# Impacts of Tax Revenue on Economic Growth in Nigeria: An Aggregate and Disaggregate Analysis

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***Abstract***

*The primary goal of any developing country is to increase the rate of economic growth and per capital income which leads to a higher standard of living. Thus, taxation can be used as a stimulus to accelerate such growth in the Nigerian economy. Combined with economic growth, it reduces long term reliance on aid and ensures good governance by promoting the accountability of governments to their citizens. It has been observed that in Nigeria, the quantum of income generated from non-oil tax over the years by the federal government is grossly insufficient in relation to the ever increasing social, political and infrastructural developmental needs of the country. In Nigeria revenue derived from income taxes has been grossly understated due to improper tax administration, assessment and collection. Its in the light of these and many more that this study examined the impact of tax revenue on aggregate and disaggregate on economic growth in Nigeria for the period 1979-2018 with purposive sampling technique. ARDL model was employed. The result showed that PPT has significance effect on gross domestic product with coefficient 0.4675 at 5% level of significance. Company income tax also has a positive significant effect on economic growth with coefficient 0.1975 with p-value of 5% level of significant. The overall result showed significant effect of tax revenue on aggregate on economic growth. The study then concluded that there is urgent need for government to prioritize her needs as petroleum revenue continues to decrease. Therefore the study recommends that government should try to diversify the economy as revenue generated from petroleum should be used to develop other sectors of income generation.*

***Keywords:*** *Petroleum Profit Tax, Company Income Tax, Custom and Excise Duties, GDP.*

## Introduction

The primary goal of any developing country is to increase the rate of economic growth and per capital income which leads to a higher standard of living. Thus, taxation can be used as a stimulus to accelerate such growth in the Nigerian economy. Economic history of both developed and developing countries, reveals that taxation is an important instrument of government that generates revenue, which also create fiscal goals that influence the direction of investment and taming the consumption and production of certain goods and services. Oriakhi, (2014) stated that, taxes are imposed to regulate the production of certain goods and services, protection of infant industries, control business and commerce, curb inflation, and these in turn result to economic growth.

Taxation is the key to promoting sustainable growth and poverty reduction. It provides developing countries with a stable and predictable fiscal environment, promote growth and to finance their social and physical infrastructural needs. Combined with economic growth, it reduces long term reliance on aid and ensures good governance by promoting the accountability of governments to their citizens (Romer & Romer, 2010). They buttressed their point that, availability and mobilization of revenue is the fundamental factor with which an economy is managed.

A sound tax system protects infant industries, encourages entrepreneurial development in the country, which is paramount for the sustenance of economic growth of every economy (Eyisi, Chioma & Bassey, 2015). Taxation has existed since the birth of early civilization and it could be said that it is part of the price to be paid for living in an organized society. However, taxation is not just a means of transferring money to the government to spend as it thinks fit, but it also has a tendency to reflect prevailing social values and priorities (Soyode & Kajola, 2006).

Basically, there are two ways of financing government expenditure in Nigeria; which are oil revenue and non-oil revenue sources, the Nigerian government derives a large proportion of its total revenue from oil. Empirical studies have shown that the quantum of revenue available to any government needed to meet the social and capital expenditure in a country depends on its ability to harness funds from internal and external sources and channel it towards national development and economic prosperity. Appah (2010) stated that revenue from taxation forms the bedrock of the revenue base of most governments all over the world. The extent to which a government can provide social, economic and infrastructural development is a function of the amount of funds at its disposal. This research therefore examined the impact of tax revenue on the economic growth in Nigeria: an aggregate and disaggregate analysis.

**Statement of the problem**

It has been observed over the years that tax revenue has generally been grossly understated due to improper tax administration arising from under assessment and inefficient machinery for collection (Chigbu & Njoku, 2015). In Nigeria revenue derived from income taxes has been grossly understated due to improper tax administration, assessment and collection (Ola, 2001; Adegbie & Fakile, 2011). Persons and companies are known to routinely evade and avoid taxes due to corrupt practices and the existence of various loopholes in the tax laws. According to Oluba (2008), the success or failure of any tax system depends on the extent to which it is properly managed; the extent to which the tax law is properly interpreted and implemented.

According to Iweala, (2013), about 75% of registered firms were not in the tax system and 65% of them had not filed their tax returns for 3years (2010-2012). Over ₦80billion was lost monthly from these companies, estimating the total Company Income Tax leakages in that period to about $250million.

According to Fowler (2018), there are 6,772 number of billionaire tax defaulters and they are of three categories: those that have Tax Identification Number (TIN), those that do not have TIN and of course no TIN no pay and those that have not even paid anything. On a minimum, every company or business included here over the period three years (2015-2017) have had a banking turnover of N3 billion and above while some of them have had banking turnover of over N5 billion and have not paid one kobo in taxes.

Illiyas and Siddiqi (2008), observed that in Nigeria, the quantum of income generated from non-oil tax over the years by the federal government is grossly insufficient in relation to the ever increasing social, political and infrastructural developmental needs of the country. As noted by Odusola (2006), Nigeria economy has thrived largely on oil revenue in the past decades. In essence, Nigeria runs a monolithic economy which is subject to international oil price mechanism far beyond the control of the government, thereby exposing the economy to global market fluctuations, slant budgetary protrusions, and renders meaningful developments unapt. The current budget of borrowing in Nigeria is a fall out of the dwindling oil revenue that has sank into abysmal low prices in the international market and has thrown the Nigeria budget in recent years into serious crisis.

Therefore the problems of poor economic growth, insufficient revenue collection and inefficient administrative framework by federal government of Nigeria were the major issues this study investigated. The main objective of this study is to examine the impact of tax revenue collected on the economic growth of Nigeria. The specific objectives were raised.

**Objectives of the Study**

i. Assess the impact of Petroleum Profit Tax on economic growth in Nigeria;
ii. Ascertain the influence of Companies' Income Tax on economic growth in Nigeria;
iii. Examine the impact of Custom and Excise Duties on economic growth in Nigeria.

Appreciable efforts have been made on empirical studies carried out by researchers on effect of tax revenue on economic growth like; Kamiar and Hashem (2013), Keightley (2014), Baranova and Janickova (2012), and particularly in Nigeria by Okoli and Afolayan (2015), Anyaduba and Aronwa (2015), Akhor and Ekundayo (2016), Okoye and Gbegi (2013), Lawrence (2015), Ofishe (2015), Onakoya and Afintimi (2016), Abdullahi, Madu and Abdullahi (2015), Manukaji and Nwadialor (2016), Cornelius, Ogar and Oka (2016), Naomi and Sule (2015), Gwangdi and Abubakar (2015), Grace, David and Oliver (2016) to mention a few.

It has been identified that none of the above mentioned existing studies relate the petroleum profit tax, company income tax, and custom and excise duties to the economic growth of Nigeria. To that extent, it is also observed that none of the studies looked at the tax revenue in aggregate and disaggregate analysis in Nigeria. Thus, this study is timely and appropriate due to the situation of the economy in which most of the states cannot afford to pay their workers' salaries and the issue of federal government bailout fund does not seem viable enough to solve the problem. The period of the study is forty (40) years spanning from 1979-2018.

**Conceptual Issues:**

**The Concept of Taxation:** Tax is a compulsory contribution imposed upon persons and firms by a public authority to cover government expenses (Attamah, 2004). Attamah opined that tax is a good source of revenue to government, as it is regularly imposed annually or as government thinks fit. He affirmed that income from taxes on people and firms play critical roles in any nation's economic growth and development. Tax administration and collection is a major problem facing taxation world-wide. Bad administration and collection of tax has led to tax evasion. Udabah (2002), referred to tax as a necessary vice to meet the cost of those services a society wishes its government to provide. According to Udabah (2002), tax is an obligatory transfer from tax payers to the public authority. Udabah (2002), argued that taxation was originally formulated to raise revenue so as to cover the state expenditure. Today however, it has been assumed to play a more far reaching role which includes curtailing the consumption of harmful commodities, to regulate the production of certain commodities. It is used as an instrument of economic policy, to control monopoly, curb inflation, and protect infant industries. The Institute of Chartered Accountants of Nigeria (2014) 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.

**Petroleum Profit Tax in Nigeria**

Petroleum taxation is the instrument of choice for sharing wealth between host governments and international oil companies. It is a direct tax, levied annually on net profit of a petroleum tax payer, who is carrying on the business of petroleum exploration and production (Evans & Hunt, 2011).

Petroleum taxation has some particular features as a result of oil industry's unique characteristics: the huge central contribution of revenue to the economy, the volatility of oil prices, the large operating and development costs, the high uncertainty associated with petroleum geology, the specific characteristics of individual oilfields, and the possibility of re-investment. The cost of petroleum projects tend to be incurred up-front and the time lags between the discoveries of oil or gas reserves to the time of first production can be significant. This adds to the challenge of designing and implementing appropriate petroleum tax system aimed at achieving a balance between both government and industry interest (Evans & Hunt, 2011). A variety of tax instruments have been used to capture the economic rent from oil activity over the years namely; gross royalty, brown tax, resource rent tax (RRT) and income tax. Royalty is an output- based tax because it is levied on the unit or value of production, whereas the other three instruments are profit based or cash flow taxes, because they are imposed on net profit or operating income after capital investment (Saheed, Abarshi & Ejide, 2014).

Attamah (2004) asserted that Petroleum Profit Tax is the most important tax in Nigeria in terms of its share of total revenue contributing 95 and 70 percent of foreign exchange earnings and government revenue respectively. According to Jakir (2011), Nigerian law by virtue of the Petroleum Profits Tax Act (2004) which was further amended in 2007 requires "an Act to impose a tax upon profits from the winning of Petroleum in Nigeria, to provide for the assessment and collection thereof and for purposes connected therewith".

Due to the importance attached to oil exploration and production by the Federal Government of Nigeria, the taxation of profit of companies engaging in such operation became inevitable under a tax Act different from the companies income tax Act (Success, Success & Ifurueze, 2012). According to Success *et al.*, this Act became effective 1st January, 1959 since export of oil to the international market started in 1958. This ordinance under which petroleum profit is taxed is referred to as the Petroleum Profit Tax Act (PPTA).

Petroleum Profit Tax involves the charging of tax on the incomes accruing from petroleum operations (Nwezeaku, 2005). He further noted that the importance of petroleum to the Nigerian economy gave rise to the enactment of a different law regulating the taxation of incomes from petroleum operations. The petroleum profit tax is charged, assessed and payable upon the profits of each accounting period of any company engaged in petroleum operations during any such accounting period, usually one year (January to December) (Anyanwu,1993).

**Company Income Tax in Nigeria**

A Company is defined by Section 93 (1) of the Companies Income Tax Act CAP 60 Laws of the Federation of Nigeria (LFN), 1990 as “any company or corporation other than a corporation sole, established by or under any law in force in Nigeria or elsewhere”. The registration of limited liability companies is being carried out by the Corporate Affairs Commission (CAC) in Nigeria. The world Limited (Ltd) or Public Company (Plc) is expected to end each name of a registered company.

According to (CAMA 1990), a company duly registered in accordance with the provision of the Companies and Allied Matters Act (hereinafter referred to as CAMA 1990) or any enactment replaced by it is what the Act recognizes as a company in Nigeria. Although CAMA 1990 defines a foreign company to mean company incorporated elsewhere than in Nigeria, it does not recognize its existence in Nigeria for business activities. It only defines it for the purpose of identifying it to comply with the mandatory incorporation processes before carrying on business in Nigeria and to benefit from exemption from registration. Section 54(1) CAMA 1990 provides that:

> *Subject to Sections 56 - 59 of this Act, every foreign company which, before or after the commencement of this Act, was incorporated outside Nigeria, and having the intention of carrying on business in Nigeria shall take all steps necessary to obtain incorporation as a separate entity in Nigeria for that purpose, but until so incorporated the foreign company shall not carry on business in Nigeria or exercise any of the powers of a registered company and shall not have a place of business or an address for service of documents or processes in Nigeria for any purpose other than the receipt of notices and other documents as matters preliminary to incorporation under this Act.*

However, the Companies Income Tax Act (CITA) defines 'company' in a broader sense. It defines a company as:"any company or corporation (other than corporation sole) established by or under any law in force in Nigeria or elsewhere".

The CITA permits the existence of foreign companies and charge their profits derived from Nigeria to tax. John (2011), argued that both Acts of the National Assembly made to serve economic and fiscal purposes. While CAMA regulates incorporation, control and management of companies, CITA charges to tax the profits of these companies. Before CITA can be effective, there must be in existence companies brought into being by CAMA. When CAMA prohibits the existence of a class of company can CITA permit or legalize it? This question according to John (2011), brings about two conflicting public interest. He said:

“One is the prevention of proliferation of foreign companies, unless registered as Nigerian company. The second is the revenue generation from the profits of companies including foreign companies.” The two conflicting public interest according to John (2011), constitute key components of Nigerian economic policy and needs to be reconciled and harmonized. It is important to state that the definition of company above analysed is the same under the Petroleum Profit Tax Act.

The CITA however, exempts the profits of any company engaged in ecclesiastical, charitable or educational activities of a public character in so far as such profits are not derived from a trade or business carried on by such company; What constitutes a ‘trade or business’ is however, not defined or described in the CITA (as amended).Orojo (2005), referred to the

decision in *Arbisco v FBIR*15 where the Supreme court applied the dictionary meaning which is that a trade or business is:
"The practice of some occupation, business or profession habitually carried on especially when practiced as a means of livelihood' It was also decided in this case that the question of whether the activity in question is a trade or business is a matter of fact and not of law".
CITA also exempts the profits from taxation of any company formed for the purpose of promoting sporting activities where such profits are wholly expendable for such purpose. Company limited by guarantee may be exempted upon an application to the president for an order for exemption.
According to Ariwodola (2000), Companies Income tax is chargeable on:

(i) The global profits of Nigerian companies irrespective of whether or not they are brought into or received in Nigeria.
(ii) The portion of the profits of non-Nigerian companies derived from such companies operations in Nigeria.
(iii) Dividends, interests or royalties due to non-Nigerian companies which are assessed at ten percent (10%) withholding tax rate.

Company Income tax is chargeable on the income of all companies operating in the country except those specifically exempted under the Act. There is some emphasis in the Act on the distinction between Nigerian and non-Nigerian companies. A Nigerian company is defined as one incorporated under the Companies and Allied Matters Act 1990, or any enactment replaced by that Act. The total profits of such company are assessable to Nigerian tax irrespective of whether or not all the profit have been derived from, brought into or received in Nigeria.

**Custom and Excise Duties**

Customs duties in Nigeria are the oldest form of modern tax revenue. Their introduction dates back to 1860 known as import duties, which represents taxes on imports into Nigeria, charged either as a percentage of the value of imports or as a fixed amount of contingent on quantity (Buba 2007). Customs duty is a major source of revenue for the Federal Government which is payable by importers of specified goods (Buyonge 2008).
According to Buba (2007), excise duties were also introduced on several goods to broaden the revenue base in Nigeria in 1962. Customs and excise duties is an important component of the non-oil revenue and has remained an important source of revenue before and after discovering of oil in Nigeria and over the years contributed significantly to national development.

**Gross Domestic Product**

According to World Bank Report (2011), GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products, It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

The Central Bank of Nigeria (2010) defined GDP as the money value of goods and services produced in an economy during a period of time irrespective of the nationality of the people who produced the goods and services. It is usually calculated without making any allowance for capital consumption (or deductions for depreciation).

**Theory of Economic Growth**

Interest in growth issues has led to the development of various theories of growth, each purporting to explain the mechanics of growth. However, in the context of this study, the Keynes' growth theory provides the theoretical basis for this study because it explains how expansion through increase in government expenditure can bring about growth, whereas government expenditure is a function of revenue, of which petroleum taxation is a major source.

Keynes was of the opinion that increase in government expenditure leads to higher economic growth. The theory demonstrates a long- term full employment which requires that two fundamental conditions be met, that is, the ratio of investment to income must equal the full employment savings ratio, and the economy's rate of growth must equal the natural rate of growth. Keynes asserted that a key factor that could account for an economy's stagnation and unemployment was the deficiency of aggregate effective demand. Keynes view was that the solution to the problem of economic stagnation rested on expansion of aggregate demand through massive increase in government expenditure (Alfred, 2005). Whereas, government expenditures also depends on the revenue accruing to it through taxation, including petroleum profit tax.

**Empirical review**

Anyaduba and Aronnwan (2015) investigated the impact of tax revenues collected by the government on infrastructural development in Nigeria. This study restricts itself to taxes collected by the federal government of Nigeria. The longitudinal research design was used. The choice of this design is based on the observation of variables over a period of time (1980 to 2014). The hypotheses raised were evaluated using the Error Correction Model. The findings show that CIT and TET have significant impact on the level of infrastructural development while PPT and VAT have non-significant impact.

Akhor and Ekundayo (2016) examined the impact of indirect tax revenue on economic growth in Nigeria. The study uses value added tax revenue and custom and excise duty revenue as independent variables and economic growth was proxy with real gross domestic product as the dependent variable. The study employ secondary data collected from Central Bank of Nigeria statistical bulletin for the period covering 1993 to 2013 for the empirical analysis using the convenient sampling techniques. The result revealed that value added tax had a negative and significant impact on real gross domestic product. In the same vein, past custom and excise duty had a negative and weakly significant impact on real gross domestic product. The Error Correction Model (ECM (-1)) coefficient had a correct negative and statistically significant sign. This shows that short-run deviation can be quickly corrected. The Durbin-Watson positive value indicates the absence of autocorrelation in the model.

Onakoya and Afintinni (2016) investigated the co-integration relationship between tax revenue and Economic growth in Nigeria from 1980 to 2013. Various preliminary tests including descriptive statistics, trend analysis, and stationary tests using Augmented Dickey Fuller (ADF) test were conducted. The Engle-Granger Co-integration test was employed to determine whether a long run relationship existed between the variables. The Vector Error correction model was employed to confirm the long run relationship and determine the short run dynamics between the variables. The result revealed a significant positive relationship at 5% level of significance between Petroleum profit tax, Company Income tax and economic growth, but a negative relationship between economic growth and customs and Excise Duties. However, the tax components are jointly insignificant in impacting the Nigerian economic growth.

Nasiru, Haruna and Abdullahi (2016) opined that the Nigerian tax reform in the early 1990s was a fallout of market reform in the mid- 1980s, while the structural adjustment program (SAP) piloted a transition to market driven economy where emphasis is laid on market forces with minimal government intervention, hence, the introduction of Value Added Tax (VAT) in 1994. This study empirically examined the impact of VAT on the level of economic activities in Nigeria from its inception to 2014. The study uses secondary data which was analysed using Johansen (1988) co-integration test. The quarterly data ranged from 1994 Q4 to 2014 Q4. The study found evidence of a significant positive impact of VAT on economic growth. In the same vein, other government revenues, which include all oil receipts and other receipts into the federation account other than VAT were also found to be positively related to economic growth during the study period.

Cornelius, Ogar and Oka (2016) examined the impact of tax revenue on the Nigerian economy. The objectives of the study were; to examine the relationship between petroleum profit tax and the Nigeria economy, the impact of company income tax on the Nigerian economy and the effectiveness of non-oil revenue on the Nigerian economy. Data were sourced from Central Bank Statistical Bulletin and extracted through desk survey method. Ordinary least square of multiple regression models was used to establish the relationship between dependent and independent variables. The finding revealed that there is a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It showed that there is a significant relationship between non-oil revenue and the growth of the Nigeria economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy.

Adegbite (2015) examined the effects of corporate income tax on revenue profile; it also determined the impact of corporate tax revenue on economic growth in Nigeria using multiple regression analysis method from 1993 to 2013 and found that there is a positive significant impact of corporate tax on revenue in Nigeria. The study concluded that government should reduce corporate income tax rather than eliminate corporate tax in Nigeria, lower corporate tax will increase the demand for labour which will in turn raises wages and increases consumption.

Francis, Ochuko and Ardi (2018) examined the tax revenue and economic growth: A study of Nigeria and Ghana for the year 2000 – 2016. Tax revenue is frequently considered as an alternative form of sustainable financing within a stable and predictable fiscal environment to promote growth and enable governments to finance their social and infrastructural needs. The objective of the study is to examine the effect of tax revenue on economic growth of Nigeria and Ghana. The study used multiple regressions as tools of analysis. The study finds a positive impact of tax revenue on the gross domestic product of Nigeria and Ghana confirming prior studies.

## Methodology

### Model Specification

Guided by the perceived functional relationship between the matrix of economic growth (Gross Domestic Product) with PPT, CIT, and CED revenue, a link is forged among the 3 (three) variables. From sub-macro and micro economic perspectives, the model for this study states that economic growth (GDP) depend on PPT, CIT, and CED revenue. The model which is in line with the work of Ogbonna and Ebimobowei (2012) is a modified form of the model specified by Anyanwu (2007) in his study of Nigeria's tax efforts and economy development. Thus, the functional relationship and the resultant models are as specified below:

$$GDP_t = f\,(PPT_t, CIT_t CED_t)$$

$$\log GDP_t = \alpha + \beta_1 \log PPT_t + \beta_2 \log CIT_t + \beta_3 \log CED_t + U_t$$

Where:

GDP= Economic growth (dependent variable)

Economic Growth; GDP is measured using Gross Domestic Product at a given time

PPT= Petroleum Profit Tax (independent variable), PPT; is measured using PPT at a given time.

CIT= Company Income Tax (independent variable), CIT is measured using CIT at a given time.

CED= Custom Excise Duties (independent variable), CED is measured using CED at a given time.

U= Error term

*A priori* expectation is that $\beta_1$, $\beta_2$, and $\beta_3 > 0$

Since the data to be used for the analysis is time series, the study employed co-integration tests to avoid spurious regression. The first step would be a diagnostic test of each of the variables for stationarity. This study employs the Augmented Dickey - Fuller test for unit root. If any of the series found to be integrated, then a co-integration test will be conducted using Autoregressive Distributed Lag (ARDL).

The generalized aggregate ARDL (p,q) model can be shown as follows(Green,2003):

$$\Delta LGDP_t = \beta_0 + \sum_{i=1}^{m} \beta_1 \Delta LGDP_{t-1} + \sum_{i=1}^{m} \beta_2 \Delta LTAXREV_{t-1} + \sum_{i=1}^{m} \beta_3 \Delta EXR_{t-1} + \sum_{i=1}^{m} \beta_4 \Delta INT_{t-1} + \sum_{i=1}^{m} \beta_5 \Delta INF_{t-1} + \alpha_1 LGDP_{t-1} + \alpha_2 LTAXREV_{t-1} + \alpha_3 EXR_{t-1} + \alpha_4 INT_{t-1} + \alpha_5 INF_{t-1} + \varepsilon_t$$

However, the disaggregate model of the ARDL is specified as:

$$\Delta LGDPt = \beta 0 + \sum_{i=1}^{m} \beta 1 \Delta LGDPt-1 + \sum_{i=1}^{m} \beta 2 \Delta LPPTt-1 + \sum_{i=1}^{m} \beta 3 \Delta LCITt-1 + \sum_{i=1}^{m} \beta 4 \Delta LCEDt-1 +$$

The ARDL model was divided into two parts, the first part of the equation with $\beta_0$ to $\beta_3$ represent short run model of the relationships among the variables while the coefficients $\alpha_1$ to $\alpha_3$ represent the long run model of the ARDL.

**Research Design**

A quantitative research design was used in this study, using time series data due to the nature of the variables under study. The study used E-view 9.0 version in carrying out its analysis. Before analyzing the time series data, some diagnostic test such as descriptive statistics, unit root test with the aid of Augmented Dickey Fuller and Phillip Peron, Bounds test, ARDL long run test and short test, Diagnostic test, stability test, and recursive residual test were carried out to ensure that the model and estimated parameters are stable.

**Sample size and sampling Technique**

The population of this study is the sample size. The study made use of the purposive sampling technique. The Central Bank of Nigeria (CBN) and Federal Inland Revenue Service (FIRS) have been chosen for the purpose of this study. The justification for the choice of these bodies is because they are the custodians of information which includes aggregate tax figures in Nigeria.

**Method of Data Analysis**

In carrying out this research, Autoregressive Distributed Lag (ARDL) model was employed. This is because ARDL model have more advantages than the Johansen cointegration approach. First , the ARDL approach can be applied irrespective of whether the regressors are I(1) and I(0). Second, while the Johansen cointegration techniques require large data samples for validity, the ARDL procedure provides statistically significant result in small samples (Udoh and Ogbuag , 2012). That means, it avoids the problem of biasness that arise from small sample size (Chaudhry & Chaudhry, 2006).

**Analysis and Interpretation**

**Unit Root Tests for Disaggregate Model**

Table 1: Unit Root Test (Augmented Dickey-Fuller and Phillips-Perron)

| Variables | Augmented Dickey- Fuller | | Phillips-Perron | |
|---|---|---|---|---|
| | Level | First Diff. | Level | First Diff. |
| LGDP | -0.850202 | -8.628229*** | -3.399892* | -8.603426*** |
| LPPT | -2.234602 | -5.354489*** | -2.278192 | -6.461869*** |
| LCIT | -3.467290* | -9.197617*** | -3.450040* | -10.25508*** |
| LCED | -4.119024** | -4.673416** | -3.255339* | -12.62814*** |

*Note: ***, ** and * indicate significant at 1%, 5% and 10% respectively.*

Source: *Authors computation from Eviews output.*

Table 1 contains the results of unit root test using Augmented Dickey-Fuller and Philips-Perron testing approaches. From ADF test the result indicated that company income tax, custom and excise duty are stationary at level value while economic growth, petroleum profit tax are stationary after first difference. The P-P test reveals that economic growth, company income tax, custom and excise duty are all stationary at level value, while petroleum profit tax is stationary after first difference. These differences in the order of integration serve as a reason or justification for the study to apply the use of ARDL in estimating the existence of integration.

**ARDL Bounds Test for Disaggregate Model**

Table 2: ARDL Bounds Test

| | | |
|---|---|---|
| Test Statistics | | |
| F-Statistics | 11.59 | |
| Critical Value Bounds | | |
| Significance levels | I(0) Bounds | I(1) Bounds |
| 10% | 2.08 | 3.00 |
| 5% | 2.39 | 3.38 |
| 1% | 3.06 | 4.15 |

Source: Authors' Computation from Eviews Output.

The result in Table 2 indicates that there is an existence of co-integration among the variables, this is because the f-statistic is greater than the upper and lower critical value at all significance levels. Therefore, null hypothesis of no co-integration cannot be accepted. This also gives the study opportunity to estimate long run and short run coefficients of the ARDL model.

## Long-Run Coefficients of the ARDL Disaggregate Model

Table 3: Result of the Estimated Long-Run Coefficients of the ARDL

| Dependent Variable: LGDP | | | | |
|---|---|---|---|---|
| Variables | Coefficients | std. Error | t-Statistics | Prob. |
| LPPT | 0.467517 | 0.091453 | 5.112083 | 0.0009 |
| LCIT | 1.974811 | 0.249653 | 7.910209 | 0.0000 |
| LCED | -0.127264 | 0.024337 | -5.229291 | 0.0008 |
| C | 10.842149 | 1.059327 | 10.234942 | 0.0000 |
| $R^2$ = 0.95, Adj. $R^2$ = 0.85, AIC = 0.355259, SIC = 1.140628, HQC =0.563618, DW = 1.98, F-Stat. = 10.20 (0.0012) | | | | |

Source: Authors calculation Using Eviews Version 9.

According to the results, petroleum profit tax and company income tax have positive and statistically significant influence on economic growth in Nigeria. An increase or decrease in petroleum profit tax and company income tax will upsurge or downward the level of economic growth in Nigeria. A 1% increase in both petroleum profit tax and company income tax is associated with the 0.47% and 1.97% increase in economic growth to Nigeria. Furthermore, excise and custom duty has negative effect on the growth of Nigeria's economy. An increase (decrease) in excise and custom duty will generate decrease (increase) in economic growth to Nigeria over the study period. When excise and custom duty increase by 1%, economic growth will decrease by 0.13%.

## Short-Run Coefficients of the ARDL Disaggregate Model

Table 4 below showed the short run coefficient of the ARDL among the variables under study. This explained in the short run if explanatory variables have significant effect on economic growth as measured by the gross domestic product.

Table 4: Estimated Short-Run Coefficients of the ARDL Model

| Dependent Variable: Δ(LGDP) | | | | |
|---|---|---|---|---|
| Variables | Coefficients | std. Error | t-Statistics | P-value |
| D(LPPT (-1)) | -0.369132 | 0.119519 | -3.088485 | 0.0149 |
| D(LCIT(-1)) | -2.828605 | 0.312517 | -9.051031 | 0.0000 |
| D(LCED(-1)) | 0.154062 | 0.024120 | 6.387365 | 0.0002 |
| ECM (-1) | -0.287340 | 0.191903 | -11.919231 | 0.0000 |

Source: Authors' computation Using Eviews Version 9.

The result of the short run coefficients is presented in Table 4. The result shows that petroleum profit tax, company income tax, have statistically negative effect on economic growth in the short run while excise and custom duty have statistically positive influence on economic growth. The speed of adjustment has corrected sign. It validated the evidence of co-integration. In case of any disequilibrium in the economy the error correction term will correct itself at the speed of 29%.

## Diagnostic Tests for Aggregate Model

Table 5: Results of the Diagnostic Tests

| Serial Correlation Test | | | |
|---|---|---|---|
| F-statistic | 1.430318 | Prob. F(2,6) | 0.3105 |
| Obs*R-squared | 7.748346 | Prob. Chi-Square(2) | 0.0208 |
| Normality Test | | | |
| F-Statistics | 4.85 | Probability Value | 0.08 |

Source: Authors' Computation Using Eviews Version 9.

The autocorrelation test shows that there is no autocorrelation problem attached to the model and the result is reliable. From the normality test, the result indicates that the variables are not normally distributed. This is due to the fact that, the variables controlled in the model are financially related variables and that most of the financial variables do not follow a normal distribution due to persistent episode of fluctuations.

**Unit Root Tests results for Aggregate Model**

Table 6: Unit Root Test (Augmented Dickey-Fuller and Phillips-Perron)

| Variables | Augmented Dickey- Fuller | | Phillips-Perron | |
|---|---|---|---|---|
| | Level | First Diff. | Level | First Diff. |
| LGDP | -0.850202 | -8.628229*** | -3.399892* | -8.603426*** |
| LTAXREV | -1.866311 | -9.247034*** | -2.701688 | -9.268198*** |
| EXR | -1.769274 | -4.677705*** | -0.993301 | -4.504574*** |

*Note: ***, ** and * indicate significant at 1%, 5% and 10% respectively.*

Source: *Authors computation from Eviews output.*

In estimating the nexus among the variables, this study conducted a unit root test via the employment of Augmented Dickey-Fuller and Philips-Perron testing approaches. The result of the ADF test presented in Table 6 shows that economic growth, tax revenue and exchange rate are all stationary after first difference while inflation rate is stationary at level value. Similarly, from the P-P test, the result reveals that tax revenue and exchange rate are stationary after first difference while economic growth is stationary at level value. The variation in the order of integration obtained from the unit root test confirmed to us that ARDL model is best technique to handle the result of this nature. The then go further to estimate bounds test for cointegration.

**ARDL Bounds Test for the Aggregate Model**

Table 7: ARDL Bounds Test

| | | |
|---|---|---|
| Test Statistics | | |
| F-Statistics | 8.05 | |
| Critical Value Bounds | | |
| Significance levels | I(0) Bounds | I(1) Bounds |
| 10% | 2.2 | 3.09 |
| 5% | 2.56 | 3.49 |
| 1% | 3.29 | 4.37 |

Source: Authors' Computation from Eviews Output.

The result of the bound test in Table 7 indicated that, there is an evidence of cointegration among the variables. This is because the F-statistics value (8.05) is greater than the critical value bounds even at 1% level of significance. Therefore, the null hypothesis of no cointegration cannot be accepted while the alternative hypothesis is accepted. This is also permitting the study to generate the long run and short run coefficients of the ARDL model.

**Long-Run Coefficients of the ARDL Aggregate Model**

Table 8: Result of the Estimated Long-Run Coefficients of the ARDL

| Dependent Variable: LGDP | | | | |
|---|---|---|---|---|
| Variables | Coefficients | std. Error | t-Statistics | Prob. |
| LTAXREV | 1.718758 | 0.258426 | 6.650862 | 0.0000 |
| EXR | -0.016296 | 0.007536 | -2.162380 | 0.0390 |
| C | -6.444793 | 2.677524 | -2.406997 | 0.0227 |
| $R^2$ = 0.62, Adj. $R^2$ =0.51, AIC = 1.100287, SIC =1.488137, HQC = 1.238281, DW = 2.04, F-Stat. = 5.94 (0.0001) | | | | |

Source: *Authors calculation Using Eviews Version 9.*

The estimated long run coefficient estimated shows that there is a statistically positive relationship between economic growth and tax revenue in Nigeria. An increase (decrease) in tax revenue will lead to increase or decrease in economic growth in Nigeria. A 10% rise in tax revenue will lead to 17.19% rise in economic growth in Nigeria throughout the period under review. It is also demonstrated that exchange rate has negative and statistically insignificance effect on economic growth. An increase in exchange rate depreciation is associated with decrease in economic growth. A 10% changes in exchange rate will lead to 0.16% negative change in economic growth.

**Short-Run Coefficients of the ARDL Aggregate Model**

Table 9: Estimated Short-Run Coefficients of the ARDL Model

| Dependent Variable: ΔLGDP | | | | |
|---|---|---|---|---|
| Variables | Coefficients | std. Error | t-Statistics | P-value |
| D(LTAXREV) | 0.346622 | 0.168757 | 2.053971 | 0.0491 |
| D(EXR) | -0.008797 | 0.003001 | -2.931230 | 0.0065 |
| ECM (-1) | -0.469159 | 0.059252 | -7.918041 | 0.0000 |

*Source: Authors' computation Using E-views Version 9.*

In the short run the outcomes presented in Table 9, acknowledged that tax revenue causes positive effect on economic growth and exchange rate has negative impact on the growth of the Nigeria's economy. Consequently, the error correction term has the needed sign negative, less than one and statistically significant at 1%. This is confirming the evidence of long run relations among the series. In case of any distortion in the economy, the error correction model indicating that the economy will correct itself from the disequilibrium toward the equilibrium at the rate of 46%.

Table 10: Results of the Diagnostic Tests

| Serial Correlation Test | | | |
|---|---|---|---|
| F-statistic | 1.054430 | Prob. F(2,27) | 0.3623 |

| | | | |
|---|---|---|---|
| Obs*R-squared | 2.752999 | Prob. Chi-Square (2) | 0.2525 |
| Normality Test | | | |
| F-Statistics | 6.055 | Probability Value | 0.048 |

Source: Authors' Computation Using E-views Version 9.

To ensure the reliability of the estimated results, the study conducted post-estimation tests so as to identify the fitness or otherwise of the results. The tests were carried out using autocorrelation and normality tests and the results is tabulated in Table 10. The serial correlation test shows that the model is free from serial correlation problem. The normality test testified that; the model is not normally distributed. This is resulted from the fact that financial variables have volatility clustering and as a result the data will not be normally distributed due to persistent degree of fluctuations.

Petroleum Profit Tax, and Company Income Tax have negative and statistically significant impact on economic growth performance indicator, while custom and excise duties has positive and statistically significant effect on economic growth performance in the short-run as shown in Table above. This further corroborates the results of the empirical analysis and gives insight to the result obtained from this research that the Petroleum Profit Tax has a significant positive relationship with the Gross Domestic Product.

## Conclusion and Recommendations

### Conclusion

This study has examined the effect of tax revenue on economic growth of Nigeria. All the independent variables (Companies Income Tax, Petroleum Profit Tax, as well as Customs and Excise Duties) have statistical significance on the dependent variable (Gross Domestic Product). This study has been able to describe the roles that petroleum profit tax, custom and excise duty and company income tax play in the economic growth in Nigeria. Nigeria has the potential to build a prosperous economy, reduce poverty significantly, and provide the health, employment generation, education, and infrastructure services to its population needs. Considering the positive and significant relationship between petroleum profit tax, company income tax and economic growth in Nigeria, there is an urgent need for government to prioritize her needs as petroleum revenue continues to decrease and a situation where most of registered firms were not in the tax system.

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

(i) Government should transparently and judiciously account for the revenue it generates through petroleum profit tax, Custom and Excise Duties and Company Income Tax by investing massively in the provision of infrastructural facilities.

(ii) Government should try to diversify the economy. In so doing, revenue accrue to government through petroleum profit tax should be judiciously used to develop other sectors, especially in developing other mineral resources and agricultural sector since the country has what it takes in terms of fertile land, favourable climate and manpower which will lead to economic growth.

(iii) Government should imposed strict penalties on any individual or corporate body that engage in any act of tax evasion in order to serve as a lesson for those who intend to evade tax which will lead to increase in revenue generation and subsequently result in increase in economic growth of the country.

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