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Original Research Article

Tax Revenue and Economic Growth in Nigeria: Evidence from Nigeria

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Abstract
Based on mixed findings from prior research works on tax revenue and economic growth in Nigeria, this study was conducted to unravel Real Gross Domestic Product’s response to tax Revenues. The dataset was gleaned from the Central Bank of Nigeria Bulletin and the Federal Inland Revenue Service Website from 2008 to 2019. The independent variables of tax revenues were regressed against the dependent variable, economic growth, using the real gross domestic product as a proxy. The results of multiple regressions carried out by the Ordinary Least Square statistical technique showed a significant positive statistical relationship with real gross domestic product except for Value Added Tax that showed a negative and statistically insignificant relationship at a 5% level of significance. In view of the findings and the current precarious oil market prices, it was recommended that the government should increase the tax base through the provision of infrastructures that will enable more businesses to thrive while accountability and transparency should be pursued to avoid massive revenue diversification to personal pockets of some corrupt tax officials.

Keywords: Tax Revenue, Real Gross Domestic Product, Economic Growth, Tax Policy, Petroleum Profit Tax.

JEL Classification Codes: H3, H20, F43, H50

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1 INTRODUCTION

Tax revenue is a familiar global concept that drives the economy of every nation. Its spectacle of global significance is obvious because it is a strong financing factor in every economy in the world (Oboh & Isa, 2012). As a compulsory charge imposed and empowered by the government Decree, Acts or Laws on the income and properties of individuals and companies, tax is an unrequited payment (Omotoso, 2001). The implication is that the taxpayers should not expect a reciprocal service from the government as a condition for tax payment. Okpe (2000), in corroboration, averred that tax payment is not for the direct exchange of goods and 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 such as high level of employment, stable prices, the rapid growth of the gross national product, a favourable balance of payments position and promotion of a free market economy (Onoh, 2013). This statement agrees with the submissions of Anthony (2016), which state that tax payments should be compulsory, non-negotiable, binding and essential for all citizens of a country despite religious and or social standing. Scholars attribute the level of economic growth and development of any economy to the amount of tax revenue generated (Libabatu, 2014; Kiabel & Nwokah, 2009; Vincent, 2001). Tax revenues come from direct and indirect sources. Avi-Yonah and Margalioth (2007) observed that two-third of the total tax revenue generated in developed countries come from direct tax, unlike the developing countries where more significant revenues come from indirect tax. This can be traced to the existing bottlenecks that trail tax administration in Nigeria and proof in the recent increase in Nigeria’s value-added tax rate from 5% to 7.5% on 1st February 2020. Extant literature has shown that a country’s tax system is a significant determinant of the macroeconomic indices for developed and developing economies; hence, there exists a relationship between the tax structure and the level of economic growth. However, much as tax is viewed as a strong economic indicator, its administration determines its level of compliance and its effectiveness and efficiency as a growth indicator. As opined by Allenk and Kommer (2000), the law requires that the primary function of tax administrators is to assess and collect taxes. Where this function is not strictly performed, tax evasion and avoidance cases would assume a ceiling level, thereby leading to low revenue generation with its negative consequences on the growth of the economy.

1.1 Statement of the Problem

Following the precarious price situation in the oil market and the attendant glut, foreign earnings from this primary income source have fallen, and the Nigerian economy has not been on the real growth path. The federal government’s various economic recovery programs have not brought solution to the chaotic situation that increases by the day. This condition has brought a paradigm shift, leaning on tax revenues as the panacea to financing the increasing fiscal deficits. Findings from prior studies indicate that an
effective tax systems is essential for promoting economic growth and vital for achieving macroeconomic goals in Nigeria. However, scholars have given conflicting and inconclusive findings on the outcome of tax revenue on economic growth. While some documented that tax revenues have a positive effect on the Nigerian economy's growth, other scholars established a negative association, while others identified the existence of both negative and positive effects between tax revenue and economic growth. Besides the differences in findings, some of the studies' currency has been affected by economic vagaries.

Given these circumstances, it is difficult to reconcile the different shades of opinion on the effect of tax revenue on the growth of the Nigerian economy. As a result of this existing gap, this paper seeks to examine the response of tax revenue on the real gross domestic product in Nigeria. It is believed that this research will contribute to the existing literature on tax revenue and economic growth in Nigeria and other developing countries.

Against the background of the problem identified above, the objectives of these studies are to: examine the relationship between petroleum profit tax and real gross domestic product; evaluate the relationship between company income tax revenue and real gross domestic product; ascertain how customs and excise duties revenue relate with real gross domestic product and assess the relationship between value added tax revenue and real gross domestic product.

2 LITERATURE REVIEW

The Concept of Taxation

Taxation can be defined as a system of taxing or executing the collection of taxes by the authorities while tax is a compulsory payment made by citizens of a country without recourse to immediate commensurate return. It is a burden that is mandatorily borne by citizens to sustain the government who invariably has certain functions to perform for the citizens' benefits (Nwezeaku, 2005). According to the Institute of Chartered Accountants of Nigeria (2006) and the Chartered Institute of Taxation of Nigeria (2002), tax is defined as an enforced contribution of money, enacted pursuant to legislative authority. Tax is given a legal backing by enabling statute, Decree, Act or law without which it has no valid position and thus not a charge. Tax is charged based on income, profit, or wealth such as salaries, business profits, interest, dividends, Commissions, royalties, capital gains and rent. Given these various incomes, Orji (2001) defines tax from the structure of the tax system into two forms which are based on mode of payment and incidence. The first form consists of proportional, progressive and regressive systems while the second form consists of direct and indirect tax. Direct tax includes personal income tax, companies’ income tax, capital gains tax, petroleum profit tax and education tax. Indirect taxes are taxes on goods and services, that is consumption taxes such as value added tax (VAT), stamp duties, excise duties and customs duties (Akrani, 2010). This study was conducted using selected aggregate record of tax revenue over the study period having regard to the petroleum profit tax (PPT), companies’ income tax (CIT), value-added tax (VAT) and customs and excise duties (CED) respectively.

2.1.1 Economic Growth

Economic growth from research literature has been viewed as a continuous increase in per capita national product or net national
output over time. Economic growth according to Dwivedi (2006) occurs when the rate of increase in output is more than the proportionate increase in the rate of population growth. In economic terms, growth takes place when a nation’s production possibility frontier shifts forward; an indication of a rising standard of living or a rise in average real income. Every government aims at operating at this level of economic performance, a neo-classical model credited to Solow (1956) which posits that growth is dependent on capital accumulation that is needed to finance investment.

Harping on this growth model, Nnanna (2004) documented that output growth correlates with capital accumulation, adoption of cutting-edge technology and efficiency in the using of resources. Economic growth also depends on financial institutions that can impact liquidity on the stock market, a window for economic growth.

Thus, economic growth occurs as the total output of goods and services produced in an economy over time increases (GDP) in real or nominal terms. However, leakages or black-market activities involving production that do not contribute to the total national output, such as production for family consumption, do not contribute to the GDP (Goossens, Mäkipää, Schepelmann, Isabel Kuhndt & Herrndorf (2007)).

2.2 Theoretical Review

Expediency Theory

This theory on taxation was propounded by a Tunisian born economist, Abdul Islahi Azim and validated by Mirrlees in 1971. The theory leans on the test of practicability, which every proposed tax policy should pass. It explains the economy, efficiency, and effectiveness of tax collection instrument. Its strong proposition is that tax rate adopted by the government should not be harmful to the taxpayer and by this, the government will realize much revenue from a higher compliance rate. According to Chigbu, Eze, and Ebimobowei (2011), this theory perceives taxation as a powerful policy tool that should be employed and effectively used to remedy macroeconomic and social ills of the state or society including income inequalities, regional disparities, and unemployment revenue mobilization. It is a taxation theory that has a relationship between tax liabilities and state activities, the imposition being very instrumental for financing state activities and then providing a basis for apportioning the tax burden between members of the society.

2.3 Empirical Review of Tax Revenue and Growth of Nigerian Economy

Various scholars have conducted several empirical studies to investigate the relationship between tax revenue and economic growth as proxied by the gross domestic product. While some of these studies found a positive and significant relationship, others established a negative or inverse relationship between the regressor and regressand. Okafor (2012) investigated the impact of income tax revenue on the economic growth of Nigeria 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 between 1981 and 2007. The regression result indicated a very positive and significant relationship between the components of tax revenue and the growth of the Nigerian economy. Owolabi & Okwu (2011) examined the contributions of
only value-added Tax (VAT) to the Development of Lagos State Economy between 2001 and 2005. The study carried out a regression analysis of each development indicator (infrastructural, environmental management, education sector, youth and social welfare, agricultural, healthcare, and transportation) on value-added tax revenue proceeds generated by Lagos State during the study period. Their finding revealed that revenue generated from Value Added Tax positively contributed to developing the respective sectors of the Lagos State economy during the period studied. In a related but foreign country based research study conducted by Haq-Padda and Akram (2011) on the impact of tax policies on economic growth employing data from Asian Economies for 1971 to 2007, results showed a negative relationship between tax policies and economic growth, a development that the Neo-classical growth Model best describes given that a higher tax rate does not encourage increase in economic growth rate. It was recommended that budgets should be financed with an optimal tax rate while permanent and transitory expenditures should be financed by imposing taxes and issuing debt instrument, respectively. Adereti, Sanni and Adesina (2011) investigated the effect of value-added tax on economic growth in Nigeria using time series data collected from the Central Bank of Nigeria between 1994 and 2008. The simple regression analysis and descriptive statistical method showed a positive and significant correlation between value-added tax revenue and gross domestic product. In a study carried out by Salti and Chabaan (2010) on the effect of the increasing rate of VAT with emphasis on poverty and inequality, an empirical model based on consumer theory of demand was adopted to study the impact. Simulation results indicated that an increased rate of VAT would have significant negative impact on poverty. The study established that due to the increased tax rate, a negative impact on overall consumption will further widen the gap between the rich and the poor. Ogbonna and Appah (2012) examined the impact of tax reforms on economic growth in Nigeria, using data collected from the Statistical Bulletin of the Central Bank of Nigeria (CBN) for 1994 - 2009. The study adopted descriptive statistics and econometric models such as the White test, Ramsey RESET test, Breusch Godfrey test, Jacque Berra test, Augmented Dickey-Fuller test, Johansen test, and Granger Causality test to analyze their study data. They found that tax reform variables such as petroleum profit tax, companies’ income tax, value-added tax, education tax, personal income tax, and custom and excise duties had a significant positive impact on economic growth in Nigeria. They concluded tax reforms improved government revenue. Scholars such as Umoru and Anyiwe (2013) investigated the correlation between the New National Tax Policy and economic growth in Nigeria, using the co-integration technique and error correction model to analyze data. They stated that taxes could be structured into direct and indirect, consisting of petroleum profit tax, companies’ income tax, education tax and personal income tax, customs and excise duties, and value-added tax for direct and indirect taxes. Their analysis revealed that direct taxation revenue had a significant positive relationship with economic growth, while indirect tax revenue had an insignificant but negative impact on economic growth in Nigeria. They concluded that Nigeria’s tax
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policy towards indirect taxation lacks justification; rather, the country should strengthen the structures of direct taxation.

Ihenyen and Mieseigha (2014) examined taxation as a financial instrument for economic growth using data obtained from the Central Bank of Nigeria for 1980 – 2013. They used corporate income tax and value-added tax as the independent variables and proxy for taxation. These were regressed against economic growth measured by gross domestic product (GDP), the dependent variable. The study employed the Ordinary Least Squares technique (OLS) data, and the results revealed that corporate income tax and value-added tax positively impacted gross domestic product. The researchers, therefore, concluded that taxation is an instrument of economic growth in Nigeria.

3 METHODOLOGY

This study adopted both ex-facto and exploratory research design. It is ex-post facto given that the relevant materials will be gathered from such sources as textbooks, journal articles, the internet etc. The validity of using the ex-post-facto is attested to the researchers’ inability to manipulate the data. Data for the study period 2008 – 2019 were extracted from the Central Bank of Nigeria (CBN) Statistical Bulletin and the Federal Inland Revenue Services (FIRS), Economic Reports, Annual Reports and Statement. The data were analyzed using the Econometric Model of Multiple Linear Regression and Ordinary Least Squares (OLS) regression techniques using the R statistical package. The justification for choosing the Ordinary Least Squares as a regression technique lies in its optimal efficiency, linearity, sufficiency, least variances, unbiased and least mean error. The macroeconomic data (components of tax revenue and gross real domestic products) employed in this study includes revenue from petroleum profit tax, company income tax, value-added tax, customs and excise duties and economic growth proxy by real gross domestic product between 2008 and 2019. Increased tax revenue is expected to have a direct effect on the gross domestic product. Hence, the model specification becomes:

\[ \text{RGDP} = f (\text{PPT}, \text{CIT}, \text{VAT}, \text{CED}) \]  

Its econometric expression becomes

\[ \text{RGDP} = \beta_0 + \beta_1 \text{PPT}_t + \beta_2 \text{CIT}_t + \beta_3 \text{VAT}_t + \beta_4 \text{CED}_t + \epsilon_t \]  

Where;

- RGDP = Real Gross Domestic Product (Proxy for economic growth)
- PPT = Petroleum Profit Tax
- CIT = Company Income Tax
- VAT = Value Added Tax
- CED = Customs and Excise Duties
- \( \beta_0 = \) Constant
- \( \beta_1, \beta_2, \beta_3, \beta_4 = \) Coefficients attached to explanatory variables
- \( t = \) Time Period
- \( \epsilon = \) Stochastic Error Term

According to Koutsoyiannis (2001), model evaluation involves ascertaining the theoretical usefulness and statistical satisfaction of the parameters used. This has to do with evaluating the results of this study using the Economic Apriori criteria. In doing this, the signs and magnitude of the parameters were examined to determine whether they fit together with the assumptions of economic theory. The economic criterion will be determined using the Ordinary Least Square Technique, which consists of the test of R-Square, T-test and F-test to verify the order of integration of each variable. Further tests
that will be carried out involve the R-Square test, which is used to measure the goodness fit of the model to evaluate the statistical reliability of the estimated parameters. The student t-test will also be carried out on the parameter estimates to test for significance of individual parameter estimates, conducted at a 5% level of significance. Further to these is the F – test which determines the overall adequacy of the regression line. It shows whether the explanatory variables' joint impact has a significant influence on the dependent variable. If \( f^* > 0.05 \), we reject the null hypothesis and accept the alternative; otherwise, we accept the null hypothesis and reject the alternative.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Standard deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>62,226.17</td>
<td>46,613</td>
<td>71,604</td>
<td>8,391.14</td>
<td>12</td>
</tr>
<tr>
<td>PPT</td>
<td>11,414.96</td>
<td>1,183.6</td>
<td>32,010</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>CIT</td>
<td>507.61</td>
<td>113</td>
<td>847.5</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>VAT</td>
<td>324.27</td>
<td>117.70</td>
<td>438.30</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>CED</td>
<td>1,224.58</td>
<td>199.78</td>
<td>1,967</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

**Source:** Regression Result using SPSS

4. PRESENTATIONS AND ANALYSIS OF RESULT

The descriptive statistics presented in table one comprises the variables, mean, minimum, maximum, standard deviation and the number of observations. It shows the result of the data used to estimate the relationship between the predictor variables and real gross domestic product in Nigeria from 2008 to 2019.

From table one, it can be observed that between 2008 and 2019, petroleum profit tax realized an average of N11,414.90 billion naira while company income tax, value-added tax and Customs and Excise Duties realized average revenues of N507.61, N324.27 and N1, 224.58, respectively. On the comparative, RGDP (Real Gross Domestic Product) realized an average of N62,226.17 billion within the study period, and the maximum RGDP is N71, 604. A comparative assessment between the mean and the maximum values of the dependent and independent variables of the study shows a significant difference; the maximum values are greater than the mean values. This indicates that real gross domestic product, petroleum profit tax, company income tax, value-added tax and customs and excise duties are averagely low in Nigeria between the study periods. However, the real gross domestic product can be taken to be substantial on the average, an indication that the economy has been on the growth path over the period, but the predictor variables cannot be said to have been undergoing growth given their extreme low values.
Table 2: Regression Result

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>T- Statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONSTANT</td>
<td>4.856 x 10^4</td>
<td>2.39 x 10^3</td>
<td>20.317</td>
<td>1.75 x 10^{-7}</td>
</tr>
<tr>
<td>PPT</td>
<td>1.679 x 10^{-1}</td>
<td>7.072 x 10^{-2}</td>
<td>2.374</td>
<td>4.929 x 10^{-2}</td>
</tr>
<tr>
<td>CIT</td>
<td>2.602 x 10^{-1}</td>
<td>3.35</td>
<td>7.766</td>
<td>1.1 x 10^{-4}</td>
</tr>
<tr>
<td>VAT</td>
<td>-1.569 x 10^{-1}</td>
<td>7.795</td>
<td>-2.013</td>
<td>8.401 x 10^{-2}</td>
</tr>
<tr>
<td>CED</td>
<td>2.949</td>
<td>0.8254</td>
<td>3.572</td>
<td>9.07 x 10^{-3}</td>
</tr>
</tbody>
</table>

Source: Regression Results using SPSS

Multiple $R^2 = 0.9791$
Adjusted $R^2 = 0.967$
F- Statistic = 81.8
P- Value 5.887 x 10^{-6}
Durbin- Watson 1.686

The regression analysis results carried out to convey the relationship between the predictor variables and the dependent variable shown in table two. The outcome of the analysis shows that R-Squared with its adjusted value and F-Value are all imposing. From the analysis, over 96% of the variations in the dependent variable (RGDP) are explained by the predictor variables. Only 4% can be attributable to other exogenous or stochastic errors. The Durbin- Watson test shows that there is no auto autocorrelation among the predictor variables.

An evaluation of the individual predictor variables’ contributions to the real gross domestic product for the period as set out in table two shows that petroleum profit tax, company income tax and customs and excise duties all contributed to the growth of the economy, passing the 5% significance test except the value Added tax which was not significant at 5% but significant at 10%.

Table 3: Test of Hypotheses

<table>
<thead>
<tr>
<th>Variables</th>
<th>P- Values</th>
<th>Critical Value</th>
<th>Decision</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPT</td>
<td>0.04929</td>
<td>0.05</td>
<td>Reject</td>
<td>Statistically significant</td>
</tr>
<tr>
<td>CIT</td>
<td>0.00011</td>
<td>0.05</td>
<td>Reject</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>CED</td>
<td>0.00907</td>
<td>0.05</td>
<td>Reject</td>
<td>Statistically Significant</td>
</tr>
<tr>
<td>VAT</td>
<td>0.08401</td>
<td>0.05</td>
<td>Accept</td>
<td>Statistically insignificant</td>
</tr>
</tbody>
</table>

Source: Regression Result using SPSS.

Test of Hypotheses
The following specified rules are applied in the test of hypotheses which are stated in chapter one. The decision rule rejects the null hypothesis if p-value < critical value and accepts the null hypothesis if the p-value > critical value.

Hypothesis One: There is no significant relationship between petroleum profit tax revenue and real gross domestic product.

Hypothesis Two: There is no significant relationship between company income tax revenue and real gross domestic product.
P-Value is 0.00011 compared with critical value of 0.05 (0.00011 < 0.05). The null hypothesis was also rejected to conclude a significant relationship between company income tax and real gross domestic product.

**Hypothesis Three:** There is no significant relationship between customs and excise duties revenue and real gross domestic product.

The result in table two shows that P-Value to be 0.00907, and the critical value is 0.05 (0.00907 <). The null hypothesis was rejected, and we conclude that real gross domestic product and customs and excise duties have a significant relationship.

**Hypothesis Four:** There is no significant relationship between value-added tax revenue and real gross domestic product.

P-Value is 0.08401 while the critical value is 0.05 (0.08 401 > 0.05). The null hypothesis was accepted, and we conclude that there is no significant relationship between Value Added tax and real gross domestic product.

**5 Conclusion and Recommendations**

The study carried out an empirical examination on the response of real GDP to tax revenue as related to economic growth in Nigeria. The predictor variables included in the study were petroleum profit tax, company income tax, value-added tax and customs and excise duties. All the variables except value-added tax were statistically significant, and the regression result showed a strong positive relationship. The implication is that petroleum profit tax, company income tax and customs and excise duties contributed to the growth of the Nigerian economy as supported by previous studies (Ogbonna & Appah, 2012; Umoru & Anyiwe, 2013). However, the result of value-added tax opposes the findings of Owolabi and Okwu (2011), which states that there is a significant relationship between value-added tax revenue and the gross domestic product of Nigeria but agrees with the submissions of Salti and Chabaan (2010).

**Recommendations**

Based on the findings of this study, the following recommendations were made:

1. The government should judiciously use the tax revenue to provide infrastructures and create job opportunities to increase the tax base.
2. Tax administrators should intensify effort to ensure that value-added tax revenue is collected correctly and accounted for.
3. Following the current precarious price of oil revenue in the international market, the country's revenue base should be urgently diversified for increased revenue as more taxes will be realized.

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Inter-American Center of Tax Administrations


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