

How productive is Value Added Tax Revenue in Nigeria between 1994 and 2016?

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Abstract: *Value added tax (VAT) is most common indirect tax, a consumption tax designed to increase tax revenue of government. The government will be in position to execute her laudable projects for well-being of the citizenry. The VAT was introduced in Nigeria in 1994. Available data showed that VAT revenue to the government from 2010, 2011, 2012, 2013, 2014, 2015, and 2016 were ₦564,890 million, ₦659,160 million, ₦802, 700million, ₦802,700, ₦803, 000 million, ₦767, 300, and ₦ 828,200 million respectively. It seems growing, but definitely not in tandem with expected economic reality in Nigeria, especially if purchasing power is considered. The questions are: How has the VAT helped in minimizing Nigerian government borrowing? Can be concluded at 5% Vatable rate in Nigeria that VAT revenue is productive? This work therefore assessed VAT productivity at the cross-elasticity of Total Consumption Expenditure in Nigeria; and VAT productivity at the cross-elasticity of Private Consumption Expenditure. The work hypothesized that: VAT productivity is not significant at the cross-elasticity of Total Consumption Expenditure in Nigeria. VAT productivity is not significant at the cross-elasticity of Private Consumption Expenditure in Nigeria. The study adopted the ex post facto research method using regression techniques. Data were sourced from Federal Inland Revenue Services (FIRS), Central Bank of Nigeria (CBN) statistical bulletin and World Bank's World Development Indicators (WDI). The findings showed that VAT productivity is not significant at the cross-elasticity of Total Consumption Expenditure (TCE)/GDP; and VAT productivity is not significant at the cross-elasticity of Private Consumption Expenditure (TCE*)/VATable GDP. Thus, rather than increasing VAT rate, which had not been properly harnessed, the machinery of VAT collection should be streamlined to minimize loopholes and corrupt practices. The distortion, lopsidedness and the directionless of VAT administrators may not be unconnected to political sabotage and ineptitude of economic managers of the nation. There is seemingly manifestation of over reliance on oil revenue for selfish personal and sectional interests.*

Keywords: *Efficiency, Gross domestic product, Value Added Tax, Productivity, Tax Revenue*

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I. Introduction

Taxation as an instrument of fiscal policy is vital in generating revenue to finance the activities of government, redistribute income, stabilise the economy as well as stimulate growth and development (Famoyin, 2016). For the first two decades after Nigeria independence the economy was relatively buoyant as a result of favourable balance of payments and the oil boom. The government somehow neglected revenue from taxation especially from the real sectors namely agriculture and manufacturing sectors as a result of large revenue from sales of crude oil. It seemed that the government has no strategic economic development plan for the nation. If any at all, it was primarily selfish, sectionalism, and unpatriotic.

The global oil glut adversely affected the revenue position of Nigeria. There is over 60% drop in oil price (it was below \$40 per barrel). This was unanticipated by the government. This has resulted in over 80% fall in the yield (spread) per barrel of oil produced in Nigeria, steep decline in the country's revenue, 2016 budget deficit of over ₦2 trillion, continuing devaluation of the Naira, slowing Gross Domestic Product (GDP) growth, reduced inflow of foreign direct investment, rising inflation and growing unemployment (Gupta, 2016). The government at the federal level has put a stop to capital projects, while allocation to the States of the Federation has reduced resulting in the inability of many States to provide relevant infrastructural facilities and pay workers' salaries ranging from five months to eight months. This dilemma coupled with the recent global economic recession and increased cost of running the government has turned the attention of managers of the

nation's economy to the importance and sustainability of taxes, especially value added tax (Gupta, 2016).

Consequently, the government economic team has become reactive in behaviour. A number of economic reforms including tax regime reforms have been pursued by the government. As part of the efforts put in place by the Government to improve the mode of finance, a study group on indirect taxation was set up by the Federal Ministry of Budget and Planning in April 1991. Among other things, the aim was to study how to improve the administration of indirect taxes in Nigeria. It was this study group that carried out the feasibility study of Value Added Tax and came up with a firm recommendation in November, 1991 that Value Added Tax should be introduced in Nigeria. After two years of preparatory work, a Modified Value Added Tax (MVAT) committee was set up in 1992 to undertake preliminary work for the introduction of the new tax. The committee was later to work in close collaboration with the Federal Inland Revenue Service in 1993. The latter was to take over the administration of the new tax which was scheduled to come on stream as Value Added Tax (VAT) by first September, 1993 but eventually came on stream on first December, 1993 by Decree No. 102 of 1993.

By the introduction of Value Added tax (VAT), it was intended that government revenue priorities would move away from crude oil sales, oil royalties and petroleum profit tax, all of which are vulnerable to international petroleum price fluctuations, to a more stable internally generated revenue service. Olaoeye (2013) observed that, if government was able to collect more revenue through indirect taxation it should be possible to reduce the tax burden on the income of individuals.

The value added tax (VAT) which is a consumer based tax has assumed a high profile since government introduced it in 1994 to replace sale tax. The value added tax generated ₦13.67 billion in the first half of 1994 and about 24 percent above the pro rata revenue of ₦11 billion projected for the period (Igweonyia, 2011).

The figures obtained from the Federal Inland Revenue Services (FIRS) also showed that out of the total collection over ₦7.791 billion was realized from VAT on import while non-import for the period fetched ₦865.886 billion. Monthly collections showed that the highest yield of ₦2.914 billion was recorded in May, while the lowest below the estimated monthly yield, and were realized in February. The month of January yielded ₦42.3 billion, March, ₦862.253 billion and June, ₦862.186 billion (Igweonyia, 2011).

The federal government had estimated revenue of ₦22 billion from VAT for 1996, compared to over ₦19 billion collected in 1995. The government recorded a development that encouraged the federal government to reduce personal tax relief in 1995. By the end of 1995, the new tax scheme shot up its contribution to the revenue pool of the government to true of ₦20.26 billion. Consequently, government has announced its intention to shift its focus from income tax to the tax on consumption which it claimed is less prone to tax evasion and it's progressive in nature. The government has earned about ₦7.01 billion from VAT in the first three months of 1996 (Igweonyia, 2011).

Naiyeju (2014) also asserts that there are obvious reasons why the effective administration of the value added tax merits nothing but a national celebration in Nigeria. Alheri (1995) confirmed this by stating that VAT has proved to be a realistic economic policy in spite of public outcry against the tax regime at its inception. In 1994, he said, the federal budget stipulated that VAT must realize revenue of ₦ 6 billion, while multilateral financial institutions IMF and World Bank had estimated that VAT could not yield more than ₦4 million. Needless to say, VAT met and overshot as 1994 budget estimated by over ₦ 21 billion and a total of ₦36 billion was realized in that same year. Again VAT, as stated in 1996 budget speeches overshot the 1995 estimated by yielding over ₦21 billion.

VAT is a tax regime to which every state and local government areas in the federation contributes. On the other hand, the efficient and speedy manner in which FIRS accounts for monthly revenue has enabled the government to allow VAT revenue to all state governments on a monthly basis. The 768 local government areas in Nigeria in 1994 shared VAT revenue of ₦61 million, while Federal capital territory (FCT) received ₦3.17 million revenue in 1994 and 1995 respectively (Alheri, 1995). How has this performance sustained over the years?

The VAT revenue to the government from 2010, 2011, 2012, 2013, 2014, 2015, and 2016 were ₦564,890 million, ₦659,160 million, ₦802, 700 million, ₦802,700, ₦803, 000 million, ₦767, 300, and ₦ 828,200 million respectively (CBN Statistical Bulletin & FIRS Collection Profile 2010 to 2016). It seems growing, but definitely not in tandem with expected economic reality in Nigeria, especially if purchasing power is considered.

Over the years, revenue derived from taxes has been growing very lowly and it seems that no significant physical development actually took place. The impact of tax revenue on the poor is not being felt (Okafor, 2012). Inadequate tax personnel, fraudulent activities of tax collectors and lack of understanding of the importance of tax by tax payers are some of the problems linked to the Nigerian tax system.

Value Added Tax (VAT) is based on the general consumption behaviour of the people. It is expected to boost government revenue with minimal resistance from the tax payers. It was also believed VAT was introduced among other reasons to serve as means of avoiding taking loans from international agencies and

relying on foreign aids for development (Adereti, Sanni&Adesina, 2011). Contrary to the people's beliefs, a rundown of government annual expenditure from 1970 (at the end of the Nigeria-Biafra war) to 2014 shows that the government ran annual deficits for 39 years (even after VAT introduction in 1994) which has not translated into a viable economic performance in terms of price stability and growth that guarantees employment creation (Fagbohun, 2017).

Two questions begging for answers are: How has the VAT helped in minimizing Nigerian government borrowing? Can be concluded at 5% Vatable rate in Nigeria that VAT revenue is productive? This work therefore aims at assessing VAT productivity at the cross-elasticity of Total Consumption Expenditure in Nigeria; and VAT productivity at the cross-elasticity of Private Consumption Expenditure. The work hypothesized that: VAT productivity is not significant at the cross-elasticity of Total Consumption Expenditure in Nigeria. VAT productivity is not significant at the cross-elasticity of Private Consumption Expenditure in Nigeria.

This study is further presented in the following sections: Conceptual and theoretical framework; Empirical studies' review; Methodology; Data presentation and analysis; Summary of findings, conclusion and recommendations.

II. Conceptual And Theoretical Framework

Another name for VAT is goods and services tax (GST). It is levied on the value added that results from each exchange. It is an indirect tax collected from someone other than the person who actually bears the cost of the tax or the tax burden. Value Added Tax (VAT) has been reduced in most countries of the world on record. The first country that introduced or imposed VAT, as is known in modern sense is France on April 10, 1954. Most countries of the European Economic Community (EEC), have value added tax as a means of ensuring uniformity of trading, since goods and services move relatively freely among these countries. Owing to the close economic relationship between France and its colonies, VAT was introduced almost immediately after 1954 in most of Franco- phone African Countries, beginning with Ivory Coast in 1957. Within ten years of its administration, VAT in one form or the other was operational in most French speaking African countries (Adereti, Sanni&Adesina, 2011).

The first developing country to implement VAT was Brazil in 1967 when the state government abolished the multiple sales tax system, in order to ensure financial and economic co-ordination among 26 states in the country. Among the latest countries that imposed VAT were India and China both in 1990. Nigeria introduced VAT in 1st September, 1993 and was implemented on 1st January 1994. In the United States despite the autonomy of the states in tax matters, the state that operated value added tax was Michigan which was introduced in 1965, but was replaced in 1974 and was re-introduced in 1981. All the other states still operate the sales tax system (Aderetiet *al.*, 2011).

VAT is used as an important instrument for fiscal and economic policies in many countries of the world. The tax which each individual is bound to pay ought to be certain and not arbitrary. The time of payment, the manner of payment, the quantity to be paid, ought all to be clear and plain to the contributors, and to every other person (Adam, 1993).

Tax revenue including VAT revenue promotes economic and social development sustainability Afuberoh and Okoye (2014) stated that in achieving sustainable development in the social and economic sectors of a country, the government must consider the trade-off involved in attracting foreign direct investment (FDI) in terms of giving incentives and the impact of these on the country's sustainable development. Afuberoh and Okoye (2014) elaborated that tax is a fiscal instrument used to encourage or discourage specific production or consumption behaviours that affect the economic, environmental or social sustainability. The following are the impacts on the sustainability of economic development as identified by them:

- a. Tax system provides a fiscal platform that encourages foreign direct investment (FDI) and also fosters bilateral, regional and international trade relations among countries: The tax policies of a nation determine whether foreign direct investment would be attracted or not. If investors are brought into a country, it means that the investors will bring their stable and free capital, their technology, efficiency and contribution to nation's capital accumulation and job/wealth creation.
- b. Taxation fosters a fair relationship between development and developing countries so as to ensure that developing countries get a fair allocation of tax base and tax room in emerging trade relations: Consequently, the developed countries would not take undue advantage of the development needs in developing countries as a reason not to work out the international tax regime and mechanism against the third world countries.
- c. Taxation helps developing countries in formulating effective policies and collection system that foster the funding of sustainability: Effective and well-functioning tax system and administration are essential foundation blocks for financing sustainable development.

It is pertinent to note that if there is no adequate tax structure and tax collection system, the ability of implementing any policy meant to enhance sustainable development goals is limited. No wonder, unwary developing countries keep relying on foreign supports usually associated with unfavourable conditions. Thus, VAT was introduced to reduce reliance on foreign loans and support for development.

Different countries have different sources of income. It is from these various sources of income that countries are able to finance the many activities that governments are involved in. The activities that need government spending are in such areas as, social, economic and political fields. If a country is self-sufficient, there will be no significant problem in terms of incurring National debt because this country will be able to meet its expenditure from its resources.

However, the problem arises for those countries who are not self-sufficient. Such countries are not in a position to meet all the needs of its citizens from its own resources and hence it will look to other sources of extra income to meet its obligations, hence incurring National debt. National debt is a real problem because once this debt is incurred, it has to be serviced. The servicing of most debts do not only require that the principal debt is serviced but in addition to servicing the principal debt, interest has also to be paid. This means therefore that instead of meeting other social needs of the people of a country, the money will go to the payment of interest.

Titely and Moynihan (2000) have pointed out that "all the money borrowed by the public sector over the past which has not been repaid is called the public sector debt or national debt". Other scholars have also contributed to the debate of National debt. Bernanke and Abel (2001) have argued that "there is an important distinction between the government budget deficit and the government debt (also called the national debt). The government debt (a stock variable) is the total value of government bonds outstanding at any particular time. Because the excess of government expenditures over revenues equals the amount of new borrowing that the government must do that is, the amount in dollar, or nominal terms) equals the change in the debt in that year". There are various ways in which a deficit can be caused. Deficits can occur when:

- There is excess of total outlays over total receipts
- There is national emergency and the government has to meet the unplanned costs
- There is a drop in tax collection due to a recession.
- There is a drop in revenue due to a tax cut.

Revenue is regarded as the principle purpose why Government imposes tax on her subjects. Revenue from taxation is required to cover a widening field of government expenditure. According to Adesoji and Chike (2013), revenue generation is the nucleus and the path to modern development. Taxes were imposed to cover the cost of administration, defense and maintenance of law and order, these being services which individuals could not adequately render. The range of service provided by the state has increased very tremendously in the recent time. The health service and education are both very costly but large sums are also required for housing, pension, supplementary allowances, a portion of this expenditure been the form of grant to local authorities to supplement expenditure financed out of local rates.

The negative function of reducing the spending potential of people often may be viewed as an unfortunate by-product of taxation. For instance, by the time of Napoleonic war, the British government had discovered the conveniences of having the bank of England to provide it with the money using power. Massachusetts has the distinction of been the first government in the world to issue paper money. World war one was the first occasion when the power of financing government by creating money was fully used by all major belligerents. This financial power was clearly recognized by government during World War II and was used on a vast scale. In the contemporary world, the possibility of national government having insufficient money of finance for their internal expenditure is no longer a reality. Thus, the amount of money to be raise by taxation depends on the policy objectives rather than on government financial necessity (International Encyclopedia of the Social Sciences, 2018).

Taxation is preferred as means of raising revenue. It is worthy to note that when taxes are collected, the money is usually expended for the building of schools, construction of roads, provision of pipe born water and the establishment of industries all geared towards the raising of the living standard of the citizens.

How about increasing the VAT rate in Nigeria? A fundamental challenge is yet to be resolved: attitude of government and producers. Igbaekemen (2014) reported that African Economic Research Consortium (AERC) in a work carried out on VAT system in Nigeria discovered that that Nigerian companies treat their VAT expenses as input costs and pass these to the consumers while the government injects most of the VAT revenue back into the system as consumption expenditures, causing huge disruptions to the economy. In a country where basic physical infrastructure – for transport, communications, power and information technology – to strengthen competitiveness and expand predictive capacity are lacking, the increase in VAT was not only ill timed, but counterproductive in the already highly distorted Nigerian economy.

Nigeria's infrastructure is of poor quality by any standard and constraint business even if it is better than average for Africa. In recent World Bank survey, manufacturing companies in the country ranked

infrastructure as their most severe business constraints (Igbaekemen, 2014). Apart from the negative implications of VAT increase as highlighted above, the following issues are likely to be the problems associated with the increase: total collapse of the Real Sector; rise in Inflation; increase in unemployment; possible labour unrest due to distrust on political class (Onaolapo, Aworemi&Ajala, 2013).

In this study Total Consumption Expenditure (TCE) represents the total of government and private sector expenditure. VAT Productivity infers the attainment of the highest level of performance with the lowest possible expenditure of resources. This is the rate at which VAT is able to generate revenue for the federal government in an effective and efficient manner. Based on this study, it is expressed as effectiveness/efficiency. Vatable Consumption Expenditure (TCE*) is a proxy of private consumption expenditure since Government expenditures is not VATable, and Vatable GDP (GDP*) is the VATable component of Nominal GDP (i.e. is the total cost of goods and services that are subjected to VAT. It is expressed as $GDP^* = NGDP - \text{Non-Vatable GDP}$).

This work is anchored on socio-political theory, put forward by Wagner. Onakoya and Afintinni (2016) discussing the theory stated that social and political objectives should be the major factors in selecting taxes. The theory advocated that a tax system should not be designed to serve individuals, but should be used to cure the ills of society as a whole. One of the Nigerian society's ills that brought about VAT was that of relying on external loans and supports to finance development by Government.

The Keynes General Theory of Employment, Interest and Money assisted in explaining the concept of productivity canvassed in this work. This theory was propounded by John Maynard Keynes, a British economist in 1936. His major work, entitled 'the general theory of employment, interest and money' was first published in 1936. Keynes advocated the use of fiscal policy by central government to manage the level of aggregate demand to preserve full employment and avoid inflation. This involves the manipulation of government spending and taxation in order to guide the economy's performance. When inflation exists, government spending should be reduced or taxes increased. These policies will reduce aggregate demand and thus reduce inflationary pressures. Another approach would be to use monetary policy: policy intended to alter the supply of money in order to influence the level of economic activity. Inflation calls for a reduction in the money supply. By making it more difficult to borrow funds, the government can reduce spending and thereby combat inflation (Anichebe, 2015).

III. Empirical Studies' Review

Naiyeju (2014) argued that the positive result received from any tax depends on the extent of how it is properly managed. The extent of how the tax law is interpreted and implemented as well as the publicity brought into it will determine how a particular tax is able to meet its objectives.

VAT rate in Nigeria has been determined in a way that minimizes disincentive efforts on economic activities (Owolabi&Okwu, 2011). Musa (2009) opined that economic and social development laws and policies provide the basis for effective state action that lifts society from underdevelopment, improves the standard of living and facilities for the realization of the millennium development goals.

Ariyo (1997) in his study on productivity of the Nigerian tax system reported a satisfactory level of productivity of the tax system before the oil boom. The report underscored the urgent need for the improvement of the tax information system to enhance the evaluation of the performance of the tax system and facilitate adequate macroeconomic planning and implementation.

Ajakaiye (2000) worked on the impact of VAT on key sectoral and macroeconomic aggregates, using a Computable General Equilibrium (CGE) model considered suitable for Nigeria. The study developed three scenarios. In order to approximate the presumed Nigerian situation, the study assumed that government pursued an active fiscal policy involving the re-injection of the VAT via increases in government final consumption expenditure in combination with a presumed non-cascading treatment of the VAT. Two other simulations considered an active fiscal policy combined with a cascading treatment of VAT and a passive fiscal policy combined with a non-cascading treatment. As it turned out, the scenario of a cascading treatment of VAT with an active fiscal policy not only had the most deleterious effects on the economy, it was also the one that most closely approximated the situation in Nigeria. VAT revenues under this scenario are more than 3% lower than the first scenario, the general price index increases by 12%, and wage and profit incomes fall by 8.54% and 12.27% respectively. Overall, the GDP declines by 11.34%. Such a situation, as observed by the researcher, poses a great threat to the sustainability of VAT. A United Nations (2000) expert group stated that tax revenue contributes substantially to development. The stark reality in most developing countries is that while there are several budgetary pressures as a result of ever increasing demand for government expenditure, there is a limited scope for raising extra tax revenues.

Desai, Foley and Hines (2004) stated that governments have at their disposal many tax instruments that can be used singly or in concert to finance their activities. These tax alternatives include personal and corporate income taxes, sales taxes, value added taxes, capital gains taxes and numerous others. In choosing what tax instruments to use and what rates to impose, governments are typically influenced by their expectations of the

effects of taxation on investment and economic activities, including Foreign Direct Investments (FDI). The researchers stated that there are extensive empirical studies that high corporate income tax rates are associated with low levels of FDI.

Olaoye (2009) worked on the administration of VAT in Nigeria. The objective of the study was to seek ways of improving government revenue generation base in order to improve on the economy. The study among other things, recommended that more awareness was needed on VAT.

Njuru, Ombuki, Wawire and Okeri (2013) investigated the impact of taxation on private investment in Kenya. Vector auto-regression technique was used to achieve study objectives. Time series research design was used covering period 1964-2010. The study found that VAT, income tax and establishment of Kenya Revenue Authority (KRA) had negative impact on private investment while excise tax, import tax and tax amnesty impacted positively on private investment. The study concludes appropriate tax system and progressive tax reforms are necessary to ensure that private investors are given enabling environment to establish.

Kleiman (1993) examined the extent to which international differences in taxation may explain departure of national price levels from Purchasing Power Parity (PPP). Investigating a sample of 51 Countries for which price level data were available from stage IV of the project on the international comparison of purchasing powers and the real products for 1980. The study suggests that the overall burden of central government taxation, especially of indirect domestic taxes raises the general price level. Consistent with the accepted view that direct tax cannot be shifted forward; no such effect is associated with the direct tax burden. Contrary to expectations, however, the burden of domestic indirect taxes expresses itself in the prices of tradables rather than of non tradables.

Omokhuale (2016) evaluated empirically the contribution of value added tax (VAT) to Nigeria from 2000-2012. Data were collected from Central Bank of Nigeria (CBN) statistical bulletin and Federal Inland Revenue bulletin. Ordinary least square techniques were used to estimate the model, which reveals a strong positive significant relationship between values added tax and Nigeria economy.

IV. Methodology

The study adopts the *ex post facto* research method using regression techniques. Data were sourced from Federal Inland Revenue Services (FIRS), Central Bank of Nigeria (CBN) statistical bulletin and World Bank's World Development Indicators (WDI).

To assess VAT productivity on GDP, the study adopted the elasticity and buoyancy of the tax which determines how VAT responds to changes in Gross Domestic Product (GDP). It has been used Mansfield (1972), Osoro (1991), Kusi (2011), Muriithi and Moyi (2003), and Amina (2013). Ene (2000) noted that the efficiency of operations is the relationship between the level of service provided and the resources used to achieve that level. Increasing efficiency will reduce cost and hence increase productivity. Efficiency measures the degree of effectiveness with which government and other economic services are implemented. Thus, efficiency and effectiveness depend upon the existence of some arrangement for the planning, appraisal, authorization and control of its use of resources (Chandler, 1985).

Productivity was calculated in accordance to Oloidi and Oluwalana (2014). They adopted the Ariyo (1997) log linear productivity model. They showed that productivity is the ratio of Effectiveness/ Efficiency. In relation to taxation,

$$\begin{aligned} \text{Tax Effectiveness} &= \frac{\text{TAX}_t / \text{GDP}_t}{\text{STR}_t} && \text{(Eq.1)} \\ \text{Standard Tax Rate} &= \text{TAX}_t / \text{GDP}_t \end{aligned}$$

Where:

TAX_t = Total Value of Tax Collected for Period
 GDP_t = Total Value of GDP for Period and
 STR_t = Standard Tax Rate in operation for period

$$\begin{aligned} \text{Tax Efficiency} &= \frac{\text{TAX}_t / \text{TCE}_t}{\text{STR}_t} && \text{(Eq. 2)} \end{aligned}$$

Where;

TCE = Total Consumption Expenditure for period
 TAX_t and STR_t = as defined in equation 1

$$\begin{aligned} \text{Tax productivity} &= \frac{\text{TAX}_t / \text{GDP}_t \times \text{STR}_t}{\text{STR}_t \text{TAX}_t / \text{TCE}} && \text{(Eq. 3)} \end{aligned}$$

This work proposed therefore that in relation to VAT productivity:

$$\text{VAT productivity} = \frac{\text{VAT}_t / \text{GDP}_t \times \text{STR}_t}{\text{STR}_t \text{VAT}_t / \text{TC}} \quad (\text{Eq.4})$$

$$= (\text{VAT}_t / \text{GDP}_t) / (\text{VAT}_t / \text{TCE}_t)$$

$$= \frac{\text{VAT}_t \times \text{TCE}_t}{\text{GDP}_t \text{VAT}_t} = \frac{\text{TCE}_t}{\text{GDP}_t} \quad (\text{Eq5})$$

For real VAT productivity, GDP and TCE were adjusted to reflect vatable GDP (GDP*) and vatable TCE (TCE*)

Adjusting equation 5 for Vatable GDP and Vatable TCE, Real VAT productivity is $\text{TCE}_t^* / \text{GDP}_t^*$ (Eq. 6)

Equations 5 and 6 are synonymous with Osoro (1991) buoyancy index b1 in the productivity equation of $\text{TTR} = b_0 + b_1 Y + e$

Productivity may be expressed in percentage but better expressed in number of times since numerator % cancels out denominator %.

Also there is productivity if: $\text{Effectiveness} > 1$
Efficiency

If productivity is less than unity, the cost of resources or input is higher than the financial benefit in form of output. If productivity is at unity, no productivity since the cost of resources just equals the output value. This shows that the system has managed to break even.

V. Data Presentation And Analysis

This study proposed that:

H0₁: VAT productivity is not significant at the cross-elasticity of Total Consumption Expenditure (TCE)/GDP.
H0₂: VAT productivity is not significant at the cross-elasticity of Private Consumption Expenditure (TCE*)/VATableGDP.

These can be simplified as: Value Added Tax revenue productivity has no significance on vatable GDP in Nigeria. In order to test this, revenue productivity model was adopted. The VAT productivity is derived from VAT efficiency and VAT effectiveness. Table 1 shows the result of our computations from Appendixes I and II.

Table 1: Calculation of VAT Effectiveness, Efficiency and Productivity

** Columns are in alphabets

S/N	A**	B	C	D	E	F	G
	Year	Private Consumption Expenditure (TCE*)	Total Consumption Expenditure (TCE)	Vatable GDP at Current Purchasers' Prices (GDP*)	Total GDP at Current Purchasers' Prices (GDP)	VAT Revenue	
		₦ Billion	₦ Billion	₦ Billion	₦ Billion	₦ Billion	₦ Billion
1	1994	610.34	780.01	356.19	945.56	7.2608	
2	1995	1,387.45	1,630.18	550.75	2,008.56	20.761	
3	1996	2,124.27	2,404.66	692.14	2,799.04	32.5	
4	1997	2,091.07	2,468.85	775.06	2,906.62	35.3	
5	1998	2,371.33	2,764.88	882.21	2,816.41	37.6	
6	1999	2,454.79	2,686.09	989.34	3,312.24	47.8	
7	2000	2,478.78	2,872.32	1,088.85	4,717.33	58	
8	2001	3,687.66	4,090.76	1,340.78	4,909.53	91.7	
9	2002	5,540.19	6,018.48	1,963.32	7,128.20	108.6	
10	2003	7,044.54	7,495.03	2,162.47	8,742.65	136.4	
11	2004	8,637.73	9,423.55	3,201.58	11,673.60	163.3	
12	2005	11,075.06	12,078.16	4,079.26	14,735.32	192.7	
13	2006	11,834.58	13,117.98	5,515.27	18,709.79	232.7	
14	2007	16,243.72	18,375.53	6,257.56	20,940.91	312.6	
15	2008	16,090.50	18,961.87	7,099.80	24,665.24	401.7	
16	2009	18,980.96	22,250.89	8,075.51	25,236.06	481.4	
17	2010	22,845.13	27,001.27	14,486.19	55,469.35	564.9	
18	2011	22,840.83	27,820.74	17,368.54	63,713.36	659.2	
19	2012	19,536.05	24,388.87	21,029.66	72,599.63	710.6	
20	2013	59,048.10	70,640.98	25,794.80	81,009.96	802.7	
21	2014	64,671.26	76,325.05	57,036.71	90,136.98	803	
22	2015	74,785.69	86,083.59	63,859.01	95,177.74	767.3	
23	2016	83,635.16	94,681.05	69,357.56	102,575.42	828.2	
TOTAL		460,015.18	534,360.78	313,962.56	716,929.50	7,496.22	
AVEGAGE		20,000.66	23,233.08	13,650.55	31,170.85	325.92	

SOURCES: 2012, 2013, 2016 and 2017 CBN Statistical Bulletins and Appendixes I & II

The effectiveness of VAT as per GDP is the total VAT for period compared with expected VAT from GDP. Total VAT of ₦7,496.22B should be at least 5 percent of Total GDP of ₦716,929.50B; and GDP* of ₦313,962.56. For GDP, ₦ 7,496.22B/(₦716,929.50B) results in 0.0105. This is less than 0.05. Hence, VAT is not effective as per GDP. For GDP*, ₦7,496.22B/₦313,962.56B results in 0.0239. This is also less than 0.05. Hence, VAT is not effective as per GDP*.

$$\begin{aligned} \text{GDP Effectiveness rate} &= \text{VAT} / (0.05 \text{ GDP}) \\ &= (\text{₦ } 7,496.22\text{B}) / (\text{₦ } 35,846.4752\text{B}) \\ &= 20.912 \text{ percent} \end{aligned}$$

$$\begin{aligned} \text{GDP* Effectiveness rate} &= \text{VAT} / (0.05 \text{ GDP*}) \\ &= (\text{₦ } 7,496.22\text{B}) / (15698.1279\text{B}) \\ &= 47.752 \text{ percent} \end{aligned}$$

$$\text{Generally, Effectiveness rate} = \frac{20\text{VAT}}{\text{GDP}} \text{ or } \frac{20 \text{ VAT}}{\text{GDP*}}$$

$$= 20.912\% \text{ or } 47.752\%$$

Efficiency Rate-This is when VAT is compared with TCE or TCE*. The calculation resembles GDP effectiveness.

$$\begin{aligned} \text{Efficiency rate on TCE} &= \text{VAT} / (0.05 \text{ TCE}) \\ &= (\text{₦ } 7,496.22\text{B}) / \text{₦}26,718.0391\text{B} \\ &= 28.06 \text{ percent} \end{aligned}$$

Thus,

$$\begin{aligned} \text{TCE*} &= \text{VAT} / (0.05 \text{ TCE*}) \\ &= (\text{₦ } 7,496.22\text{B}) / \text{₦}23000.759\text{B} \\ &= 32.59 \text{ percent} \end{aligned}$$

$$\text{Generally, Efficiency rate} = \frac{20\text{VAT}}{\text{TCE}} \text{ or } \frac{20\text{VAT}}{\text{TCE*}}$$

$$= 28.06\% \text{ or } 32.59\%$$

Productivity [Pr]:

Model I: Productivity on GDP effectiveness and TCE efficiency is:

$$\begin{aligned} (\text{Pr1}) &= \text{Effectiveness/Efficiency} \\ &= 20.912 \% / 28.06\% \\ &= 0.7453 \end{aligned}$$

Or

$$(\text{Pr1}) = \text{TCEt}/\text{GDPt} = 0.7453 \text{ (i.e. } 460,015.18/716,929.50)$$

Model II:Productivity on GDP* effectiveness and TCE* efficiency is:

$$\begin{aligned} (\text{Pr2}) &= 47.752\%/32.59\% \\ &= 1.47 \end{aligned}$$

Or

$$(\text{Pr2}) = \text{TCEt*}/\text{GDPt} = 1.4651 \text{ (i.e. } 147615/313,962.56)$$

Table 2: Summary of Findings

S/N	Variables	Result	Remarks
1	Effectiveness Rate (GDP)	20.912 percent	Not effective
2	Effectiveness Rate (GDP*)	47.752 percent	Not effective
3	Efficiency Rate (TCE)	28.06 percent	Not efficient
4	Efficiency Rate (TCE*)	32.59 percent	Not efficient
5	Productivity (Pr1)	0.7453	Not productive
6	Productivity (Pr2)	1.4651	Productive

Source: Authors' Computations

Productivity Index interpretation

$$\text{Productivity Index [PI]} = \text{Pr} - 1$$

If Pr < 1, PI = negative [resources used are more than benefits derived]

If Pr = 1, PI = zero

If Pr > 1, PI = Positive.

For example the productivity index of VAT in the above calculations is:

$$\text{PI} = \text{Pr} - 1$$

$$\text{PI1} = \text{Pr1} - 1$$

$$= 0.7453 - 1$$

= -0.2547 [deficit/negative]
PI2 = Pr2 -1
= 1.4651 -1
= 0.4651times

VI. Discussion of Results

Table 1 exhibits some characteristics in the distributions from columns C to G. Column C, which is the adjusted TCE (or TCE*), totals ₦460,015.18B for the 23 years 1994 – 2016, with an average of ₦20,000.66 per annum. Total of Consumption Expenditure (TCE) is ₦534,360.78B with an average of ₦23,233.08. The difference between TCE and TCE* is ₦534,360.78B– ₦460,015.18B resulting in ₦74,345.6B representing government consumption expenditure. For adjusted GDP (or GDP*), which is vatable, the total is ₦313,962.56B for 23 years with an average of ₦13,650.55 B and GDP total is ₦716,929.50B for 23 years with an average ₦31,170.85B. Within the period under study, total VAT collected was ₦7,496.22B with an average of ₦325.92B.

The indicators are disappointing. They are too low in value for a country like Nigeria. The GDP, an indicator of the productivity and wealth of a nation are commonly influenced among other factors by the quantity and quality of land, labour, capital and technological progress; and with such if programmed and enabled will allow for increasing investments.

This work therefore showed that:

1. VAT was neither effective on GDP nor effective on GDP* (VATable GDP). VAT system effectiveness rate, as per GDP was low. The 20.912 percent indicates non-attainment of the objective of VAT notwithstanding the non-VATable components in the GDP. Similarly, the VAT system effective rate as per GDP* was also low (47.752 percent), indicating failure in implementing appropriate self-assessment procedures. It seems that the effective implementation of VAT may take longer than was envisaged when it first started. There cannot be effective VAT without self-assessment. This also signifies that VAT audit procedure should be accelerated to sieve accidentals and modulations inhibiting VAT's success. Probing the result of VAT effectiveness on GDP* further, VAT exempted goods and services cannot be ruled out because exemptions are fundamentally inconsistent with the economic logic of VAT. There is a difference of ₦402,966.94B representing the value of exemptions (majorly on government expenditure) and takes about 56.23 per cent of GDP. Only 43.77 percent of products are VATable in Nigeria.
2. VAT was neither efficient on TCE nor efficient on TCE* (representing private consumption only). The efficiency on TCE was 28.06 percent and 32.59 percent on TCE*. These results corroborate the views of many tax experts on VAT that there are still many underground economy, thousands of small and medium scale businesses across the country would not register for VAT. Considering the *super-markets* all over the country, professional consultants, artisans and a host of others evading VAT procedures. These are evidences of poor VAT administration. This was quite exemplified in the 2018 report of the former honourable Minister of Finance, Mrs. Kemi Adeosun revealing that 87 percent of federal revenue from Value Added Tax (VAT) was derived from just four states (55% from Lagos, 6% from Rivers, 5% from Kano and 1% from Kaduna) out of 36 states and the Federal Capital Territory (FCT) contributing 20% is another irrefutable testimony that VAT revenue generation is faced with many problems. Other thirty two (32) states contributing 13% to VAT revenue is unacceptable by any reasonable standard. Accelerating VAT revenue will also need the consideration of the importance of international trade, high literacy and learning effect of VAT overtime. It is now critical for VAT administrators to maintain a focus on the long-term strategic goal of creating sustainable tax system based on voluntary compliance. VAT administrators should, as a matter of caveat, set an optimal level of threshold with which registration of the VAT becomes compulsory. A too low threshold results in considerable difficulty when tax administrator of a country is found to be insufficiently developed to administer a large VAT population.
3. The productivity of VAT on GDP and TCE produces 0.7453. This shows that VAT is not productive because 0.7453 still needs 0.2547 to break even. Productivity index (PI1) is negative (0.7453– 1) up to -0.2547. The cost of resources or input is higher than the financial benefit as output. The productivity of VAT on GDP* and TCE* produces 1.4651. This shows that VAT is productive because 1.4651 is more than break even. Profitability index (PI2) is positive (1.4651– 1) resulting in 0.4651. There is an excess of 46.51 percent performance or 0.4651times. The productivity of VAT on GDP* may be attributed to dwarf GDP* figure. Its failure to meet expected volume resulted in somewhat fictitious productivity. If the denominator, the vatable GDP* was expanded, productivity would have reduced. The results of this study on effectiveness and efficiency are not too far from reflecting the findings of Oloidi and Oluwalana (2014). Their study covered 2000 - 2011. Generally, there has not been any notable improvement since 2011. From ongoing, it can be asserted that if VAT revenue could not attain at least five per cent of TCE* (i.e. 0.05

(~~₦~~460,015.18) = ₦23000.759B) already adjusted for VATable expenditure, then not all VAT collected were actually remitted, or poor administrative strategy is at play or some VATable expenditure are implicit.

VII. Summary Of Findings, Conclusion And Recommendations

Summary of Findings: The work findings that:

1. VAT productivity is not significant at the cross-elasticity of Total Consumption Expenditure (TCE)/GDP.
2. VAT productivity is not significant at the cross-elasticity of Private Consumption Expenditure (TCE*)/VATable GDP.

Conclusion:

Rather than increasing VAT rate, which had not been properly harnessed, the machinery of collection should be streamlined to minimize loopholes and corrupt practices. The distortion, lopsidedness and the directionless of VAT administrators may not be unconnected to political sabotage and ineptitude of economic managers of the nation. There is seemingly manifestation of over reliance on oil revenue for selfish personal and sectional interests.

Recommendations

Given the resourcefulness of VAT to generate needed government revenue, and that many persons evade tax including VAT, and that VAT revenue productivity is low:

1. Government via tax authority should promote Tax Education. There must be intensive tax education, particularly on VAT. In so doing, people will know the importance of tax on the economy and will broaden their knowledge on any new tax policy. Public enlightenment programmes and seminars should be organized as to keep the public aware of VAT and its objectives.
2. Funds generated from VAT should be employed to provide specific infrastructural facilities to improve the welfare of the people. By this, VAT will gain more popularity and promote voluntary registration for VAT by the populace.
3. Contravention of any provision of the VAT Act must be met with stiff penalties according to the dictates of the Act as amended. Any erring tax officer or tax payer found guilty of infringing the VAT laws should be given appropriate punishment. The federal Inland Revenue Services (FIRS) should work in close collaboration with Independent Corrupt Practices and other related Offences Commission (ICPC) and Economic and Financial Crime Commission (EFCC) in order to arrest and prosecute tax defaulters and corrupt tax officials to serve as escape goats to others.
4. Competent and experienced personnel should be recruited by the FIRS and existing staff trained and their skills developed for proper administration of VAT.
5. In order to promote fiscal discipline, and discourage the underground economy evading VAT procedures to VAT net in each state, the principle of derivation currently applied only to oil-producing states in the country should also be applied to VAT revenue sharing among the states. This will promote proper monitoring of VAT activities in each State and stimulate less VAT productive state governments to actively participate in VAT revenue generation and monitoring.
6. Government should review VAT threshold and then reduce exemptions especially imported goods that has close substitutes in Nigeria and on demerit goods because exemptions are fundamentally inconsistent with the revenue generation objectives of VAT. This logic is preferred to increasing the present five percent VAT-rate.
7. Government should embark on cost benefit analysis of VAT administration on a yearly basis. All administrative costs including the cost of monitoring the tax, compliance cost and other relevant cost all over the country should be compared to VAT revenue productivity on a yearly basis. This will provide more information to government on VAT administrative performance and profitability.
8. A viable, efficient and reliable data base should be created for VAT to track all potential taxpayers. To achieve this, there should be strong collaboration among FIRS, Nigerian Custom Services (NCS), Corporate Affairs Commission (CAC), Central Bank of Nigeria (CBN), commercial banks and other relevant government agencies to have a common platform for tracking VATable transactions and ease VAT Collection. By this VAT collection could be automated to generate more revenue.

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APPENDIX I
COMPUTATION OF VATABLE GDP AT CURRENT PURCHASERS' PRICES

YEAR	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'m	₦'B	₦'B	₦'B	₦'B
GDP AT CURRENT PURCHASERS' PRICES (₦'Billion) (A)	945.56	2,008.56	2,799.04	2,906.62	2,816.41	3,312.24	4,717.33	4,909.53	7,128.20	8,742.65	11,673.60	14,735.32	18,709.79	20,940.91	24,665.24	25,236.06	55,469.35	63,713.36	72,599.63	81,009.96	90,136.98	95,177.74	102,575.42
GDP AT BASIC CURRENT PRICES (B)	1,399,703.220	2,907,358.180	4,032,300.340	4,189,249.770	3,989,450.280	4,679,212.050	6,713,574.840	6,895,198.330	7,795,758.350	9,913,518.190	11,411,066.910	14,610,881.450	18,564,594.730	20,657,317.670	24,296,329.290	24,794,238.660	33,984,754.130	37,409,860.610	40,544,099.940	42,396.77	89,043.62	94,144.96	101,489.49
GOODS/SERVICES EXEMPTED FROM VAT:																							
Agriculture (C)	528,951.76	940,304.95	1,275,751.88	1,445,147.39	1,600,576.12	1,704,823.23	1,801,482.92	2,410,050.69	2,847,114.68	3,231,443.60	3,903,758.69	4,752,978.82	5,940,236.97	6,757,867.73	7,981,397.32	9,186,306.05	10,310,655.64	11,593,434.13	13,413,842.46	14,709.10	18,018.61	19,636.97	21,523.51
Crude Petroleum & Natural Gas (D)	326,894.06	1,150,680.58	1,739,698.54	1,605,479.57	1,104,154.59	1,536,508.73	3,282,911.50	2,501,590.05	2,695,930.89	4,113,905.31	4,247,716.05	5,664,883.21	6,982,935.44	7,533,042.60	9,097,750.70	7,418,148.91	14,505,759.31	15,285,004.21	15,004,619.95	13,750.73	9,616.49	5,990.42	5,367.32
Producers of Govt. Services (E)	16,575.64	19,152.56	19,724.05	21,361.04	35,017.24	40,176.18	79,446.53	100,359.87	105,392.12	115,942.30	129,865.58	148,055.51	168,796.67	193,425.36	223,385.84	255,443.83	292,749.63	333,052.94	381,052.77	436.78	0.00	0.00	0.00
Private non-Profit Organizations (F)	22.65	26.16	26.92	181.94	47.84	54.9	108.64	137.25	141.37	145.61	149.98	154.48	158.8	163.59	188.13	211.99	244.27	276.54	327.98	0.38	0	0	0
Public Administration (G)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2,644.23	2,552.45	2,783.83
Education (H)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,804.40	2,116.35	2,445.95

How productive is Value Added Tax Revenue in Nigeria between 1994 and 2016?

Government Final Consumption Expenditure (D=A+B+C)	169.67	242.74	280.38	377.78	393.55	231.29	393.55	403.10	478.29	450.49	785.82	1,003.10	1,283.40	2,131.81	2,871.38	3,269.93	4,156.13	4,979.90	4,852.81	11,592.88	11,653.79	11,297.90	11,045.90
Final Consumption Expenditure of Household (E)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58,745.85	64,334.92	74,410.95	83,218.22
Final Consumption Expenditure of Non-Profits Serving Household (F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	302.25	336.34	374.73	416.93
Private Consumption Expenditure (TCE*) (G=E+F)	610.34	1,387.45	2,124.27	2,091.07	2,371.33	2,454.79	2,478.78	3,687.66	5,540.19	7,044.54	8,637.73	11,075.06	11,834.58	16,243.72	16,090.50	18,980.96	22,845.13	22,840.83	19,536.05	59,048.10	64,671.26	74,785.69	83,635.16
TOTAL CONSUMPTIO N EXPENDITUR E (TCE) (D+G)	780.01	1,630.18	2,404.66	2,468.85	2,764.88	2,686.09	2,872.32	4,090.76	6,018.48	7,495.03	9,423.55	12,078.16	13,117.98	18,375.53	18,961.87	22,250.89	27,001.27	27,820.74	24,388.87	70,640.98	76,325.05	86,083.59	94,681.05

Okonkwo. "How productive is Value Added Tax Revenue in Nigeria between 1994 and 2016?." IOSR Journal of Economics and Finance (IOSR-JEF) , vol. 10, no. 1, 2019, pp. 16-29.