

# Impact of Taxes on Revenue Generation in Nigeria (A Study of Federal Government)

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## ABSTRACT

This paper investigated the effect of taxes on revenue generation in Nigeria from 1981 to 2016, a period of thirty-five (35) years and the data for the analysis were sourced from Central Bank of Nigeria's (CBN, 2016) Statistical Bulletin. The variables used include total federally collected revenue as a proxy for revenue generation, labour, gross capital formation, company income tax, petroleum profit tax, personal income tax, value added tax, custom and excise tax, direct tax and indirect tax. Fully modified ordinary least squares method (FMOLS) was employed to determine the direction and the magnitude of impacts. Based on the effect of direct tax on revenue generation in Nigeria, both company income tax and personal income tax boost revenue generation in Nigeria while petroleum profit tax discourage revenue generation in Nigeria. Also, model on the effect of indirect tax on revenue generation showed that the two variables used as indirect tax variable (value added tax and custom and excise tax) have positive and significant effect on revenue generation in Nigeria. Lastly, the researchers found out that the estimated result on the effect of direct and indirect tax on revenue generation in Nigeria showed that indirect tax lead to revenue generation in Nigeria while direct tax does not and this is so because most people pay indirect tax in Nigeria than direct tax. Also, tax evasion and avoidance are very minimal in indirect tax and this lead to more revenue which encourage economic growth in Nigeria. The researchers recommended that it is important that efficient and effective tax policy be implemented to ensure that enough revenue is generated for growth purposes like strict penalties should be meted to people who avoid and evade tax payments. Government should base her taxes on indirect tax because this will not create any burden on the citizen and in this way, it will lead to growth.

**KEYWORDS:** Direct Tax, Indirect Tax, Revenue Generation, Custom and Excise tax  
Word count: 331

## INTRODUCTION

Tax is a bedrock upon which the nation's economic is been laid. Where its well administered and few people evade tax it makes provision of basic infrastructure by the central government an easy task.

Tax revenue mobilization as a source of financing developmental activities in Nigeria economies has been a difficult issue primarily because of various forms of resistance, such as evasion, avoidance corrupt practices attending to it. These activities are considered as sabotaging the economy and are readily presented as reasons for the underdevelopment of the country (Afuberoh and Okoye, 2014). Government collects taxes in order to provide an efficient and steadily expanding non-revenue yielding services, such as infrastructure, education, health, communications system, employment opportunities and essential public services (such as the maintenance of laws and order) irrespective of the prevailing ideology or the political system of a particular nation (Worlu and Emeka, 2012).

Tax is also the nexus between state and its citizens, and tax revenues are the lifeblood of the social contract. The very act of taxation has profoundly beneficial effects in fostering better and more accountable government. However, the use of tax as an instrument of fiscal policy to achieve economic growth in Nigeria cannot be reliable because of dwindling level of revenue generation (Okwara and Amori, 2017). Consequent upon this, changing or fine-tuning tax rates has been used to influence or achieve macroeconomic stability. In other to finance the fiscal policy, Nigeria has heavily resorted to foreign capital, loans and aids as the primary means to achieve rapid economic growth, thereby accumulate huge external debt in relation to gross domestic product and serious debt servicing problems in terms of foreign exchange flow and, as such majority of the populace live in abject poverty.

Based on the listed problems, this paper investigated the impact of taxes on revenue generation in Nigeria. The specific objectives are to examine the effect of;

1. direct tax on revenue generation in Nigeria.
2. indirect tax on revenue generation in Nigeria.

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3. both direct and indirect tax on revenue generation in Nigeria.

## Review of Related Literature

### Conceptual Review on Nigeria Tax System

Tax is a compulsory transfer or payment (or occasionally of goods and services) from private individuals, institutions or groups to the government. The main purpose of tax is to raise revenue to meet government expenditure and to redistribute wealth and management of the economy (Ogbonna and Appah, 2012). Tax is a compulsory levy imposed on a subject or upon his property by the government to provide security, social amenities and create conditions for the economic well-being of the society (Appah and Oyandonghan, 2011).

The Nigerian Tax System has undergone significant changes in recent times. However, the tax system is basically structured in such a way as to contribute to economic growth through income generation. On the basis of incidence, taxes can be structured into direct and indirect. There are different components of direct taxation. These include the personal income tax (PIT), petroleum profit tax (PPT), companies' income tax (CIT), educational tax (ET). The PIT is currently regulated under the Personal Income Tax Act of 2004. The PPT is regulated by the Petroleum Profit Tax Act (PPTA) of 1990. PPT is charged on the profit of a petroleum company in the upstream sector of the industry. Companies in Nigeria are taxed under the Companies Income Tax Act introduced in 1961 with modifications in 2007. The administration of the CIT is vested on the Federal Inland Revenue Services. Education tax in Nigeria is under the regulation of the Education Tax Act No. 7 that was promulgated in 1993. The tax is payable by all companies at the rate of 2 percent of the assessable profit defined in the Company Income Tax Act. Therefore, assessment of education tax and companies' income tax are done concurrently. The different prominent components of indirect taxation in Nigeria include, Value Added Tax (VAT) and Custom and Excise Duty (CED). VAT is regulated by the Value Added Tax Act (VATA) of 2007. The Nigerian VAT system is destination based, which means the tax is levied on goods and services consumed within the tax jurisdiction. The implication of this is that VAT imposition is designed to stimulate export growth (Desai and Hines, 2002). In Nigeria, the tax rate chargeable is 5 percent on goods and services purchased but the tax payer can claim credit for input tax when such goods are sold. The CED is regulated by the Custom and Excise Management Act of 1990. The duty is chargeable on all goods and services imported into Nigeria. The tax is administered by the Nigeria Custom Services and is also referred to as import duties. Currently, the duties ranged between 2.5 percent to 100 percent depending on the product.

### Empirical Review

A lot of research works have been done on the impact of taxes on revenue generation in Nigeria and came up with different results. For example, Engen and Skinner, (1996) explained that tax reforms are sometimes touted as having strong macroeconomic growth effects. Using three approaches, they consider the impact of a major tax reform a 5 percentage point cut in marginal tax rates on long-term growth rates. The first approach is to examine the historical record of the U.S. economy to evaluate whether tax cuts have

been associated with economic growth. The second is to consider the evidence on taxation and growth for a large sample of countries. And finally, the study used evidence from micro level studies of labor supply, investment demand, and productivity growth. Final results suggested modest effects, on the order of 0.2 to 0.3 percentage point differences in growth rates in response to a major tax reform. Nevertheless, even such small effects can have a large cumulative impact on living standards.

Leahy *et al.*, (2011) examined the distributional effects of Value Added Tax (VAT) in Ireland. Using the 2004/2005 Household Budget Survey, the paper assessed the amount of VAT that households pay as a proportion of weekly disposable income. The paper measured VAT payments by equalized income decline, households of different composition and different household sizes. The current system is highly regressive. With the use of a micro-simulation model the paper also estimate the impact of changing the VAT rate on certain groups of items and the associated change in revenue. The paper also considers how the imposition of a flat rate across all goods and services would affect households in different categories. The general pattern of results shows that those hardest hit are households in the first income decline, households in rural areas, 6 person households and households containing a single adult with children.

Chigbu *et al.*, (2011) examined the causality between economic growth and taxation in Nigeria for the period 1970-2009. To achieve the objective of the study, data was collected from the Central Bank of Nigeria (CBN) Statistical Bulletin and Federal Inland Revenue Service (FIRS). The data collected from the secondary sources were analyzed using relevant econometric models such as Augmented Dickey-Fuller, Diagnostic Tests, Granger Causality and Johansen Co-integration. The results from the econometric analysis reveals that taxation as an instrument of fiscal policy affects the economic growth and thereby causing economic growth of Nigeria.

Adereti *et al.*, (2011) emphasized that Value Added Tax (VAT) was introduced by the Federal Government of Nigeria in 1993 to replace Sales Tax. The aim was to increase the revenue base of government and make funds available for developmental purposes that will accelerate economic growth. Time series data on the Gross Domestic Product (GDP), VAT Revenue, Total Tax Revenue and Total (Federal Government) Revenue from 1994 to 2008 sourced from Central Bank of Nigeria (CBN) were analyzed, using both simple regression analysis and descriptive statistical method. Findings showed that the ratio of VAT Revenue to GDP averaged 1.3% compared to 4.5% in Indonesia, though VAT Revenue accounts for as much as 95% significant variations in GDP in Nigeria. A positive and significant correlation exists between VAT Revenue and GDP. Both economic variables fluctuated greatly over the period though VAT Revenue was more stable. No causality exists between the GDP and VAT Revenue, but a lag period of two years exists.

Ferede and Dahlby, (2012) examined the impact of the Canadian provincial governments' tax rates on economic growth using panel data covering the period 1977-2006. The paper finds that a higher provincial statutory corporate

income tax rate is associated with lower private investment and slower economic growth. Empirical estimates find that a 1 percentage point cut in the corporate tax rate is related to a 0.1–0.2 percentage point increase in the annual growth rate. Results also indicate that switching from a retail sales tax to a sales tax that is harmonized with the federal value-added sales tax boosts provincial investment and growth.

Appah and Ebiringa, (2012) investigated the impact of petroleum profit tax on the economic growth of Nigeria. To achieve the objective of this paper, relevant secondary data were collected from the Central Bank of Nigeria (CBN) and the Federal Inland Revenue Service (FIRS) from 1970 to 2010. The secondary data collected from the relevant government agencies in Nigeria were analyzed with relevant econometric tests of Breusch-Godfrey Serial Correlation LM, White Heteroskedasticity, Ramsey RESET, JarqueBera, Johansen Co-integration, and Granger Causality. The results show that there exists a long run equilibrium relationship between economic growth and petroleum profit tax.

Stoilova and Patonov, (2012) studied the basic trends in the distribution of the total tax burden in the EU (27) member states during the period 1995-2010. The comparative analysis was focused on the cross-country differences in terms of total tax burden, measured by the tax-to-GDP ratio and design of tax structure, presented by the breakdown of the total tax revenues into standard components such as direct taxes, indirect taxes and social contributions. Special emphasis is placed upon the impact of taxation on the economic growth. The relationship is investigated by the means of the regression analysis.

Ogbonna and Ebimobowei, (2012) examined the impact of tax reforms on the economic growth of Nigeria from 1994 to 2009. To achieve the objective of the study, relevant secondary data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin, Federal Inland Revenue Service (FIRS), Office of the Accountant General of the Federation, and other relevant government agencies. The data collected were analyzed using relevant 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. The results from the various test shows that tax reforms is positively and significantly related to economic growth.

Abata, (2014) focused on the impact of tax revenue on Nigeria economy. Descriptive survey design was adopted and simple random sampling technique was used in the selection of the sample size. 100 copies of questionnaires were administered to workers of the Federal Board of Inland Revenue (FBIR), Lagos, Nigeria. 75 questionnaires were retrieved and found usable for the study hence, giving a 75% response rate. A pilot study was conducted and this gave a reliability value of 0.78 which according to Nunnally (1978) is reliable enough to measure the research construct. Four Hypotheses were formulated and tested using Chi-square statistical tool of analysis. The findings show that tax revenue has significant 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.

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

Myles, (2014) reviewed the theoretical and empirical evidence to assess whether a consensus arises as to how taxation affects the rate of economic growth. It is shown that the theoretical models isolate a number of channels through which taxation can affect growth and that these effects may be very substantial.

Edame and Okoi, (2014) examined the impact of taxation on investment and economic growth in Nigeria from 1980-2010. The ordinary least square method of multiple regression analysis was used to analyze the data. The annual data were sourced from the Central Bank of Nigeria Statistical Bulletin and NBS. The result of the analysis showed in conformity to our prior expectation because the parameter estimates of corporate income tax (CIT) and personal income tax (PIT) appears with negative signs, this means that an inverse relationship exist between taxation and investment. The economic implication of the result is that a one percent (1%) increase in CIT will result in decrease in the level of investment in Nigeria. Consequently, an increase in PIT will result in decrease in the level of investment. Finally, the result therefore showed that taxation is negatively related to the level of investment and the output of goods and services (GDP) and is positively related to government expenditure in Nigeria. The study also observed that taxation statistically is significant factor influencing investment, GDP and government expenditure in Nigeria.

Ihenyen and Mieseigha, (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 during the period 1980 through 2013, a linear model of Corporate Income Tax (CIT), Value Added Tax (VAT) and Economic Growth (GDP) was estimated using the Ordinary Least Square (OLS) technique. The empirical result revealed that the hypothesis link among corporate income tax, value added tax and economic growth indeed exist in the Nigerian context. Thus the result offer tantalizing evidence that taxation is an instrument of economic growth in Nigeria.

Afubero and Okoye, (2014) aimed at the impact of taxation on revenue generation in Nigeria, with reference to FCT and some selected states in the country. Attempt is also made in the study (through the means of secondary data) at highlighting the concept and nature of taxation, objectives of taxation, features in Nigerian tax system, taxation as a tool for wealth creation and employment, classification of taxes, Nigeria's major taxes and other issues that relate to taxation. In achieving the objective of the study, the study also adopted primary sources of data to present and analyze the information for the study. The testing of the hypothesis of



the study was done using regression analysis computed with the aid of SPSS version 17.0. The research discovered among others that, taxation has a significant contribution to revenue generation and taxation has a significant contribution on Gross Domestic Product (GDP).

**Theoretical Framework**

The theoretical framework for this study was based on productivity theory of tax. The theory has been utilized as a decent standard to judge a decent tax. It was built up that revenue productivity concurs that the tax base must be sufficiently vast so that the cost of working the tax system should be beneath the revenue it generates. In this manner, the explanation behind acquainting tax was with raise revenue which boost by its vast base.

**Model Specification**

The model specification for this paper was based on the theoretical framework above and the model for this study is adapted from the work of Worlu and Emeka, (2012); Unegbu and Ireferin, (2011); Stoilova and Patonov, (2012); Okoye and Gbegi, (2013); Ogbonna and Appah, (2012); Afuberoh and Okoye, (2014) & Okwara and Amori, (2017). Three models were specified based on the specific objectives set.

**Model to examine the effect of direct tax on revenue generation in Nigeria**

Direct tax has three components which are company income tax, petroleum profit tax and personal income tax and these three variables will be incorporated into the model.

$$TFCR = f(L, K, CIT, PPT \& PIT) \dots\dots\dots (1)$$

Where TFCR is Total Federally Collected Revenue (₦Billion), L is Labour (using Total Labour Force), K is Capital (using Gross Capital Formation in ₦Billion), CIT is Company Income Tax (₦Billion), PPT is Petroleum Profit Tax (₦Billion) and PIT is Personal Income Tax (₦Billion).

The following three direct tax variables are used as regressors to estimate the effect of direct tax on revenue generation in Nigeria and the linear regression is given in equation (2).

$$TFCR = \beta_0 + \beta_1L + \beta_2K + \beta_3CIT + \beta_4PPT + \beta_5PIT + u \dots\dots\dots (2)$$

In other to normalize the variables, both the explanatory and explained variable will be log.

$$LN(TFCR) = \beta_0 + \beta_1LN(L) + \beta_2LN(K) + \beta_3LN(CIT) + \beta_4LN(PPT) + \beta_5LN(PIT) + u \dots\dots\dots (3)$$

**Model to examine the effect of indirect tax on revenue generation in Nigeria**

Indirect tax components are two which are value added tax and custom and excise tax and these two variables will be incorporated into the model.

$$TFCR = f(L, K, VAT \& CET) \dots\dots\dots (4)$$

Where TFCR is Total Federally Collected Revenue (₦Billion), L is Labour (using Total Labour Force), K is Capital (using Gross Capital Formation in ₦Billion), VAT is Value Added Tax (₦Billion) and CET is Custom and Excise Tax (₦Billion).

The following two indirect tax variables are used as regressors to estimate the effect of indirect tax on revenue generation in Nigeria and the linear regression is giving be in equation (5).

$$TFCR = \beta_0 + \beta_1L + \beta_2K + \beta_3VAT + \beta_4CET + u \dots\dots\dots (5)$$

In other to normalize the variables, both the explanatory and explained variable will be log.

$$LN(TFCR) = \beta_0 + \beta_1LN(L) + \beta_2LN(K) + \beta_3LN(VAT) + \beta_4LN(CET) + u \dots\dots\dots (6)$$

**Model to examine the effect of both direct and indirect tax on revenue generation in Nigeria**

Both direct and indirect tax are used as regressors to estimate the effect of both direct and indirect tax on revenue generation in Nigeria

$$TFCR = f(L, K, DT \& INDT) \dots\dots\dots (7)$$

Where TFCR is Total Federally Collected Revenue (₦Billion), L is Labour (using Total Labour Force), K is Capital (using Gross Capital Formation in ₦Billion), DT is Direct Tax (₦Billion) and INDT is Indirect Tax (₦Billion).The linear regression is giving be in equation (8).

$$TFCR = \beta_0 + \beta_1L + \beta_2K + \beta_3DT + \beta_4INDT + u \dots\dots\dots (8)$$

In other to normalize the variables, both the explanatory and explained variable will be log.

$$LN(TFCR) = \beta_0 + \beta_1LN(L) + \beta_2LN(K) + \beta_3LN(DT) + \beta_4LN(INDT) + u \dots\dots\dots (9)$$

**Data Requirement and Data Source**

The data that is used for this study are basically time series data covering 1981 to 2016, a period of thirty-six (36) years because of the unavailability of data for some of the variables. The data were sourced from Central Bank of Nigeria’s (CBN, 2016) Statistical Bulletin. This particular scope was chosen in order to ascertain the effect of tax on revenue generation in Nigeria during the period of military and civilian regimes. Since value added tax started in 1994, dummy variable is used to capture the period before 1994.

**Estimated Technique**

The study made use of the fully modified ordinary least squares method (FMOLS) approach. The FMOLS method produces reliable estimates for small sample size and provides a check for robustness of the results. The FMOLS method was originally introduced and developed by Philips and Hansen (1990) for estimating a single co-integrating relationship that has a combination of I(1). The FMOLS method has an advantage over the Engle-Granger (EG) procedure techniques in introducing appropriate correction to overcome the inference problem in EG method and hence, the t-test for long-run estimates is valid (Himansu 2007). The Fully Modified Ordinary Least Squares (FMOLS) method utilizes “Kernal estimators of the Nuisance parameters that affect the asymptotic distribution of the OLS estimator. In order to achieve asymptotic efficiency, this technique modifies least squares to account for serial correlation effects and test for the endogeneity in the regressors that result from the existence of Co-integrating Relationships” (Rukhsana and M. Shahbaz, 2008).

**Data Analysis and Presentation**  
**Pre-Estimation Results**

**Table 1: Descriptive Statistics**

	LNTFCR	LNK	LNL	LNCIT	LNPPT	LNPIT	LNVAT	LNCET	LNDT	LNINDT
Mean	8.359	12.403	18.591	9.883	11.714	9.844	7.346	10.405	12.144	10.825
Median	8.504	12.399	18.590	10.552	11.553	9.835	10.626	11.198	11.978	11.635
Maximum	11.528	15.205	19.023	12.529	14.545	11.742	12.576	12.394	14.697	13.182
Minimum	4.9769	9.0824	18.142	5.999	8.229	5.463	0.000	7.388	9.349	7.388
Std. Dev.	2.273	2.123	0.269	2.144	2.276	1.384	5.651	1.757	1.981	2.084
Skewness	-0.137	-0.121	0.003	-0.478	-0.187	-0.748	-0.528	-0.523	-0.105	-0.478
Kurtosis	1.590	1.621	1.805	1.728	1.457	3.674	1.338	1.663	1.384	1.563
Jarque-Bera	3.094	2.938	2.142	3.800	3.780	4.036	5.813	4.325	3.982	4.472
Probability	0.213	0.230	0.343	0.150	0.151	0.133	0.055	0.115	0.137	0.107
Sum	300.908	446.523	669.268	355.801	421.714	354.388	264.469	374.577	437.182	389.684
Sum Sq. Dev.	180.812	157.676	2.53744	160.873	181.262	67.031	1117.708	108.104	137.399	151.935
Observations	36	36	36	36	36	36	36	36	36	36

Source: Author’s Computation from E-view 9

Table 1 showed that the means and medians of all the variables lie within the maximum and minimum values indicating that the variables had high tendency to be normally distributed. However, the Jarque-Bera test conducted for the normality test showed that all the series were normally distributed while only value added tax was not normally distributed since it test was significant at 10% level. Surprisingly, these variables that were normally distributed were skewed negatively except labour which was skewed positively. The value of kurtosis for all the variables showed that the variables were mesokurtic in nature while only personal income tax was leptokurtic in nature.

**Table 2: Correlation Matrix**

	LNTFCR	LNK	LNL	LNCIT	LNPPT	LNPIT	LNVAT	LNCET	LNDT	LNINDT
LNTFCR	1									
LNK	0.994	1								
LNL	0.993	0.398	1							
LNCIT	0.974	0.396	0.295	1						
LNPPT	0.950	0.496	0.294	0.195	1					
LNPIT	0.740	0.370	0.373	0.107	0.678	1				
LNVAT	0.921	0.491	0.479	0.194	0.585	0.645	1			
LNCET	0.946	0.365	0.148	0.270	0.240	0.709	0.558	1		
LNDT	0.965	0.621	0.521	0.636	0.495	0.181	0.483	0.395	1	
LNINDT	0.962	0.534	0.322	0.699	0.318	0.720	0.663	0.283	0.491	1

Source: Author’s Computation from E-view 9

The results of the correlation matrix showed that none of the variables had perfect correlation coefficients. This was an indication that the model emanated from the set of the variables would not have any tendency for multicollinearity problem. Precisely, there was strong positive correlation between total federally collected revenue and all the explanatory variables but weak and moderate positive correlation among the explanatory variable. The results of the correlation among the explanatory variables indicated that the model emanated from the set of the variables would not have any tendency for multicollinearity problem. Multicollinearity problem occurs when there is a strong serial relationship among the explanatory variables in the same model. Therefore, there was no serious problem of multicollinearity exists because the Pairwise correlation coefficient for any of the explanatory variables does not found to exceed 0.80 (Gujarati, 2003).

**Table 3: Time-Series Properties of Variables using Augmented Dickey Fuller Method**

Variable	Level	Critical Value @ 5%	First Difference	Critical Value @ 5%	Order of Integration
LNTFCR	-1.065	-2.951	-3.087	** -2.951	I(1)
LNK	-0.220	-2.948	-2.964	** -2.957	I(1)
LNL	-0.896	-2.951	-6.664	** -2.951	I(1)
LNCIT	-2.013	-2.948	-4.977	** -2.951	I(1)
LNPPT	-1.023	-2.948	-7.532	** -2.951	I(1)
LNPIT	-1.407	-2.951	-6.802	** -2.954	I(1)
LNVAT	-1.099	-2.948	-5.312	** -2.951	I(1)
LNCET	-1.286	-2.948	-5.940	** -2.951	I(1)
LNDT	-0.872	-2.948	-7.005	** -2.951	I(1)
LNINDT	-1.204	-2.948	-5.703	** -2.951	I(1)

Source: Author’s Computation from E-view 9

Note: \*\* implies 5% significance level

The time series properties of the variables was conducted using Augmented Dickey Fuller (ADF) test and the results from this test showed that none of the variables was stationary at level. However, all the variables were stationary at first difference meaning that all the variables were integrated at order one. The implication of this was that all the variables were I(1) series. This therefore called for further long-run co-movement among the variables using Johansen co-integration technique since all the variables are more than four.

**Table 4: Johansen Co-integration Result**

Hypothesized	Trace	0.05	Max-Eigen	0.05
No. of CE(s)	Statistic	Critical Value	Statistic	Critical Value
r≤0	401.6092	239.2354**	90.14914	64.50472**
r≤1	311.4601	197.3709**	87.82387	58.43354**
r≤2	223.6362	159.5297**	58.49787	52.36261**
r≤3	165.1383	125.6154**	46.99777	46.23142
r≤4	118.1405	95.75366**	34.65081	40.07757
r≤5	83.48974	69.81889**	30.72947	33.87687
r≤6	52.76027	47.85613**	25.98331	27.58434
r≤7	26.77696	29.79707	11.71498	21.13162
r≤8	15.06198	15.49471	9.436767	14.26460
r≤9*	5.625211	3.841466**	5.625211	3.841466**

**Source:** Author’s Computation from E-view 9

*Note: \*\* implies 5% significance level*

The results of the Johansen co-integration test showed that there was long-run co-movement among the variables. This was evidenced from the Trace statistic which showed that the Johansen co-integration had seven co-integrating equations emanated from the statistic and Max-Eigen statistic showed that the Johansen co-integration had four co-integrating equations. Thus, this result showed there was a convergence relationship among the variables in the long-run.

**Estimation Results**

The estimation results of this research work was based on the three model which are set to achieve the three objectives of the research work and it is presented below in Table 5.

**Table 5: Effect of Direct Tax, Indirect Tax and both Direct Tax and Indirect Tax on Revenue Generation in Nigeria**

Dependent Variable: LNTFCR			
	Model on Direct Tax on Revenue Generation	Model on Indirect Tax on Revenue Generation	Model on both Direct and Indirect Tax on Revenue Generation
Regressor	Coefficient with [Prob]	Coefficient with [Prob]	Coefficient with [Prob]
_CONS	-64.94915 [0.0000]*	-75.75161 [0.0000]*	-70.94072 [0.0000]*
LNK	0.415963 [0.0000]*	0.370467 [0.0000]*	0.375718 [0.0000]*
LNL	3.543072 [0.0000]*	4.223478 [0.0000]*	3.886278 [0.0000]*
LNCIT	0.284949 [0.0000]*	-	-
LNPPT	-0.090690 [0.0053]*	-	-
LNPIT	0.053342 [0.0137]**	-	-
LNVAT	-	0.049023 [0.0000]*	-
LNCET	-	0.061194 [0.0246]**	-
LNDT	-	-	-0.011123 [0.7708]
LNINDT	-	-	0.233223 [0.0000]*
R <sup>2</sup>	0.998108	0.998820	0.997866
Adjusted R <sup>2</sup>	0.997782	0.998662	0.997581
Long-run variance	0.010131	0.004058	0.011987

**Source:** Author’s Computation from E-view 9

*Note:\*, \*\* and \*\*\* denote 1%, 5% and 10% level of significance respectively*

Based on the effect of direct tax on revenue generation in Nigeria, the explanatory power of the model explained approximately 99.78% of the total variations in revenue generation in Nigeria. This showed that the model had high goodness of fit. The long-run variance is very low indicating

an appropriate model. The results of the study indicated that all the explanatory variables (gross capital formation, labour, company income tax and personal income tax) included in the model are all statistically significant and they have a positive effect on revenue generation in Nigeria except for

petroleum profit tax which has a negative significant effect on revenue generation in Nigeria. Therefore, both company income tax and personal income tax boost revenue generation in Nigeria while petroleum profit tax discourages revenue generation in Nigeria.

Also, model on the effect of indirect tax on revenue generation showed that the explanatory power of the model explained approximately 99.88% of the total variations in revenue generation. This showed that the model has high goodness of fit which indicate more fitness of the model. It was also discovered that the two variables used as indirect tax variable (value added tax and custom and excise tax) were both statistically significant at 1% and 5% level of significant. The coefficient of both value added tax and custom and excise tax have positive and significant effect on revenue generation in Nigeria. The positive significant of value added tax and custom and excise tax implies that they are the form of tax that is commonly used in Nigeria and as a result of people pay value added tax on goods without feeling it and this generate more revenue for the government.

Lastly, the estimated result on the effect of direct and indirect tax on revenue generation in Nigeria. The explanatory power of the model explained approximately 99.76% of the total variations in revenue generation in Nigeria and it shows that the model had high goodness of fit. The long-run variance is very low indicating an appropriate model. The results of the research work indicated that gross capital formation, labour and indirect tax have a positive significant effect on revenue generation while direct tax has a negative but insignificant effect on revenue generation in Nigeria. Therefore, indirect tax lead to revenue generation in Nigeria while direct tax does not and this is so because most people pay indirect tax in Nigeria than direct tax. Also, tax evasion and avoidance are very minimal in indirect tax and this lead to more revenue which encourage economic growth in Nigeria.

### Conclusion and Recommendations

The research work investigated the effect of taxes on revenue generation in Nigeria 1981 to 2016, a period of thirty-five (35) years and the data for the analysis were sourced from Central Bank of Nigeria's (CBN, 2016) Statistical Bulletin. The variables used include total federally collected revenue as a proxy for revenue generation, labour, gross capital formation, company income tax, petroleum profit tax, personal income tax, value added tax, custom and excise tax, direct tax and indirect tax. Fully modified ordinary least squares method (FMOLS) was employed to determine the direction and the magnitude of impacts. Also, three specific objectives were set which are: effect of direct tax on revenue generation in Nigeria; effect of indirect tax on revenue generation in Nigeria and effect of both direct and indirect tax on revenue generation in Nigeria.

Based on the effect of direct tax on revenue generation in Nigeria, both company income tax and personal income tax boost revenue generation in Nigeria while petroleum profit tax discourage revenue generation in Nigeria. Also, model on the effect of indirect tax on revenue generation showed that the two variables used as indirect tax variable (value added tax and custom and excise tax) have positive and significant effect on revenue generation in Nigeria. Lastly, the estimated

result on the effect of direct and indirect tax on revenue generation in Nigeria shoed that indirect tax lead to revenue generation in Nigeria while direct tax does not and this is so because most people pay indirect tax in Nigeria than direct tax. Also, tax evasion and avoidance are very minimal in indirect tax and this lead to more revenue which encourage economic growth in Nigeria.

The research work recommended that it is important that efficient and effective tax policy be implemented to ensure that enough revenue is generated for growth purposes, strict penalties should be meted to people who avoid and evade tax payments. Government should base her taxes on indirect tax because this will not create any burden on the citizen and in this way, it will lead to growth.

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