

Value Added Tax and Economic Growth in Nigeria

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Abstract – The study examined value added tax and economic growth in Nigeria from 1994 to 2015. The econometrics methods of Co-integration and ECM were employed as the main analytical techniques. The Co-integration result revealed the existence of a long-run relationship among the variables. The Parsimonious Error Correction result revealed that value added tax, exchange rate and interest rate have a significant relationship with economic growth in Nigeria during the period of study. While, private domestic investment has no significant relationship with economic growth in Nigeria during the studied period. Also, the coefficient of the parsimonious ECM has the appropriate sign that is negative and statistically significant. Meaning that, the short run dynamics adjust to long run equilibrium relationship. The study therefore concluded that VAT revenue impacted on economic growth in Nigeria positively during the period of study. In the light of the above, government should boost VAT revenue. This can be achieved by removing all administrative loopholes, ensure all the companies in Nigeria are registered to make VAT collection easy, and sanction any company that do not remit VAT revenue adequately.

Key Words: VAT, RGDP, Co-integration, ECM and Taxation.

I. INTRODUCTION

The achievement of a high, rapid and sustained economic growth (i.e., promotion of economic growth) is one of the objectives of government involvement in the economy. It is necessary for an economy to grow over time. The reason for this is simple. Without economic growth the average citizen will have less goods and services to consume over the years (Akpakpan, 1999). In order to achieve adequate economic growth in the economy, governments (federal, state or local) need to incur expenditures on internal security, economic services, social and community services, etc., which in turn will lead to an improvement in the standard of living of the citizenry. But governments complain of lack of funds to embark on these projects, hence the necessity for urgent increase in revenue generation by the governments through taxation.

According to Ajie, Akekere and Ewubare (2014), taxation is an instrument for transferring or diverting resources from the private sector to the public sector in order to accomplish some of the nation's economic and social goals. A tax is a compulsory levy imposed by governments (federal, state or local) on individuals, groups of individuals, corporate residents and other legal entities (Ezirim, 2005). In addition, Ajie, et al (2014), submitted that "governments do not impose tax on her citizens just for the sake of it. Taxation is the powerful tool in the hands of the governments (federal, state

or local) to achieve stated economic and social goals among which is economic growth". Specifically, taxes are normally used for the provision of collective or public goods. These are goods that cannot be divided among the separate members of the society but which must be used for the benefit of all. Such goods include the maintenance of law and order, defense against external aggression and regulation of trade and business to ensure social and economic justice.

Taking a step further, Akhor, Atu and Ekundayo (2016), submitted that VAT is a way of raising revenue for the day to day running of government activities. Government activities involve generating funds and using same to provide adequate security, social amenities, infrastructural facilities, etc, for the resident of the country. The government can also use VAT to control the production and consumption of certain goods and services, control adverse economic conditions and help sharpen the economy and reduce the level of unemployment through building of industries, skill acquisition centres, encourage local manufacturers which in turn will help to achieve adequate economic growth in the country. Base on this, it is worthy of note that the objective of introducing VAT is in tandem with the functions of government.

Nevertheless, value added tax (VAT) was introduced in Nigeria in 1994. Until 1994, the sales tax was one of the major sources of revenue for governments. However, in an attempt to ensure that governments adopted uniform rates and to enhance receipts, the federal government introduced VAT in its stead, with a wider coverage and assumed responsibility for its administration and collection of its proceeds from 1994. Revenues of VAT were initially to be shared in the proportion of 20; 50; 30 per cent to federal, state and local governments respectively. But in 1996, the formula was 35: 40: 25 for federal, state and local governments respectively (Ekine, 2011).

According to Abiola (2012), when VAT turned out to be quite successful, the distribution formula was altered in favour of the Federal Government and also extended to the local government councils in the ratio of 50, 25 and 25 per cents to the federal, state and local governments respectively. Due to protest by State Governments, the distribution formula has been reviewed on several occasions in favour of the States and Local Government Councils to arrive at the present formula which is 15, 50 and 35 percents to the Federal, States and Local Governments.

The introduction of VAT has been impressive in terms of increase in government revenue. According to Umo

(2012), VAT has become an increasing component of revenue in Nigeria since 1994. For instance, available data reveals a great improvement in the VAT returns on yearly basis, value added tax contributed about ₦ 7.2 billion in 1994 representing an increase of 21% over the budget estimate of that year; and 20.76 billion 1995 while the budgeted revenue from VAT was 12 billion naira in the same year. Revenue from VAT increased to 31 billion naira in 1996, 34 billion naira in 1997, 36 billion in 1998, 47.1 billion in 1999, 58.5 billion in 2000, 91.8 billion in 2001, 108.6 billion in 2002, 136.4 billion in 2003, 159.5 billion in 2004, 178.1 billion in 2005 and 221.6 billion in 2006, in 2009, 2010, 2011 and 2012 was ₦468.4 billion, ₦562.9 billion, ₦649.5 billion and ₦710.2 billion respectively (CBN, 2007 and 2013); showing a continuous increase in VAT revenue in Nigeria. In addition, value added tax yielded ₦473,464,201,273.68 as against the budgeted N198 billion in 2016 (Vanguard newspaper of January 8, 2017). In addition, the VAT budget has been increased from N198 billion in 2016 to N242 in the 2017 budget, the increase is N44 billion or 22 per cent (Vanguard newspaper of January 8, 2017).

In terms of total contribution in total federally collected revenue, Madugba and Joseph (2016) submitted that VAT accounted for about 4.6% in 1994, 5.93% in 1995, 6.2% in 1996 and 5.83% in 1997 respectively. Strictly speaking, one of the fiscal policy objectives of Nigeria's 2017 economic recovery plan is to Increase the tax base by raising the VAT rate for luxury items from 5 to 15 per cent from 2018, while improving company income tax (CIT) and VAT compliance to raise 350 billion annually (Punch newspaper of March 8, 2017).

In as much as the performance of VAT as a source of revenue in Nigeria is encouraging, it remains difficult to find attempts to systematically assess the effect of VAT on economic growth in Nigeria from 1994 to 2015. Furthermore, a number of studies have been done on various aspects of the operation of taxation in Nigeria but not much appear to have been done on how VAT has affected economic growth in Nigeria from 1994 to 2015. In related terms, similar studies have lost touch on current realities of VAT. Thus, this study stands out to add to wherever scarce studies already existed in this aspect of taxation.

Moreover, despite the enormous revenue that accrue into the government treasury because of the impressive performance of VAT in terms of its contributions to total government's revenue in Nigeria, the governments (federal, state and local) still complain of inadequate funds to embark on projects and Nigerians have always lamented of poor infrastructural facilities, low per capita income, inadequate economic growth, high rate of unemployment, etc., which have resulted to poor standard of living, increase in crime rate and other social problems. Thus, the Nigerian economy still performs below expectation. This state of affairs raises a pertinent question: what is the relationship between value added tax and economic growth in Nigeria? This question

pleads for an answer and this is the main concern of this study. This study also linked other variables such as interest rate, exchange rate and private domestic investment with economic growth with the view of examining their impacts on economic growth of Nigeria. Most researchers have not bothered to enquire into the extent to which Value Added Tax supports or contributes to economic growth in Nigeria (Ofishe, 2015). Because increases in tax revenue including value added tax signifies that more revenue is available for economic growth. It is no longer news that citizens expect the revenue generated from VAT to be used to make expenditures on education, housing, transportation, agriculture, health, power, road construction, national defense, among others that will help the various sectors of the economy to function very well thereby enhancing the growth and development of the country. Therefore, the broad objective of this study is to examine the impact of value added tax on economic growth in Nigeria from 1994 to 2015. Specifically, the study sought to examine the relationship between value added tax and economic growth in Nigeria.

II. LITERATURE REVIEW

The Concept of Taxation

Taxation is the primary source of governmental revenue. It is an instrument for transferring resources from the private sector to the public sector in order to accomplish some of the nation's economic and social goals (Ekine, 2011). Taxes can be classified into two; namely, the direct and indirect taxes. The direct tax is levied or imposed on the income, profits and properties of individuals and corporate bodies (Okpe, 1998). In direct taxes, the liability is determined with direct reference to the tax paying ability of the taxpayer. Examples of direct taxes include education tax, personal income tax, companies' income tax, petroleum profit tax, capital gains tax, etc. Indirect tax on the other hand is defined as taxes levied on goods and services rendered which are shifted in part or in full to the final consumer who does not even know either when he/she pays or the exact amount he/she pays (Okpe, 1998). Examples of indirect tax include Value Added Tax (VAT) which is the main subject of this study, as a source of revenue generation in Nigeria. An increase in tax revenue including value added tax (VAT) signifies that more revenue is available for economic growth. Furthermore, we have assumed that the revenue generated from VAT will be used to make expenditures on education, housing, transportation, agriculture, health, power, road construction, national defense, among others that will help the various sectors of the economy to function very well thereby enhancing the growth and development of the country.

The Concept of Value Added Tax (VAT)

Value added tax was introduced in 1994. Until 1994, the sales tax was a major source of revenue for governments. However, in an attempt to ensure that governments adopted uniform rates and to enhance receipts, the federal government

introduced VAT in its stead, with a wider coverage and assumed responsibility for its administration and collection of its proceeds from 1994. Revenues of VAT were initially to be shared in the proportion of 20; 50; 30 per cent to federal, state and local governments respectively. But in 1996, the formula was 35: 40: 25 for federal, state and local governments respectively. Presently, the formula is 15, 50 and 35 percent to the federal, states and local governments respectively (Abiola, 2012).

Value added tax is an example of indirect (i.e., non-income) tax levied on the sale of goods and services. It represents a tax on value added in the process of producing/consuming goods or services at various stages. VAT may be imposed for the purpose of encouraging or discouraging the consumption of particular items and to enhance government revenue or both (Umo, 2012). Ekine (2011) submits that VAT is a tax on the value added to a commodity or service. It is imposed on the value that a business firm added to the goods and services that it purchases from other firms. It added value by processing or handling these purchased items with its own labour or its own machinery, building or other capital goods. It then sells the resulting product to consumers or to other firms. Thus, the difference between the sales proceeds and the cost of materials that it has purchased from other firms is its value added. That is, this form of taxation is determined when the cost of raw material is subtracted from the value of the finished product. There are two important varieties of VAT, namely: the consumption variety, and the income variety. The difference between these two varieties emerges from the treatment of capital depreciation. If a firm is allowed to deduct the full value of any capital goods purchased from another firm, the system comes under consumption type of VAT. It allows no adjustment for depreciation in other subsequent years. If the firm is allowed to deduct the value of capital goods or the equipment purchased from other firms as it appreciates over times, the system is termed income-type of VAT.

Although, VAT become operational in Nigeria and earned revenue first in 1994, the tax policy was conceptualized in 1991 and received legal backing with the promulgation of decree no. 102 of 1993. Its administration is vested in the Federal Inland Revenue Service (FIRS). Since its introduction in 1994, VAT revenue source has demonstrated some measure of buoyancy and has been one of the major factors in the improved performer of non-oil revenue. Umo (2012) submitted that the introduction of VAT as been impressive in terms of increase in government revenue. VAT receipts in 1994 was ₦ 7.26 billion representing an increase of 21% over the budget estimate of that year; and in 1995 it increased to ₦ 20.7 billion or by 185%. It has become an increasing component of Nigerian government revenue since then.

However, at every increasing impact of VAT in Nigeria's economy, it faces challenges and obstacles that stand against its successful administration in Nigeria. The

challenges or problems include inadequate VAT zonal offices, non-compliance of business owners, lack of transparency on the part of the tax authority, evasion of VAT-able goods and services, inadequate workforce, lack of adequate orientation, burden on low income earners, and issue of fraud. Examples of goods exempted from VAT include all medical and pharmaceutical products, basic food items, books and educational materials, fertilizers locally produced agricultural and veterinary medicine, farming machinery and farming transportation equipment. Moreover, services exempted from VAT include medical services, services rendered by community banks, people's bank and mortgage institutions, plays and performances conducted by educational institutions as part of learning.

Theoretical Literature

The benefit theory of taxation holds that people should be taxed according to the benefits they receive from tax-financed projects. If, for instance, free education is publicly financed, the parents of the recipients should be taxed in proportion to the benefits they obtain. According to Umo (2012), it is very difficult to assign quantitative benefits in relation to the tax paid. Another problem of the benefit theory is that some people like the physically handicapped, benefit from a programme without having the financial ability to pay taxes. Moreover, despite the criticisms faced by the benefit theory of taxation, it is a better way to explain value added tax because VAT as a consumption tax is paid by each citizen base on the level of consumption for goods and services (benefits). The benefit theory of taxation can be represented functionally as, $B = F(\text{VAT})$ Where; B refers to the sustained increase in the actual output of goods and services and VAT refers to revenue from value added tax. This means that, for actual output of goods and services to be increased, revenue from VAT is necessary. Akpakpan (1999) argued that economic growth enables the country to meet the needs of the people. To achieve increase in the output of goods and services, through increased production government needs to increase its sources of revenue and VAT is one of the instruments the government introduced to generate additional revenue in order to be able to make good investment in the education, health, agriculture, etc. Because economic growth is necessary if living standards must not fall.

Endogenous Growth Theory

Endogenous growth theory provides a theoretical framework for analyzing endogenous growth, persistent GNI growth that is determined by the system governing the production process rather than by forces outside that system. It explains long-run growth rate of an economy on the basis of endogenous factors as developed by Romer (1986) and Lucas (1988), among others (Jhingan, 2007). According to Todaro and Smith (2011), endogenous growth theory assumes that public and private investments in human capital generate external economies and productivity improvements that offset the natural tendency for diminishing returns. Put differently,

the theory predicts positive externalities and spillover effects from development of a high valued-added knowledge economy which is able to develop and maintain a competitive advantage in growth industries in the overall economy. In addition, it explicitly tries to model technology rather than assuming it to be exogenous. Momentously, it is a statistical explanation of technological improvement that incorporated a new idea of human capital, knowledge and skills that enable workers to be more productive. More often than not, economic growth comes from technological progress, which is fundamentally the ability of economic agents to utilize their productive resources more effectively over time through the process of learning. This is because human capital development has a high rates or increasing rates of return. Therefore, the rate of growth depends to a large extent on what (the type of capital) a country invests in. Thus, to achieve economic growth, public expenditure in human capital development must be increased. That is, government expenditure in education, health, housing, transportation, agriculture, power, road construction, national defense, among other must be increased and this will help the various sectors of the economy to function very well thereby enhancing the growth and development of the country. Supporting this, Jhingan (2007) argued that one of the implications of the endogenous growth theory is that public policy can be more effective in making large provision for making investments in creating human capital and on research and development of new knowledge. This can help to increase the rate of accumulation of both physical and human capital and thus the long-run growth rate of the country. But the governments of Nigeria complain of lack of funds to embark on projects in critical sectors of the economy including education, health, housing, transportation, agriculture, power, road construction, national defense, among others, hence the necessity for governments to generation more revenue through taxation (VAT). Also, the right public policy regarding international trade and domestic investment, i.e., appropriate policies regarding exchange rate, interest rate and private domestic investment will help the country to achieve economic growth. This justifies the inclusion of the above mentioned variables in the model.

Furthermore, the endogenous growth theories posit that permanent change in a variable that is potentially influenced by government policies cause permanent change in the growth rate (Romer, 1986, 1990 and Ehigiamusoe, 2014). Also, financing government activities through taxes may have impact on welfare and/or on growth (Solow, 1956 and Cass, 1965). According to Ehigiamusoe (2014), tax policy can affect economic growth by discouraging new investment and entrepreneurial incentives or by distorting investment decisions since tax codes make some forms of investment more or less profitable than others or by discouraging work effort and workers' acquisition of skills. Therefore, it is necessary to find out how value added tax has impacted or influenced economic growth in Nigeria from 1994 to 2015.

Review of Empirical Literature

This review was done in line with the broad objective of the study. Value added tax was introduced in Nigeria in 1994 to replace the old sales taxes which used to be collected by the state governments (Umo, 2012). Furthermore, the aim of this tax (i.e., value added tax) is to increase the revenue base of Nigerian government and make funds available for developmental purposes. In the light of the above, a lot of research works have been done on this (i.e., VAT and economic growth) in different nations with diverse, assorted or miscellaneous techniques. For instance, Adegbe, Jayeoba and Kwabai (2016) looked at the impact of VAT on economic growth in Nigeria from 1994-2015. The researchers adopted descriptive, ex-post-factor as well as analytical research approaches. The outcome revealed that VAT has impacted on GDP positively.

Manukaji and Nwadiolor (2016) looked at the impact of VAT on economic growth in Nigeria (2005 to 2014). The study used data from CBN statistical bulletin. OLS method was used in the study. The outcome demonstrated that VAT positively contributed to the overall government revenue leading to increase in economic growth of Nigeria.

Taking the matter a step further in Nigeria, Apere and Durojaiye (2016) empirically looked at the association between VAT, total government revenue and GDP from 1994 and 2014. Using simple regression, the result showed a meaningful positive association between VAT, total government revenue and GDP over the period under review.

Madugba and Joseph (2016) studied the association between VAT and economic development in Nigeria (1994 to 2012). The researchers used multiple regressions to scrutinize the data gotten from CBN Statistical-Bulletin of various years. From the outcome of the multiple regressions it was discovered that revenue from VAT has a negative but significant impact on GDP. While, GDP and total consolidated revenue has a positive association that is meaningful.

Inyiama, Oliver and Ubesie (2016) used simple regression technique to find out the effect of VAT and Customs & Excise Duties on Nigeria's economic growth. Secondary sources were explored in data gathering. The outcome revealed that revenue from VAT and Customs and Excise Duties affected the growth of the country meaningfully.

Nasiru, Haruna and Abdullahi (2016) adopted Johansen (1988) co-integration test to ascertain the impact of VAT on economic growth in Nigeria. The quarterly data used in the study ranged from 1994 Q4 - 2014 Q4. The result revealed that VAT has a meaningful positive impact on economic growth in the country.

Ibadin and Oladipupo (2015) used ECM method to find out how indirect taxes have impacted on economic growth of Nigeria from 1981 to 2014. The result demonstrated

that VAT and petroleum profit tax exercise a positive and significant association on economic growth.

Afolayan and Okoli (2015) carried out an empirical study to see how VAT has impacted on Nigeria's economic growth from 1994 to 2012 by employing the ECM and Granger causality test. The outcome revealed that an insignificant positive relationship between VAT revenue and RGDP. Granger Causality Test established that the association connecting VAT and real GDP is unidirectional. Meaning that, RGDP granger causes VAT revenue.

Njogu, (2015) carefully ascertained how VAT has affected the economic growth in Kenya using causal study as research design. The study used quarterly reports on GDP, consumer price indexes and unemployment rate, from the beginning of VAT (1990 to 2014). All the data were in rates. The findings indicated that a percentage change in the incident rate of GDP is an increase of 7% for every unit decrease in VAT. It was therefore concluded that there is a significant negative relationship between VAT rates and GDP.

Ofishe (2015) used OLS technique to empirically analyze the impact of VAT on economic growth in Nigeria (1994 to 2012). The result demonstrated that VAT meaningfully impacted on economic growth and total tax revenue in Nigeria.

Omesi and Nzor (2015) carefully looked at tax reforms in Nigeria with reverence to VAT. The researchers explain the reasons why government replaced sales tax with VAT, annually contributions of VAT to the aggregate revenue base of the country and showed that VAT was planned to favour development at level of government researchers considered as the lower tier.

Onwuchekwa and Aruwa (2014) studied the impact of VAT on Nigeria's economic growth. They employed the OLS method to test the hypothesis formulated. The outcome revealed that the contribution of VAT to the aggregate revenue from tax is meaningful and by implication, the economic growth of Nigeria. It was also observed that the growth of VAT revenue had a consistent, although not explosive, increase.

Izedonmi and Okunbor (2014) investigated the contribution of VAT to the development of the economy of Nigeria (1994 to 2010). The study used data on GDP, VAT revenue, total tax revenue and total revenue from the federal government. The study used multiple regression modeling. Their findings showed a positive but unimportant association connecting VAT revenue and GDP.

Chigbu (2014) conducted an empirical examination of the impact of VAT on the economic growth of Nigeria from 1994-2012. The study conducted econometric tests including Breusch-Godfrey Serial Correlation LM, White Heteroskedasticity, Ramsey RESET, Jarque Bera, Johansen Co-integration, and Granger Causality. The results revealed that there is a long run equilibrium association connecting

economic growth and VAT. It also revealed that VAT granger caused GDP in Nigeria.

Onaolapo, Aworemi and Ajala (2013) examined VAT and its effect on revenue generation in Nigeria. They used the stepwise regression analysis technique to analyze their data. Their outcome revealed that VAT has a significant effect on revenue generation in Nigeria.

Bakare (2013) also looked at how VAT has impacted on economic growth in Nigeria. Using the OLS method, the result showed a significant and positive association connecting VAT and economic growth in Nigeria. The results of the findings also showed that the historical values of VAT could be used to forecast the prospect behaviour of economic growth in Nigeria.

Bumpei (2011) empirically examined the effect of a change in a country's VAT rate on its total consumption and economic growth. The study used panel data models on a sample of 14 developed countries, including Japan, and quarter periods from the second quarter in 1980 (1980 Q2) to the 3rd quarter in 2010 and picking up 53 cases of the change of the VAT rate, the study showed empirically that total consumption and economic growth display three kinds of trends when the VAT rate is changed. The first trend is that aggregate consumption and economic growth increases (or decreases) just before the rise (or reduction) of the VAT rate. The second trend is that they decrease (or increase) relatively dramatically as soon as the rise (or reduction) is implemented. The third trend is that after the dramatic decrease (or increase) they increase (or decrease) gradually.

Adereti, Adesina & Sanni (2011) examined the impact of VAT on the economic growth of Nigeria. They used data on the GDP, Vat Revenue, total tax revenue and total government revenue from 1994 to 2008. The study used multiple regression modeling. Their findings showed that the ratio of VAT Revenue to GDP averaged 1.3% compared to 4.5% in Indonesia and indicated a positive cum significant association connecting VAT Revenue and GDP. It also showed that no causality connecting the GDP and VAT Revenue but a lag of two years however existed.

Owolabi and Okwu (2011) empirically asserted in their study on the contribution of VAT to the development of Lagos state economy as positively related. The result demonstrated that VAT impacted positively to the seven strategic economic sectors of Lagos. The sectors are: Agriculture, infrastructure, education, environment, transportation, health, Youth and social development sectors. Among all these the study indicated that agricultural sector was the only one that is statistically significant with positive assistance to the economic growth and development.

Similarly, the impact of value added tax on economic development of emerging countries was the research carried out by Unegbu and Irefin (2011). The study was focused on Adamawa state of Nigeria. The result showed that VAT

allocations alone accounted for 91.2% of differences in expenditure pattern in the state. And they showed very significant impact on the economic growth and development. However, data obtained from primary sources indicated minimum VAT impact. Denis (2010) ascertained the association connecting VAT and GDP in Nigeria. The study discovered that VAT is not efficient as a revenue earner.

Olatunji (2009) did a study on the efficiency of the administration of VAT to improve revenue and enhance economic growth in Nigeria. It used chi-square and simple percentage to analyze the data. The study showed a positive association between VAT and GDP.

Also, a review of the work done by Ajakaiye (1999) regarding microeconomic effect of VAT on the Nigerian economy, since inception revealed that VAT revenue is a significant source of fund to the country. In other words, from his findings, revenue from VAT has significant impact on economic growth for examples, he posited that in 1994 (the year of inception) VAT actual revenue was N8.19 billion as against the projected N6 billion. Similarly in 1995 actual VAT revenue stood at N21 billion as against a projected figure of N12 billion. The finding revealed that three fiscal policy scenarios, namely: reinjection of VAT funds through increased government spending for active fiscal policy; active fiscal policy through cascading treatment of VAT and passive fiscal policy through non-cascading treatment of VAT. The study showed that the situation of a cascading action of VAT with effective fiscal policy not only had the most harmful effects on the economy but also the one that highlighted the obvious Nigeria situation.

III. METHODOLOGY

The methods that were employed to analyze our data are: unit root test, Johansen Co-integration test and Error Correction Mechanism (ECM). While the unit root test helps to ascertain stationarity of the variables, the co-integration measures the long run relationship among the variables and the ECM corrects abnormalities that may affect regression results. It is important to note that time series data are prone to error because of unsteadiness in business activities from which most of our data are derived. Hence, the adoption of the above econometrics techniques to help us determine how the variables considered in this study has influenced economic growth (RGDP) in Nigeria.

In addition, this study used an econometrics model aimed at capturing the impact of value added tax on economic growth of Nigeria (regressand) proxied by real gross domestic product growth rate. Guided by the perceived functional relationship between the matrix of economic growth (RGDP) and VAT growth rate (i.e., VAT revenue), a link was provided between the variables in line with the conceptual, theoretical and empirical literature reviewed. Specifically, this work adapted the model of Manukaji and Nwadiolor (2016) in their investigation of the impact of VAT and economic growth in

Nigeria. That is, the model was cast in agreement with that of Manukaji and Nwadiolor (2016), whose model is in the form $GDP = f(VAT)$ but with slight modification. However, other relevant independent variables (i.e., interest rate, exchange rate and private domestic investment growth rate) not captured in the study of Manukaji and Nwadiolor (2016) were considered in this study to actually showcase the performance or impact of VAT among other vibrant variable in Nigeria on economic growth of Nigeria. Strictly speaking, the model for this study states that, economic growth (RGDP) depends on value added tax growth rate (VAT), private domestic investment growth rate (PDI), exchange rate (EXR) and interest rate (INT). The functional relationship and the resultant model for this study is as specified below (i.e., the model for this study is presented thus):

$$RGDP = F(VAT, INT, EXR, PDI) \quad (3.1)$$

$$RGDP_t = a_0 + a_1VAT_t + a_2INT_t + a_3EXR_t + a_4PDI_t + u_t \quad (3.2)$$

Where: RGDP = Real Gross Domestic Product - Growth Rate, VAT = Value Added Tax - Growth Rate, INT = Interest Rate (i.e., monetary policy rate), EXR = Exchange Rate, PDI = Private Domestic Investment - Growth Rate, u = Error Term, a_0 = the constant parameter, $a_1, a_2, a_3,$ and a_4 = the slope parameters. Apriori expectation: On the apriori: $a_1, a_3, a_4 > 0,$ and $a_2 < 0.$

The unit root test encompasses testing the order of integration of the individual series in a model precedes Co-integration and ECM. The unit root test used in this study is the Augmented Dickey-Fuller (ADF). The general form of ADF is estimated by the following regression $\Delta RGDP_t = \alpha_0 + \alpha_1 RGDP_{t-1} + \sum \alpha_i \Delta RGDP_{t-i} + \delta_t + u_t \quad (3.3)$

Where: y is a time series, t is a linear time trend, Δ is the first difference operator, α_0 is a constant, n is the optimum number of lags in the independent variables and u is random error term. Co-integration is an econometric technique used for testing the correlation between non-stationary time series data. Two variables are said to be Co-integrated if they have a long run or equilibrium relationship between them (Gujarati, 2007). This study used Johansen co-integration procedure. The basic argument of Johansen's procedure is that the rank of matrix of variables can be used to determine whether or not the two variables are co-integrated. A lack of co-integration suggests that such variables have no long-run relationship. According to Johansen (1998), the general form of co-integration is given by $RGDP_t = \mu + \Delta RGDP_{t-1} + \dots + \Delta P y_{t-p} + u_t \quad (3.4).$

Where: Y_t is an $n \times 1$ vector of variables that are integrated of order commonly denoted (1) and u_t is an $n \times 1$ vector of innovations. However, an extension of this in the co-integration technique is the Error Correction Mechanism (ECM) (Engle and Granger, 1987). These authors have established that Co-integration is a sufficient condition for an Error Correction Model formulation.

Furthermore, if co-integration is proven to exist, then the next step requires the construction of Error Correction Mechanism (ECM) to model dynamic relationship. The purpose of the ECM is to indicate the speed of adjustment from the short-run equilibrium to the long-run equilibrium state. The greater the co-efficient of the parameter, the higher the speed of adjustment of the model from the short-run to the long-run. The study represents the model specification with an error correction form that allows for inclusion of long-run information thus, the ECM can be formulated as follows:

$$\Delta Q_t = \beta_{10} + \sum \beta_{11t} \Delta Q_{t-1} + \sum \beta_{12t} \Delta Y_{t-1} + \sum \beta_{13t} \Delta Z_{t-1} + \delta_1 ECM_{t-1} + u_{1-t} \tag{3.5}$$

Where; Q is the dependent variable, $\beta_1 - \beta_2$ are the slope parameters, $Y_1 - Y_3$ are the set of explanatory variables, $\delta_1 ECM_{t-1}$ is the coefficient of ECM, Δ is change and μ is the disturbance term. Based on our model in 3.2, the dynamic (error correction) representation is given below:

$$\Delta RGDP_t = \beta_0 + \sum \beta_1 \Delta RGDP_{t-1} + \sum \beta_2 \Delta VAT_{t-1} + \sum \beta_3 \Delta INT_{t-1} + \sum \beta_4 \Delta EXR_{t-1} + \sum \beta_4 \Delta PDI_{t-1} + \delta_1 ECM_{t-1} + \mu_{1-t} \tag{3.6}$$

Note the variables as earlier defined. Furthermore, the data collected and utilized in this work were from CBN’s Statistical Bulletin. It covers the period 1994-2015. It is taken that the data are a true representative of the Nigerian economy, trusting that the analysts and researchers of the CBN are efficient to the content that human error allows. Thus, the data remain secondary in nature.

IV. RESULTS AND DISCUSSION

To avoid spurious regressions which may arise as a result of carrying out regressions on time series data, we first subject the data to stationarity test by using the Augmented Dickey Fuller (ADF) tests. For detail result of the Augmented Dickey Fuller (ADF) tests, see the Table 4.1.

Table 4.1: Unit Root Test (1994-2015)

| Variables | ADF Test | Critical Value @ 1% | Critical Value @ 5% | Critical Value @ 10% | Order of Integration |
|-----------|-----------|---------------------|---------------------|----------------------|----------------------|
| RGDP | -5.124576 | -3.808546 | -3.020686 | -2.650413 | 1(1) |
| VAT | -4.860424 | -3.808546 | -3.020686 | -2.650413 | 1(0) |
| PDI | -5.145160 | -3.788030 | -3.012363 | -2.646119 | 1(0) |
| EXR | -4.680203 | -3.808546 | -3.020686 | -2.650413 | 1(1) |
| INT | -5.073987 | -3.808546 | -3.020686 | -2.650413 | 1(1) |

Source: Computed Result Using (E-Views 9.0)
 Note: RGDP, VAT, PDI, EXR and INT as earlier defined.

The stationarity test result presented in Table 4.1 shows that at various levels of significance (1%, 5% and 10%), the variables were stationary. However, only VAT and PDI were stationary at level. The other variables such as RGDP, EXR and INT were differenced. Thus, RGDP, EXR and INT

became stationary at first difference (i.e., integrated of order one). Hence, the entire variables in this study are stationary. The results of the variables being stationary at various levels makes it inappropriate for the application of the Ordinary Least Squares (OLS) method, therefore the tests to determine the long run relationship can be achieved with the aid of the Johansen Co-integration test which is presented in Table 4.2.

Test for Co-integration

Co-integration is conducted based on the test proposed by Johansen. According to Iyoha and Ekanem, (2002) Co-integration deals with the methodology of modeling non-stationary time series variables. For detail result of the Johansen Co-integration, see the Table 4.2.

Table 4.2: Johansen Test for Co-integration

| Eigen value | Trace Statistic | 5% critical value | Prob. ** | Hypothesis of CE(s) |
|-------------|-----------------|-------------------|----------|---------------------|
| 0.993834 | 153.7479 | 79.34145 | 0.0000 | None * |
| 0.850027 | 57.06204 | 55.24578 | 0.0343 | At most 1 * |
| 0.578135 | 21.01339 | 35.01090 | 0.6409 | At most 2 |
| 0.173165 | 4.615079 | 18.39771 | 0.9543 | At most 3 |
| 0.051382 | 1.002223 | 3.841466 | 0.3168 | At most 4 |

Source: Computed Result Using (E-Views, 9.0)

The Table 4.2 indicates that there are two Co-integrating equations because two of the Trace Statistic(s) are larger than critical value at 5%. Therefore, there is a long-run relationship among RGDP, VAT, PDI, EXR and INT, which prevent them from wandering apart without bound. Given that there are two Co-integrating equations, the requirement for fitting in an Error Correction Model is satisfied. The Error Correction Mechanism (ECM) intends to validate the presence of long-run relationship and incorporate the short-run dynamics into the long-run equilibrium relationship.

Table 4.3 Parsimonious Error Correction Model

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-----------|
| C | -1.309089 | 0.857561 | -1.526526 | 0.1579 |
| D(RGDP(-1)) | 0.035981 | 0.235264 | 0.152941 | 0.8815 |
| D(RGDP(-2)) | 0.772976 | 0.201902 | 3.828473 | 0.0033 |
| D(VAT(-2)) | 0.004136 | 0.001841 | 2.246085 | 0.0485 |
| D(PDI(-2)) | 0.001759 | 0.001318 | 1.334377 | 0.2117 |
| D(EXR(-2)) | 0.148730 | 0.050330 | 2.955105 | 0.0144 |
| D(INT(-2)) | -1.793121 | 0.404254 | -4.435632 | 0.0013 |
| ECM(-1) | -0.801553 | 0.260982 | -3.071293 | 0.0118 |
| R-squared | 0.767762 | Mean dependent var | | -0.296111 |
| Adjusted R-squared | 0.605196 | S.D. dependent var | | 4.842275 |
| S.E. of regression | 3.042569 | Akaike info criterion | | 5.364384 |
| Sum squared resid | 92.57224 | Schwarz criterion | | 5.760104 |
| Log likelihood | -40.27945 | Hannan-Quinn criter. | | 5.418948 |
| F-statistic | 4.722758 | Durbin-Watson stat | | 2.169999 |
| Prob(F-statistic) | 0.013929 | | | |

Table 4.3 indicates that the dynamic model is a good fit. The reason is that the difference in predictors account for 77 percent of the overall disparity in the model looking at the R^2 . Put differently, the R^2 value of 0.767762 indicates that the variation in RGDP growth rate explained by value added tax growth rate, private domestic investment growth rate, exchange rate and interest rate is 77 percent. Therefore, the explanatory power of the model estimated is 77 percent. The Durbin Watson (DW) value of 2.169999 which is approximately 2.2, suggests that the model is free from autocorrelation.

Moreover, an important characteristic to be noticed in Table 4.3 is the coefficient of the parameter of Error Correction Term. The coefficient of the Error Correction Term appears with the right sign (i.e., negative) and statistically significant. This shows that disequilibria in the RGDP in the previous year were corrected for in the current year. It therefore, follows that the ECM could rightly correct any deviations from short run to long-run equilibrium relationship between RGDP and the explanatory variables.

Furthermore, the coefficient of value added tax appears with the right sign (i.e., positive) implying a positive relationship between value added tax and economic growth. This conforms to the apriori expectation. This means that a percentage increase in VAT will increase economic growth by 0.004136 percent. Moreover, the absolute value of the t-statistic for the slope coefficient is significant at conventional level (i.e., 5 %). Thus, the study accepts the alternative hypothesis which states that there is a significant relationship between value added tax and economic growth in Nigeria. The implication of this result is that value added tax as a fiscal policy tool has significantly contributed to economic growth during the period of study. Put differently, the implication of this finding is that value added tax in Nigeria is capable of impacting on economic growth significantly. This is consistent with earlier studies including Oladipupo and Ibadin (2015), Ofishe (2015), Adegbe, Jayeoba and Kwabai (2016) as well as Manukaji and Nwadiolor (2016) who reported that value added tax positively contributed to the total revenue generated by government and by extension the economic growth of Nigeria.

Moreover, the coefficient of private domestic investment appears with the right sign (i.e., positive) implying a positive relationship between private domestic investment and economic growth in Nigeria. This conforms to the apriori expectation. Meanwhile, the absolute value of the t-statistic for the slope coefficient is not significant at conventional level (i.e., 5 %). Thus, the study accepts the null hypothesis which states that there is no significant relationship between private domestic investment and economic growth in Nigeria. That is, private domestic investment impacted on economic growth but not meaningfully (significantly). This also means that policies toward private domestic investment have not been well articulated and coordinated towards increasing economic growth of the country during the period of study.

In addition, the coefficient of exchange rate is positive implying a positive relationship between exchange rate and economic growth. This conforms to the apriori expectation. This means that a strong value of the naira in relation to dollar will increase economic growth. Meanwhile, the absolute value of the t-statistic for the slope coefficient is significant at conventional level (i.e., 5 %). Thus, the study accepts the alternative hypothesis which states that there is a significant relationship between exchange rate and economic growth in Nigeria. This means that exchange rate variable has the ability to increase economic growth of Nigeria. Hence, if exchange rate policy is managed very well it will increase economic growth of Nigeria. The significant relationship between exchange rate and economic growth also reflect the potency of the variable (i.e., exchange rate) as an important conduct in transmitting monetary policy impulses to the aggregate economy thereby increasing economic growth.

At the same time, the coefficient of interest rate appears with the right sign (i.e., negative) implying a negative relationship between interest rate and economic growth. This conforms to the apriori expectation. This means that a percentage increase in interest rate will decrease economic growth by 1.793121 per cent. Moreover, the absolute value of the t-statistic for the slope coefficient of interest rate is statistically significant. Thus, the study accepts the alternative hypothesis which states that there is a significant relationship between interest rate and economic growth in Nigeria. The implication of this result is that interest rate variable has significantly impacted on economic growth of Nigeria during the period of study.

V. CONCLUSION AND RECOMMENDATIONS

This study on the impact of value added tax in Nigeria from 1994-2015 is very important because it examined empirically the degree to which Nigeria's value added tax has influenced economic growth in Nigeria from 1994 to 2015. With the utilization of data on real gross domestic product, value added tax, interest rate, exchange rate and private domestic investment from CBN Statistical Bulletin and the used of Co-integration and ECM methods of econometrics to analyze the data so as to know the relationship that exist among the variables. The regression result revealed that value added tax, exchange rate and interest rate have a significant relationship with economic growth in Nigeria during the period of study. While, private domestic investment has no significant relationship with economic growth in Nigeria during the studied period. The study therefore concluded that VAT revenue impacted on economic growth in Nigeria positively during the period of study. In the light of the above, government should ensure that VAT revenue together with revenue from other sources are used to make expenditures on social and community services - education, health, etc., economic services - agriculture, construction, transport and communication among others that will help the various sectors of the economy to function very well thereby

enhancing the growth of the country. Government should boost VAT revenue. This can be achieved by removing all administrative loopholes, ensure all the companies in Nigeria are registered to make VAT collection easy, and sanction any company that do not remit VAT revenue adequately.

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