Impact of Income Tax Rates on Tax Revenue in Nigeria: 1986 - 2015 in Focus

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ABSTRACT

Governments all over the world have formulated policies and fixed tax rates aimed at generating required quantum of revenue to foster growth and productivity in their respective economies. The problem has been that not much has been achieved in terms of tax rates regulations over the years across the globe. It is indisputable fact that Government need tax revenue to meet her fiscal need. Various literatures and theories have suggested one way or another that increased tax revenue cannot be achieved without increase in tax rates. Hence, this study examines the impact of income tax rates on tax revenue in Nigeria from 1986 to 2015. The study equally takes scientific analyses of a directional influence of tax rates on tax revenue. It adopts the survey inferential research design. Population of the study consists of all the eight major tax handles under the jurisdiction of the federal government. Purposive sampling technique was adopted in the selection of a sample of three taxes on income. Data for analyses were obtained from both primary and secondary sources. The hypotheses formulated were tested using the Karl Pearson's product moment correlation analysis and findings made. It was discovered that income tax rate have significant relationship with tax revenue as a whole but one of the coefficients of explanatory variables - company income tax rate exhibited a negative correlation with tax revenue. This result explains that company income tax rate and tax revenue are inversely related. This concludes that the lower the rate on company tax, the higher the revenue yields from company tax and vice versa. The study suggests that income tax base should be vertically broadened so as to capture more taxable items into the tax net. This will conveniently result in increase in tax revenue where ever practiced.

***Keywords**: Tax rates, tax base, rate correlation, rate irony, revenue correlation, tax revenue, economic growth.*

INTRODUCTION

At the beginning of every year, governments come up with fiscal policies aimed at boosting the economy through improvements in tax administration and revenue generation. Government revenues are from two main sources - tax revenue and non-tax revenue. Of

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these two sources, tax is a more reliable and most consistent source of government revenue. Based on this fact, tax laws are tailored in such a way that tax revenues accruable to the government do not escape assessment in compliance with approved tax rates and collection policy. Some of the fiscal policies of government come in the form of tax rates and self-assessment compliance incentives. According to Stanlake and Grant (1999), the primary objectives of fiscal policy are to generate sufficient revenue to meet government expenditures, to redistribute scarce resources and to stabilize the economy and that the instrument of fiscal policy used to achieve these objectives is taxation and government expenditure. More so, fluctuations in the rates charged on taxes, adjustments in the tax bases and the income tax assessment period can significantly impact tax revenue. Thus, it is self-evident that, fiscal policies guide and direct activities within the economy toward achieving taxation objectives (Attah, 2008). Tax rate is a veritable yardstick for measuring the quantum of revenue government expects to generate from taxation within a specified period. Tax rate is therefore important and necessary in an economy. It is a fundamental tax revenue generation instrument; it affects every taxable items in the economy, as a determinant of compulsory contribution charged upon persons, properties and businesses by relevant authorities for the support of government, and is crucial to the success, not only of tax revenue generation and provision of social and economic obligations of government but also for equitable distribution of the tax burden. That is, everyone is made to pay his "fair" share (FIRS, 2002).

Government needs to provide infrastructures such as hospitals, schools, roads, electricity, water, security and other obligations that directly impact the living standards of the people. The rates of tax charged would determine how much revenue the government generates and consequently how many of those infrastructures are provided. If the tax rates are to the effect that revenue generated is not sufficient to meet government obligations, then, it could be that those obligations may not be met or government may go borrowing to finance them and that may likely affect the economy negatively. On the other hand, if the tax policies are lopsided to the effect that much of the revenue that comes from tax goes to one tier of government that control high rated taxable items, other tiers may face difficulty in meeting their obligations to the people due to inadequate funds unless the tax rates are improved. According to Brennan and Buchanan (1977), the Laffer curve analysis correlates tax rates and tax bases with tax revenue and the result shows that the higher tax rate is less likely the optimum tax rate and that a lower tax rate may reasonably generate more tax revenues than the higher tax rate. Ghaus (1995) finds out that a Laffer curve estimation provides the optimal tax rate (optimal in terms of revenue maximization) and provides tax authorities with evidential convictions to either increase or reduce tax rates depending on the direction of tax policy objectives.

In Nigeria, government's fiscal power rely on a three-tier structure of taxation with the Federal, States and Local Governments having different tax jurisdiction, the most buoyant tax handles (taxes with higher rates and wider base) being under the control of the Federal government. Akabom and Effiong (2010), assert that the total tax revenue and monies generated from levies by the three tiers of government in Nigeria averaged 96.4

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per cent for the Federal Government, 3.2 per cent for the States and 0.4 per cent for the Local Governments. According to Nigeria's FIRS (2002), "in 2002 about forty different tax handles and levies were distributed amongst the three levels of government. Amongst these, the Federal Government controlled higher rate and wider base taxes". The study group on Tax Reforms (2003) reveals that the Federal Government (that controls most buoyant tax handles) generates more than 98 per cent of the total revenue from tax in Nigeria. In the United Nation University - World Institute for Development Economics Research (UNU-WIDER) on Tax Policy Reforms in Developing Countries by Odusola (2006), evidence shows that due to the non - flexible nature of Nigerian tax structure, the oil and gas based taxes (that have higher rates) generate more than 75 per cent of the country's total tax revenue. The absence of a robust tax policy, which could properly integrate the two elements in a tax - tax base and tax rate - has resulted in Nigeria's fiscal operations being largely depending oil-related volatility thus impacting both revenue and expenditure. Based on the high dependence on taxes driven by oil volatility, revenue and expenditure increased correspondingly during periods of high oil prices. This is evident in tax revenues and expenditure profile, for instance, in 1979 - 1982 and 1991 -1992.

Expectedly, in 2003 - 2006, the rigid tax structure made it increasingly difficult for the tax authority to record remarkable success in tax collection. Adesina (2006) compared tax revenue in some countries and regretted that Nigeria, generates the least tax revenue when compared to Morocco, Kenya and India, emphasizing that Federal Inland Revenue Services was not empowered to charge commensurate tax rate and also that the right caliber of workers were not engaged in this direction.

The Federal Inland Revenue Service (FIRS) is the tax operative arm of the Federal Government in Nigeria which is responsible for taxation as enshrined in the exclusive legislative list under item 58 of the Second Schedules of the 1999 Constitution, as amended (Ola, 1999). Its duties are to assess, collect and account for federally collected taxes such as, Company Income Tax (CIT), Capital Gains Tax (CGT), Valued Added Tax (VAT), Petroleum Profit Tax (PPT), With-holding Tax (WT) and Stamp Duties base on stipulated rates approved by government. However, the duty to account for taxes is beyond the scope of this study, while those of assessments and revenue collections based on government approved tax rates are of specific interest to this study.

Taxation Powers and Jurisdictions

The legislative power and the power to impose taxes and stamp duties on taxable income, chargeable profits and on gains on capital appreciation, for corporate bodies and specific individuals are vested in the Federal Government as embedded in the 58th and 59th items of Part I (the second schedule) of the exclusive legislative list in the 1999 constitution of Nigeria. By implication, only the Federal Government vested with the exclusive power to impose and collect taxes from specific individuals and corporate bodies either by Decree promulgation or Acts of parliament. Consequently, the Petroleum Profits Tax Acts, Personal Income Tax Acts, Companies Income Tax Act and Value Added Tax Decree came into existence as a result of the Federal Government enactments.

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The promulgation of the PITA 104 of 1993, was aimed at ensuring uniformity throughout the States of the Federation, all the previous States Edicts imposing one tax or the other were repealed. Section 99 of PITA, 1993 repealed ITMA and the Income Tax (Armed Forces and other Persons) (Special Provision) Act. Nigeria operates governments at three distinct levels and in line with this tripartite arrangement, fiscal powers and fiscal responsibilities are assumed by each level. In delineating the functions, the 1999 constitution shared government responsibilities and powers into exclusive, concurrent and residual lists. The imposition of taxes on special individuals and corporate bodies is an item in the exclusive list of the constitution while the collection of such taxes is an item in the concurrent legislative list. In other words, the power to collect the various taxes is shared among the three levels of government.

Adesola (1986) points out that the National Assembly is empowered to legislate on the taxation of incomes, profits and capital gains. The National Assembly equally legislates on matters in the concurrent lists especially the ones on the sharing of public revenue and also delegate authority to collect and administer taxes other than those from capital gains, income, profits and stamp duties. The Houses of Assembly at the State level, on the other hand, may legislate on the collection of any tax, rates or fees or may administer laws to provide for such collections by the local government area. This constitutional window enables the States to impose, collect and spend tax revenues, fees or rates which are not expressly listed as an exclusive item. However, according to the 1999 constitution, such laws are void if found to be at conflict with the enactments of the National Assembly.

The total absence of professionalism by States and Local governments in their approach on tax imposition, possibly resulting from declining or fluctuating revenue from, the unregulated use of tax consultants together with the use of extreme force and violence in tax enforcements, have been serious sources of concern to future tax administration of the country. To de-multiply taxes at the state and local government levels and probably eliminate consultants' engagements, the Joint Tax Board (JIB) published the taxes each level of government is authorized to collect. This became operational on April 1, 1997 and had received statutory backing of Decree No. 21 of 1998. This was a major landmark in the Nigerian tax system; the federal government was limited to eight specific taxes, while the States and Local governments were restricted to 11 and 20 specific taxes respectively (Odusola, 2006).

Taxation and the Economy

Human wants are unlimited while economic resources to satisfy these wants are scarce. The unlimited and insatiable human wants make man to prioritize his needs as a way of satisfying the most pressing needs while others are arranged according to preference, pending when the resources will be available to satisfy them. One of the ways in which government augment its available resources to enable it satisfy wants of the citizenry is through taxation. An efficient tax system is a potent lubricant of the wheel of increased tax revenue collection. Taxation itself involves choosing among alternative courses of action.

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Government has to decide between fixing tax rate at a level that will encourage voluntarily compliance and rapid economic growth such that the desired revenue can be collected at minimal compliance cost or at a level such that investment may be discouraged with likely high incidence of tax evasion and avoidance and high tax collection cost.

Table 1: Nigeria's tax system (taxes and levies approved for collection)

Federal Government	**State Government**	**Local Government**
Company income tax	Personal income tax (applies to residents of the state).	Tenancy rates
Petroleum profit tax	Withholding tax (individuals only).	Shops and kiosks rates
Value added tax	Capital gains tax (individuals only).	Fees for on-off liquor licenses
Education tax (applies to companies, residents of the federal capital territory and non-resident individuals).	Stamp duties (applies to instruments executed by individual only).	Fees for butcher slaps
Capital gains tax (applies to corporate bodies and Abuja residents).	Road taxes (e.g. vehicle licenses).	Fees for marriage, birth and death registrations.
Stamp duties (applies to corporate bodies	Taxes on pools betting, lottery and casino winnings).	Fees for street name registration (except in the state capital).
Withholding tax (applies to companies).	Business premises and registration fees in urban and rural areas:	Urban areas as defined by each state, Motor park fees.
Personal income tax (applies to personnel of the armed forces, police, External Affairs Ministry, and residents of FCT	Development levy (for taxable individuals only).	Market taxes and levies (except in any market where state finance is involved).
	Street name registration fees (state capital only).	Fees for domestic animal licenses.
	Fees for right of occupancy on urban land owned by the state government.	Fees for bicycles, trucks, wheel barrows, carts and canoes.
	Market taxes and levies where state finance is involved.	Fees of right of occupancy on land in rural areas (except those of federal and state governments).
	Miscellaneous revenue (e.g. rent on property).	Cattle tax, applies to cattle farmers only. Entertainment and road closure levy. Fees for radio and television licenses Vehicle parking and radio license fees Charges for wrongful parking Fees for public convenience, sewage and refuse disposal Customary ground permit fees. Fees for permits for religious establishments Fees for permits for signboards, bill boards and advertisements.

Source: FIRS (2002) and Odusola (2006).

One of the critical areas of tax revenue generation is the effect the rate has on such revenue. This effect goes a long way to determining whether such rates imposed are

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worthwhile. The tax authority takes critical analysis of the tax policies in operation vis-à-vis the assessment and collection procedure to be adopted. Effiong and Akabom (2010) reason that only the very naïve person will engage in chess competition without being acquainted with the rules of the game. Taxation occupies a central position in the fiscal policies of the government. The core position of taxation lies in its importance as the major source of revenue generation and a major contributor to public expenditure. It is also a means of resource reallocation and resource distribution in any economy. As an instrument of resource allocation, taxation has occupied the minds of economist of all ages. In one of the surveys conducted, taxation was described as an economic weapon to raise money for government to prosecute its various programs and also as a tested physical tool for charting appropriate economic path for rapid development (Effiong and Akabom, 2010).

Even more importantly, Peacock (1971) examines the effects of fiscal measures on some macro-economic variables such as income, output, employment, growth, prices and the balance of payment and pointed out that in any given country, the effectiveness of any tax system is dependent on the economic, political, social, cultural and technological characteristics of the society concerned. Their arguments were on the assumption that government fiscal measures, such as taxation and government spending have important relationship to the movement of these macro-economic variables and hence in the control of the economy.

Taxation is a sensitive issue capable of causing disorder and it is an area where the political leadership must treat with caution. Taxation which is supposed to be perceived as a civil obligation is not perceived as such but rather as an unnecessary burden. In examining the various aspects of tax policies as they affect economic development the emphasis has always been that the tax base of these countries has to be broadened in order to raise tax revenue for development (Kaldor, 1963).

Various theories have been propounded on taxation bordering on what a good tax system should be; among such theories are the canon of taxation and optimal taxation theory.

Canons of Taxation

Classical economist Adam Smith first presented four Canons of taxation in his famous book "The Wealth of Nations" (1776). The canons or principles upon which a good tax system should be based are enunciated below which include: Ezejelue (1978) observes that there is a possibility of a tax system having a negative effect which might outweigh the benefits to be derived from the revenue to be collected. In order to avoid such negative effect, he set out the first four principles which should guide the formulation of tax policies of a country. Such canons include:

1. ***Equity:*** The canon of equity suggests that the tax should be progressive, in which case, one should be taxed according to one's ability to pay. A tax would be regarded as equitable or fair when the higher income earner pays the higher tax and vice-versa.

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2. ***Certainty:*** This canon requires that the amount payable as tax, the time to pay the tax and the method required for payment should be known to the tax payer and the tax officials. It is expected that the scope of the tax should be clear; the tax should not be arbitrary.

3. ***Convenience:*** This principle requires that an individual should pay tax at a time convenient for that tax payer and collector. A convenient period of salary earners will be at month end and for companies, at the end of financial year,

4. ***Economy:*** The requirement of this canon is that government expenditure on tax collection should not exceed the amount to be collected. The tax collection machinery should be economical, a tax official spending ₦15,000 to collect ₦10,000 is not economical. Thus, tax should not be imposed if the cost of collection is excessive.

The other four canons of taxation articulated by the Classical Economist to make up desirable characteristics of a healthy tax system are:

5. ***The canon of simplicity:*** It requires that the tax should be well understood by the tax payers and should be acceptable to the public. Ambiguities must be avoided and proper understanding of the tax system ensured. By so doing, the chances of corruption and oppression by tax officials will be eliminated.

6. ***Flexibility:*** A tax system should be amendable to changes, where necessary but not rigid. Amendable tax system will allow an obsolete tax to be scrapped and replaced with a more meaningful and realizable tax.

7. ***Impartiality:*** This tax principle states that a good tax system does not discriminate the tax payers. An impartial tax system ensures that tax payers at the same level pay the same amount of tax.

8. ***Productivity/Fiscal Adequacy:*** This canon advocates that the yield from a tax should be adequate to cover government expenditure.

Optimality theory of taxation

Optimal theory is the branch of economics that focuses on the management of taxes to give a minimal weight of cost or provide the best results with regard to social welfare (Hellerstein, 1997). He opines that most governments require revenue over and above the amount generated from a non-distorted tax system. Many economists have tried to correlate tax optimality with the functions of social welfare which reveal the economic expression of equality as being overwhelmingly valuable. These economists argue that

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when individuals experience reduced income flows, the best redistribution mechanism of income for the society is the progressive tax system (Holcomb and Sobel, 1997). They present two optimal tax models which are the Ramsey Rule and the Laffer curve. Based on these models and given the gap between revenue needs of government and the deficiencies in tax revenues, each of these models can be applied to generate the optimal tax rate expression. Optimality is considered in terms of (a) efficiency in costs of taxation in relation to revenue constraints as is the case of the Ramsey Rule; or (b) the maximization of revenue as is the case in Laffter Curve.

Models of Optimal Taxation

There are two famous models of optimal taxation. These are: the Ramsey Rule and the Laffer curve. The Ramsey model is built on rules and functions specified by Ramsey (1927), who states that excess tax burden could be reduced by making the ratio of tax rates to be inversely proportional to price elasticity of demand for two products. This model is based on the belief that government attempts to reduce the excess tax burden (efficiency loss) depending on a given revenue requirements. The "optimal" tax rate, based on the Ramsey Rule, is that rate which reduces the excess burden of taxation while still generating the amount of revenue required.

The economist Arthur Laffter developed the Laffer curve model of optimal taxation. The assumption of this model is that government desires to generate most possible revenue with no regards whatsoever to efficiency losses resulting from taxation (Brennan and Buchanan, 1977). The limiting factors on desperate revenue generation will normally come from constitutional constraints and recent legislations – this is referred to the "Leviathan" model of government. The Laffer curve is built on the premise of inverse relationship which exists between the rates of tax and tax bases and how this relationship impact tax revenue. The curve shows that the optimum tax rate is not always the highest tax rate – it means that a reasonably lower tax rate may eventually raise more tax revenue than a higher tax rate (Brennan and Buchanan, 1977).

Tax Base and Tax Rate Structure

Taxes may be classified by tax base or according to the way the rate varies with income.

Tax Base: Attempt has been made to define tax base as a collective value of taxable items. Taxes may be based on income, capital, profits, consumption etc. Therefore, there is room for definitional crisis. Personal Income Tax and Company Income Tax are examples of taxes based on income, while petroleum profit tax is an example of a tax based on profits. In principle, capital gains tax is also a form of tax on value appreciation of capital. The tax base of capital gains tax is the appreciation in value accruing to an investment over time (James and Nobes, 1978).

Value added tax and excise duties are examples of taxes on expenditure. It would

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be possible to further divide these tax bases into those from sources of income and those from uses of the income. Taxes on income and taxes on Capital gains are the examples of taxes based on income sources while value added tax is an example of tax based on the use of income. It could also be considered based on the relationship between the amount of tax and the size of the tax base. Poll tax is the only tax whose size bear no relationship to the tax base except the tax payer, for example a N1,000.00 tax per person throughout the population. The size of a tax base is crucial to the degree of tax yield. If the yield of a tax is small, it can only have a small effect on aggregate demand, regardless of its advantages in other respects. Income/Profits taxes are taxes that have a wide base that could be broadened for increase tax yield.

Tax Rate: This is a charge per assessed units of tax liability; it constitutes the proportion of the tax base that the tax payer contributes to the government. In other words, tax rate is the description of the amount of tax, which is levied per unit of the tax base. It is usually expressed as a percentage of the taxable unit. Hence, the total amount of the tax is expressed in terms of the unit (base) as a multiple of the rate:

$$B \times R = T$$

$$R = {}^{T}/_{B}.$$

Where:

R = the tax rate

B = the tax base

T = the amount of tax (Oriaku, 2004).

The rate at which government fixes taxes determines the amount of revenue government can generate there from. James and Nobes (1978) maintain that as direct taxes are assessed on individuals' income, marginal and average rates of taxes can be charged based on the size of the individual's tax base. Some other classification of Taxes can be according to the variation of the rate with income. Progressive taxes attract more portion of the income as the income increases. For example, the current system of personal income tax in Nigeria. In a progressive tax system, the marginal tax rate will always go above the average tax rate. This fact causes the increase in average tax rate. Government has power to vary the rate of taxes to generate increased revenue and still ensure stabilization of the economy.

Buoyancy and Elasticity of aTax

The productivity of a tax system is often assessed through two common measures; its buoyancy or its elasticity or both. These terms were designed specifically to highlight the factors responsible for an increase in the tax yield over time (Oriaku, 2004). He further enunciates the findings in Osoro (1993) that two factors are responsible for the growth in tax revenues:

1. The intention to raise more revenue by adjusting the same tax base or
2. Expanding the base while the tax rate remains fixed.

Tax can grow in response to GDP in two ways: the growth based on which the expansion

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of the tax base on which tax is charged; and the growth as a result of discretionary changes in tax rates and tax requirements. The effect of these two growths is called the buoyancy of a tax. A buoyancy coefficient of 1.5 implies that in every 1% increase in GDP, revenue from the tax had on average contribution of 1.5%. Elasticity of tax measures the effect of the automatic growth without recourse to the discretionary changes in tax rates and tax requirements.

METHOD

The research adopts the survey inferential design. The design was adequate because it is concerned with identifying the actual situation and establishing the relationship existing among variables. This is necessary because of the fact that this study is purely non-experimental in the sense that the subjects used as samples for the research were not subjected to control and experimental groups and more so, they were not randomly assigned to the treatment levels. This study was rather aimed at finding out what relationship exists between the variables.

The study surveys income tax rates and revenue statistics in order to weigh and measure the degree to which income tax rates influence the amount of tax revenue generated in Nigeria within the specified period. The tax rates used are what is generally adopted by various agencies of governments in Nigeria concerned with tax assessment and collection especially the FIRS - the body saddled with the responsibility of assessing, collecting and accounting for all the federally collectable taxes in Nigeria.

The subject-matter of this research, "Impact of Income Tax Rates on Tax Revenue in Nigeria suggests that the relevant tax rates and revenue generated from sampled income taxes in the Federation (Federal Republic of Nigeria), over specified period, had to be looked into and made use of for the study. Thus, the aggregate annual revenue figures for 30 years and the corresponding tax rate for 30 years were collected for analysis. Nigeria was considered as a unit of elements where secondary data were collected from Central Bank of Nigeria, Economic and Financial Review Statistical Bulletin, National Bureau of Statistics' Nigeria Statistical fact sheets on Economic and Social Development, and from the Federal Ministry of Finance and Economic Development. Primary data were obtained through the use of questionnaire administered on respondents in the Federal Inland revenue Service (FIRS).

Both the purposive and the simple random sampling techniques were used in selecting the elements for the study. The purposive sampling technique was used to select a sample of 3 income taxes: Company Income Tax, Petroleum Profit Tax, and Domestic Crude Tax. The reasons for the choice of these taxes is that they are characteristically homogeneous, constitute the major income tax handles under the jurisdiction of the federal government and finally they are statutory taxes on income/profit. The simple random sampling method was used in selecting 45 respondents from three zones of the Federal Inland Revenue Service (FIRS) in which we administered with the questionnaires. That is, 15 respondents were selected from among senior officers from each zonal headquarters of the FIRS.

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Based on the theoretical expectations, the Karl Pearson's Product Moment Correlation analysis was employed, and carefully evaluated in analyzing the data obtained for the study. Pearson's Product Moment correlation coefficient (r) is a parametric statistical tool which assumes linearity in regression. In analyzing the data collected, the hypotheses tested include:

$H_0$1: There is no significant relationship between Petroleum Profit Tax (PPT) Rate and Petroleum Tax Revenue in Nigeria

The model is given as

$$r_{pv} = \frac{n(\sum pv) - (\sum p)(\sum v)}{\sqrt{\left[n\left(\sum P^2\right) - \left(\sum P\right)^2\right]\left[n\left(\sum V^R\right) - \left(\sum V\right)^2\right]}}$$

Where:

r = the (product moment) correlation of Petroleum Profit Tax Revenue on Rates of the Petroleum Profit Tax (PPT)

p = Rates of the PPT sampled.

v = Revenue from Sampled PPT

n = number of years sampled.

$H_0$2: There is no significant relationship between company income tax (CIT) rates and company income tax revenue in Nigeria

The model is given as:

$$r_{CV} = \frac{n(\sum cv) - \left(\sum C\right)\left(\sum V\right)}{\sqrt{\left[n\left(\sum C^2\right) - \left(\sum C\right)^2\right]\left[n\left(\sum V^2\right) - \left(\sum V\right)^2\right]}}$$

Where:

r = the (product moment) correlation of company income tax revenue on rate of the companies Income tax (CIT).

c = rate of Companies Income Tax sampled.

r = revenue of Sampled tax

n = number of years sampled.

$H_0$3: There is no significant relationship between tax rate on indigenous firms producing crude oil in Nigeria and Tax Revenue in Nigeria.

The model is given as

$$r_{tv} = \frac{n(\sum tv) - \left(\sum t\right)\left(\sum v\right)}{\sqrt{\left[n\left(\sum t^2\right) - \left(\sum t\right)^2\right]\left[n\left(\sum V^2\right) - \left(\sum V\right)^2\right]}}$$

where:

r = the (product moment) correlation of tax revenue on rate of the tax on indigenous oil firms.

t = rate of indigenous firm's tax sampled.

v = revenue of sampled tax.

n = number of years sampled.

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RESULTS AND DISCUSSION

Table 1 indicates the taxes and levies approved for collection by the three tiers of government in Nigeria. Tables 2 and 3 show the income taxes revenue collection in billions between 1986 and 2015; and income tax rate in percentage between the same periods. From table 4, the Petroleum Profit tax rate coefficient of determination (r^2) shows that petroleum profit tax rate (p) influences the value of tax revenue from petroleum profit tax income (v) up to 88 per cent. The remaining 12 per cent could be attributed to other factors (like values of assessment, tax evasion, and tax base that also influence the value of tax revenue. Thus, there is a substantial significant influence of the tax rate imposed by government on the amount of revenue realized from tax on petroleum profits. The value of the coefficient of correlation was tested for significance at 0.05 level of significance and at 18 degree of freedom (df) using students t-distribution for the coefficient of correlation. This is calculated using the formula:

$$t = \frac{r_{pv}\sqrt{n-2}}{\sqrt{1-r^2}}$$

Significant at 0.05 levels. $T_{p20} = 11.68$: $t_t = 2.306$. Based on this result the t value falls in the rejection region. Its value is 11.68 and is greater than the critical value 2.306. This indicates a significant positive relationship between PPT rate and tax revenue. The null hypothesis that there is no significant relationship between tax rate on indigenous firms producing crude oil in Nigeria and Tax Revenue in Nigeria was therefore rejected.

The null hypothesis from table 5 indicates that there is no significant relationship between the rate of tax charged on company income and tax revenue. The independent variable involved in this hypothesis is company income tax rate while the dependent variable is the tax revenue. In order to test this hypothesis the company income tax rates in Nigeria for twenty years were related to the tax revenues for the corresponding years. The result was correlated and interpreted. The total number of years sampled were 20 and the summation of the values of the companies income tax rates (Sc) and revenue (Sv) were 700 and 694 respectively. Square of the values of CIT (Sc^2) and revenue (Sv^2) were 25050 and 56768 respectively while that of Scv was 20213. The correlation coefficient r was -0.96 while the coefficient of determination of the correlation coefficient of company income tax rates and revenue (rcv) was 92%.

The calculated t-test value, which falls in the rejection region, was -14.55 and was found to be less than the critical value t_t 2.306 with 18 degrees of freedom at 0.05 level of significance was therefore significant ($T_{c0.05 = -14.55,}$ df = 18 < $t_{t0.05}$ = -2.306. This result means that there is a significant inverse relationship between companies' income tax rate and companies' income tax revenue. More so, the statistical significance of the relationship is splendid based on the decision criteria, confirming the significance of the relationship. The null hypothesis that there is no significant relationship between the rate of tax charged on company income and tax revenue was therefore rejected.

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The null hypothesis from table 6 states that there is no significant relationship between tax rate on indigenous firms producing crude oil and tax revenue in Nigeria. The independent variable involved in this hypothesis is the tax rate on indigenous oil firms producing crude in Nigeria while the dependent variable is the tax revenue. Testing this hypothesis was made possible by relating tax rates levied on indigenous oil firms in Nigeria for twenty (20) years with the tax revenues for the corresponding years. The data obtained were subjected to Pearson Product Moment Correlation statistical test. The result was correlated and interpreted. The result of the analysis showed that the correlation coefficient (r) was 0.93 while the coefficient of determination (r^2) shows that the rate of tax levied on indigenous oil producing firms (t) influenced the value of tax revenue (v) up to 86 per cent. The remaining 14 per cent could be attributed to other factors (values of tax assessment, collection procedures and tax policy) that influence the value of tax revenue.

The result of the analysis showed that tax rate on indigenous firms t-value calculated was 10.73 and was found to be significant at the rejection region $t_{t\,0.05}$ 10.73 > $t_{t\,0.05}$ 2.306 at 0.05 significance level at 18 degrees of freedom. The calculated t-value was greater than the critical value hence the result was very significant. This means that the tax rates adopted in the country for assessing and collecting income tax revenue from indigenous oil producing firms influenced the value and amount of revenue realized in different ways from what it would have been if different set of rates of tax were adopted. In other words, the rate of tax imposed on indigenous oil producing firms has significant influence on the volume of revenue generated thereof. The null hypothesis that there is no significant relationship between tax rate on indigenous firms producing crude oil and tax revenue in Nigeria was therefore rejected.

Each tax rate was correlated with the respective tax revenue to see the effect the rate will have on revenue. In hypotheses 1 and 3 where we have $r_{PV} = 0.94$ and $r_{tv} = 0.93$ respectively. In these cases, the variables were correlated to determine their impact on revenue and the result showed that petroleum profit tax rates and tax rates imposed on indigenous oil producing firms have positive influence on tax revenue. In hypothesis two we have $r_{cv} = -0.96$ which indicates a negative correlation with tax revenue. The findings indicate that there exist a significant relationship between petroleum profit tax rates and tax revenue. In other words, the ability of the country to generate tax revenue from petroleum profit taxation is significantly influenced by the petroleum profit tax rate adopted by government in any given fiscal year.

Companies' income tax rates when correlated with tax revenue showed a negative correlation or had an inverse relationship with tax revenue as shown in the coefficient of correlation between the variables. The overall result however, shows a significant inverse relationship between companies' income tax rate and revenues. This means that in Nigeria, companies' income tax rates and revenue are inversely related. This means that the lower the tax rate, the higher the revenue generated from tax and vice versa.

The rate of tax levied on indigenous oil producing firms in Nigeria strongly influence the amount of tax revenue the nation got from that source. That is to say, that the revenue generating strength of the federation from petroleum activities is further enhanced by the

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tax rates imposed on indigenous oil producing firms and adopted by government and tax assessment and collection agencies respectively. This explains the significant positive relationship between tax rate on indigenous oil producing firms and revenue as shown by the result.

The copies of the questionnaire were administered to personnel of the Federal Inland Revenue Service as respondents to obtain information on what they consider useful factors to ginger increased and effective revenue collection. Most respondents agreed that tax rates do determine the amount of revenue realized from taxation. They were equally of the opinion that income tax rates are not used in isolation for revenue determination. They submitted that broadening of the tax bases, favourable business and political climates, adequate motivation for revenue agencies' staff and officers are other factors used with optimum tax rates as judgments factors for increased tax revenue.

Table 2: Income taxes revenue collection between 1986 and 2015 (₦ = Billion)

Year	Petroleum Profit Tax ₦	Companies Income Tax ₦	Indigenous Oil Producing Firms Tax ₦
1986	4.81	1.10	3.30
1987	12.50	1.20	6.52
1988	16.81	1.60	13.01
1989	40.60	1.90	28.53
1990	56.91	2.90	44.98
1991	69.62	3.80	44.05
1992	86.48	5.40	11.26
1993	69.21	9.60	10.29
1994	42.80	12.30	11.74
1995	42.86	21.90	28.17
1996	96.67	22.00	33.21
1997	88.57	26.00	46.82
1998	78.00	37.30	66.60
1999	379.30	56.20	56.10
2000	685.10	71.10	106.40
2001	759.20	84.70	151.55
2002	392.20	89.10	334.20
2003	683.50	114.80	386.40
2004	939.30	113.00	635.40
2005	1,352.50	140.30	857.21
2006	1,352.20	244.90	912.53
2007	1,132.00	275.30	816.31
2008	2,060.70	290.67	868.61
2009	934.40	295.72	967.49
2010	1,480.36	2,028.70	749.86
2011	3,070.59	297.52	786.48
2012	234.23	298.46	711.01
2013	2,666.34	299.01	778.00
2014	2,453.95	2,999.01	861.53
2015	2,178.43	1,063.37	987.88

Source: Central Bank of Nigeria Statistical Bulletin of various years

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Table 3: Income tax rates (in percentage) between 1986 and 2015

Year	Petroleum Profit Tax Rates ₦%	Companies Income Tax Rates ₦%	Indigenous Oil Producing Firms Tax Rates ₦%
1986	75	45	55
1987	75	40	55
1988	75	40	55
1989	75	40	55
1990	85	40	65
1991	85	40	65
1992	85	35	65
1993	85	35	65
1994	85	35	65
1995	85	35	65
1996	85	30	65
1997	85	30	65
1998	85	30	65
1999	85	30	65
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2004	85	30	65
2005	85	30	65
2006	85	30	65
2007	85	30	65
2008	85	30	65
2009	85	30	65
2010	85	30	65
2011	85	30	65
2012	85	30	65
2013	85	30	65
2014	85	30	65
2015	85	30	65

Source: (i) Federal Inland Revenue Service (FIRS).

(ii) http://www.nationssencyclopedia.com/Africa/Nigerian-taxation

Table 4: Pearson product moment correlation analysis results of the relationship between petroleum profit tax rates and tax revenue in Nigeria n = 30

Variables	Σp Σv `000,000	Σp^2 Σv^2 `000,000	Σpv `000,000	R
Petroleum Profit Tax Rates	1650	136500	418244	0.94*
Revenue from tax income	4765	3029283		
Substantively significant		$r_{30} = 0.94$ $r^2 = (0.94)^2 = 0.8836 = 88\%$		
Significant at 0.05 level = $t_{c\ 18} = 11.68 > t_{t\ 18} = 2.306$				

Source: Authors' computation

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Table 5: Pearson product moment correlation analysis results of the relationship between companies income tax rates (CIT) and tax revenue in Nigeria. n = 30

Variables	Σc	Σc^2	Σcv	R
	Σv	Σv^2		
	`000,000	`000,000	`000,000	
CIT Rates	700	25050		
			20213	-0.96*
Revenue from CIT.	694	56768		
Substantively significant	$r_{20} = -0.96$	$r^2 = (-0.96)^2 = 0.9216 = 92\%$		
Significant at 0.05 level = $T_{c18} = -14.55 > t_{t18} = -2.306$				

Source: Authors' computation

Table 6: Pearson's product moment correlation analysis results of the relationship between tax rate on indigenous oil producing firms and tax revenue in Nigeria n = 30

Variables	Σt	Σt^2	Σtv	R
	Σv	Σv^2		
	`000,000	`000,000	`000,000	
Tax Rates on Indigenous Oil Firms	1250	78500		
			138985	0.93
Revenue	2023	687653		
Substantively significant	$r_{20} = 0.93$	$r^2 = (0.93)^2 = 86\%$		
Significant at 0.05 level: $T_{c18} = 10.73$ $t_{18} = 2.306$ $T_{c\,0.05} = 10.73 > t_{0.05} = 2.306$				

Source: Authors' computation

CONCLUSION AND RECOMMENDATIONS

The study focused on the impact of income tax rates on tax revenue in Nigeria. It examines income tax rates and revenue profile of the Federation for twenty years with a view to establishing whether income tax rates have any significant relationship with tax revenue. This was aimed at evaluating whether income tax rates adopted in the country was capable of generating sufficient revenue needed by government to meet its obligations to the citizenry. The study assesses whether government will be better economically by introducing appropriate income tax rates or replacing existing ones due to their speculated adverse effect on revenue. From the findings of this study it was concluded that petroleum profit tax rates and tax rates imposed on indigenous oil producing firms have strong and positive relationship with tax revenue. It is also concluded that companies' income tax rates has significant inverse relationship with tax revenue. Meaning the higher the tax rate, the lower the revenue generated from tax and vice versa. The study further concludes that the ability of a country to generate adequate revenue from taxation is significantly influenced by the rates imposed by the government in any given fiscal year.

Based on the findings from the study, the following recommendations become imperative for ensuring increased tax revenue generation in the country and the desired growth of the national economy:

i. Companies' income tax rates should be systematically reviewed downward. If the CIT rate is reviewed downward, compliance level will increase, more revenue

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will be realized, and tax evasion and avoidance will be discouraged and curtailed. Conducive environment for business growth and productivity will be encouraged and consequently, government tax objectives will be achieved.

ii. Since the ability of the nation to generate adequate revenue from taxation is significantly influenced by the tax rates imposed by the government, it is recommended that contrary to the erstwhile practices of obsolete tax laws and rates in the country, there should be a systematic review of tax laws, rates and tax base broadening as well as other tax related issues to align with the macroeconomic target of promoting increased tax revenue generation and efficient fiscal policy.

iii. A corrupt-free tax system as well as efficient tax administration machinery with tax personnel who are adequately trained, well-equipped and motivated will accelerate the nation's desire to make appreciable progress in tax revenue generation. Therefore, government should create and facilitate tax administration machinery that has an effective redress and refund system so that tax personnel would have a sustained sense of fulfillment and work with renewed zeal. This will check corruption, thereby ensuring increased revenue generation.

iv. Nigeria's history of oil-related revenue flow fluctuations suggests that it is time for the country to seriously consider the diversification of its revenue sources and revenue structure. It is recommended that the government should explore the potentials of such broad-based revenue source as income taxes. This will ensure stability, sustainability and predictability of revenue generation processes.

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