

The Impact of Value Added Tax on Economic Growth in Nigeria (1994 - 2012)

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Abstract

This study is aimed at empirically analyzing the impact of Value Added Tax (VAT) on economic growth (GDP) in Nigeria from 1994 – 2012. Relevant data were collected from Central Bank of Nigeria (CBN) statistical bulletin and Federal Inland Revenue Service (FIRS) reports. The Ordinary Least Square techniques were used to estimate three models in line with the formulated hypotheses. The results from the models revealed a strong positive significant impact of VAT on economic growth as proxy by GDP in Nigeria. It also revealed that there is positive relationship or impact of VAT on total tax revenue over the period studied. Consequently, it was recommended among other things that government should put in place measures to effectively utilize generated VAT revenue for infrastructural and economic development. It also recommends the review of tax incentives to attract both local and foreign investors in order to boost economic growth in Nigeria.

Keywords: Value Added Tax (VAT), Economic Growth (GDP), Total Revenue

1.1 INTRODUCTION

The administration of tax systems and the enthrone of a tax payment culture nationwide continue to challenge successive government in Nigeria. One of the attempts to expand the tax net with minimum resistance and also to reduce tax evasion so that most of the tax income revenue would get to the government of Nigeria was the introduction of value added tax (VAT) in 1993. This tax reform actually came into operation in January 1994 to replace the old sales tax which was narrow in scope in terms tax revenue from goods and services. In other words, VAT is a broader tax system structured to raise revenue for government (federal, state and local governments). This is why Odusola (2006) stated that in Nigeria, the government fiscal power is divided into three tiered tax structure: federal, state and local governments, each with their different tax jurisdiction. Nzotta (2007) also put forth a similar argument when he stated that taxes constitute the key sources of revenue to the federation account shared by the three tiers of government. Azubike (2009) opined that a tax system such as VAT should be able to mobilize a nation's internal resource in order to create an environment conducive to promote economic growth.

Many developing countries adopted the value added Tax system because of the perceived advantage inherent in the collection process. Thus, in Sub-Sahara Africa and parts of West Africa such as Benin Republic, Cote d'ivoire, Guinea, Kenya, Madagascar, Mauritius, Niger Republic, Senegal and Togo VAT became a major contributor to total government Tax revenues (Ajakaiye, 2000). In fact Schalizi and Squire (1988) found out from their studies that VAT accounted for about 30% of total revenue of Cote d'ivoire, Kenya and Senegal in 1982. Similarly, Tait(1989) also observed that in Latin America that VAT account for 12.35% and 19.71% of total revenue in Ecuador and Mexico respectively as at 1983.

The impressive performance of VAT in other countries as well as the intention of the Nigerian government to increase her non-oil revenue base principally accounted for the introduction of the VAT tax system. The value added tax system is consumption tax levied on the supply of goods and services which will be difficult to evade both by the rich and the poor, small or large companies. It is an indirect tax system designed in the form of a final tax liability on the final consumer of goods and services. The issue here is that to what extent has the revenue collected from value added tax system affected the growth of the Nigeria economy.

This is because the tax revenue is suppose to be used to grow or develop an economy. Dwivedi (2004) defines economic growth as a sustained increased per capita national output or net national product (NNP) over a long period of time. This implies that the rate of increase in total output must be greater than the rate of population growth. In other words, contributory revenue from VAT should be enough to positively affect the population and economic growth of Nigeria as country.

1.2 Statement of Problem

While the performance of Value Added Tax as a source of revenue in Nigeria is encouraging, it remains difficult to find ways to systematically assess and ascertain the true impact of VAT on the economy. Recent research works on the impact of taxation on the Nigeria economy lumped up all the various taxes together without isolating VAT (Adereti et al, 2011). In other words, most researchers have not bothered to enquire into the extent to which Value Added Tax support or contribute to economic growth in Nigeria.

Another problem perceived by enterprises or businesses in Nigeria is that of increase in the cost of raw materials, Semi-finished goods (WIP) as well as finished goods and services caused by VAT. This has also

affected the consumption of goods and services resulting from increase in their prices. Poor relationship between tax payers and tax authorities is also a source of serious concern. The issue of not remitting VAT collection promptly is equally worrisome since it needs to be done within 30 days of collection by business ventures.

1.3 Research Questions

This research work shall be guided by the following research questions.

1. How and in what direction has VAT been affecting the Nigerian economy as proxy by Gross Domestic Product (GDP)?
2. How does VAT affect total revenue in Nigeria?
3. Is there any causality between VAT and GDP?
4. What is the relationship between Tax payers and Tax authorities?

1.4 Hypotheses

For the purpose of this research work, three hypotheses are proposed:

H₀: Value added tax (VAT) has not made any significant impact on the Economic growth as proxy by GDP in Nigeria

H₁: Value added Tax (VAT) has made significant impact on Economic growth as proxy by GDP in Nigeria.

H₀: Value added Tax (VAT) has not made significant impact on total revenue in Nigeria

H₁ : Value added tax (VAT) has made significant impact on total revenue in Nigeria.

H₀: total revenue has not made any significant impact on the Economic growth as proxy by GDP in Nigeria

H₁: total revenue has made significant impact on Economic growth as proxy by GDP in Nigeria.

1.5 Purpose of the Study

The purpose of this study is to find out:

- i. Whether revenue from value added Tax (VAT) has any significant impact on Nigeria economic growth over the years
- ii. Whether revenue from value added Tax (VAT) has any significant impact on the total revenue base of the country
- iii. Whether the incidence of VAT like other indirect taxes is regressive.

1.6 Significance of the Study

This study is significant because of dearth of work in this tax system since it was introduced about two decades ago. This is because extensive studies have been done on various aspect of tax generally and VAT in particular but not much has been done on the contribution of value added tax system and its contribution to government total revenue and gross domestic product. This study therefore intends to focus and address the level of impact VAT has on government total revenue and economic growth as proxy by GDP.

1.7 Scope of the Study

The scope of this study covers the period from inception, which is from 1994 to 2012. This period is considered long enough to provide useful result to ascertain the level of impact value added tax has on total revenue and gross domestic products (GDP)

2.1 REVIEW OF RELATED LITERATURE

In this section, we shall look at the conceptual and theoretical framework of value added tax before looking at other related literatures to VAT as a system of taxation in Nigeria

2.2 Conceptual Framework

Tax is a non-penal yet compulsory transfer of resources from the private sector to the public sector levied on all taxable individuals, businesses and institutions without recourse or expectations for immediate benefits for the tax paid. Onwuchekwa and Aruwa (2014) asserted similarly that tax is a compulsory payment made by all concerned to the government of a country from which essential services are rendered, without necessarily offering an explanation on how the money generated was spent or equating the services with the money collected. The concept of value added tax is a consumption tax that is levied at a particular stage in the sale of a product or service. In other words, it is an indirect tax imposed on consumers at every stage of the consumption process—from the raw stage to the finished stage. Olatunji (2009) posited that the idea of value added tax system in Nigeria actually started with the acceptance of the recommendation of a study group on indirect taxation in November, 1991. The decision to accept the recommendation was made in the 1992 budget speech of the head of state. This resulted in setting up the modified value added Tax (MVAT) committee on 1st June 1992 as recommended by the study group. The committee recommended that Vat should be administered by an

independent commission. But this was rejected by the government. The government left it in the hands of the Federal Inland Revenue Services (FIRS) which was already saddled with the responsibility of administering most other taxes in Nigeria. Thus, the conceptualization of VAT in 1991 and the subsequent introduction of the VAT system in 1994 through decree 102 of 1993 marks the phasing out of the Sales Tax Decree No. 7 of 1986. The idea of VAT introduction over sales tax was to broaden the revenue base of the country.

2.3 Theoretical Framework

Taxation forms the most important sources of revenue to the government. The value added tax (VAT) is one of such revenue sources today since its inception in 1994. However the theory of VAT can be traced to the works of Wilhelm von Siemens, who proposed it as an alternative to the German turnover tax (Onwuchekwa and Aruwa, 2014). The development of these proposals into problem in a country is credited to Maurice Laure a French economist who introduced it into France in 1954 as the *Taxe sur la valeur Ajoutée* (Smith, Islam and Moniruzzaman, 2011). Maurice Laure's theory of VAT was envisioned on sales tax on goods that did not affect the cost of manufacture or distribution but was collected on the final price charged to the consumer (Muhibat, Abdul Azees and Tope, 2013). Due to its ease of payment and ready comprehensibility, several countries across the world including Nigeria decided to adopt and use government revenue.

Since VAT is a subset of the entire tax system in Nigeria, it becomes imperative to look at the basic theories surrounding taxation. The theories highlighted in this work include the following:

- a) **Socio Political Theory:** This theory of taxation states that social and political objectives should be the major factors in selecting taxes. The theory advocates that a tax system should not be designed to serve individuals but should be used to cure all ills of the society as a whole. Wagner the advocate of this theory believe that each economic problem should be looked at in its social political context and an appropriate solution found accordingly.
- b) **Expendiency Theory:** This theory was posited that every tax proposal must pass the test of practicability. It must be the sole consideration weighing the authorities in choosing a tax proposal. Economic and social objectives of the state as effects of a tax system should be treated as irrelevant.
- c) **Benefit Received Theory:** This theory is based on the assumption that there is basically an exchange relationship between tax-payers and the state. The state provides certain goods and services to the members of the society and they contribute to the cost of these supplies in proportion to the benefits received (Bhartia, 2009). On the other hand, Anyafo (1996) argued that taxes should be allocated on the basis of benefits received.
- d) **Cost of Service Theory:** This theory is sometimes similar to the benefits received theory. It lays emphasis on semi commercial relationship between the state and the citizens. The theory emphasizes that the state should give up basic amenities and welfare functions. This simply implies that the citizens are not entitled to any benefits if they however receive any benefits, then they must pay the cost of service thereof.
- e) **Faculty Theories:** This theory states that one should be taxed according to the ability to pay (Anyafo, 1996). On the other hand, Bhartia (2009) argued that a citizen is to pay taxes just because he can, and his relative share in the total tax burden is to be determined by his relative paying capacity. The bottom line of this theory is to maximize the distributive effects of taxes within the country.
- f) **Theory of Laffer Curve:** Laffer (2004), postulated this theory to explain the theoretical representation of the relationship between government revenue raised by taxation and all possible rates of taxation. The theory was demonstrated with a curve based on his observation that increasing tax rate beyond a certain point will become counter-productive for raising further tax revenue because of diminishing returns.
- g) **Ibn Khaldun's theory of Taxation:** This theory is explained from two-folds; viz: the arithmetic and economic effects. The arithmetic effects states that if VAT rates are lowered the VAT revenue will be lowered by the amount of the decrease in the rate. The reverse is the case for an increase in VAT rates (Ishlahi, 2006). Conversely, the economic effect recognized the positive impact that lower VAT rate have on work, output and employment and thereby providing incentives to increase these activities whereas raising VAT rate has the opposite economic effect by penalizing participation in the taxed activities. Ishlahi (2006), further stated that at a very high VAT rate has negative economic effect which dominates positive arithmetic effect, thereby decreasing VAT revenue.

2.4 Some Theories on Economic Growth

According to Dwivedi (2004), economic growth is a sustained increase in per capita national output or net national product over a long period of time. It implies that the rate of increase in total output must be greater than the rate of population growth. Another quantification of economic growth is that national output should be composed of such goods and services which satisfy the maximum want of the maximum number of people. Economic growth can be determined by four important determinants namely, human resources, national

resources, capital formation and technological development. The emergence of economic growth theories can however be traced back to Adams Smith's Wealth of Nations. In Smith's view, economic growth of a nation strictly speaking, 'wealth of Nations' depends on the division of labour and is limited by the limits of division of labour. The Smithian view was later superseded by the view of Richardo, Malthus and Mill. The growth theories suggested by these great economists are collectively called classical theory of economic growth. And then, during the nineteen thirties and forties, R.F. Harrod and Dumar developed a path breaking theory of economic growth-the capital accumulation theory of economic growth, popularly called Harrod-Domar growth model. The theories of economic growth can be examined under the Harrod-Domar theory of growth, Kaldor model of distribution, Pasinetti model of profit and growth, Joan Robinson's model of capital accumulation, Meade's Neo Classical model of economic growth and the Solow model of long run growth. The above models of economic growth or theories are discussed as follow:

Harrod-Domar Theory of Growth: The Harrod -Domar models are based on economic growth on the experiences of advanced economists. They are primarily addressed to an advanced capitalist economy and attempt to analyse the requirements of steady growth in such an economy. Harrod -Domar assign a key role to investment in the process of economic growth. But they lay emphasis on the dual character of investment. Firstly, it creates income and secondly, it augments the productive capacity of the economy by increasing its capital stock. The former may be regarded as the demand effect and the later the supply effect of investment. Hence so long as net investment is taking place, real income and output will continue to expand. However, for maintaining a full employment equilibrium level of income from year to year, it is necessary that both real income and output should expand at the same rate at which productive capacity of the capital stock is expanding. Ultimately, it will adversely affect the economy by lowering incomes and employment in the subsequent periods and moving the economy into equilibrium path of steady growth.

The Kaldor model of distribution: The Kaldor model is an attempt to make the saving-income ratio variable in the growth process. It is based on the classical saving function which implies that saving equals the ratio of profits to national income, i.e. $S = P/Y$.

The Pasinetti model of profit and growth: The Pasinetti model is based on the Kaldor model of distribution by incorporating workers profits as returns on their savings. It shows that there exists a distribution of income between profits and wages which keeps the system in a long-run equilibrium.

Joan Robinson's model of capital accumulation: Okoye and Gbegi (2013) asserted that Joan Robinson in her book "The Accumulation of capital" built a simple model of economic growth based on the capital rules of the game. The model is where net national income is the sum of the total wage bill plus total profits which may be shown as: $Y = wN + pK$.

Meade's Neo classical model of economic growth: Okoye, and Gbegi, (2013) posited that Professor J.E. Meade constructed a neo-classical model of economic growth which is designed to show the way in which the simplest form of economic system behave during a process of equilibrium growth. In the model, the net output produced depends upon four factors:

- The net stock of capital available in the form of machines
- The amount of available labour force
- The availability of land and natural resources
- The state of technological knowledge which continues to improve through time

The Solow model of long-run growth: Solow postulates a continuous production function linking output to the inputs of capital and labour which are sustainable. He shows in his model that with variable technical efficient there would be a tendency for capital-labour ratio to adjust itself through time in the direction of equilibrium ratio.

2.5 Value Added Tax in Nigeria

This is a tax that was introduced by the Federal Government of Nigeria 1994 by Decree 102 of 1993 to replace the old sales tax. It is a consumption tax imposed on all VATable goods and services at the rate of 5% (Soyode and Kajola, 2006). They went further to capture the major attributes of value Added Tax (VAT) as:

- i. A consumption tax
- ii. A multi-stage tax and
- iii. A tax with incidence on the final consumer.

As a consumption tax Ochei (2010) Opined that VAT is an indirect tax system where the consumer actually bears the cost of the tax. Bird (2005) on his part confirmed the multi-stage nature of VAT when he asserted that, value added tax (VAT) is a multi-stage tax imposed on the value added to goods and services as they go through various stages of production and distribution as well as services rendered. Obviously from the shades of opinions highlighted above, it is clear that the final incidence or burden of VAT is borne by the final consumer of goods and services in Nigeria

Tabansi (2001), Okezie (2003), Ojo(2003) and Offiong (2004) were all in agreement when they cited

the enabling law (Value Added Tax Act, 1993) and listed the following as Goods and Service exempted from VAT in Nigeria.

1. Medical and Pharmaceutical products;
2. Basic food items;
3. Books and educational materials;
4. Baby products;
5. Commercial vehicles and their spare parts;
6. Agricultural equipment and products and veterinary medicine
7. Fertilizers, farming machinery and farming transportation equipment;
8. All exports of goods and services;
9. Plant and machinery used in export processing zone
10. Plant, machinery and equipment purchased for utilization of gas in the downstream petroleum operations;
11. Tractors, ploughs, agricultural equipment and implements purchased for agricultural purpose.
12. Services of community banks and primary mortgage institutions;
13. Plays and performances conducted by educational institutions as part of learning ;
14. Service related to education and medical services

On his part Oyebanji (2010) helped us to arrange those taxable goods and services as specified in VAT decree of 1993:

(a) Goods

1. All Goods manufactured and assemble in Nigeria
2. All goods imported into Nigeria
3. All second hand goods
4. All household furniture and equipment
5. Petroleum and petroleum products
6. Jewel and jewelry
7. Textile, cloth, carpet and rug
8. Bear, wine, liquor, soft drinks, treated water
9. All vehicles and their spare parts exchanging commercial vehicles and their spare parts
10. Perfumes and cosmetics (including toiletries)
11. Soap and detergents
12. Mining and minerals
13. Office furniture and equipment
14. Electrical materials of description

(b) Services

1. All service rendered by financial institutions to consumers
2. Accounting services
3. Provision of reports, advice , information or similar technical service in the following areas:
 - i. Management, financial and taxation
 - ii. Recruitment, staff and training
 - iii. Marketing research

From the above items listed it becomes obvious that value added tax covers almost every aspect of our economic and human life. It is a tax that most consumers pay without knowing, yet it helps the government to generate substantial revenue for economic growth. Aruwa (2008) added his voice to the broad nature of VAT in Nigeria when he stated that the Nigeria VAT which is a replacement for the sale tax of 1986 have a very wide based with relative few exemptions and only exports are zero-rated.

2.6 Administration of VAT in Nigeria

Soyode and Kojola (2006) citing the VAT Act of 1993 (then Decree) section 7(2) which states that VAT shall be administered and managed by the Federal Board of Inland Revenue (FBIR) but shared by the three tiers of government in Nigeria from 1999 to date as follows:

Federal Government: 15%

State Government: 50%

Local Government: 35%

To ensure VAT's effective administration, certain amendments were made on the existing tax structures in Nigeria. According to Odusola (2006), the amendments includes inter alia:

- i. Reduction of the personal income tax burden through increased tax allowances, and reduced tax rates;
- ii. Monetization and taxation of fringe benefits;
- iii. Deduction of R&D expenditure from the gross earnings of companies
- iv. Extension of tax-free status to companies in rural areas and granting of incentives based on the

- infrastructure available in the areas;
- v. Reduction of company tax rate from 40 to 35 percent and subsequently to 30 percent; and
 - vi. Payment of petroleum profit tax in dollars.

The implementation of fiscal federalism in Nigeria tax administration especially with respect to the ratio of 15:50:35 as provided by the VAT Act, is plagued with various problems. A critical aspect of this is the issue of multiple taxation on individuals and corporate consumers. In fact this is applicable to all the study groups.

2.7 Value Added Tax and Economic Growth in Nigeria

Empirically the input of value Added Tax (VAT) is not the same in every country. This may be due to the percentage charged or the willingness for taxpayers to comply. It could also be a function of consumers' financial economic status as well as the intention to consume goods and services. Denis(2010) investigated the relationship between value added tax and gross domestic product (GDP) in Nigeria, the study discovered that VAT is not effective as a revenue earner. This implies that significant parts of GDP which represent aggregate national income as well as aggregate national expenditure are not taxed. Samimi and Abdolahi (2011) scanned the impact of implementing value added tax on export goods and service in selected countries. Their findings based on Mean Statistical Difference test indicated positive impact of value added tax on exported goods and services.

A cursory backward view at the work done by Ajakaiye(2000) in his study of the Microeconomic effect on value added tax on Nigeria 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 result of his 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 revealed that the scenario of a cascading treatment of VAT with active fiscal policy not only had the most harmful effects on the economy but also the one that highlighted the obvious Nigeria situation

Owolabi and Okwu (2011) empirically asserted in their study on the contribution of value added tax (VAT) to the development of Lagos state economy as positively related. The analysis showed that VAT revenue contributed 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 contributions to the economic growth and development.

Similarly, the impact of VAT on economic development of emerging nations was the research carried out by Unegbu and Irefin (2011). The study was focused on Adamawa state of Nigeria. The study revealed that VAT allocations alone accounted for 91.2% of variations 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. They however, recommended that similar research should be replicated in other states of Nigeria to ascertain the impact of VAT on economic growth and development.

Again, Olatunji (2009) researched on the administration of VAT in Nigeria with the main aim of finding ways of improving government revenue generation base in order to improve the economy. The study among other things recommended on the need for government to increase awareness of people on the existence of VAT as well as its contribution to Nigeria economic growth.

Ekeocha (2010) work focused on how the value added tax rate could be increased from its present 5% to 15%. This may be due to the fact that the 5% is not significant enough to address positive economic changes. Various IMF report as indicated by Olatunji (2009), posited that Nigeria and Mauritius are the only two African countries with the smallest VAT rate of 5%. Kenya and Malawi are as high as 75% and 85% respectively. Legally speaking, Sanni (2012) affirmed the intension to review the VAT rate upward. In his work, current law and practice of value Added Tax in Nigeria he posited that they have been amendment to the original value added tax decree of 1993 for more than half a dozen times-the latest being the value Added tax (Amendment) Act of 2007. He noted however, that some of the amendments have made significant changes which are yet to reflect in the body of existing literature and the economy itself.

Adereti, Sanni and Adesina (2011) empirically evaluated the contribution of value added tax (VAT) to economic growth in Nigeria between 1994-2008. From their time series data of GDP and VAT revenue, it was observed that VAT revenue to total tax Revenue averaged 12.4% which was considered very low when compared to other countries in Africa. The study also observed that there is no causality between VAT revenue and Nigeria Gross Domestic product. Both observations indicates that revenue from VAT has no significant impact on economic growth in Nigeria. This is however not the case with Umeora (2013) investigation on the effects of value Added tax (VAT) on economic Growth and total tax revenue in Nigeria. The result of his

findings shows that VAT has significant effect or impact on economic growth (GDP) and total tax revenue. Similarly; Onwuchekwa and Aruwa(2014) observed that VAT contributes significantly to the total tax revenue of government as well as economic growth in Nigeria. Their study was on the value added tax and economic growth in Nigeria.

2.8 VAT and its Challenges

Tax evasion and tax avoidance are two broad challenges faced by every tax authority or administrator. Olatunji (2009) identified the following challenges relating to VAT administration in Nigeria.

- i. **Inadequate machinery for tax remittance:** Lack of adequate resources in the form of qualified tax personnel and facilities is a major challenge in the administration of tax in Nigeria. Consequently there are a lot of leakages in the form of tax fraud, refusal to complete tax return forms etc.
- ii. **Dishonest tax officials:** The dishonesty by most tax officials in Nigeria pose a serious threat to effective tax administration in the country. In most cases they will deliberately reflect wrong tax figures in consumers' invoices or documents. This go a long way to discourage honest tax payers from being committed to prompt and adequate tax payments.
- iii. **The regressive effects of VAT:** Practically, value added tax is a tax on consumption of items. Its computation is based on a fixed rate on taxable commodities, consequently, the burden of VAT falls more on low income earners than other groups. Hence low income earners in Nigeria see VAT as a tax skewed against them.
- iv. **General increase in price levels:** VAT simply means add some amount to the cost or price of items at each stage. In other words VAT as a tax system tends to increase the general price level of goods and service in the economy. This can have the adverse effect of reduction in the demand for goods and services.
- v. **The difficulties in calculating VAT on retailers:** Nigeria is a country infested with numerous retailers and small professional service providers. The ability to compute VAT amount for these set of people prove to be very difficult. The problem of registration with tax authorities and remittance of collected VAT amount is equally a major challenge here.

3.1 METHODOLOGY

The study employed a time series data covering a period of 1994 – 2012. Data were obtained from various CBN statistical bulletins, the Federal Inland Revenue Service (FIRS), Federal of Statistics and the author's computation

3.2 Research Design

This study adopts the time series design procedure. This is to enable us establish the possible impact of value added tax (VAT) revenue on economic growth as proxy by GDP over a time period. Ndiyo (2005) asserted that time series design is a better representation of periodic multiple observations of items, at different times. Consequently this design method was considered the most appropriate procedure to employ in this study.

3.3 Source of Data

Data were obtained from various CBN statistical bulletin, Federal Inland Revenue Service (FIRS), Federal of statistics and the author's computation. The data collected were from secondary sources. They are to cover a period of 1994 – 2012

3.4 Model Specification

This study will examine three major models to measure possible input of VAT on economic growth over a period of time

3.4.1 Model 1

Based on the perceived functional relationship between VAT and GDP a link is forged between the two variables. Thus, with the functional relationship and the resultant model using the ordinary least squares (OLS) regression method we have:

Functional relationship

$$GDP = F(VAT) \dots\dots\dots(1)$$

Converting this to a linear or stochastic model we have

$$GDP = b_0 + b_1 VAT + e \dots\dots\dots (2)$$

Where b_0 and b_1 are constants GDP= Gross Domestic Product, VAT = Value Added Tax

e = Error Term or Stochastic term, Apriori expectation: $b_1 > 0$

3.4.2 Model 2

Similarly we can also establish the relationship between VAT and TREV. The functional relationship and the resultant model using the OLS regression method we have:

Functional relationship

$$TREV = F(VAT) \dots\dots\dots 3$$

Converting this to a linear or stochastic model we have

$$TREV = b_0 + b_1 VAT + e \dots\dots\dots 4$$

Where b_0 and b_1 are constant, $TREV =$ Total Revenue, $VAT =$ Value Added Tax

$e =$ Error term or stochastic item, Apriori expectation = $b_1 > 0$

3.4.3 Model 3

We can also show or establish the relationship between Gross Domestic product (GDP) and Total Revenue (TREV) from tax. The functional relationship and the resultant model using the OLS regression method, we have:

Functional relationship

$$GDP = F(VAT) \dots\dots\dots (5)$$

Converting this to linear or stochastic model we have:

$$GDP = b_0 + b_1 VAT + e \dots\dots\dots (6)$$

Where b_0 and b_1 are constant $GDP =$ Gross Domestic Product $VAT =$ Value Added Tax

$e =$ Error Term or stochastic term Apriori expectation: $b_1 > 0$

4.1 DATA PRESENTATION, ANALYSIS AND INTERPRETATION

In this section we shall present the relevant data before analyzing and interpreting them. The data are used to examine or test the stated hypotheses

4.2 Data Presentation

The data collected from various CBN, Federal Office of statistics and Federal Inland Revenue Service reports is hereby presented as follow:

Table 4.1 GDP, TREV and VAT figures for 1994 – 2012

YEAR	GDP	TREV	VAT
1994	69147	201910.8	7260.8
1995	105222.8	459987.3	20761
1996	139085.3	523597	31000
1997	2801972.6	582811.1	34000
1998	2708430.9	463608.8	36867.7
1999	3194015	949187.9	47135.8
2000	4582127.3	1906159.7	58469.6
2001	4725086	2231532.9	91757.9
2002	6912381.3	1731800	108600
2003	8487031.6	2575100	136400
2004	11411066.9	3920500	159500
2005	14572239.1	5547500	178100
2006	18564594.7	6069800	230400
2007	20657317.7	5727500	301700
2008	24296329.3	7866600	404500
2009	24794238.7	4844600	468400
2010	29205783	7303700	562900
2011	37936747.89	7477111.80	446598.94
2012	41181617.01	7962111.83	477412.20

Sources: CBN Annual report for 2013, Federal Office of Statistics report, Federal Inland Revenue service Report.

4.3 Data Analysis & Interpretation

Considering the models specified in the previous chapter and the gathered data, we shall present the summary of the results as well as their analysis and interpretations.

Table 4.2 Descriptive statistics

	GDP	VAT	TREV
Mean	13491812	200092.8	3597112.
Median	8487032.	136400.0	2575100.
Maximum	41181617	562900.0	7962112.
Minimum	69147.00	7260.800	201910.8
Std. Dev.	12989533	185026.8	2869111.
Skewness	0.790582	0.698335	0.275034
Kurtosis	2.447251	1.993924	1.520975
Jarque-Bera	2.221111	2.345610	1.971322
Probability	0.329376	0.309498	0.373193
Sum	2.56E+08	3801764.	68345119
SumSq. Dev.	3.04E+15	6.16E+11	1.48E+14
Observations	19	19	19

Source: Author's computation

Table 4.2 shows the mean, maximum, minimum and Jargue-Bera (J.B) for each of the variables among others. The result in table 4.2 above provided useful insight into the time series data over the period from 1994 – 2012. Firstly, the large and astronomical difference between the maximum and minimum values in GDP, TREV and VAT indicate high degree of change in the variables. This implies that the interaction of the variables, with the economy has tremendous impact over the years. The mean of the variable indicated very high figure over the period. This also implies that the average performances of variables are relatively significant to the economy. The Jargue Bera test however did not establish normality in the three variables. This implies that other factors may be needed to ascertain their normalcy.

4.4 Ordinary Least Squares Regression Analysis

Gujarati et al (2013) posited that the least squares method has very attractive statistical properties that have made it the most powerful and popular methods of regression analysis. Hence we shall use it to address the regression model specified in chapter three as well as the hypotheses stated in chapter one.

4.4.1 Gross Domestic Product and Value Added Tax

The table below shows the relationship between gross domestic product (GDP) and value added tax (VAT).

Table 4.3 GDP and VAT Regression Result

Dependent Variable: GDP

Method: Least Squares

Date: 11/20/14 Time: 07:56

Sample: 1994 2012

Included observations: 19

GDP=C(1)+C(2)*VAT

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	153130.5	1437375.	0.106535	0.9164
C(2)	66.66246	5.339375	12.48507	0.0000
R-squared	0.901664	Mean dependent var		13491812
Adjusted R-squared	0.895880	S.D. dependent var		12989533
S.E. of regression	4191420.	Akaike info criterion		33.43428
Sum squared resid	2.99E+14	Schwarz criterion		33.53369
Log likelihood	-315.6256	Hannan-Quinn criter.		33.45110
F-statistic	155.8770	Durbin-Watson stat		1.096233
Prob(F-statistic)	0.000000			

Computed with Eviews 7.0

In order to analyze the hypothesis relating to GDP and VAT, we shall use table 4.3. From the table, the coefficient of determination r^2 is 0.901664. This value is very high and impressive. It also confirms the apriori expectation of a positive relationship between VAT revenue and GDP over the years. The high r^2 of 0.901664 implies that 90% of the variation in GDP is actually explained by VAT revenue over this period. Similarly, the adjusted r^2 with a value of 0.895880 indicates a more reliable coefficient of determination haven taken the required degree of freedom into consideration. The high value of 89.59% also indicates high positive impact of value added tax (VAT) on economic growth.

The t-statistic (12.48507) with p- value (0.0000) is significant at 5%. This implies that there is significant relationship between VAT and GDP. That is value added tax (VAT) has tremendous or significant impact on economic growth as proxy by GDP. Similarly, the F-statistic (155.8770) with probability value of 0.00000 is significant at 5% level of significance. This also means that value added tax (VAT) has significant impact on the economic growth as well as general development of Nigeria.

4.4.2 Total Revenue and Value Added Tax

The table below shows the relationship between total revenue (TREV) and value added tax (VAT).

Table 4.4 TREV and VAT Regression result

Dependent Variable: TREV

Method: Least Squares

Date: 11/20/14 Time: 09:26

Sample: 1994 2012

Included observations: 19

TREV=C(1)+C(2)*VAT

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	761834.0	411215.2	1.852641	0.0814
C(2)	14.16981	1.527529	9.276298	0.0000
R-squared	0.835031	Mean dependent var		3597112.
Adjusted R-squared	0.825327	S.D. dependent var		2869111.
S.E. of regression	1199113.	Akaike info criterion		30.93136
Sum squared resid	2.44E+13	Schwarz criterion		31.03078
Log likelihood	-291.8480	Hannan-Quinn criter.		30.94819
F-statistic	86.04971	Durbin-Watson stat		1.096108
Prob(F-statistic)	0.000000			

Computed with Eviews 7.0

Again, in order to address the second hypothesis on total revenue (TREV) and value added tax (VAT), we shall analyse and interpret the result in table 4.4. The r- squared (r^2) and adjusted r-squared (r^2) produced the following figures 0.835031 and 0.825327 respectively. Both figures represent a very high level of reliability of the model $TREV = b_0 + b_1VAT + e$. They indicated over 80% level of reliability. The positive regression coefficient of VAT i.e (14.16981) met the expected apriori statement showing a direct relationship between total revenue and value added tax.

The t-statistic (9.276298) with its associated p-value (0.0000) is significant at 5% level of significance. This implies that we should reject the null hypothesis which states that VAT has no significant impact on total revenue and conclude that VAT has significant impact on total revenue. Similarly, F-Statistic (86.04971) with p-value is also significant since the p-value is less than the critical 5% level of significance. This also confirms that Value Added Tax has significant impact on Total Revenue in Nigeria.

4.4.3 Gross Domestic Product and Total Revenue

The table below shows the relationship between gross domestic product and total revenue.

Table 4.5 GDP and TREV regression result

Dependent Variable: GDP
 Method: Least Squares
 Date: 11/20/14 Time: 07:00
 Sample: 1994 2012
 Included observations: 19
 GDP = C(1) +C(2)* TREV

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-1796170.	1723122.	-1.042392	0.3118
C(2)	4.250072	0.378386	11.23210	0.0000
R-squared	0.881252	Mean dependent var		13491812
Adjusted R-squared	0.874267	S.D. dependent var		12989533
S.E. of regression	4605945.	Akaike info criterion		33.62289
Sum squared resid	3.61E+14	Schwarz criterion		33.72231
Log likelihood	-317.4175	Hannan-Quinn criter.		33.63972
F-statistic	126.1601	Durbin-Watson stat		1.076192
Prob(F-statistic)	0.000000			

Computed with Eviews 7.0

From the above table, the coefficient of determination r^2 measures the proportion of the total variations in the dependent variable that is explained by the independent variable. From the result in Table 4.5 above, r^2 is 0.874267. This implies that the model between GDP and TREV is 87.43% reliable given the adjusted degree of freedom.

The t-value of 11.23210 with its associated p-value (0.0000) indicates that total revenue has significant impact on economic growth at 5% as proxy by GDP. Similarly the F-statistic with a value of 126.1601 and p-value of 0.00000 is also significant at 5%. This also implies that TREV has a great influence on economic growth and development in Nigeria.

5.1 Conclusion

This work is an attempt to empirically analyse and investigate the impact of value added tax (VAT) on economic growth from 1994 – 2012, using the ordinary least squares regression model (OLS) in examining the variables in our hypothesis. The empirical result shows that the value of VAT has a positive significant impact on economic growth (GDP) in Nigeria. The findings also revealed the following:

- Value Added Tax (VAT) has a positive and significant impact on total revenue in Nigeria; and by extension on the economic growth and development of the country.
- Total revenue growth over the period also have significant impact on economic growth as proxy by Gross Domestic Product

Hence we can conclude therefore that Value Added Tax (VAT) as a subset of the entire tax system in Nigeria has significant impact on the economic growth of Nigeria since its inception in 1994. It has greatly contributed to the total revenue of this nation by reducing tax evasion by many people.

5.2 Recommendations

Following the empirical findings of this study, the following recommendations are made for the purpose of effective policy formulations in the area of economic management, accounting and financial management:

- Government should put in place adequate measure to ensure that revenue generated from VAT are effectively utilized to develop and grow the economy through proper infrastructural development
- The positive impact of VAT on the economy can be sustained and enhanced if efforts are made by the government and its relevant agencies to exempt infant industries from VAT payment over reasonable period.
- The management, administration and implementation of VAT in Nigeria should be done in such a way that it will not have adverse effect on the economy by distorting the free forces of demand and supply.
- The proceeds of VAT should be attractive enough to prevent a reintroduction of sales Tax which may constitute double taxation.
- The government must put stein punitive measures in place to sanction corrupt officials as well as establishments that refuses to remit collected VAT funds
- In order to encourage speedy economic growth, government should embark on periodic review of tax

- incentives to investors (especially foreign investor) so that they can increase their investment in the economy
- vii. For the purpose of balanced economic growth, VAT should be structured to take more resources from the rich than the poor by exempting more items consumed by the poor from VAT.

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