is traceable to the Dr. Sylvester Ugoh-led study group on Indirect Taxation in November, 1991. Thereafter, a committee was set up by the then Military government under the chairmanship of Mr. Emmanuel Ijewere to conduct extensive research and make recommendations. Value Added Tax (VAT) was finally introduced by the Federal Government of Nigeria and was provided for by the Value Added Tax Decree 102 of 1993. It became effective in 1994 as a replacement of the Sales Tax which had been in operation under Federal Government Legislated Decree No.7 of 1986 but administered by the States and the Federal Capital Territory (Ugwa and Embuka, 2012).

Before the introduction of VAT in Nigerian economy, the Federal Government has been working relentlessly on how to revamp the moribund Nigeria economy. To this effect, several economic measures were introduced and among them include the Second-Tier Foreign Exchange Market (SFEM), Structural Adjustment Programme (SAP) and Foreign Exchange Market (FEM) and so
on. All these efforts at revamping the economy were to no avail as the economy seems to have defied all fiscal measures (Ehigiamusoe, 2018). Prompted by its avowed position to revamp the economy at whatever cost, the Federal Military Government under the leadership of General Sani Abacha introduced a fiscal policy, the Value Added Tax (VAT) in January 1994.

It is charged on the supply of VAT able goods and services in Nigeria. It also requires Manufacturers, wholesalers, importers and suppliers of VAT able goods and services to get registered within six months of commencement of the business. Such a registered entity is expected to charge and collect VAT on the supplied goods and services. The amount collected constitutes the VAT output. On the other hand, a purchaser of VAT able goods and services is also expected to pay a VAT. The amount paid constitutes the VAT input. The difference between the VAT output and the VAT input represents the amount payable to Federal Inland Revenue Service (FIRS). Thus, VAT is an offshoot of sales tax.

Nigeria is currently experiencing revenue crisis due to declining crude oil earnings and as such, the government is trying to improve its revenue potential by imposing more taxes (Ogbonna and Ebimobowei, 2017). The Nigerian government on Wednesday, September 11, 2019, approved a 50% increase in the Value Added Tax (VAT) rate applicable on supply of goods and services in Nigeria, from 5 per cent to 7.5 per cent. The new rate took effect in the first quarter of 2020 (1st February, 2020). Thus, the recently signed finance bill has attracted public attention and met with mixed reactions by Nigerians. It will also be recalled that the Federal Government attempted to increase the VAT rate to 10 per cent in 2007, but this was faced with stiff opposition resulting in the suspension of the proposed increase. However, the problem is that VAT rate in Nigeria as remained at 5 percent since its introduction in 1993 despite several attempts to review it upward by successive governments.

All these strategic objectives aim towards achieving an improved welfare of the ever increasing population of the country. Tax reforms are changes that are made in the Nigerian Tax system to increase the revenue potential of government so as improve peoples’ welfare. No matter the angle from which VAT is viewed, the purpose is to generate more revenue to the government. The introduction of VAT in 1993 and its eventual implementation in 1994 has recorded a huge success in Nigeria. For instance, records from Federal Inland Revenue Service (FIRS) data base revealed that the total VAT revenue increased from ₦8.20 billion in 1994 to a whopping sum of ₦163.30 billion in 2004 (ten years after its introduction). The revenue rose to ₦616.90 billion in 2014 and ₦1.7 trillion in the year 2018. The total amount generated by the nation from VAT dipped by ₦53 billion from ₦1.7 trillion in 2018 to ₦1.17 trillion in 2019.

Despite the significant rise in the revenue accruals from VAT to the Nigerian government coffers on yearly bases, it is important to state that the rate is one of the lowest in the world. Obadan (2015), Wheatcroft, (2015) and Ebrill, (2018) reported the VAT rate of a number of countries as follows: European countries: Austria 20 percent, Belgium 21 percent, Bulgaria 20 percent, Denmark 25 percent, France 20 percent, Hungary 27 percent, Latvia 21 percent, Finland 24 percent, and United Kingdom 20 percent. For non-European union countries, Albania has 20 percent rate, Australia 10 percent, Argentina 21 percent, Bangladesh 15 percent, Chile 19 percent, People’s Republic of China 17 percent, Egypt 10 percent, Ethiopia 15 percent, South Africa 14 percent, Russia 18 percent and Norway 25 percent. Others are Ghana with 15 percent VAT rate,
Guyana 16 percent, Indonesia 10 percent, Taiwan 18 percent, Tunisia 18 percent, Israel 18 percent, Japan 8 percent, Mexico 16 percent, Mauritius 15 percent, Namibia 15 percent, and Morocco 20 percent. It is therefore no longer news that the reviewed Value Added Tax (VAT) from 5% to 7.5% in the recently signed finance bill took effect from February 1st, 2020.

A number of empirical studies in extant literature such as Diamond and Zodrow (2010); Skinner (2015) and Omesi and Nzor (2015) did not shed light on the magnitude of impact (positive and negative) of VAT on economic growth. It is therefore pertinent to stress that VAT should only provide governments an avenue to explore all means of redistribution of resources towards improving the welfare of citizens. This should be done at the expense of the citizens as well. It is evident VAT revenue is being shared among the three levels of government in Nigeria. This is indication that this revenue is being re-injected into the economy. Against this background, this study is therefore motivated by the recent dwindling of oil revenues due to fluctuations of price in the global oil market. Therefore, the paper examined the effect of VAT on economic growth using CPI as a threshold.

The remainder of this paper is organized as follows. Section 2 provides theoretical and empirical literature. While section 3 presents the methodology, section 4 reports estimated results. Section 5 gives concluding remarks.

2.0 Theoretical and Empirical Literature
The paper is anchored on the theory of Pareto Optimality. The theory relates directly to the study of economic efficiency and income redistribution as well as how they affect the over-all wellbeing of people in the economy. In practical sense, it seeks to provide tools to guide public policy to achieve beneficial social and economic outcomes for the economy. The theory also seeks to evaluate the costs and benefits of changes to the economy and guide public policy towards increasing the total good of society (Bird and Gendron, 1993). Pareto Optimality ensures social welfare is maximized in the sense that no resources can be reallocated to make one individual better off without making at least another individual better off. Thus, Nigerian economy, in the wake of signing 2020 Finance Bill into law is moving towards Pareto Optimality.

VAT is seen as a replacement of the Sales tax, which was earlier promulgated into existence through decree No.7 of 1986. The rationale behind replacing Sales tax with VAT was informed by a number of factors and considerations (Ogunbesan, 2015 and Soyode & Kajola, 2016). Notable among these factors are: The base of the sales tax in Nigeria as operated under Decree No. 7 of 1986 was narrow. It covered only nine categories of goods including sales and services in registered hotels, motels and similar establishments. The narrow base of the tax negates the fundamental principle of consumption tax which by nature is expected to cut across all consumable goods and services. This is without mincing words that VAT base is broader and includes most professional services and banking transactions which are high profit-generating units of the economy.

Besides, the sales tax decree of 1986 targeted only locally manufactured goods, although this might not have been the intention of the law (Soyode & Kajola, 2016 and Aizenman, 2018)). In the case of VAT it is neutral in this regard as considerable part of the tax to be realised is from imported goods. This means that under this new indirect tax, locally manufactured goods will not be placed at a disadvantage relative to imports. Another reason was that VAT is a consumption tax and is
based on the, general consumption behaviour of people; the expected high yield from it is boosting the revenue collected by governments with minimum resistance from the payers of the tax.

Due to minimum resistance from the payers, empirical studies in literature have shown that VAT has become very popularly in many African countries even as far back as the 1960s. For instance, Omesi & Nzor (2015) and Antwi, Atta, Emire & Xicang, (2019) revealed that Cote D'Ivore and Guinea introduced it in 1960, Senegal in 1961 and in Ghana in 1998. There are indications that in other parts of the world, particularly in the 1980s and 1990s, VAT had been warmly embraced. In spite of resistance experienced in the introduction of VAT in some countries, it is clear that by the early 1990s, the tax had gained prominence all over the world. It therefore appears that in Africa, the Francophone countries were front liners in the imposition of VAT. This is evident from the fact that as early as 1954, France had embarked on a number of tax reforms, which culminated in the introduction of VAT. With, its policy of Assimilation and Association, it was not difficult to impress it on its colonies in Africa to follow suit. Thus, public finance literature and empirical studies revealed than many developing countries had embraced VAT and this culminated in its eventual introduction in Nigeria in 1994.

Since its introduction in Nigeria in 1994, Naiyeju (1994) argued that tax is gaining more prominence among fiscal planners and governments and beside Keynes’ fiscal propositions, the most significant fiscal revolution of the twentieth century is VAT. Similarly, Diamond and Zodrow (2010) submitted that a VAT would lower household consumption in the short and long runs, and would reduce GDP for the next several years followed by several years of negligible change.

There a number of contrary arguments on whether VAT had done more harm than good in Public finance literature. For instance, Keen and Lockwood (2010) and Skinner (2015) asserted that the benefits of the VAT can be numerous as it is perhaps harder to evade than other forms of taxation, and it can easily be made compatible with international trade. The impact of the introduction of the value-added tax on inequality and government revenues was examined by Kaisa (2019) and the findings of the study showed that revenue consequences of VAT have not been positive. This is an indication that income-based inequality has increased due to the VAT adoption, whereas consumption inequality has remained unaffected. The author argued that VAT appears to have led to an increase in inequality when inequality is measured based on disposable income.

Nigerian Tax reforms with respect to value added tax (VAT) became the topical issue as result of the replacement of sales tax with value added tax (VAT). The study of Omesi and Nzor (2015) revealed that the contributions of Value Added Tax to the total revenue accruals was significant and that it was primarily designed to favour development at the lower level of government. The study also revealed that Nigerian Value Added Tax rate was the least in the world and recommended that the rate should be increased to 10 percent based on destination principle to impose VAT on imported services rendered outside Nigeria by a non-resident company.

3.0 Methodology

Model Specification

Analysis of the survey of VATable organizations suggests the prevalence of a markup pricing regime. It has also been established in literature that the producers tend to treat VAT on input as costs and as a result, production, cost, market prices and even level of output in Nigeria are greatly being influenced (Ajakaiye, 2019). This seeks to evaluate the costs and benefits VAT confers on the economy as the emphasis is on economic efficiency and income redistribution towards the
over-all wellbeing of people. Then, the VAT cost - output function can be specified in a Cobb-Douglas form as

\[ VAT = \beta_0 \left( CPI^\alpha GDP^\theta \right) \]

Where, \( VAT \) is the total annual VAT revenue accrual, \( CPI \) stands for consumer price index (a measure of over-all wellbeing of people in the economy), \( GDP \) is the gross domestic product (a measure of macroeconomic stability), \( \alpha \) and \( \theta \) are the degrees of elasticity of cost and output variables and \( \beta_0 \) is a constant.

The logarithmic transformation of equation (1) above in an estimable form is specified as

\[ \ln VAT_t = \beta_0 + \alpha \ln CPI_t + \theta \ln GDP_t + \epsilon_t \]

The purpose of the transformation is not only to linearise the relationship but also to remove the systematic change in spread with the aim of achieving approximate "homoscedasticity." in the model (Asteriou and Hall, 2007).

Following Emirmahmutoglu and Kose (2011), the paper adopts the Threshold VAR technique. In an attempt to investigate whether there may be a consequential effect of expanding or contracting CPI, which may work asymmetrically across regimes, the method, therefore, accounts for the threshold point. The baseline model in a bivariate setup involving GDP and VAT can be specify in a heterogeneous VAR as:

\[ \ln VAT_t = \beta_0 + \sum_{i=1}^{p} \beta_1 \ln VAT_{t-1} + \sum_{i=1}^{p} \beta_2 \ln GDP_{t-1} + \epsilon_{1t} \]

\[ \ln GDP_t = \alpha_0 + \sum_{i=1}^{p} \alpha_1 \ln GDP_{t-1} + \sum_{i=1}^{p} \alpha_2 \ln VAT_{t-1} + \epsilon_{2t} \]

where, \( p \) is the optimally lag length selected which is based on either the Akaike or the Schwarz Information Criterion in the system.

The null hypothesis that value-added tax does not cause growth can then be stated as:

\[ H_0: \beta_i = 0, i = 1,2, \ldots, p \]

On the other hand, the hypothesis that economic growth does not cause value-added tax is given by

\[ H_0: \alpha_1 = 0, i = 1,2, \ldots, p \]

**Incorporating the threshold effect**

In an attempt to incorporate the threshold effects of changes in CPI over time, the paper made use of the discrete threshold VAR approach using changes in CPI as the threshold variable. Also, Toda-Yamamoto (Toda and Yamamoto, 1995) approach to causality testing was utilised, where a heterogeneous vector autoregressive model was specified (Emirmahmutoglu and Kose, 2011).
Therefore, the GDP equation of the bivariate threshold VAR model is given by

\[
\ln GDP_t = \left\{ \alpha_0 + \sum_{i=1}^{p} \alpha_1 \ln GDP_{t-i} + \sum_{i=1}^{p} \alpha_2 \ln VAT_{t-i} + \varepsilon_{2t} \right\} I(\Delta CPI_t > \delta_i) \\
+ \left\{ \beta_0 + \sum_{i=1}^{p} \beta_1 \ln VAT_{t-i} + \sum_{i=1}^{p} \beta_2 \ln GDP_{t-i} + \varepsilon_{1t} \right\} I(\Delta CPI_t \leq \delta_i)
\]

The VAT equation can equally be stated as well. The value \( \delta_i \) is the threshold value of the change in CPI and the threshold value is set to zero (that is, \( \delta_i = 0 \)), which apparently paves way for the growth, conservation or neutrality hypothesis in the regime of rising CPI over time or otherwise.

4.0 Empirical analysis

Here, empirical supports for these hypotheses were offered, given CPI as the threshold. Data used were extracted from Central Bank of Nigeria (CBN) statistical bulletin and they span the period 1961 to 2020.

Unit Root Test

A KPSS unit root test proposed by Kwiatkowski-Phillips-Schmidt-Shin (1992) was used to determine the stationarity or otherwise of the variables used in this analysis. The null hypothesis is that the variable is stationary. The results of the unit root test is presented in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>LM-Stat</th>
<th>Asymptotic critical values</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGDP</td>
<td>0.7352</td>
<td>0.4630**</td>
</tr>
<tr>
<td>LVAT</td>
<td>0.7421</td>
<td>0.7390***</td>
</tr>
<tr>
<td>LCPI</td>
<td>0.7975</td>
<td>0.7390***</td>
</tr>
</tbody>
</table>

Notes: ***, **, and * indicate significance at the 1, 5 and 10 % levels, respectively
Source: Author’s computation from the data extracted from CBN statistical bulletin and National Bureau of Statistics (1961 - 2020)

The rule of thumb is that KPSS depends on Lagrange Multiplier (LM) principle. The results show that LM statistic of LGDP (0.7352) is greater than the asymptotic critical value (0.4630) at 5% level of significance, then the null hypothesis is accepted and the variable is stationary at levels. Also, it was revealed that LM statistic of each of LVAT (0.7421) and LCPI (0.7975) appear to be greater than the asymptotic critical value of 0.7390 at 1% level of significance, then the null hypothesis is equally accepted and the variables are stationary levels.

VAR Lag Order Selection Criteria

The optimal lag selected for the model used in this paper was determined using Log-Likelihood test, LR test statistic, Final Prediction Error (FPE), Akaike information criterion (AIC), Schwarz Information Criterion (SC), Hannan-Quinn information criterion (HQIC) and Structural Bayesian Information Criterion (SBIC). The results are presented in Table 2.
Table 2: Lag Selection Criteria Results

<table>
<thead>
<tr>
<th>Lag</th>
<th>LogL</th>
<th>LR</th>
<th>FPE</th>
<th>AIC</th>
<th>SC</th>
<th>HQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>-25.21</td>
<td>NA</td>
<td>0.0021</td>
<td>2.3508</td>
<td>2.4981</td>
<td>2.3899</td>
</tr>
<tr>
<td>1</td>
<td>50.63</td>
<td>126.4</td>
<td>8.1000</td>
<td>-3.2196</td>
<td>-2.6305*</td>
<td>-3.0633</td>
</tr>
<tr>
<td>2</td>
<td>63.49</td>
<td>18.21*</td>
<td>6.1300*</td>
<td>-3.5410*</td>
<td>-2.5102</td>
<td>-3.2675*</td>
</tr>
</tbody>
</table>

Note: * indicates lag order selected by the criterion

Source: Author’s computation from the data extracted from CBN statistical bulletin and National Bureau of Statistics (1961 - 2020)

It was shown that all the Selection Criteria except Log L indicated 2 as the optimal lag order. The selection of lag length is therefore based on the outcome of LR, FPE, AIC, SC and HQ criteria which depict 2 as the optimal lag order. This is the consensus of the greater number of the selection criteria. Thus, the lag length of order 2 indicated by AIC criterion was therefore employed in the analysis.

Threshold VAR (TVAR) Test

In this section, causality between economic growth and Value-Added Tax (VAT) in Nigeria was investigated using VAR Granger Causality/Block Exogeneity Wald Tests. The null hypothesis is that GDP does not Granger cause VAT. The results of the estimated basic and Threshold VAR is presented in Table 3.

Table 3: Threshold value estimates of VAT and CPI on Economic growth

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Threshold Regime</td>
<td>VAT</td>
<td>12.63</td>
<td>1.0237</td>
<td>0.0000***</td>
</tr>
<tr>
<td></td>
<td>CPI</td>
<td>10.09</td>
<td>2.8914</td>
<td>0.0254**</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>5.215</td>
<td>2.1091</td>
<td>0.0000</td>
</tr>
<tr>
<td>Regime of rising CPI (that is, ΔCPI &gt; 0)</td>
<td>CPI</td>
<td>-0.1734</td>
<td>0.9271</td>
<td>0.001***</td>
</tr>
<tr>
<td></td>
<td>VAT</td>
<td>-0.7157</td>
<td>1.9821</td>
<td>0.012**</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>5.3065</td>
<td>0.2931</td>
<td>0.0000</td>
</tr>
<tr>
<td></td>
<td>VAT</td>
<td>6.8604</td>
<td>0.1945</td>
<td>0.0000***</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>8.3651</td>
<td>0.9001</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Notes: *** and ** indicate significance at the 1 and 5% levels, respectively

Source: Author’s computation from the data extracted from CBN statistical bulletin and National Bureau of Statistics (1961 - 2020)

For the basic non-threshold model in Table 3, it was shown that the two variables (VAT and CPI) react the same way to output change. This implies that a strong evidence of causal relations is found either from both VAT and CPI to economic growth and other way round as well. This is an indication that VAT is a positive determinant of rising output in Nigeria. That is, as VAT rises, it
implies a rise in the level of output. The results contradict the findings of Kaisa (2019) which showed that revenue consequences of VAT have not been positive.

In the regime of rising CPI, the results show that a two-digit rise (10 percent threshold) in CPI confers a significant negative impact on the output level in the economy. This implies that the general price level of a weighted average market basket of consumer goods and services purchased by the various economic agents will upsurge. This is indeed at a cost to the wellbeing of the entire citizenry because a non-stop rising in CPI tends to propel a rise in VAT and hence a rise in firms’ final goods and services. A unique feature of this analysis is that there is no regime of falling CPI in the anal of Nigeria’s history. Thus, the ever increasing CPI in Nigeria continues non-stop.

Similarly, a VAT above the 10 percent threshold value endangers the economy as it practically corrodes people's welfare while maintaining high revenue profile for the economy. This is an implication that a greater threshold value of VAT in Nigeria takes its toll on the people well-being. The results support the empirical work of Kaisa (2019) which reveals that the revenue consequences of VAT have not been positive as it results in tax inequality in the economy. On the contrary, the results are not in line with the findings of Keen and Lockwood (2010) and Skinner (2015) which asserted that the benefits of the VAT appear numerous as it is perhaps harder to evade than other forms of taxation.

On the contrary, a VAT below the 7.59 percent threshold value does not harm the economy; rather, it improves people's well-being while maintaining revenue collection. The results shows that a VAT below the 7.59 percent threshold confers significant positive effect on the Nigerian economy as well as on the consumption pattern of Nigerians. This is an indication that that Value-Added Tax has contributed significantly to the standard of living of Nigerians. The results corroborate the findings of Diamond and Zodrow (2010) which submitted that a VAT would lower household consumption in the short and long runs, and would reduce GDP for the next several years followed by several years of negligible change. The results are also in line with findings of Omesi and Nzor (2015) which revealed that the contributions of Value Added Tax to the total revenue accruals was significant and that it was primarily designed to favour development at the lower level of government.

5.0 Conclusion
The rising level of output necessitates an increased VAT in other to achieve beneficial social and economic outcomes in the economy. This is only achievable through a rising CPI at the expense of the entire citizens. Thus, a VAT below the 7.59 percent threshold upholds Pareto Optimality which ensures social welfare is maximized in the sense that no resources can be reallocated to make one individual better off without making at least another individual better off. The paper recommends that Nigerian economy should maintain a VAT below the 7.59 percent threshold to cushion the effect of ever rising CPI on the citizens.
References


