

# Implications of Tax Revenue on Economy Growth in Nigeria

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## Abstract

The paper examined the implications of tax revenue on economy growth in Nigeria. The specific objective of this study is to examine the relationship between tax revenue and gross domestic product in Nigeria. Simple Regression was used to achieve the objective of this study. Secondary data will be sourced from International Monetary Fund's Government Finance Statistics. It was revealed that there was a weak correlation between dependent and independent variable. It was also discovered that there was no significant relationship between tax revenue and gross domestic product in Nigeria. The study therefore recommends that Government should formulate policies that will minimize the volume of tax leakages in order to increase total tax revenue that will contribute positively to economic growth in Nigeria. The study also recommends that Government should always make sure that tax revenue is spent on social amenities and welfares of the Nigerian citizens.

**Keywords:** Tax Revenue, Economy Growth, Nigeria.

## 1. Introduction

The need for tax payments has been a phenomenon of global significance as it affects every economy irrespective of national differences (Oboh& Isa, 2012). Taxation is an age long event. The need for its payment was emphasized by Jesus in "Mathew 22 vs 17-21" when the Pharisees asked Him whether it was lawful to pay taxes or not. His reply „render therefore unto Caesar the things which are Caesar's and to God the things that are to God's suggests that tax payments should be compulsory, non-negotiable, binding and obligatory on all citizens of a country regardless of religion and social status. What then is tax? Tax is a compulsory charge imposed by a public authority on the income and properties of individuals and companies as stipulated by the government Decree, Acts or Laws irrespective of the exact amount of service of the payer in return (Omotoso, 2001). Tax payment is not for the direct exchange of good and/or services but a transfer of resources and income from the private sector to the public sector in order to achieve some of the nation's economic and social goals (Okpe, 2000). Such goals may be in for of high level of employment, stable prices, rapid growth of gross national product, favourable balance of payments position, promotion of a free market economy, satisfaction of collective demands, equitable income redistribution, promotion

of infant industries, the encouragement of priority sector, encouragement of balance population development and promotion of labour and capital development (Onoh, 2013).

The level of tax to be paid by the citizens and the items to be taxed is determined by the government. Such decision according to Ngerebo and Masa (2012) is based on the cost of the projects or programmes government intends to execute, which is the principal determinant of the budget -size. Government also judges the basis, rates, the category of citizens, and the time period to pay the tax, on the direction of the economy desired and government's perception of the standard of living of the citizens. Taxes therefore affect the expenditure size of government, the productivity and level of activities of businesses, the consumption pattern of individuals, the propensity to save and invest and the growth path of the economy. The extent to which the impact of taxation is felt is dependent on the level of compliance with tax payments which is further dependent on the level of tax literacy.

In Nigeria, the incidence of tax evasion and avoidance by tax payers is high, leading to low level of government revenue which further reduces the level of government expenditure, culminating into a reduction in the income savings and expenditure of households and firms, leading to low level of economic activities and economic growth. This study is therefore intended to examine the impact of taxation on the growth of the Nigerian economy amidst high level of evasion and avoidance.

This economic reasoning emphasized the revenue need of government and indicates that, apart from strengthening the existing sources of revenue, it is also necessary for government to diversify its revenue base in order to meet its constitutional responsibilities. Myles (2000) states that financial capacity of any government depends among other things, on its revenue base, the fiscal resources available to it and the way these resources are generated and utilized. It is therefore, the duty of the government to adequately mobilize potential revenue across the country to prevent economic stagnation. This mobilization involves the adoption of economically and politically acceptable taxes that would ensure easy administration, accounting, verification, auditing and investigation based on the equality, neutrality and other attributes of a good tax.

Consumption taxes have a wider coverage since the cause of adverse variance can be adequately controlled under proper administration (Leach, 2003). The revenue generated from consumption taxes can help to boost the financial base of any economy. This however involves exploiting the potential and adopting the type of consumption tax that will recognize the tax payers as utility minimizing individuals and safeguarding their evading behaviour. The essential consideration of choosing a consumption tax option from other tax options includes; assessment of administrative feasibility of each tax and determining its relative revenue potentials, its relative revenue potentials, its degree of voluntary compliance, its relative neutrality, its equity essential for regressively and the efficiency of these criteria.

Thus, the introduction and full recognition of the potential value of taxation in revenue generation. The paper work intends to avert all the prevention deficiency deduced by the recent author and thereby revealed the benefits of tax as our revenue generation in Nigeria. All over the world different countries look for ways to boost their revenue, this facilitated many nations to introduce tax on goods and services. It is a consumption tax, levied at each stage of the consumption chain and borne by the final consumer of the product or service. Taxation has become a veritable source of revenue in many developing countries in Sub-Saharan Africa. VAT is a consumption tax payable on the goods and services consumed by any person, whether government agencies, business organizations or individuals. The target of VAT is consumption of goods and services and unless an item is specifically exempted by law, the consumer is liable to the tax; some of the goods and services exempted includes: Basic food, Medical and pharmaceutical products, educational materials, Agricultural equipment and veterinary medicines, Agricultural fertilizers, Goods for export Baby products and services such as medical services by Peoples Bank now defunct and mortgage Institutions, Microfinance Bank, Plays and performance conducts by educational institutions as part of learning, Religious service (FIRS 1993).

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Gendron (2005) argues that consumption tax, such as VAT, is increasing being favoured as a tax base over income and allied items. Nairayan (2003) further supports the introduction of VAT in Nigeria as an instrument for the balance of payments engineering, by encouraging exports through zero-rating of exporting goods. Although, very few literature exist on the subject of value added tax in less developing countries by different groups of scholar, academicians, tax experts and professionals, international Monetary fund (IMF), World Bank, Organization of Petroleum exporting countries (OPEC), Extensive studies have nevertheless, been done on the alternation prominence of indirect tax in developing countries in general and Nigeria in particular. The core function of taxation as revenue generating tool in developing countries has been studied by eminent scholars. Although, different scholars had used different explanatory variables to attempt some empirical measurements of tax efforts in various countries; Toder and Rosenberg (2010) worked on the effects of imposing a value added tax to replace payroll taxes or corporate taxes. The research work was conducted against the background that the United States is the only country in the developed world that does not impose a broad-based consumption tax.

In Nigeria, tax is one of the instruments the Federal government introduced to generate additional revenue. One of the recurrent problems of the three-tier structure of the government in Nigeria is dwindling revenue generation as characterized by yearly budget deficits and insufficient funds for economic growth and development. However, this paper examines the implication of tax on revenue generation in Nigeria and provides reasonable solutions and recommendations that will be geared to reveal the benefit of tax revenue in Nigerian macro economy.

The broad objective of this study is to examine the effect of taxation on economy growth in Nigeria. However, the specific objective is to examine the relationship between tax revenue and gross domestic product in Nigeria. The hypothesis to be tested is presented in a null form which states that there is no significant relationship between tax revenue and gross domestic product in Nigeria.

One of the most important policy concerns in most countries is the effect of taxation on economic growth and development. This study is important at this level of economic development when efforts are being made to reposition the Tax system to enable it play key roles in economic development of Nigeria. The study essentially seeks to examine in an empirical manner, the nature of Tax system in Nigeria since 2003 up to 2013. The study shall seek to ascertain the critical factors that have affected the level of revenue generated from Tax in Nigeria.

This study was justifiable since it employed the crucial methodology analysis used in examining the flows of Tax in Nigeria. While most studies conducted on Tax and economic growth examined the revenue level up to 2013 (Emmanuel 2013; Asogwa & Nkolika 2013), the periods covered also made the study unique to others. It covered thirty one year's ranging from 1986 to 2017. Although, the relationship between Tax and economy growth has been well documented in both international and domestic literature, this work seeks to add to the research by examining the relationship between Tax and Revenue generation which is a quiet departure from previous studies that focused on Tax and Economic growth level. This is equally of value to policy makers since it will identify which sectors are most efficient in their payment of Tax. With this knowledge policy makers can target these sectors and attempt to ensure that they pay their Tax as at when due.

This study will be a critical comparative analysis of the implication of Taxation on the growth of economy for the periods 2003 to 2013. The study covers Empirical Review which consists of work done by other erudite Scholars

on the relationship between Tax and Economic growth in Nigeria. It covers the nature and scope of taxation, objectives of taxation, the principles that are used as a tax policy guide which includes adequacy, simplicity, neutrality, equity and exportability, theory of Economic growth, Benefit Theory, The Cost of Service Theory, Ability to Pay Theory, Ownership of Property, Tax on the Basis of Expenditure, Income as the Basics, Proportionate Principle.

## **2. Literature Review**

### ***2.1 The Nature and Scope of Taxation***

Taxation is a compulsory but non-penal levy by the government through its agent on the profits, income, or consumption of its subjects or citizens. It is also viewed as a compulsory and obligatory contribution made by individuals and organization towards defraying the expenditure of government (Dandago and Alabede 2001). Kotler (1975) posits that it is a charge levied by the government on the income or wealth of a person or corporate organization for the common benefit of all. The term does not include specific charges made against a particular person or properties for current or permanent benefits and privileges accruing only to those paying such charges. Similarly, Ogundele (1999) defines taxation as the transfer of real economic resources from private sector to the public sector to finance public sector activities. It may be inferred from the foregoing that taxation is the transfer of financial resources from private economic agents like households and corporate bodies, to the public sector to finance the development of the society.

Going by the definition of taxation, Nzotta (2007) identified four key issues which must be understood for taxation to play its functions in any society. First, a tax is a compulsory contribution made by the citizens to the government and this contribution is for general common use. Secondly, a tax imposes a general obligation on the tax payer. Thirdly, there is a presumption that the contribution to the public revenue made by the tax payer may not be equivalent to the benefits received. Finally, a tax is not imposed on a citizen by the government because it has rendered specific services to him or his family. Thus, it is evident that a good tax structure plays a multiple role in the process of economic development of any nation which Nigeria is not an exception (Appah, 2010).

The main purpose of tax is to raise revenue to meet government expenditure and to redistribute wealth and management of the economy (Ola, 2001; Jhingan, 2004; Bhartia, 2009). Anyanwu (1993) pointed out that there are three basic objectives of taxation. These are to raise revenue for the government, to regulate the economy and economic activities and to control income and employment. Also, Nzotta (2007) noted that taxes generally have allocation, distributional and stabilization functions. The allocation function of taxes entails the determination of the pattern of production, the goods that should be produced, who produces them, the relationship between the private and public sectors and the point of social balance between the two sectors. The distribution function of taxes relates to the manner in which the effective demand over economic goods is divided, among individuals in the society.

According to Musgrave and Musgrave (2006), the distribution function deals with the distribution of income and wealth to ensure conformity with what society considers a fair or just state of distribution. The stabilization function of taxes seeks to attain high level of employment, a reasonable level of price stability, an appropriate rate of economic growth, with allowances for effects on trade and on the balance of payments.

Tax is discriminatory in the sense that it is assessed on persons or property based on profits/incomes or gain, the benefit derived by citizens from tax payment is without reference to the contribution of individual tax payers (Nightingale, 2000). In line with this, Ariwodola (2000) posits that it is accurate to say that the primary objective and purpose of taxation in most nations of the world is essentially to generate revenue for government expenditure on social welfare such as provision of defense, law and order, health services and education. Tax revenue can also be expended on capital projects otherwise called consumer expenditure, creating social and economic infrastructure

which will improve the social life of the people (Angahar& Alfred, 2012). Other than facilitating the administrative function of government, taxation as the most potential source of revenue to the government of any nation, has played very crucial roles as an instrument of government's economic, social and fiscal policy.

Taxation is used for the purpose of discouraging certain forms of anti-social behaviour in the society. Taxation according to Musgrave and Musgrave (1980) can be extensively used in regulating the consumption pattern resulting in economic stabilization. Anti-social behaviour such as drinking of alcohol, smoking and pool betting can be controlled by imposition of higher taxes on production of such goods.

The resource allocation dimension of taxation policy is its role in promoting investment as a critical measure of ensuring a healthy economy through creation of new wealth. In Nigeria, government sometimes introduces tax incentives and attractive tax exemptions as an instrument to woo and induce local and foreign investors in areas such as manufacturing of goods, export processing, oil and gas and utilities, which are critical and necessary for the economic development and growth of the nation (Angahar& Alfred, 2012).

The use of transfer payments and benefits to those members of the society who are less well-off according to Musgrave and Musgrave (1980) is to promote social equality. Taxation as a mechanism for income and wealth distribution holds that the burden of taxation should be heavier for the rich in the society than for the poor so that taxes collected are used to pay for social services for the less fortunate.

Harmonization according to Lekan and Sunday (2006) is said to be the modern objective of Economic community of West African States (ECOWAS). The idea of a single market in ECOWAS member nations is to provide for the free movement of goods/services, capital and people between member states. The philosophy behind this single market therefore suggests that these tax systems of member states should be harmonized.

Generally, according to Ola (2004) taxation is a powerful and potential fiscal stabilizer employed by government of nations to plan development policies. It is a device according to Nightingale (2000) to induce economic development and favourable balance of payments.

## ***2.2 Principles of Tax Policy Guide***

- a) Adequacy - An adequate tax system provides funds sufficient and on sustainable basis to balance the government budgets. A tax is said to be adequate if it is stable as well as elastic. The policy makers want to know whether growth of a specific tax keeps up with the pace of economic growth in the long run (elasticity).
- b) Simplicity - A simple tax system requires clear and easily understandable rules. It ensures that cost of tax administration and collection must not exceed the actual tax revenue raised. A tax system becomes complex with excessive exemptions such as special schemes, concessions, credits and too many rates, among others.
- c) Neutrality and Efficiency- A tax system is said to be neutral and production efficient if it leaves production undistorted as suggested by the production efficiency theorem (Diamond & Mirrlees, 1971). In other words, it does not interfere with the investment and spending decisions of the individuals and the businesses.
- d) Equity - There are two measures of equity. Horizontal equity requires that the taxpayers with equal level of income pay the same amount of tax and thus bears equal tax burden. On the other, vertical equity requires that taxpayers with different level of income should pay different amount of tax and thus bear unequal tax burden. In other words, the taxpayers with high income level should pay higher taxes as a percentage of their income than those taxpayers having comparatively less income. Accordingly, a tax becomes proportional if all the taxpayers pay the same percentage of their income in the form of tax; regressive if the taxpayers with higher income level pay tax as a

small percentage of their income; and progressive if the taxpayers with higher income pay a greater percentage of their income in the form of tax.

e) *Exportability* -An exportable tax is one that is at least partially paid by the non-residents who use a state's transportation infrastructure. There are broadly three ways in which taxes can be exported: by having non-residents pay the tax directly; by levying taxes on businesses which are then passed on to non-residents; and through interaction with the federal income tax.

### **2.3 Empirical Review**

Several empirical studies have been conducted on the impact of taxes on economic growth. Okafor (2012) investigated the impact of income tax revenue on the economic growth of Nigeria as proxied by the gross domestic product (GDP). The study adopted the ordinary least square (OLS) regression analysis technique to explore the relationship between the GDP (the dependent variable) and a set of federal government income tax revenue heads over the period 1981-2007. The regression result indicated a very positive and significant relationship between the components of tax revenue and the growth of the Nigeria economy.

Adereti, Sanni and Adesina (2011) studied value added tax and economic growth in Nigeria. Time series data on the Gross Domestic Product (GDP), VAT Revenue, Total Tax Revenue and Total (Federal Government) Revenue from 1994 to 2008 sourced from Central Bank of Nigeria (CBN) were analyzed, using both simple regression analysis and descriptive statistical method. Findings showed that the ratio of VAT Revenue to GDP averaged 1.3% compared to 4.5% in Indonesia, though VAT Revenue accounts for as much as 95% significant variations in GDP in Nigeria. A positive and significant correlation exists between VAT Revenue and GDP. Both economic variables fluctuated greatly over the period though VAT Revenue was more stable. No causality exists between the GDP and VAT Revenue, but a lag period of two years exists.

Akwe (2014) analysed the impact of Non-oil Tax Revenue on Economic Growth from 1993 to 2012 in Nigeria. To achieve this research objective, relevant secondary data were used from the 2012 Statistical Bulletin of the Central Bank of Nigeria (CBN). These data were analyzed using the Ordinary Least Squares Regression. The result from the test shows that there exists a positive impact of Non-oil Tax Revenue on economic Growth in Nigeria.

Onaolapo, Aworemi, and Ajala (2013) examined the impact of value added tax on revenue generation in Nigeria. The Secondary Source of data was sought from Central Bank of Nigeria statistical Bulletin (2010), Federal Inland Revenue Service Annual Reports and Chartered Institute of Taxation of Nigeria Journal. Data analysis was performed with the use of stepwise regression analysis. Findings showed that Value Added Tax has statistically significant effect on revenue generation in Nigeria.

Ogbonna and Ebimobewe (2012) investigated the impact of petroleum profit tax on the economic growth of Nigeria. To achieve the objective of this paper, relevant secondary data were collected from the Central Bank of Nigeria (CBN) and the Federal Inland Revenue Service (FIRS) from 1970 to 2010. The secondary data collected from the relevant government agencies in Nigeria were analysed with relevant econometric tests of Breusch-Godfrey Serial Correlation LM, White Heteroskedasticity, Ramsey RESET, Jarque Bera, Johansen Co-integration and Granger Causality. The results show that there exists a long run equilibrium relationship between economic growth and petroleum profit tax. It was also found that petroleum profit tax does granger cause gross domestic product of Nigeria. Anyanwu (1997), Engen and Skinner (1996), Tosun and Abizadeh (2005) and Arnold (2011) provided different explanations of taxes on economic growth.

Tosun and Abizadeh (2005) in their study of economic growth of tax changes in OECD countries from 1980 to 1999 reveal that economic growth measured by GDP per capita has a significant effect on the tax mix of GDP per capita.

It is shown that while the shares of personal and property taxes have responded positively on economic growth, shares of the payroll and goods and services taxes have shown a relative decline.

Arnold (2011) in their study found that short term recovery requires increase in demand while long run growth requires increase in supply. As short term concessions can be hard to reverse, this implies that policies to alleviate this crisis could compromise long run growth.

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

Naiyeju (1996) argued that the positive result received from any tax depends on the tax extent of how it is properly managed. The extent of how the tax law is interpreted and implemented as well as the publicity brought into it will determine how a particular tax is able to meet its objectives.

Emmanuel (2013) investigated the effects of Value Added Tax (VAT) on economic growth (GDP) of Nigeria using time series data from 1994-2010 and found one per cent increase in VAT revenue causes 1.47% increase in economic growth (GDP). Canavire-Bacarreza et al. (2013) estimated the effects on growth of the most important taxes for Latin American countries, namely personal income tax, corporate income tax, general taxes on goods and services, including value added and other sales taxes, and revenues from natural resource. They evaluated the effect of these tax instruments on growth for Argentina, Brazil, Mexico, and Chile using vector autoregressive techniques, and for close to the entire region and a worldwide sample of developing and developed countries using panel data estimation. They found that for the most part, personal income tax does not have the expected negative effect on economic growth in Latin America, which is largely explained by the small collections in the region. For corporate income tax, the results suggest reducing tax evasion and greater reliance on collection may boost economic growth in the region as a whole and especially for natural resource exporting countries. However, they found small negative effects of corporate income tax on growth for individual countries, specifically Argentina, Mexico, and Chile. Finally, the study results suggest that greater reliance on consumption taxes has significant positive effects on growth in Latin American in general, although found slight negative effects in some of the selected countries. On the other hand, natural resource revenues do not seem to contribute to growth. Asogwa & Nkolika (2013) examined the impact of value added tax on investment growth in Nigeria using multiple regression analysis. The results show that Value Added Tax has significant effect on investment growth in Nigeria.

Ebeke & Ehrhart (2011) examined whether or not the adoption of value-added tax (VAT) in developing countries is an effective way of stabilizing tax revenues. Using a large panel of 103 developing countries observed over 1980-2008, they found robust evidence that the presence of VAT leads to significantly lower tax revenue instability. On average, countries with VAT experience 40-50% less tax revenue instability than countries which do not have a VAT system. These effects decrease with the level of economic development and the openness of trade.

Miki (2011) used panel data covering 14 developed countries and quarter periods from the second quarter in 1980 (1980 Q2) to the third quarter in 2010 (2010 Q3) and picking up 53 cases of the change of the VAT rate and empirically found three kind of trends of aggregate consumption and economic growth 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.

Unegbu & Ireferin (2011) studied the impact of value added tax (VAT) on economic and human developments of Adamawa State of Nigeria from 2001 to 2009. They collected data from both primary and secondary sources. They found that the facts obtained via secondary data attest to a very significant VAT impact on economic and human development of the State but data obtained from primary sources suggest minimum VAT impacts.

#### **2.4 Theoretical Framework**

The economists have put forward many theories or principles of taxation at different times to guide the state as to how justice or equity in taxation can be achieved. The main theories or principles in brief, are:

##### **(i) Benefit Theory:**

According to this theory, the state should levy taxes on individuals according to the benefit conferred on them. The more benefits a person derives from the activities of the state, the more he should pay to the government. This principle has been subjected to severe criticism on the following grounds:

Firstly, If the state maintains a certain connection between the benefits conferred and the benefits derived. It will be against the basic principle of the tax. A tax, as we know, is compulsory contribution made to the public authorities to meet the expenses of the government and the provisions of general benefit. There is no direct quid pro quo in the case of a tax.

Secondly, most of the expenditure incurred by the state is for the general benefit of its citizens, It is not possible to estimate the benefit enjoyed by a particular individual every year.

Thirdly, if we apply this principle in practice, then the poor will have to pay the heaviest taxes, because they benefit more from the services of the state. If we get more from the poor by way of taxes, it is against the principle of justice?

##### **(ii) The Cost of Service Theory:**

Some economists were of the opinion that if the state charges actual cost of the service rendered from the people, it will satisfy the idea of equity or justice in taxation. The cost of service principle can no doubt be applied to some extent in those cases where the services are rendered out of prices and are a bit easy to determine, e.g., postal, railway services, supply of electricity, etc., etc. But most of the expenditure incurred by the state cannot be fixed for each individual because it cannot be exactly determined. For instance, how can we measure the cost of service of the police, armed forces, judiciary, etc., to different individuals? Dalton has also rejected this theory on the ground that there's no quid pro qua in a tax.

##### **(iii) Ability to Pay Theory:**

The most popular and commonly accepted principle of equity or justice in taxation is that citizens of a country should pay taxes to the government in accordance with their ability to pay. It appears very reasonable and just that taxes should be levied on the basis of the taxable capacity of an individual. For instance, if the taxable capacity of a person A is greater than the person B, the former should be asked to pay more taxes than the latter.

It seems that if the taxes are levied on this principle as stated above, then justice can be achieved. But our difficulties do not end here. The fact is that when we put this theory in practice, our difficulties actually begin. The trouble arises with the definition of ability to pay. The economists are not unanimous as to what should be the exact measure of a person's ability or faculty to pay. The main viewpoints advanced in this connection are as follows:

**(a) Ownership of Property:** Some economists are of the opinion that ownership of the property is a very good basis of measuring one's ability to pay. This idea is out rightly rejected on the ground that if a person's earns a large income but does not spend on buying any property, he will then escape taxation. On the other hand, another person earning income buys property; he will be subjected to taxation. Is this not absurd and unjustifiable that a person, earning large income is exempted from taxes and another person with small income is taxed?

**(b) Tax on the Basis of Expenditure:** It is also asserted by some economists that the ability or faculty to pay tax should be judged by the expenditure which a person incurs. The greater the expenditure, the higher should be the tax and vice versa.



**(c) Income as the Basics:** Most of the economists are of the opinion that income should be the basis of measuring a man's ability to pay. It appears very just and fair that if the income of a person is greater than that of another, the former should be asked to pay more towards the support of the government than the latter. That is why in the modern tax system of the countries of the world, income has been accepted as the best test for measuring the ability to pay off a person.

### Theory of Economic Growth

Economic growth is closely linked to the intricacies of the financial system. A well developed and efficient financial system helps in allocating financial resources to the best uses in the real sector, thereby promoting economic growth. As the real sector grows, the demand for financing increases and in this way the financial sector grows in tandem with the economy, signifying a two way causal relationship between finance and growth. In developed countries, financing generally flows both from the banking system and the capital markets, while in most developing and transition economies the capital markets lag behind, which shifts the burden of financing to the banking system.

There are numerous growth models in literature. However, there is no consensus as to which strategy will achieve the best success. The achievement of sustained growth requires minimum levels of skills and literacy on the part of the population. Some of these existing growth models are Two-Gap Model, Marxian Theory, Schumpeterian Theory, and Harrods - Domar Theory of Growth, Neo-Classical Model of Growth, and Endogenous Growth Theory. The growth models relevant to this are Neo-Classical Model of Growth, and Endogenous Growth Theory, since these growth models explain the situation in developing economies such as Nigeria. The neo-classical model of growth was first devised by Robert Solow. The model believes that a sustained increase in capital investment increases the growth rate only temporarily. This is because the ratio of capital to labour goes up (there is more capital available for each worker to use) but the marginal product of additional units of capital is assumed to decline and the economy eventually moves back to a long-term growth path, with real GDP growing at the same rate as the workforce plus a factor to reflect improving "productivity". A "steady-state growth path" is reached when output, capital and labour are all growing at the same rate, so output per worker and capital per worker are constant. According to Todaro, the Neo-classical economists believe that to raise an economy's long term trend rate of growth requires an increase in the labour supply and an improvement in the productivity of labour and capital. Differences in the rate of technological change are said to explain much of the variation in economic growth between developed countries. This is shown in the model below. The aggregate production function,  $Y = F(K, L)$  is assumed characterized by constant returns to scale. For example, in the special case known as the Cobb-Douglas production, at time  $t$  we have

$$Y(t) = K(t)^a (A(t)L(t))^{1-a} \dots \dots \dots (1)$$

Where  $Y$  is gross domestic product,  $K$  is the stock of capital (which may include human capital as well as physical capital),  $L$  is labour, and  $A(t)$  represents the productivity of labour, which grows over time at an exogenous rate. Because of constant returns to scale, if all inputs are increased by the same amount, say 10%, then output will increase by the same amount (10% in this case). More generally

$$\gamma Y = F(\gamma K, \gamma L) \dots \dots \dots (2)$$

where  $\gamma$  is some positive amount (1.1 in the case of a 10% increase). Because  $\gamma$  can be any positive real number, a mathematical "trick" useful in analyzing the implications of the model is to set  $\gamma = 1/L$ , so that

$$Y/L = f(K/L, 1), \text{ or, } y = f(k) \dots \dots \dots (3)$$

This simplification allows us to deal with just one argument in the production function.

$$y = AK^a \dots \dots \dots (4)$$

This represents an alternative way to think about a production function, in which everything is measured in quantities per worker. Equation 4 states that output per worker is a function that depends on the amount of capital per worker. The more capital with which each worker has to work, the more output that worker can produce. The labour force grows at rate  $n$  per year, say, and labour productivity growth, the rate at which the value of  $A$  in the production function increases, occurs at rate  $\lambda$ . the total capital stock grows when savings are greater than

depreciation, but capital per worker grows when savings are also greater than what is needed to equip new workers with the same amount of capital as existing workers have.

The Solow equation (Equation 5) gives the growth of the capital-labour ratio,  $k$  (known as capital deepening), and shows that the growth of  $k$  depends on savings  $sf(k)$ , after allowing for the amount of capital required to service depreciation,  $k$ , and after capital widening that is, providing the existing amount of capital per worker to net new workers joining the labour force,  $nk$ . That is

$$\Delta k = sf(k) - (\delta + n)k \dots\dots\dots(5)$$

For simplicity we are assuming for now that  $A$  remains constant. In this case, there will be a state in which output and capital per worker are no longer changing, known as the steady state. (If  $A$  is increasing, the corresponding state will be one in which capital per effective workers is no longer changing. In that case, the number of effective workers rises as  $A$  rises, the job.) To find this steady state, set  $\Delta k = 0$ :

$$sf(k^*) = (\delta + n)k^* \dots\dots\dots(6)$$

The notation  $k^*$  means the level of capital per worker when the economy is in its steady state. The capital per worker  $k^*$  represents the steady state. If  $k$  is higher or lower than  $k^*$ , the economy will return to it; thus  $k^*$  is a stable equilibrium. In the Solow equation, we see that when  $(n + \delta)k < sf(k), \Delta k > 0$ . As a result,  $k$  in the economy is growing toward the equilibrium point  $k^*$ . by similar reasoning to the right of  $k^*, (n + \delta)k > sf(k)$  and as a result  $\Delta k < 0$ .

By the chain rule,

$$Y = \frac{dY}{dt} = \frac{\partial Y}{\partial K} \frac{\partial K}{\partial t} + \frac{\partial Y}{\partial L} \frac{\partial L}{\partial t} \dots\dots\dots(7)$$

By the exponent rule, we know that

$$\frac{\partial Y}{\partial K} = A(\alpha + \beta)K^{\alpha + \beta - 1} L^{1 - \alpha} \dots\dots\dots(8)$$

$$\frac{\partial Y}{\partial L} = AK^{\alpha + \beta} (1 - \alpha)L^{-\alpha} \dots\dots\dots(9)$$

Combining these three equations, we have

$$Y = \frac{dY}{dt} = [AK^{\alpha + \beta} L^{1 - \alpha}] \left[ \frac{\partial K}{\partial t} + (1 - \alpha) \frac{\partial L}{\partial t} \right] \dots\dots\dots(10)$$

The first term in brackets in the preceding expression is of course output,  $Y$ . For a steady state,  $K/K, L/L,$  and  $Y/Y$  are all constant. From the above

$$K = I - \delta K = sY - \delta K \dots\dots\dots(11)$$

Dividing this expression through by  $K$ , we have

$$K = sY - \delta \dots\dots\dots(12)$$

For  $K/K$  constant in the preceding expression, we must have  $Y/K$  constant. If this ratio is constant, we have

$K = Y = g$ , a constant growth rate

So from the expression for  $dY/dt$  in the preceding expression, for the aggregate production function, with  $L/L = n$ , which is also a constant, we have

$$Y = (\alpha + \beta)(K) + (1 - \alpha)L \quad g = (\alpha + \beta)g + (1 - \alpha)n \dots\dots\dots(13)$$

$$g - n = \frac{[(1 - \alpha) + (\alpha + \beta) - 1]}{[1 - (\alpha + \beta)]} n$$



### 3. Methods

The research design is the structure in which research is conducted. A research design is the arrangement of conditions for the collections and analysis of the data in a manner that aims to combine to the research purpose. It constitutes the collection, measurement and analysis of data. Therefore, this section presents the research methods of

carrying out the objectives specified in this study. It presents the population of study, Sources of data, Method of data analysis, Description of Research Variables. It also contains a detailed outline of systems of modeling equations that will be used to capture the objectives of this study as well as test of Validity and Reliability. This work focuses on the Value added Tax, Revenue and Economic growth. The data for this study rely basically on the Central Bank of Nigeria Statistical Bulletin.

Secondary data will be sourced from Central Bank of Nigeria statistical bulletin from 2003 to 2013. The data collection was limited to 2003 - 2013 due to the fact that it was the available data. This is considered sufficient to produce robust and generalizable results.

In this research, the type of data analysis that will be employed is inferential statistics ( i.e parametric statistics ), such as multiple regression analyses.

Several authors have also used this approach in their works (Reinhart & Tokatlidis, 2000; Adam, 2007). To achieve the stated objective, one equation was used to elucidate the stated objective. This is Tax revenue equation.

To achieve the objective of this study, the model concentrates on Tax revenue generation equation. To estimate the effect of Tax on the Nigerian Economic growth, the Solows model was adjusted and use for the explanation of the implications of Tax on Economic Growth in Nigeria. Hence this growth model was generated.

### **Tax Revenue Generation Equation**

$$GDP_{si} = \alpha_0 + \alpha_1 TR_{si} + e_i$$

Where

$Y_i$  = the percentage growth of Gross Domestic Product (Sectoral Real GDP)

$x_1$  = the Tax Revenue ( $TR_{si}$ )

$\alpha_0$  = Constant (A);

$\alpha_i$  = Regression Coefficients;

$e_i$  = Error term

The models used annual data spanning through the period 2003-2013.

To estimate the data generated for the study, the inferential technique is basically ordinary least square methods since the results will be sufficient, efficient and unbiased to predict the future for policy making.

However, to examine the factors influencing Tax and Economy growth in Nigeria, the study employed simple regression of ordinary least square method.

#### 4. Results

##### Data of Gross Domestic Product and Tax Revenue

<i>YEARS</i>	<i>GROSS DOMESTIC PRODUCT (GDP) IN BILLIONS</i>	<i>TAX REVENUE IN BILLIONS AND PERCENTAGES</i>
2003	13301.56	203.51 (1.53%)
2004	17321.30	157.62 (0.91%)
2005	22269.98	639.15 (2.87%)
2006	28662.47	690.77 (2.41%)
2007	32995.38	1313.22 (3.98%)
2008	39157.88	2138.02 (5.46%)
2009	44285.56	2262.99 (5.11%)
2010	54612.26	1239.69 (2.27%)
2011	62980.40	1133.65 (1.80%)
2012	71713.94	1118.74 (1.56%)
2013	80092.56	1185.37 (1.48%)

**SOURCE: The IMF's Government Finance Statistics 2014.**

$$GDP_{si} = \alpha_0 + \alpha_1 TR_{si} + e_1$$

Where:

GDP =Gross Domestic Product (GDP<sub>si</sub>)

X<sub>1</sub> = Tax Revenue; (TR)

$\alpha_0$  = Constant (A);

$\alpha_i$  = Regression Coefficients;

$e_i$  = Error term

##### Variables Entered/Removed<sup>b</sup>

Model	Variables Entered	Variables Removed	Method
1	TR <sup>a</sup>	.	Enter

a. All requested variables entered.

b. Dependent Variable: GDP

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.446 <sup>a</sup>	.199	.110	21149.55524	.199	2.233	1	9	.169	.251

a. Predictors: (Constant), TR

b. Dependent Variable: GDP

**ANOVA<sup>b</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.990E8	1	9.990E8	2.233	.169 <sup>a</sup>
	Residual	4.026E9	9	4.473E8		
	Total	5.025E9	10			

a. Predictors: (Constant), TR

b. Dependent Variable: GDP

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations			Collinearity Statistics		
		B	Std. Error	Beta			Zero-order	Partial	Part	Tolerance	VIF	
1	(Constant)	26259.298	12594.445		2.085	.067						
	TR	14.777	9.888	.446	1.494	.169	.446	.446	.446	1.000	1.000	

a. Dependent Variable: GDP

**Collinearity Diagnostics<sup>a</sup>**

Model	Dimens ion	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	TR
1	1	1.862	1.000	.07	.07
	2	.138	3.678	.93	.93

a. Dependent Variable: GDP

**5. Discussions**

From the results of **Tax revenue generation equation**, the correlation coefficient (R) was 0.446. This means that there is a weak correlation between dependent and independent variable. Practically, it means that the level at which

Tax revenue contributed to Gross domestic product is low and however, tax revenue cannot be an important part of Gross domestic product within the period of analysis.

The coefficient of determination (R-Squared) was 19.9%. This means that 19.9% variation in the dependent variable is explained by the independent variable and 80.1% of the variation in the dependent variable is explained by the disturbance term or error term. The disturbance terms are inflation, economic meltdown, low productivity, low profitability etc.

In other words, only 19.9% variation in deposit rate is explained by variation in capital base. 80.1% variation in the dependent variable is explained by variation of the variables excluded from the model.

The Durbin-Watson result is 0.251. The Durbin-Watson statistics is a number that tests for autocorrelation. Autocorrelation is a mathematical representation of the degree of similarity between lagged versions of itself over successive time intervals. In other words, it is a situation in which a time series data is influenced by its own historical values. The Durbin-Watson statistics is always between 0 and 4. The general rule states that a value of 2 means that there is no autocorrelation in the samples. Values approaching 0 indicate positive autocorrelation and values towards 4 indicate negative autocorrelation. However, the Durbin-Watson result of this model indicated positive autocorrelation since the value of 0.467 is approaching 0.

The Collinearity Diagnostics result reveals that Variance Inflation Factors (VIF) is 1.000. The general rule is that VIFs exceeding 4 warrant further investigations while VIFs exceeding 10 are signs of serious multicollinearity requiring correction. Since VIFs result is 1.00 in this model, it does not require further investigations.

#### **Testing for the statistical significant at 5% (Tax revenue generation equation)**

**H<sub>0</sub>:  $b\beta$**

**H<sub>0</sub>:** There is no significant relationship between tax revenue and gross domestic product in Nigeria.

#### **Decision**

t<sub>0.05</sub> at (11 – 2) 9 degrees of freedom was not statistically significant because analysis of variance (ANOVA) P – value > 0.05; p - value = 0.169. Therefore, H<sub>1</sub> is rejected and H<sub>0</sub> is accepted i.e. there was no significant relationship between tax revenue and gross domestic product in Nigeria. This means that Gross domestic product cannot fully depend on tax revenue which implies that tax revenue does not impact on economy growth of Nigeria up to an expected level within the period of analysis. This also means that tax revenue only fulfilled little part of government function (e.g Social Amenities) within the period of analysis.

#### **6. Conclusion**

The poor state of the present economic growth rate in Nigeria is pointing to the direction of tax leakages in the form of avoidance and tax evasion which the government could minimize if proper tax reform strategies are established. The issue of tax leakages is a global concern which Nigerian situation cannot be exempted as a result of the scale of corruption practices in Nigeria. Taxation is one of the most reliable sources of income which contribute to economic development. From the findings, the study therefore concludes that tax revenues do not have significant impact on Nigerian economy growth for the period under review.

Based on the objective and findings of this study, the study therefore recommends that:

- Government should formulate policies that will minimize the volume of tax leakages in order to increase total tax revenue that will contribute positively to economic growth in Nigeria.
- Government should always make sure that tax revenue is spent on social amenities and welfarism of Nigerian citizen.

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