VALUE ADDED TAX RATE CHANGE: EFFECTS ON INFLATION RATE AND GOVERNMENT BORROWING IN NIGERIA

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Abstract

The tax revenue to the Nigerian government especially the indirect tax revenue has been observed to be inadequate for growing needs of government. The Federal Government has therefore enacted the Finance Act 2020 introducing changes to the Companies Income Tax Act, Value Added Tax Act, Petroleum Profits Tax Act, Personal Income Tax Act, Capital Gains Tax Act, Customs and Excise Tariff Etc. (Consolidation) Act and Stamp Duties Act. Value Added Tax (VAT) rate has changed from 5% to 7.5% with effect from 1 February 2020. The Federal Inland Revenue Service has also issued a clarifying circular on the operation procedure and exemptions. There has been a barrage of argument that higher tax rates especially the new VAT rate are needed to bring in desperately needed revenue to government as its previous 5% rate's impact seems neither significant on national revenue nor reduced government reliance on loans and foreign aids. Others still fear that the increase will adversely affect other macroeconomic variables especially inflation rate. The questions are: What effect would increase in VAT rate has on inflation rate in Nigeria? How would the new VAT rate minimize the volume of Nigerian government borrowing? This work therefore assessed the effect of an increase in VAT rate on inflation rate in Nigeria; and the relationship between Value Added Tax and Nigeria's total debt outstanding. The work hypothesized that: VAT rate increase would not significantly cause a change in inflation rate in Nigeria; and there is no significant relationship between VAT revenue and Nigeria's total debt outstanding. The study adopted the ex post facto research method using a regression technique (Koyck Model) which rides on adaptive expectation hypothesis. Data were sourced from Federal Inland Revenue Services (FIRS) and Central Bank of Nigeria (CBN) statistical bulletins. The findings showed that increase in VAT rate does not guarantee more revenue that will bring about significant reduction in government borrowing but could worsen inflation rate in Nigeria. The paper concluded that general paucity of patriotism among citizens tend to frustrate even seeming good policies of the government. The government should have the political will to entrench culture of transparency and accountability; impose VAT on foreign goods that have local substitutes, and all luxury goods; work towards institutionalizing the tax institution such that no person should influence the tax policies selfishly.

Keywords: Government, Inflation rate, Value added Tax, VAT Revenue and Total National Debt Outstanding

Introduction

The existence of government is a necessity for orderly society. The government capacity of delivering its mandate requires finance. Therefore, government cannot continue without financial means to pay its expenses as there are certain services which the government must provide to its citizens because of their essential nature (Okpe, 1998). The political, economic and social development of any country depends on the amount of revenue generated and optimal allocation of such revenue for human development and the provision of infrastructures strategically. However, one means of generating the revenue needed for the provision of such infrastructures is through taxation. One of the types of taxes is the Value Added Tax (VAT).

The VAT was introduced in Nigeria in 1994. The government has experienced not comfortable growth in her tax revenue. For instance, according to the Organisation for Economic Co-operation and Development (OECD)'s Revenue Statistics in Africa 2019 report, Nigeria's tax-to-Gross Domestic Product (GDP) in 2017 was 5.7%. This was a moderate increase from the figures reported in 2016 (5.3%). However, when compared with the same index across other African countries over the same period, it was apparent that Nigeria's tax revenue generation was significantly low for the level of economic activities in the country. Specifically, the 26 African countries (including Ghana and Botswana) reviewed in the OECD's study reported an average tax to GDP ratio of 17.2% (11.5 basis points higher than Nigeria's ratio). 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). This was in sharp contrast to Nigerians' believe that the VAT was introduced as a means of avoiding taking loans from international agencies and relying on foreign aids for development (Ochei, quoted in Adereti, Sanni & Adesina, 2011).

Available records indicated that VAT revenue yearly target were hardly met. In fact, between 2009 and 2017 there has been increase in total debt outstanding (₦3,818.47 billion and ₦18,366.31 billion). The government felt convinced that one of the major considerations is to increase its revenue stream (FIRS Collection Profile from 1996 to 2017 and 2017 Central Bank of Nigeria Statistical Bulletin), hence the Finance Act, 2020 intended to raise necessary revenue required to defray public expenditure, support sustainable increase in public revenue and ensure that tax law provisions are consistent with the national tax policy objectives of the Federal Government of Nigeria. Earlier, the International Monetary Fund managing director, Ms Christine Lagarde, in January, 2016 described Nigerian VAT as the lowest in the Economic Community of West African States (ECOWAS) region and one of the lowest around the world.

The obvious matter is the likely macroeconomic fundamentals' challenge especially inflation rate given the overdependence on oil revenue by the government and seeming insincerity in governance. A persistent increase in prices has constituted a major macroeconomic challenge in 1970s. From a single digit level in 1960s, the inflation rate increased to 16% in 1971 only to jump to an all-high level of 33.9% in 1975. The 1975 high level of inflation has been attributed to the oil boom of the early 1970s and the increases in salaries and wages of both government and private workers (Maku & Adelowokan, 2013). The level of inflation in Nigeria continued to show a random trend. From 20.5% in 1981, it rose to 40.9% in 1984, and fell to 3.2% in 1985. From 1985 it rose again to 49% in 1989, falling to 7.9% in 1990. The upward trend continued in 1990, reaching an all-time high of 72.7% in 1995. In 2009 the inflation rate was 11.53% and in 2017 it was 16.50%. Ordinarily, increasing the VAT rate upwards will trigger inflation rate in the present Nigeria economy and structure.

The Government had earlier attempted increasing the VAT rate to 10% in 2007. It was faced with stiff opposition resulting in the suspension of the proposed increase. It was noted that the Nigerian companies treated 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. More so, the Nigeria's infrastructure is of poor quality by any standard and constraint business even if it is better than average for Africa. In the World Bank survey, manufacturing companies in the Nigeria ranked infrastructure as their most severe business constraints (Igbaekemen, 2014). In a country where basic physical infrastructure – for transport, communications, power and information technology – to strengthen competitiveness and expand productive capacity are lacking, the increase in VAT rate was not only ill timed, but counterproductive in the already highly distorted Nigerian economy.

The Federal Executive Council (FEC) of the Federal Government of Nigeria (FGN) on Wednesday, 11 September 2019, while approving a 50% increase in the VAT rate applicable on supply of goods and services from 5% to 7.5%, effective from 1 February, 2020, observed that increase in inflation rate was one of the problems envisaged (Deloitte Nigeria, 2019). Reason adduced was that Nigeria still practices a modified VAT system where taxpayers can only claim a limited portion of input VAT against output VAT charged. Consequently, without a corresponding adjustment to the VAT system, the increment may turn out to have a higher impact than envisaged. This is more so as entities will ultimately seek to pass the cost to end-users (Deloitte Nigeria, 2019). A barrage of argument about the effect of VAT rate increase on inflation was inconclusive among scholars and economic watchers. Two questions begging for answers are: What effect would increase in VAT rate have on inflation rate in Nigeria? How would the new VAT rate minimize Nigerian government borrowing?

This work therefore aimed at assessing the effect of an increase in VAT rate on inflation rate in Nigeria; and the relationship between Value Added Tax revenue and Nigeria's total debt outstanding. The work hypothesized that: VAT rate increase would not significantly cause a change in inflation rate in Nigeria; and there is no significant relationship between VAT revenue and Nigeria's total debt outstanding.

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.

Conceptual and Theoretical Framework

Baiyewu (2000) regarded Value Added Tax (VAT) as the policy thrust to raise higher revenue from non-oil tax sources particularly from consumption taxes such as VAT and Duties without jeopardizing the liberal tax policies. Value added Tax is of the family of indirect tax.

Different definitions of Value Added Tax have been given, some in relation to its tax incidence, and some in relation to its state of collection, while some are relative to its base. Muhammed (1995) described VAT as consumption tax designed primarily to tax private consumption by individuals of goods or services that are subject to tax. Naiyeju, 2014 defined it as a tax levied on the Value Added at the various stages of sales. Ogundele (1996) defined VAT as the 'addition type' in which the tax base would be the sum of wages and capital income. He further re-affirmed it as the difference between the sales and the purchases of the taxable firm. VAT is an indirect tax collected from someone other than the person who actually bears the cost of the tax or the tax burden. Bickley (1996) defined Value Added Tax (VAT) as a tax levied at each stage of production. Oldman and Woods (1996) defined Value Added Tax as a multi-stage consumption tax levied as the difference between a firm's sales and the value of its purchased inputs used in producing goods. Ogundele (1996) has also defined Value Added Tax as a multi-stage tax imposed on the value added to goods and services as they are processed through various stages of production and distribution and to the service as they are rendered. Broadway (1979) defined Value Added Tax (VAT) in relation to its base as 'the base of VAT is ultimately the final value of the products.' Magner (1983), defined VAT as "a method of assigning tax liability" against the value added at each stage in the process of production and distribution.

The beauty of these definitions is that they bring out the three essential characteristics of Value Added Tax: Value Added Tax is a consumption tax; Value Added Tax incidence is on the final consumer; and Value Added Tax is a multi-stage tax. VAT can be described as a goods and services tax (GST), and it is levied on the value added that results from each exchange.

The first country that introduced or imposed VAT, as is known in modern sense is France on April 10, 1954. The first developing country to implement VAT was Brazil in 1967 when the government abolished the multiple sales tax system, in order to ensure financial and economic co-ordination among 26 States in the country. India and China imposed VAT in 1990; and Nigeria introduced VAT on 1st September, 1993 and was implemented on 1st January 1994 (Adereti *et al*., 2011).

The major reason for constant study and review of VAT is rooted in the economic functions of government. The economic function of government in any country cannot be over emphasized. According to Musgrave (1959), these economic functions of government may be divided into three main categories: to overcome the inefficiency of the market system in the allocation of economic resources; the redistribution of income and wealth in order to move towards the distribution that the society adjudges to be just and equitable; and the role for government in smoothing out cyclical fluctuations in the economy and ensuring a high level of employment and price stability. Ademola (1999) threw more light by stating five major macro-economic objectives that every modern government seeks:

- **Full employment**: The government aims at a high level of human and physical resources utilisation, and the level of employment at which approximately 94 to 95 percent of those seeking jobs are employed.
- **Relative Price stability**: The government seeks the prevention of upward movement of prices (inflation) or downward movement of prices (deflation).
- **External balance**: The government executes her business aiming at the promotion of a debt-free and self-reliant economy.
- **An equitable distribution of income and wealth:** The government seeks to ensure that every citizen has access to the basic necessities of life, and ensuring equitable redistribution of wealth of the nation.
- **Economic growth:** This is the expansion of the production capacity of the economy to generate increase flow of goods and services.

Governments need money to provide the services and social infrastructure to improve the well-being of citizens. This makes it inevitable for government to raise revenue to finance the provision of these goods and services especially those known to be essential to the smooth running of the economy. No wonder why Adesoji and Chike (2013) posit that revenue generation is the nucleus and the path to modern development.
In Nigeria, revenue profile consists of oil and gas, and non – oil sectors with the former contributing over 70% of the total revenue to the federation. Central Bank of Nigeria (2016) indicated that the oil and gas sector contributed 77.5% from 1986-2016 on the average while the non-oil sector generated only 22.5% during the same period. Thus, there are tax and non-tax revenue sources to governments. When a country is confronted with increasing demands to better the well-being of her citizens from its own resources, it will look to other sources of extra income to meet its obligations

either by incurring National debt or increasing tax revenue through appropriate tax reforms. National debt has demerits if poorly contracted. It has to be serviced.

"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 (Titley & Moynihan, 2000). The servicing of most debts does 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. Because of the complexities that go with National Debt, it therefore calls for proper management. Poorly managed debts tantamount to sacrifice of future wealth of the debtor and possible underdevelopment/poverty.

What happens to a country like Nigeria that pursue high revenue generation through increase in VAT rate with a view to minimise borrowing or even do away with borrowing? Other macroeconomic variables that could be triggered is inflation. Inflation is a continuing rise in prices as measured by an index such as the consumer price index (CPI) or by the implicit price deflator for Gross National Product (GNP). Inflation is frequently described as a state where "too much money is chasing too few goods" (CBN, 2017). When there is inflation, the currency loses purchasing power. Conceptually there are two causes of inflation: demand-pull and cost push. *Demand-pull inflation* is caused by an increase in the conditions of demand. These could either be an increase in the ability to buy goods or an increase in the willingness to do so. *Cost-push inflation* arises from anything that causes the conditions of supply to decrease. Some of these factors include a rise in the cost of production, an increase in government taxation and a decrease in quantity of goods produced.

The government has limit in her capacity to increase tax rate. There is usually an optimal tax rate in given government environment. Every Government has to discover that optimal tax rate to achieve efficiently and effectively her reasons for taxation. The *Laffer curve* introduced by Prof. Arthur Laffer explained it. According to Afuberoh and Okoye (2014), *Laffer curve*is a theoretical representation of the relationship between government revenue raised by taxation and all possible rates of taxation. This theory is demonstrated with a curve as shown in Figure 1.

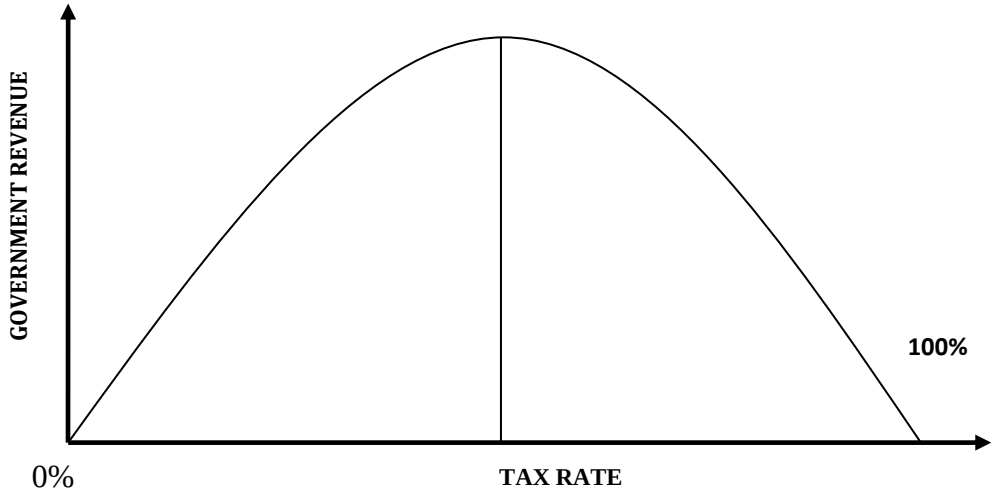

Figure 1: Laffer curve

Source: Afuberoh, D. & Okoye, E. (2014). The impact of taxation on revenue generation in Nigeria: A study of Federal Capital Territory and selected states. *International Journal of Public Administration and Management Research (IJPAMR), 2*(2), 22-47.

In the curve, it shows that the amount of tax revenue raised at the extreme tax rates of 0% and100%. The theory concludes that a 100% tax rate raises no revenue in the same way that a 0% tax rate raises no revenue. This is because at 100% rate, there is no longer incentive for a rational tax payer to earn any income, thus, the revenue raised will be 100% of nothing. It therefore follows that there must exist at least one rate in between where tax revenue would be a maximum. Laffer attributes the concept to Ibn-Khaldun and Keynes J. Marguments. One potential result of this theory is that increasing VAT rate beyond a certain point will become counterproductive for raising further tax revenue because of diminishing returns (Laffer quoted by Afuberoh & Okoye, 2014).

Another theoretical pedestal for this work is known as socio political theory put forward by Wagner quoted by Onakoya and Afintinni (2016). This theory of taxation states 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 is also relevant in this study. John Maynard Keynes, a British economist in 1936 in his major work, 'the general theory of employment, interest and money' first published in 1936 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, 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).

Empirical Studies' Review

A number of related works have guided thoughts in this work. 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.

Olatunji (2013) described the impact of VAT on the revenue generation in Nigeria and the perception of the citizen on VAT and Inflation. Primary data were obtained by the use of oral interviews and structured questionnaire and analysed using Pearson and Spearman Rank correlation analysis. Findings showed that the participants did not perceive any VAT impact on the inflation rate in Nigeria.

Atan (2013) examined the attempts by successive governments in Nigeria to use Taxation to influence macroeconomic aggregates, especially inflation and Unemployment. The study used secondary data, covering the period 1970 to 2008. Data gathered were analysed by means of both descriptive and inferential statistical techniques. The Ordinary Least Square (OLS) method was used for the estimations. Results indicated that taxes have a negative but insignificant effect on the inflation rate in line with theory. The effect of tax policy on unemployment was also insignificantly negative. The study concluded by that tax policy was not effective in controlling inflation, and reducing unemployment levels in the country over the period covered by the study.

Ikpeh and Nteegah (2013) studied the economic impact of Value Added tax on the level of aggregate prices, using partial equilibrium analysis. The analysis was carried out by applying multiple regression analysis in static form to data for the 1994 – 2010 period. The Results revealed that VAT exerted a strong upward pressure on price levels, most likely due to the burden of VAT on intermediate inputs.

Gelardi (2014) used graphs and statistical methods to ascertain whether inflation in the United Kingdom and Canada was affected by the introduction or changes in rate of the Value Added Tax. Results showed that the introduction of VAT in the United Kingdom showed no significant effect on the rate of change of Consumer Price Index (CPI), whereas the introduction of General Sales Tax (GST) in Canada did have a significant increase in the rate of CPI. It was also found that when the tax rates were changed substantially, inflation was affected; however, modest changes in the rate did not affect inflation.

Olaoye (2016) examined the determinants of VAT, Interest rate, Inflation and influence on revenue generation in Nigeria. Secondary data were gathered from CBN statistical bulletins that cut across 1990 and 2012. This period was selected in order to capture the inflation, interest rate, prior, during and post implementation of VAT. Data were analyzed with the use of descriptive analysis and Johansen co-integration test. The results revealed that VAT, INT and INF have the means of 461214, 19.06478 and 20.09913 respectively, while their standard deviations stand at 1460060, 3.284060 and 18.93905. Their minimum and maximum values are 0.0000 and 7101500 for VAT, 13.54 and 29.80 for INT, 8641 and 4749200, 5.4 and 72.80 for INF. The descriptive statistics gave a clear picture of the distribution and range of all the series, there exist no significant relationship between VAT and INT ($r=-0.200$, $p>0.05$), INF and VAT ($r=-0.139$, $p>0.05$), INT and INF ($r=-0.074$, $p>0.05$). However, there is significant positive relationship between VAT and INF both on the short and long run, while interest rate exerts negative influence on inflation both on the short and long run. There is strong and positive relationship between VAT and revenue generation in Nigeria. It was recommended that government should provide effective anti-inflationary policy to cushion the inflationary tendencies of value added tax in the country and regulate the rise in the level of interest rate in order not to provoke price instability and at the same time maintain the current level of improvement in the revenue generation in the country.

The reviewed literature revealed gaps on area of expected inflationary effect if valued added tax is reviewed upwards; and the extent value added tax revenue has mitigated the quantum of national debt outstanding in Nigeria. This paper showed the expected inflation rate change given the Value added Tax rate upwards to 7.5%; and the relationship between value added tax revenue and the national debt outstanding in Nigeria.

Methodology

This study used *ex post facto* research method using descriptive and regression techniques. Data were sourced from Federal Inland Revenue Services (FIRS) and Central Bank of Nigeria (CBN) statistical bulletin. Two models were adapted in this paper: Koyck model and simple regression model. To ascertain the effect of an increase in VAT rate on inflation rate, Koyck model is considered and the theory

behind this model is Adaptive Expectations which gives importance to past events in predicting future outcomes. Lyman (2012) defined adaptive expectation as the way of forming expectations in which the future value of the variable of interest is solely dependent on its past values. Gujarati as quoted by Lyman (2012) also called it progressive expectation or error learning hypothesis. Gregory (2011) in justifying its usefulness stated that for the purpose of finding good proxies for psychological expectations as required in the study of economic behaviour, adaptive expectations should be used whenever the economist believes that the economic agents in question form psychological expectations by taking a mean of past values with geometrically declining weights.

Model for Hypotheses I

Scholars expect inflation rate to increase when VAT rate increases. Hence the model is formulated:

Inf= f(VAT)……..……..……..…. (1)

Algebraically, $I_t = B_0 + B_1V_t^* + U_t$.....…… (2)

Where:

I= Inflation rate

V*= Expected VAT rate

Modeling expectation with the use of Adaptive Expectation hypothesis

$V_t^* - V^*_{t-1} = \lambda(V_t - V^*_{t-1})$ ……... (3)

Where λ is known as the coefficient of expectation such that $0<\lambda \leq 1$

$V_t^* = \lambda v_t + (1- \lambda)v^*_{t-1}$ .....…… (4)

Substitute equations4 into 2

$I_t = B_0+B_1(\lambda v_t + (1- \lambda)v^*_{t-1}) + U_t$

$I_t=B_0+B_1\lambda v_t + B_1(1- \lambda)v^*_{t-1} + U_t$ .....……. (5)

Lag equation 2 by one period, multiply it by 1- λ, and subtract the product from equation 5;

We obtain, $I_t = \lambda B_0+ \lambda B_1v_t+(1- \lambda)I_{t-1}+ U_t- (1- \lambda)U_{t-1}$

$I_t =\lambda B_0+ \lambda B_1v_t+(1- \lambda)I_{t-1}+V_t$ .....…(6)

Where, $V_t= U_t- (1- \lambda)U_{t-1}$

Model for Hypotheses II

The simple regression model was used to evaluate the extent to which Value Added Tax relates to Nigeria's total national debt outstanding. The model is:

TND = f(VAT) ……..……(7)

From the equation 7 functional relationship, the model can be specified as:

$TND_t= \beta_0+ \beta_1VAT_t + Ɛ_t$ ……..…….. (8)

Where

β_0 = intercept or average total debt outstanding when other variables are not applied

β_1 = Coefficient of the explanatory variable, VAT

TND =Total National Debt Outstanding
$\mathcal{E}_t$= Stochastic disturbances/ variables

***A Priori* Expectations**

VAT rate increase influences inflation rate positively; VAT revenue helps to reduce Nigeria's total national debt outstanding. Higher VAT rate results to higher inflation rate; and higher VAT revenue brings about reduced total national debt outstanding.

Data Presentation

The data processed were displayed in table I and the descriptive statistics is shown in table 2.

Table 1: Nigeria's Total National Debt Outstanding, Vat Revenue and Inflation Rate: 1994-2017

Year	Total national debt outstanding (TND) ₦' Billion	Value Added Tax Revenue (VAT) ₦' Billion	Inflation Rate (INF) %
1994	1,056.39	7.2608	57.0317
1995	1,194.60	20.761	72.8355
1996	1,037.30	32.5	29.2683
1997	1,097.68	35.3	8.52987
1998	1,193.85	37.6	9.99638
1999	3,372.18	47.8	6.61837
2000	3,995.63	58	6.93329
2001	4,193.27	91.7	18.8736
2002	5,098.88	108.6	12.8766
2003	5,808.01	136.4	14.0318
2004	6,260.60	163.3	14.998
2005	4,220.98	192.7	17.8635
2006	2,204.72	232.7	8.23953
2007	2,608.52	312.6	5.38222
2008	2,843.56	401.7	11.578
2009	3,818.47	481.4	11.5377
2010	5,241.66	564.9	13.7202
2011	6,519.69	659.2	10.8408
2012	7,564.43	710.6	12.217
2013	8,506.31	802.7	8.47583
2014	9,535.54	803	8.05738
2015	10,948.53	767.3	9.01768
2016	14,537.12	828.2	15.6969
2017	18,366.31	972.3484	16.5

Source: *2017 Central Bank of Nigeria Statistical Bulletin (CBN) and Federal Inland Revenue Services (FIRS) Collection Profile*

Table 2: Descriptive data on the input data

	INF	TND	VAT
Mean	16.71334	5467.676	352.8571
Median	11.89750	4207.125	212.7000
Maximum	72.83550	18366.31	972.3484
Minimum	5.382224	1037.300	7.260800
Std. Dev.	15.87107	4392.474	325.5170
Skewness	2.633854	1.390597	0.516953
Kurtosis	9.047224	4.605521	1.709729
Jarque-Bera	64.31765	10.31273	2.733764
Probability	0.000000	0.005763	0.254901
Sum	401.1201	131224.2	8468.570
Sum Sq. Dev.	5793.489	4.44E+08	2437110.
Observations	24	24	24

Source: Authors Computation; output from E-view version 8

The results revealed that INF, TND and VAT have the means of 16.713, 5467.67 and 352.85 respectively, while their standard deviations stand at 15.87, 4392.47, and 325.51. Their minimum and maximum values are 5.38 and 72. 83 for INF; 1037.3 and 18366.31 for TND; and 7.26 and 972.34 for VAT. The Jarque-Bera Statistic probability of less than 0.05 for INF and TND indicated normal distributions as against the VAT revenue of 0.25 (the skewness and kurtosis were 0.516 and 1.709 respectively; indicating near flat trend). Thus, human factors may have influenced the values of the VAT revenue.

Test of Null Hypothesis one: Increase in VAT Rate and Inflation Rate

The paper proposed that VAT rate increase would not significantly cause a change in inflation rate in Nigeria. Since revenue from VAT is inadequate as desired by the government and hence has taken actions to increase her revenue through VAT, it is essential that we find out if the VAT rate increase is the best way to go. An attempt is therefore made to find out if VAT rate can be increased without worsening the situation of inflation rate in Nigeria. Using Koyck model which rides on adaptive expectations hypothesis, we used past data to project future expectations following the increase in VAT rate from 5% to 7.5% and the result is presented in table 3.

Table 3: Regression Result on Effect of VAT Rate Increase on Inflation Rate in Nigeria

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DDVAT	0.024745	0.025437	0.972779	0.3436
C	8.251781	1.298207	6.356291	0.0000
INFLATION(-1)	0.257438	0.063557	4.050496	0.0008
R-squared	0.485638	Mean dependent var		12.13109
Adjusted R-squared	0.428487	S.D. dependent var		5.372327
S.E. of regression	4.061397	Akaike info criterion		5.772495
Sum squared resid	296.9090	Schwarz criterion		5.921712
Log likelihood	-57.61120	Hannan-Quinn criter.		5.804879
F-statistic	8.497417	Durbin-Watson stat		2.076716
Prob(F-statistic)	0.002520			

Source: Authors' computation through E-view version 8

From Table 3, the R-squared shows that about 49% of the dependent variable was explained by the independent variable. The Durbin Watson value also shows absence of serial correlation since its value is close to 2. The coefficient of expectation which was ascertained by1- (1-y) that is 1- coefficient of the lag of the dependent variable (1-0.25). The value would be 0.75(75%) which means that an increase in VAT rate would lead to an increase in inflation by 75% in the first year of its implementation. In the second year, the total increase in VAT rate would be totally transferred on inflation rate. This negates the findings of Atan (2013), who found a negative relationship between taxes and inflation rate.

The regression result of the model has succeeded in throwing a limelight to the increment of VAT rate. The p-value of regression parameter DDVAT was 0.3436 which is greater than 0.05 benchmark, therefore we reject the null hypothesis. There is a direct proportionate effect on inflation rate (the coefficient of INF-1 is .025; thus 1 - .25 = .75). The increase in VAT would lead to a 75% rise in inflation automatically in the first year which will further impoverish Nigerians. We conclude that VAT rate increase would significantly cause a change in inflation rate in Nigeria.

Test of Hypothesis Two: VAT and Nigerian's Total Debt Outstanding

This paper also proposed that there is no significant relationship between VAT revenue and Nigeria's total debt outstanding. This hypothesis established if there is any relationship between VAT revenue and National Debt outstanding. The output data are presented in Figure 2 and table 4 respectively:

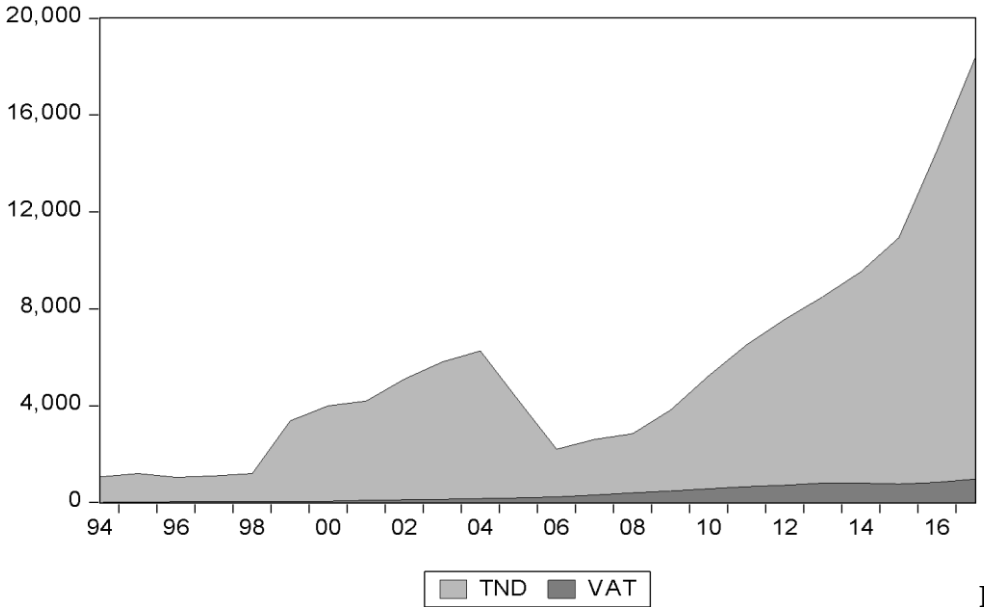

Figure 2: VAT Revenue and Total National Debt Relationship
Source: Output result from E-view version 8

Table 3: Regression Result of Effect of VAT Revenue on Total National debt outstanding

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VAT	11.29721	1.573313	7.180523	0.0000
C	1481.377	748.0342	1.980359	0.0603
R-squared	0.700924	Mean dependent var		5467.676
Adjusted R-squared	0.687330	S.D. dependent var		4392.474
S.E. of regression	2456.137	Akaike info criterion		18.53022
Sum squared resid	1.33E+08	Schwarz criterion		18.62839
Log likelihood	-220.3627	Hannan-Quinn criter.		18.55627
F-statistic	51.55991	Durbin-Watson stat		0.271270
Prob(F-statistic)	0.000000			

Source: Authors' computation through E-view version 8

From figure 2, Total National Debt outstanding (TND) increased despite the introduction of VAT in 1994. The increase was not so pronounced between 1994 and 1998 (₦1,056.39 billion and ₦1,193.85 billion respectively). There was a drastic increase in National Debt from 1999 to 2004 but 2005 witnessed a dramatic fall in TND when Nigeria receive debt cancellation. From 2006 upward, TND has been increasing with the highest value occurring in 2017 (₦18,366.31). The simple

correlation coefficient between TND and VAT revenue was determined to be 0.837. This means that 1% increase in VAT revenue results in 83.7% increase in TND. The expectation is negative.

Table 2 shows VAT revenue and TND regression estimate parameters. The regression model can be stated as: TND = 1481.377+11.29721VAT +ε_t

The regression shows that Value Added Tax (VAT) has positive relationship with TND. The R-Squared and Adjusted R-Squared were 0.700924 and 0.6873300.6 respectively. Thus, the VAT revenue explained 68% changes in the Total National debt outstanding. In other words, one percent increase in VAT revenue will lead to increase in Total National Debt by 68%. The Prob(F-statistic) of 0.000000also shows that the model is useful not minding the poor result of the Durbin Watson value of 0.271. The p-value and t-statistic of 0.0000 and 7.180523 respectively indicated that the hypothesis is significant. Therefore, we accept the null hypothesis that VAT revenue has no significant relationship with the total national debt outstanding.

Discussion of Findings

Government borrow when the money they take from citizens in the form of tax or other revenue is less than the money they spend in order to finance her expenditure. The IMF (2018) advised that Nigeria should increase its VAT rate from 5% since the country has the lowest VAT rate in the world which will help it generate more revenue in order to service its debt and repay the borrowed fund. This has put pressure on the tax authority to raise enough revenue that will be used to service the debt and restore the confidence of international community on Nigeria economy. But, it seems that the Nigerian government is rather spending type without strategic sustainable resources to finance her expenditures. It is true that the population of the nation is on increase and populace are more demanding on improved well-being. There seems obvious distrust on project Nigeria such that the governance structure lacks transparency and accountability. Resistance to tax and other revenue sources to government are been perfected on daily basis. This must have accounted for expected rise in inflation rate following the increase in VAT rate from 5% to 7.5%. The government palliative measures such as exemption of services rendered by microfinance banks (unit, state and national) from VAT, and the introduction of a threshold for VAT compliance seems good for the records: manageable vatable persons, guaranteed vat revenue from them, less cost of administration and enrollment in the tax net. Companies with turnover of ₦25, 000, 000. 00 or more shall render their tax on or before the 21st of every month; others below the threshold are exempted from registering for VAT. The citizens have accepted the attitude of expecting everything from the government because the structure is such that resources are not transparently distributed especially the social goods. Only force of law seems to compel those that pay taxes. There is need to entrench culture of patriotism. This shall promote voluntary participation of the citizens in *baking the cake*. Good governance on agreed economic and political structure seems to be the answer. The Finance Act 2020 also defined the term “goods”

to include 'any intangible product, asset or property over which a person has ownership or rights, or from which he derives benefits, and which can be transferred from one person to another, excluding interest in land". Consequently, the VATability of incorporeal property, such as rights, patents, trademarks, royalty, etc., that was hitherto debated has been legislated in favour of the government. The voluntary participation is still doubtful if the electricity supply is inadequate and costly, roads are in poor conditions, tuition fees exorbitant, educational tools in poor supply, and governance related corruption on increase and independence of the judiciary questionable. The fear of increase in inflation rate following the increase in VAT rate is highly probable if transparency and accountability in governance continue to create confusion in minds of the citizens.

It also seems that the Nigeria's huge debt has been used on recurrent expenditure and on wasteful projects instead of investment in capital projects and infrastructure that will help increase the tax base and revenue to the government. Equally, the huge debt means that the resources that would have been used for investment are diverted to meeting debt service obligations. The debt servicing and the adjustment policies required to address the debt burden have also worsened social welfare in the area of education, health and agriculture. The most serious implication of debt overhang is that, it has reduced the amount of foreign exchange available to finance the importation of raw materials and capital goods needed for rapid economic development. This means that the debt burden has denied the industrial and agricultural sectors the needed inputs, holding back new investments and even the maintenance of capital stock. The Debt Management Office (DMO) in the 2017 Debt Sustainability Analysis (DSA) warned that Nigeria's high debt service to revenue ratio, which deteriorated in 2016, could trigger a debt crisis in event of prolonged shocks (decline) in revenue, exports and Naira devaluation.

The Fiscal Sustainability Analysis for the Federation (Federal, States and Federal Capital Territory Abuja), showed that the ratio of Total Public Debt-to-Gross Domestic Product, remained below its threshold throughout the projection period. For instance, the ratio of Total Public Debt-to-GDP for 2017 was projected at 19.80 percent; and both the External and Fiscal Sustainability Analyses showed that all the revenue indicators (the ratios of Debt-to-Revenue and Debt Service-to-Revenue) deteriorated under varying shocks, suggesting that any prolonged shocks on the revenue would lead to debt distress in the medium to long-term, except other sources of revenue are speedily developed to enhance the revenue generation performance of the country. The debt burden of the nation has been on increase. The heavy debt burden payments have inevitably put great pressure on budget leading to rising fiscal deficits in the heavily indebted countries, the implication of this impact are: it has to increase tax to service the debt and reduce the deficit ,it equally has the effect of depressing investment on the debt over hung effect (Iyoha, 1997).

The increase in VAT rate may not be the solution to the problem of Nigeria's debt burden, but government should invest borrowed fund on capital projects or infrastructure that will help increase the tax base and revenue to the government rather than spending it on recurrent expenditure, on wasteful sustainable projects, and *unmerited projects* which could be a means of diverting the fund into private pockets.

Summary of Findings, Conclusion and Recommendations

This paper has found that: VAT rate increase would cause a positive and significant change in inflation rate in Nigeria; and Value Added Tax (VAT) has no significant relationship with Nigeria's total national debt outstanding.

The increase in VAT rate does not guarantee more revenue that could reduce borrowing and promote economic growth but could worsen inflation rate in Nigeria. There are loopholes and infrastructural deficits even in the Nigeria tax structure. Citizens believe in Nigeria project will show in increasing VAT revenue which would not only reduce the national debt outstanding but also productive for sustained economic growth through expansion of VAT net and prudent utilization of VAT revenue.

This paper therefore recommends that:

i. The VAT rate increase should extend to all goods especially luxury goods and foreign goods with local substitutes. This is an elementary requirement that stands on the progressiveness principle and the infant local industry protection objective. A high VAT rate on goods consumed by the wealthy citizens that have the wherewithal to pay will generate more revenue to the government, bridge the wide gap between the rich and the poor and also not put too much burden on the poor. Also, a high rate on foreign consumer goods with locally made substitutes will protect the local producers and would along with other incentives also encourage rapid local industrialisation.

ii. Since VAT rate increase could worsen the situation of inflation rate, may not be the solution to the problems of poor government revenue generation, high rate of unemployment and Nigeria's ever increasing debt. There is need for Nigerian government to shift focus from taxation to production and embarked on major industrialization drive of various constituent elements of the nation according to comparative advantage.

iii. The unwholesome attempts to delay or discourage entrepreneurship from marginalized persons must stop. There should be acceptance of power devolution and mutual trust if voluntary patriotism will characterized the Nigeria project, rather than self-destruction posture of the political and elite classes. The nation is not short of resources, ideas and skills to become self-sufficient but paucity of patriotism induced by distrust and greed.

iv. **S**ince VAT revenue has not increased to significantly reduce the national debt outstanding, the government should invest borrowed fund on capital projects or

infrastructure that will help increase the tax base and revenue to the government rather than spending it on recurrent expenditure and on wasteful projects which could be a means of diverting the fund into private pockets.

v. Improvement on VAT administration and VAT collection rate: we recommend that machinery of VAT collection should be properly harnessed by FIRS and the tax system be designed in such a way as to minimize corrupt practices and escalate a host of underground economy evading VAT procedures to VAT net. This could be achieved by the FIRS by constant monitoring of the registered persons to ensure that they render returns as and when due and by automating VAT administration.

vi. There is need for FIRS to measure up to international standards by becoming professionals and detribalized, and allowed a structure that is capable of resisting the tendency of a few wealthy persons controlling the tax policies and rates in the country. This is because we have seen several instances where it appears as though the combined power of a handful of Nigeria industrialist billionaires was greater than the power of the federal government agency. This only happens because of the weakness of the institution. A strong institution would always put national interests first and the powerful individuals would see very clearly that they cannot pit their strength against such institution.

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