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## TAX REVENUE AND ECONOMIC GROWTH IN A DEVELOPING ECONOMY: EVIDENCE FROM NIGERIA

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### ABSTRACT

*This study examined tax revenue as a catalyst for economic growth, with emphasis on Nigeria's economy from 1990- 2019. Primarily, the study examined the contribution of various components of tax revenue, including petroleum profit tax (PPT), company income tax (CIT), customs excise duties (CED) and value-added tax (VAT) on economic growth, using multiple regression model. Data were sourced from Central Bank of Nigeria statistical bulletin and Federal Inland Revenue Service, while Ordinary least square regression model was used to determine the effect of tax revenue (proxied by PPT, CIT, CED and VAT) on economic growth (represented by GDP). The study found that there is a significant effect of tax revenue on Nigeria's economic growth. Specifically, CED and VAT exert negative effects on Nigeria's economic growth; while CIT and PPT had positive effects on economic growth in Nigeria. Based on the findings, the study recommends among others that tax revenue base should be expanded by bringing more individuals and corporate bodies into tax net. Finally, corruption in the Nigerian tax administration should be brought to the barest minimal to ensure that adequate tax funds are remitted from all sectors of the Nigerian economy.*

Keywords: Diversifications, economic growth, tax revenue, tax system

### INTRODUCTION

Poor revenue base and inability to diversify same, is one fundamental challenge faced by most developing nations, including Nigeria. Diversifying a nation's sources of revenue is a necessity, due to the realization that dependency on earning from primary products cannot sustain public expenditure. This has led national economic planners and policy makers to contrive other means of raising funds for public expenditure. Taxation, a traditional means of public funding has become the last resort for most developing economies.

The drive for tax collection has thus gained substantial global significance. Tax is an instrument employed by the government to generate public funds. It is a required payment imposed by a government on income, profit or wealth of individuals, group of persons, and corporate organisations. The essence of a tax, as distinguished from charges by government, is the absence of direct quid pro quo between the taxpayer and the public authority. Okafor (2012) advocated the use of tax as an instrument of social engineering, to stimulate general or sectoral economic growth.

In that regard, taxing could have positive or negative effect on the individual, firm and government. In Nigeria, tax revenue account for a small proportion of total government revenue over the years. This is because the bulk of revenue needed for development purposes is derived from crude oil export. Crude oil export account for over 80% of Nigeria's total revenue, while the remaining 20%

is contributed by the non-oil sector. Ebieri (2014) mentioned two main sources of federal government revenue: oil and non-oil revenue. Oil revenue is revenue from crude oil and gas local sales and exports, receipts from petroleum profits tax and royalties, while non-oil revenue includes revenue from Companies' Income Tax (CIT), Custom and Excise Duties (CED), Valued Added Tax (VAT), Education Tax, Personal Income Tax (PIT), Levies, public debt, grants, etc.

A well-designed tax system help government in developing countries prioritize their spending, build stable institutions, and improve democratic accountability. The main purpose of taxation is to enable the public sector finance its activities so as to achieve expected economic and social goals (Brautigam, 2008). However, Musgrave (2004) comment that dwindling level of tax revenue generation in developing countries makes it difficult to use tax as an instrument of fiscal policy for achievement of economic development. Some governments like Canada, United States, Netherland, and the United Kingdom have substantially benefitted from the instrument of taxation.

Tax plays important roles in developed and developing countries. Therefore, this study intends to investigate the impact of tax revenue on economic growth in a developing economy with emphasis on the Nigerian economy. The specific objectives are to determine the impact of:

- 1) Petroleum profit tax on economic growth in Nigeria.
- 2) Company income tax on economic growth in Nigeria.
- 3) Custom excise duties on economic growth in Nigeria.
- 4) Value-added tax on economic growth in Nigeria.

The study is guided by the following null hypotheses:

Ho<sub>1</sub>: There is no significant relationship between petroleum profit tax and economic growth in Nigeria.

Ho<sub>2</sub>: Company income tax does not have significant impact on economic growth in Nigeria.

Ho<sub>3</sub>: Custom excise duties do not have significant impact on economic growth in Nigeria.

Ho<sub>4</sub>: There is no significant relationship between value-added tax and economic growth in Nigeria.

## LITERATURE REVIEW

### Concept of Tax Revenue

A tax is a liability imposed on individuals, groups of individuals, or other legal entities. It is a fiscal policy instruments through which governments raise funds to meet their financial obligations. The Institute of Chartered Accountants of Nigeria (ICAN, 2006) and the Chartered Institute of Taxation of Nigeria (CIT, 2002) defined tax as an enforced contribution of money to government pursuant to a defined authorized legislation. In other words, every tax must be based on a valid statute. Farayola (1987) assert that taxation is one of the sources of income for government used to finance or run public utilities and perform other social responsibilities.

There are three broad functions of tax: financial functions, social functions and economic functions. Tax provides means through which government act on their financial obligations such as providing public goods. Lyndon and Paymaster (2016) stated that tax acts as an instrument for eliminating certain unwanted social habits such as drinking and smoking. Where heavy tax rates are levied on unwanted social habits, the consumption of such habits reduce. Also, tax serves economic purpose of propelling economic growth through income redistribution. Therefore, tax is an important instrument of economic growth of any nation.

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**Concept of Economic Growth**

Economic growth is a sustained increase in gross domestic product (GDP) over a period of time. GDP which is a measure of the economy's total output of goods and services. Economic growth may be positive or negative. A positive economic growth implies that the economy exhibits increase in national output comparative to previous output. Negative economic growth describes shrinking and is associated with recession or depression of in the economy. While the former relates to a momentary decline in national output, the latter relates to a major economic crisis whereby the economy suffers greater degree of decline characterized by greater unemployment and low output (Todaro, 2012). Economic growth is the most powerful instrument for reducing poverty and improving the quality of life in developing countries, as it creates virtuous circles of prosperity and opportunity.

**Tax Revenue and Economic Growth**

Several studies have provided empirical explanations on the contribution of tax revenue to economic growth. Yet, only a few have conducted elaborate investigation by disaggregating tax revenue sources (see Okafor, 2012), and most studies used GDP as the measure of economic growth. Veronica (2012) researched on taxation of corporations and its impact on economic growth of EU countries. The study expected a negative relationship between corporate taxation and long-term economic growth. The study used a sample of 27 EU member countries for the period 1998 to 2010. The results showed positive impact of corporations and on economic growth.

Ibada (2015) examined indirect taxes and economic growth in Nigeria, using time series data of 34 years starting from 1981 to 2014. Results of the study showed that the VAT and PPT have positive significant correlation to real GDP. In addition, the study found that in two periods CED has a positive relationship with real GDP while VAT of two-period showed negative significant relationship with real GDP. Similarly,

Ihenyen (2014) examined taxation as an instrument of economic growth in Nigeria using annual time series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin from 1980 to 2013. A linear model of CIT, VAT and GDP was estimated using Ordinary Least Square (OLS) technique. The result suggests that the hypothesized link among CIT, VAT and GDP indeed exist in the Nigerian context. Thus, the result offer tantalizing evidence that taxation is an instrument of economic growth in Nigeria. In the study of

Pedro (2009) that probed the impact of income tax rates (ITR) on economic development of Botswana amidst argument between traditional and modern schools of thought on the level of tax that is needed for economic growth. Various parameters were taken into account including income tax rates, income tax revenue, total revenue and GDP of the country in the nominal and real value of money. The study showed that low income tax rates boost economic growth in Botswana.

In addition, Asiweh (2012) studied Nigeria Tax administration and its capacity to reduce tax evasion and generate revenue for development desires of the populace. The study used 121 online survey questionnaire containing 25 relevant questions; and found among others, that increasing tax revenue is a function of effective enforcement strategy which is the responsibility of tax administration. Nigeria lack enforcement machineries, including, adequate manpower, computers and effective postal and communication system. The study has clear practical implications for tax practitioners and policy makers in developing countries in particular.

Ofoegbu (2016) examined effect of tax revenue on economic development of Nigeria. The study aimed to ascertain if there is any difference in using human development index (HDI) and GDP in establishing the relationship. The study used annual time series data for the period 2005-2014 to estimate a linear model of tax revenue and human development index using ordinary least square (OLS) regression technique. Findings showed a positive significant relationship between tax revenue and economic development. The study also reveals that measuring the effect of tax revenue on economic development using HDI gives lower relationship than measuring the relationship with GDP thus suggesting that using GDP gives a painted picture of the relationship between tax revenue and economic development in Nigeria.

### **Theoretical Framework**

Several theories hypothesize links between taxation and economic growth. However, the socio-political theory of taxation serve as the baseline theory in this study. Socio-political theory of taxation states that social and political objectives should be the major factors in selecting taxes. In line with this theory, Ogbonna (2012) justified the imposition of taxes for financing state activities and for the provision of a basis for apportioning tax burden between members of a society. Ogbonna (2012) advocated that a tax system should not be designed to serve individuals, but should be used to cure the ills of society as a whole. The society is made up of individuals, but is more than the sum total of its individual members. Consequently, tax systems should be directed towards the health of the society as a whole, since individuals are integral part of the broader society (Appah, 2012).

## **RESEARCH METHODOLOGY**

This study focuses on examining the impact of tax revenue on economic growth in Nigeria. In line with previous studies, this study used GDP in its estimation of economic growth. The study adopted a descriptive research design. Descriptive studies measure and report phenomena as they occur, with any form of manipulation (Yomere, 1999). The study relied on recent secondary data obtained from the CBN and Federal Inland Revenue service covering 1990- 2019.

The Ordinary Least Squares (OLS) statistic was used to analyze the data. This statistical estimation technique guarantees that the estimates obtained are Best (Least Variance), Linear and Unbiased. The fulfillment of these properties is very essential to the study because if not guaranteed, the outcome of the study would be imprecise. However, in a bid to ensure that the model is evaluated, three stages of critique as proposed by Ojameruaye (2001) were employed. They are the theoretical stage of evaluation, the statistical or first order stage of evaluation, and the econometrical or second stage of evaluation.

### **Model specification**

The model of the study is premised on the Laffer curve theory of Arthur Laffer (1974). Specifically, the study adopted a multiple model by Okafor (2012), where the measures of tax revenue (PPT, CIT, CED and VAT) are determinants of economic growth (proxied by GDP). This is specified as:

$$\text{GDP} = f(\text{PPT}, \text{CIT}, \text{CED}, \text{VAT}) \quad (1)$$

In log-linear form equation (1) is stated as

$$\text{GDP} = \beta_0 + \beta_1 \text{PPT} + \beta_2 \text{CIT} + \beta_3 \text{CED} + \beta_4 \text{VAT} + \mu \quad (2)$$

Where: GDP = Gross Domestic Product (measure of economic growth)

PPT = Petroleum Profit Tax

CIT = Company Income Tax

CED = Custom Excise Duties

VAT = Value Added Tax

$\beta_0$  is the coefficient that measures the value of Y when all explanatory variables = 0

$\beta_1, \beta_2, \beta_3, \beta_4$  are parameter estimates; and  $\mu$  = Stochastic disturbance term

### A-priori Expectations

From the specified model, tax revenue from petroleum profit, company income, excise duties and value added contribute positively to economic growth in Nigeria. This is premised on the Keynesian proposition that tax revenue provide government with funds to influence economic growth in an economy. This is mathematically stated as:  $\beta_1, \beta_2, \beta_3, \beta_4 > 0$ .

### Econometric Test

Diagnostic tests were done on the variables in the model. This includes pre and post estimation tests (Stationary Test, Johansen Co-integration Test).

### Decision Rule

Accept the null hypothesis ( $H_0$ ) if the P-value of the t-statistics is greater than P-value tabulated (i.e.  $P\text{-value}_{cal} > P\text{-value}_{tab}$ ) at 0.05 significant which is less than 95% degree of confidence, but not significant, reject the null hypothesis ( $H_0$ ) and accept the alternative ( $H_1$ ).

## DATA ANALYSES AND RESULTS

**Table 1: Analyses of OLS Regression**

Dependent Variable: GDP

Method: Least Squares

Date: 10/17/22 Time: 14:06

Sample: 1991-2019

Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.945176	2.566841	1.536977	0.1379
PPT	0.099335	0.120766	0.822542	0.4192
CIT	0.030976	0.479556	0.064592	0.9491
CED	-0.031430	1.166705	-0.026939	0.9787
VAT	-327.1166	376.4437	-0.868965	0.3938
R-square	0.136932	Mean dependent var		5.249643
Adjusted R-squared	-0.013166	S.D dependent var		6.492201
S.E of regression	6.534800	Akaike info criterion		6.752593
Sum of squared resid	982.1830	Schwarz criterion		6.990487
Log likelihood	-89.53630	Hannan-Quinn criter.		6.825320
F-statistic	0.912283	Durbin-Watson stat		1.963482
Prob(F-statistic)	0.473419			

GDP= 3.945176 ± 0.099335PPT + 0.030976CIT - 0.031430CED - 327.1166VAT S.E (2.566841) (0.120766) (0.479556) (1.166705) (376.4437)

T-statistic (1.536977) (0.822542) (0.064592) (-0.026939) (-0.868965)

Probability (0.1379) (0.4192) (0.9491) (0.9787) (0.3938)

$R^2 = 0.136932$  Adjusted R-squared = 0 - 0.013166 D.W = 1.963482

F-statistic = 0.912283

The results in Table 1 suggests that PPT, and CIT have positive linear effects on GDP (a measure of economic growth). This means that increase in PPT, and CIT by 1% will increase GDP by 99%, and 30% respectively, while CED and VAT have inverse linear effects on GDP. This implies that increase by 1% in either or both would lead to decrease in GDP by 31%, and 11.7% respectively.

The  $R^2$  which is the co-efficient of determination and goodness of fit suggests that 13.7% of change in GDP have been explained by PPT, and CIT taken together. This is not a good fit. Which suggests that PPT, and CIT alone have no significant effect on GDP.

The T test was used to test the statistical significance of the effect of each of the dimensions of the independent variable on the dependent variable. The T-test suggests that PPT with value of 0.8225542 and probability of 0.4192 is statistically significant in explaining changes in GDP.

Also, the F-test was used to test the significance of effects variables and to test the overall hypothesis with value 0.912283 and probability of 0.473419 suggests that PPT, CIT, CED and VAT are significant variables to be taken into consideration when explaining changes in GDP. This also, suggests the rejection of our null hypothesis. Furthermore, the DW test which was used to test for the presence or absence of first order serial correlation with value 1.963482 suggests the absence of serial correlation in the model.

The foregoing results showed that PPT play significant roles in determining rate of economic growth in Nigeria. This assertion was supported by both T-test and Ramsey Reset test results respectively. This implies that for there to be economic growth in Nigeria, PPT should be effectively and efficiently managed. The result also, showed that PPT and CIT taken together significantly influence level of economic growth in Nigeria as revealed by the OLS F-test results and as such, adequate attention should be given to these two variables. However, aside, PPT, CIT, CED and VAT do not individually impact economic growth significantly in Nigeria. This suggests poor or inadequate collection and remittance of tax revenue from tax authorities of both sectors.

Finally, the co-integration test reveals that proper utilization of revenue generated from PPT, CIT, CEO, and VAT will bring about long-term economic growth in Nigeria.

### Stationarity Test

**Table 2: Stationarity test at level using ADP**

Variables	95% Critical Value of ADF	ADF Test Statistic	Order of Integration
GDP	-3.548490	-5.270485	1(0)
PPT	-3.552973	-7.831656	1(1)
CIT	-3.603203	-4.485494	1(1)
CED	-3.552973	-12.33174	1(1)
VAT	-3.552973Z	-4.250486	1(1)

Source: Author's Computation (2022).

From the stationary test conducted using the ADF statistic the data series exhibit stationarity. This implies that engaging the data series in empirical processes will produce non-spurious results.

### Test for Co-integration

The co-integration results using both the Max-Eigen and trace tests are presented below:



**Table 3: Johansen Co-integration Test**

Hypothesized No of CE(s)	Probability value of Trace test	Remarks	Probability value of Max-Eigen test	Remarks
None *	0.0000	Co-integration	0.0001	Co-integration equation exists
At most 1	0.0166	Co-integration equation exists	0.3713	No Co-integration equation
At most 2	0.0203	Co-integration equation exists	0.1116	No Co-integration equation
At most 3	0.0691	No Co-integration equation	0.0639	No Co-integration equation
At most 4	0.3256	No Co-integration equation	0.3256	No Co-integration equation

Source: Author's Computation (2022)

From Table 3, the Trace and Max-Eigen tests reveal that there are three and one co-integrating equations respectively. By co-integration of the series, which were independently not stationary but have become stationary by virtue of linearly combining the series, hence, there is a long-run relationship among the data.

#### **Ramsey RESET Stability Test**

The Ramsey RESET test was conducted to ascertain whether the model specified is linear. The results are presented and analysed below:

**Table 4: Ramsey RESET Test**

	Value	Df	Probability
t-statistic	1 .066840	22	0.2976
F-statistic	1.138148	(1,22)	0.2976
Likelihood ratio	1.614087	1	0.2039
F-test summary:			
	Sum of Sq	Df	Mean squares
Test SSR	50.64466	1	50.64466
Restricted SSR	1029.588	23	44.76470
Unrestricted SSR	978.9435	22	44.49743

Source: Author's Computation (2022)

The t-statistic as well as the f-statistic are more than 5%. The null hypothesis cannot be rejected. Therefore the powers of the dependent variable (RGDP) have zero coefficients.

### **DISCUSSION OF FINDINGS**

This study focuses on examining the impact of tax revenue on economic growth in Nigeria. The results obtained from the statistical tests reveal that PPT is a positive contributors to economic growth in Nigeria. This result confirmed the report of Ibada (2016) that PPT revenue contributes positively to economic growth in Nigeria. Furthermore, it is revealed that petroleum profit has contributed significantly to economic growth in Nigeria. With respect to CIT, the result agrees

with Ihenyen (2014) that CIT has a positive impact on economic growth in Nigeria. Similarly, the significant contribution of CIT to GDP in Nigeria gains validation from the report that tax revenue is important to economic development (Ofoegbu, 2016).

Our findings also agree with Uniamikogbo (2017) that VAT showed a negative relationship but has significant impact on economic growth rate in Nigeria. The results obtained are reliable as the data series are stationary. There is neither type I nor type 2 errors in the parameter estimates obtained as there are absence of serial correlate on and heteroscedasticity. Thus, these results are germane to policy formulation on tax administration in Nigeria.

### **CONCLUSION AND RECOMMENDATIONS**

This study investigated tax revenue as a catalyst for economic growth in Nigeria from 1990-2019. Four research hypotheses were formulated based on four tax revenue sources (PPT, CIT, CED and VAT). The study examined how these four sources of tax revenue impact economic growth in Nigeria. A multiple regression model was specified to capture the impact of these four variables on GDP (a measure of economic growth). Data were obtained from the CBN Statistical Bulletin, and the Federal Inland Revenue Service. The model was estimated using the Error Correction Methodology to ensure that the regression results are non-spurious, owing to presence of unit root in the time series data. Pre diagnostic and post diagnostic tests were conducted to provide valid results. These include test of stationary, long run co-integration test and Ramsey RESET test.

The results obtained confirm that PPT is a positive contributor to economic growth in Nigeria. Furthermore, it is revealed that CIT contribute significantly to economic growth in Nigeria. Lastly, the results obtained reveal that CED and VAT have negative relationship but significant impact on economic growth in Nigeria from 1990-2019. The results obtained are reliable as the data series are stationary. There is neither type I nor type 2 errors in the parameter estimates obtained as there are absence of serial correlation and heteroscedasticity. Thus, these results are germane to policy formulation on taxation in Nigeria.

The results obtained from the study confirm that GDP growth rates in Nigeria between 1990 and 2019 significantly benefited from PPT, CIT, CED, VAT. For an oil endowed economy like Nigeria where several domestic and Multinational Oil Companies (MNOCs) operate in the domestic economy, it is expected that the economy would benefit from these oil companies. However, such positive impacts are not significant over the years.

The study concludes that CED and VAT inhibit growth of the Nigerian economy. This highlights poor revenue collection and monitoring in Nigeria. Also, it is expected that for an economy that is dependent on importation, CED should positively contribute to GDP. Rather, the reverse is the case, which prompts the need to probe revenue from the Customs Service from 1990-2019. Lastly, VAT have significantly promoted economic growth in Nigeria, which underscores the success of taxation in Nigeria at pooling funds from value creation, to engineer growth performance in Nigeria. Thus, these results reveal that the Nigerian tax system is poorly structured and needs a review.

Consequently, the study recommends that tax policies in Nigeria should be reviewed to eliminate grey areas that do encourage tax evasion and avoidance; and that corruption in the Nigerian tax administration should be investigated and brought to the barest minimum to ensure that adequate



tax funds are remitted from all sectors of the Nigerian economy, particularly in the oil and gas sector. The study also recommends that tax authorities should expand revenue base through increase in number of individuals and corporate bodies in the tax net; that increase in CED and VAT by increase business activities and incentive to exporters and importers; and that tax payment should be driven electronically to avoid incidence of fraud, and misappropriation and non-confidence.

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