

# The Relationship between Petroleum Profit Tax, Personal Income Tax and Economic Growth in Nigeria

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## Abstract

This study examined the relationship between petroleum profit tax, personal income tax and economic growth (proxy by real gross domestic product) in Nigeria. Secondary time series data was collected for the period 2005 to 2014 from CBN Statistical Bulletin. The study employed Ordinary Least Squares (OLS) technique based on the computer software Windows SPSS 20 version for the analysis of data, where RGDP (the dependent variable) was regressed as a function of PETA and PITA (the independent variables). The results of the analysis showed that both petroleum profit tax and personal income tax have significantly positive relationship with economic growth. Based on the findings, the study recommended that government should strengthen the tax administration system to broaden the tax income, and embark on tax education to ensure voluntary tax compliance. The study also recommended that government should diversify the revenue base of the economy as the reduction in the price of crude oil at international market would adversely affect income from PETA.

**Keywords:** Petroleum profit tax, Personal income tax, Economic growth, Government revenue

## 1. Introduction

Taxation is the central part of modern economic development. The main objective of taxation is raising revenue. A high level of taxation is necessary for the welfare of a state to fulfil its obligations (Greene, 2011). According to Musgrave (2008), taxation is used as an instrument of attaining certain social objectives i.e. as a means of redistribution of wealth and thereby reducing inequalities. The drop in the international price of oil has put a lot of pressure on the budget of the Federal Republic of Nigeria. Nigeria needs to diversify her revenue base as tax revenue appears to be the immediate and important source of respite to the present national economic challenge.

The institute of Chartered Accountants of Nigeria (2006) and the Chartered Institute of taxation of Nigeria (2002) defined tax as an enforced contribution of money to government pursuant to a defined authorized legislation. The economic history of both developed and developing countries reveals that taxation is an important instrument in the hands of government not only to generate revenue, but also to achieve fiscal goals such as influencing the direction of investment and controlling the consumption of certain goods and services (Greene, 2011). However, taxation has been used as a tool by government in fashioning various aspects of our economic growth. Today, it is valid to say that, apart from provision of money for defence, security, education, industry, culture, social and other economic infrastructure, taxation serves as a veritable tool of fiscal policy. It is used to pursue the realization of what have overwhelmingly been accepted as the objective of fiscal policy. That is, the mobilization and allocation of resources to desired productive sectors of the macro-economy, and distribution of income and wealth among different groups of citizens and also stabilization effect of market and balance of payment.

A lot of empirical evidence on the relationship between other fiscal policy tools and economic growth exists as well as evidence on the relationship between taxation and economic growth. However the review of previous studies revealed a lack of consensus in the research findings of past researchers which indicates the existence of a research gap. This study to examine the relationship between petroleum profit tax (PETA), personal income tax (PITA) and economic growth (RGDP), therefore, is an attempt to fill that gap. The study adopted PETA and PITA as the independent variables while real gross domestic product (RGDP) is the dependent variable and proxy for economic growth. The broad objective of the study was to examine the relationship between the adopted independent variables and economic growth in Nigeria. But more specifically, the objective was to examine the impact of PETA and PITA on RGDP in Nigeria. This objective form the basis of the hypotheses tested in this study.

The rest of this paper is structured thus: Following this introduction, in section two is the review of empirical literature, and section three deals with the study methodology. Section four provides the results of the study and discussion, while the conclusion and recommendations of the study are presented in section five.

## 2. Review of Empirical Literature

Okafor, (2012), examined tax revenue generation and Nigerian economic development. The regression result indicated a very positive and significant relationship. However, actual tax revenue generated in most years fell below the level expected. This anomaly was attributed to inefficiency in the income tax system, loopholes in tax laws and tax administration system. Matthew (2014), tested the impact of tax revenue on Nigerian economy case study of Federal Board of Inland Revenue. The findings show that tax revenue significantly impact on Federal Government budget implementation in Nigeria, tax administrative system significantly affected the revenue generated in Nigeria, Tax evasion significantly affected government revenue in Nigeria and lack of training on the part of tax officers significantly affected the generation of government revenue in Nigeria. The study recommended that notice of tax returns at the beginning of every financial years should be supported with handbills and posters in local languages as this will enable illiterates perform their civil responsibilities; tax payment should meet the convenience of the tax-payer; and an advance payment of tax should be encouraged and estimated by the tax payer himself, based on 80 per cent tax payable the previous year.

Afubero and Okoye (2014) examined the impact of taxation on revenue generation in Nigeria, in a case study of Federal Capital Territory (FCT) and other selected states. The findings show that taxation has a significant contribution to revenue generation and taxation has significant contribution on gross domestic product (GDP). The study recommended among others that well equipped database on all taxpayers should be established by the Federal, State and Local Governments with the aim of identifying all possible sources of tax income, and the tax collection process should be free from corruption.

Onoja (2014) investigated tax revenue and national income in Nigeria, using correlation analysis to test the two hypotheses of the study which covered the period 2005 - 2006. The results showed that there was a significant relationship between tax revenue and national income. The study also indicated that value added tax (VAT) contributed significantly to national income. Thus, the study recommended that tax administration in Nigeria should be strengthened to enhance revenue generation. Similarly, Angus (2011) examined the impact of VAT on economic development in an emerging economy such as Nigeria. The study used regression analysis and ANOVA to test the hypothesis. The results showed that VAT allocation alone account for 91.2 per cent of the variations in expenditure pattern of Adamawa State, and that VAT allocation to the state within the period 2001 - 2009 was very significant.

Also, Demain (2014) examined government revenue and expenditure in Nigeria using a disaggregated analysis. The co-integration test of the study indicated the existence of a long run equilibrium relationship between government expenditure variables and revenue variables. The ANOVA results also showed that capital and recurrent expenditure had a long run unidirectional causalities running from expenditure to revenue variables. The findings supported the spend-tax hypothesis in Nigeria indicating changes in government revenue.

Umoru and Anyiwe (2013) investigated the correlation between the New National Tax Policy and economic growth in Nigeria, using co-integration technique and error correction model to analyze data. The results of their analysis revealed that direct taxation revenue had significant positive relationship with economic growth, while indirect tax revenue had insignificant but negative impact on economic growth in Nigeria. They concluded that Nigeria's tax policy towards indirect taxation lack justification, rather the country should strengthen the structures of direct taxation. In a related study 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 the period 1994 - 2009. They employed descriptive statistics and econometric models such as 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 among others had significantly positive impact on economic growth in Nigeria. Thus their conclusion that tax reforms improved government revenue.

Stoilova and Patonov (2012) examined the impact of taxation on economic growth in 27 European Union countries, using data for the period 1995 - 2010. They conducted comparative cross-country analysis as well as regression analysis. Tax revenue variables include tax on land, building and other structures, social contributions, tax on production and imports and value-added tax. The study found that direct tax revenue made more efficient impact on economic growth in EU countries than indirect taxes. Similarly, Poulson and Kaplan (2008) carried out a study on the impact of taxes on economic growth in the United States of America using data covering the period 1964 - 2004. The results of their study revealed that higher marginal tax rates had significant negative impact on economic growth in the States.

## 3. Methodology

This section provides the methodology adopted for the study of the relationship between petroleum profit tax, personal income tax and economic growth in Nigeria. First, the study adopted a longitudinal research design, using secondary time series panel data for the period 2005 - 2014. This time period was considered long enough to establish a causality relationship, whereas, the availability of data relevant for the study was also a

justification for determining this time period. Data was collected on the study variables (PETA, PITA and RGDP) from the Annual Reports and Statistical Bulletin of the CBN. This source of data is considered reliable and dependable.

This study adopted the multiple regression analysis with Ordinary Least Square (OLS) econometric technique for data analysis. This technique possesses the unique property of Best Linear Unbiased Estimator (BLUE) as well as the desirable qualities of consistency and efficiency. The statistics tested for the variables in the regression equation include coefficient of determination ( $R^2$ ), T- test, F-test and Durbin Watson (DW) statistics. The Statistics Package for Social Sciences (SPSS) 20 for windows was the statistical computer software used to run the analysis. Where: Coefficient of Determination ( $R^2$ ) measures the explanatory power of the independent variables on the dependent variable; Student T-Test measures the individual significance of the estimated coefficients of the independent variables; F-test tests for the overall statistical significance of the models, which was used to generalize the hypotheses; and the Durbin Watson (DW) Statistics test tests for the auto correlation of the variables in the regression equation.

### 3.1 Model Specification

To achieve the objectives of this study and test the hypotheses the following regression model was developed to capture the causality relationship between PETA, PITA and RGDP:

$$RGDP = f(PETA, PITA)$$

The above model was translated into a specific regression equation as stated below:

$$RGDP = \alpha + \beta_1 (PETA) + \beta_2 (PITA) + \mu$$

Where

RGDP = Gross domestic product, the dependent variable and proxy for economic growth

PETA = Petroleum profit tax, one of the independent variables

PITA = Personal income tax, the second independent variable

$\alpha$  = is the constant term

$\beta_1, \beta_2,$  = are the coefficients of the independent variables

$\mu$  = is the error term of the equation.

## 4. Results and Discussion

This study examined the relationship between PETA, PITA and RGDP, using OLS technique based the computer software package windows SPSS 20 version. The data so far collected for the study is presented in table 1 below, while the results of the analysis are in table 2.

**Table 1: Aggregate annual value of RGDP, PETA and PITA from 2005 to 2014 in billions of Nigerian Naira**

Year	RGDP	PITA	PETA
2005	14,610.88	7.56	4,762.4
2006	18,564.59	7.82	5,287.57
2007	20,657.59	8.12	4,462.91
2008	24,296.33	7.99	6,530.6
2009	24,794.24	6.93	3,191.94
2010	54,204.8	9.22	5,396.09
2011	63,258.58	9.22	8,878.97
2012	71,186.53	9.56	8,025.97
2013	80,222.13	10.57	6,809.23
2014	89,043.62	10.57	6,793.72

Source: CBN Statistical Bulletin 2014

**Table 2: Regression results**

Dependent variable = RGDP

Variable	Coefficient	Std. Error	T-Statistics	Prob.
Const.	40061.23	42990.09	-3.165290	0.7262
PITA	20201.40	4931.357	4.096521	0.0064
PETA	1.141852	3.110845	0.367055	0.0194
R-Squared	0.902150	Mean dep var	46083.93	
Adj. R-Squared	0.853224	S.D. dep var	28527.42	
S.E. of Regrn	10929.23	Akaike info Crit.	21.72544	
Sum Sqd Resid	7.17E+08	Schwarz Crit.	21.84648	
Log Likelihood	-104.6272	Durban-Watson	1.786693	

Source: Windows SPSS 20

Table 2 above shows the summary of the regression results, that is, the correlation between PETA, PITA and RGDP. From the results it is found that all the independent variables are significant and positively related to RGDP. The results of this study supports the research findings of (Okafor, 2012), Afuberoh & Okoye, (2014), (Onoja, 2014), Umoru & Anyiwe, (2013) and (Ogbonna & Appah, 2012).

The explanatory power of the model as given by the  $R^2$  0.90 or 90 per cent is statistically significant given the high value of the adjusted  $R^2$  value of 0.85 or 85 per cent. This also means the independent variables jointly and adequately explained or accounted for changes in the dependent variable. The calculated Durbin Watson (DW) value is 1.7867 which is less than 2.0 indicated that there was no autocorrelation between the independent variables.

The regression model demonstrates a good fit given that about 85 per cent of the variation in the dependent variable (RGDP) is jointly explained by changes in the behaviour of PETA and PITA. The relatively high adjusted  $R^2$  of 0.85 or 85 percent showed that the model is a good fit.

PETA have statistically positive significant relationship with RGDP, this is given the fact the Prob value of PETA is 0.0194, and this is less than the critical value of 0.05. Also PITA had statistically positive significant relationship with RGDP given the Prob value of 0.006 and less than critical value of 0.05. This means that both PETA and PITA have positive effect on RGDP. The results of the study analysis have shown that petroleum profit tax and personal income tax have positive impact on economic growth.

## 5. Conclusion and Recommendations

This study examined the relationship between petroleum profit tax, personal income tax and economic growth in Nigeria. The study adopted real gross domestic product as proxy for economic growth and the dependent variable, while petroleum profit tax and personal income tax were independent variables. Data on the variables for the period 2005 – 2014 was collected from the Central Bank of Nigeria Statistical Bulletin. The study employed OLS technique based on Windows SPSS 20 version to analysis the data. The findings from the statistical analysis of data revealed that petroleum profit tax and personal income tax have positive significant relationship with economic growth in Nigeria.

Based on the above findings, the study recommended that the tax authorities in Nigeria should strengthen the tax administration system as tax revenue has been proven to be an important source of government revenue for sustainable development. The study also recommended that the tax authorities responsible for tax administration should upgrade the tax database to capture all potential tax-payers in order to broaden tax income. Government should embark on massive public enlightenment campaign and carried out tax education among the citizenry to ensure voluntary tax compliance. Also, qualified tax professionals should be employed and trained regularly, and retained in the system of tax administration. Government should seriously work towards diversifying the revenue base of the economy as the reduction in the price of crude oil at the international market would adversely affect income from petroleum profit tax.

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