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Impact of Oil and Non-oil Tax Revenue on Economic Growth in Nigeria

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ABSTRACT

This study examined the impact of oil and non-oil tax revenue on economic growth in Nigeria. Few works have covered oil and non-oil taxation and the relationship of petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT) and custom and excise duties tax (CED) on Real Gross Domestic Product of Nigeria. The study adopted ex-post facto research design, and data were drawn from the annual reports of Central Bank of Nigeria and Federal Inland Revenue Services publications. Error Correction Model was employed to analyse the data collected after subjecting the series to unit root test and cointegration test. The result of the study showed that PPT with coefficient of 31.71067 and P = 0.0004 and CED with coefficient of 1.786145 and P = 0.0206 had appositive significant relationship with economic growth, while CIT with coefficient of −14446.50 and P = 0.0066 and VAT with coefficient of −23.33177 and P = 0.0001 had a negative significant relationship with economic. The study recommends that taxation is appropriately controlled to boost economic growth, lower inflation, and create jobs in the country. More attention to channelling of PPT and CED revenue collections to infrastructural developments will bring about economic growth of the country.

Keywords: Economic Growth, Gross Domestic Product, Non-oil Tax, Oil Tax, Revenue
JEL Classification: O47, H71

1. INTRODUCTION

Every accountable and competent government has a primary responsibility to provide appropriate public goods and basic infrastructure to improve the level of living of its population. Nigeria, like many other countries, is reliant on revenue production to support its population's basic and infrastructure demands. Taxation is one of the available sources of revenue for delivering essential services to the majority of people in a given location. (Olufemi et al., 2018). The demand for tax payments has been a worldwide phenomenon since it affects every economy, regardless of national differences. As a result, a tax is an imposed monetary contribution to the government that is mandated by law. (ICAN, CITN) To put it differently, every tax must be based on a legally binding statute. Tax revenue in Nigeria can be divided into two categories: oil and non-oil tax revenue. Oil tax revenues are derived through taxes imposed on the earnings and profits of oil corporations operating in Nigeria. Petroleum profit tax (PPT) and royalty from oil extraction economic rentals are two examples. Non-oil tax revenues, on the other hand, are revenues derived from taxes other than oil-related activities, such as corporate income tax (CIT), personal income tax (PIT), value added tax (VAT), and so on (Yahaya and Yusuf, 2019).

The agricultural industry was the basis of the Nigerian economy before the discovery of oil in Oloibiri, Bayelsa State, Nigeria (Abomaye-Nimenibo et al., 2018). According to the World Bank (2013), before oil, Nigeria's agriculture industry generated nearly

95% of the country's foreign exchange revenues, over 60% of its employment potential, and around 56% of its gross domestic earnings. Following the discovery of oil, Nigeria's petroleum industry grew to become the country's largest. Oil accounted for almost 90% of foreign exchange earnings and about 80% of federal revenue and adds to the Nigerian economy's rate of growth. The oil boom of the 1970s led to a neglect of the country's agricultural and manufacturing sectors in favour of the oil industry. Oil has undoubtedly contributed significantly to Nigeria's revenue creation and economic progress, but the country's overdependence on the oil sector, as well as the urgent need for diversification, have become major concerns. (Abomaye-Nimenibo et al., 2018).

Since independence, the Nigerian state has struggled with economic growth, with several policies aimed at reviving the economy failing to provide real results. Unemployment, high death rate due to a poor health-care system, brain drain due to insufficient educational funding, lack of essential infrastructure, high inflation, insecurity, and other concerns continue to plague Nigeria. The occurrence of all of these critical challenges, as well as the recent drop in crude oil prices on the global market, necessitates a look at the impact of tax revenue on economic growth (Ewa et al., 2020). Because of its overdependence on the oil sector, Nigeria's economy has suffered substantial economic losses over the years. This has necessitated the urgent need for economic diversification to boost economic growth. The most pressing issue is determining the best balance between a tax system that is business and investment friendly while also generating enough income for the delivery of public services, which makes the economy more appealing to investors (Abomaye-Nimenibo et al., 2018).

Taxation is necessary for the government to provide essential services to citizens, and citizen neglect results in a significant loss of money and the government's incapacity to provide basic infrastructure that enhances the citizens' standard of living. This is reflected in a statistic from the Nigeria Bureau of Statistics (NBS), which estimates Nigeria's employed population at 69.5 million as of September 2018. However, the individual tax-paying population is projected to be 19 million, implying that around 50.5 million Nigerians are employed but not paying taxes. The low tax-to-GDP ratio can be attributed to a low degree of compliance. When compared to South Africa, where the tax-to-GDP ratio is more than 25%, this is even more concerning. The tax-to-GDP ratio in Nigeria is among the lowest in the world. In 2018, it was estimated to be 6.3% according to the Organisation for Economic Cooperation and Development (OECD). Developed countries like USA has a tax estimate of 24.5% in 2019 according to OECD. Developed countries that have a higher compliance rate and better management have been able to use their resources to provide important services for their residents' welfare. Tax-to-GDP ratios in countries such as the United States, France, and Denmark are high, owing to strong taxpayer compliance and good tax administration.

Other studies such as (Abomaye-Nimenibo et al., 2018; Mohammed et al., 2020; Yahaya and Yusuf, 2019) have expended significant effort on existing literature focusing on non-oil tax revenue and economic growth using a related approach (linear regression). However, this study therefore, seeks to close the knowledge gap by examining the extent to which both oil tax revenue (Petroleum Profit Tax) and non-oil tax revenue (Companies Income Tax, Personal Income Tax, Value Added Tax) impacts economic growth in Nigeria using a different approach (Auto Regressive). Using empirical data to determine the impact of taxation on economic growth in Nigeria is a timely research project, as there is a pressing need to investigate the relationship between petroleum profit tax, corporate income tax, customs and excise levies, and economic growth in Nigeria. This study will not only ensure that the country's income base is improved, but it will also position the government to take full advantage of the new millennium global tax reform system. The study would be beneficial to tax policy makers, researchers, and the public. This study therefore seeks to answer the following questions.

1. What is the significant relationship between Petroleum Profit Tax and economic growth in Nigeria?
2. What is the significant relationship between Companies and Excise Duty Tax and economic growth in Nigeria?
3. What is the significant relationship between Personal Income Tax and economic growth in Nigeria?
4. What is the significant relationship between Value Added Tax and economic growth?

To address the above stated questions, annual time series data were collected for the period 1980 to 2019 from the Central Bank of Nigeria (CBN) Statistical Bulletin, and Federal Inland Revenue Services (FIRS) Tax Statistics for the reference period in order to test the following research null hypotheses formulated:

- $H0_1$: there is no significant relationship between Petroleum Profit Tax and economic growth in Nigeria
- $H0_2$: there is no significant relationship between Companies' Income Tax and economic growth in Nigeria
- $H0_3$: there is no significant relationship between Custom and Excise Duty Tax and economic growth in Nigeria
- $H0_4$: there is no significant relationship between Value Added Tax and economic growth in Nigeria.

2. LITERATURE REVIEW

The Nigerian tax system dates back to 1904, when the personal income tax was implemented in Northern Nigeria prior to the colonial masters' unification of the country. It was eventually adopted in the Western and Eastern regions through Native Revenue Ordinances in 1917 and 1928, respectively. Among other amendments in the 1930s it was later incorporated into Direct Taxation Ordinance No. 4 of 1940 (Bukie and Adejumo, 2011). In essence, Nigeria's tax system is based on British tax rules and has undergone a number of adjustments in recent years. Different governments have continued to improve the system since then. The recent amendment to the Companies and Allied Matters Act 2016, which gave birth to the Companies and Allied Matters Act (CAMA) 2020, has made a significant improvement to the country's tax system.

The Joint Tax Board and the Federal Inland Revenue Services are the two main bodies in charge of tax administration in Nigeria. The Joint Tax Board was founded in 1961 to provide guidance

and coordinate various aspects of tax revenue, as well as to ensure uniformity in both the execution of the Personal Income Tax Act 1993 and the tax incidence on persons across Nigeria. The Federal Board of Inland Revenue, on the other hand, was founded in 1990 with the authority to manage corporate income taxes. The federal Inland Revenue Service (FIRS), which was founded in 1993 and is responsible for income tax assessment, collection, accounting, and administration, is the main operator of this entity. The three tiers of government (federal, state, and local government) enforce tax revenue under current Nigerian law, with each domain specifically defined in the Taxes and Levies (authorized list for collection) decree, 1998 (Appah, 2010). Multiple taxation by the three tiers of government, however, remains a problem in Nigeria, posing a significant obstacle and increasing welfare costs. The low productivity of the Nigerian tax system has been a source of worry for successive governments. This can be attributed to flaws in the tax administration and collecting system, complicated legislation, and general apathy especially on the part of those outside the tax net.

2.1. Concept of Taxation

The word 'tax' is derived from the latin word 'taxo', that is to estimate the value or compute the value (Lewis et al., 1975). As a result, tax is defined as a regular and obligatory payment made by citizens to the government in exchange for the use of government services (Agunbiade et al., 2020). According to World Bank (2000), Taxes are the forced transfer of income from the rest of the economy to the government. Chibu and Njoku (2015), Emphasize that taxes are an important source of revenue for all economies, and that they are typically utilized to close the gap between the rich and the poor. Tax income is recognized as the most essential financial source for governmental public expenditures among the many ways the government might create cash. (Fregnall-Hughes, 2014).

Taxation is the process of forcing communities or groups of people to contribute in a certain amount and in a certain way for the administration and growth of society. (Ogundele, 1999). Taxation is a non-penal levy imposed by the government on the profits, income, or consumption of its citizens through its agent. (Ojong et al., 2016). Because the government has particular tasks to undertake for the benefit of people it rules, taxation is considered as a burden that every citizen must incur in order to sustain his or her government. (Bruno and Emmanuel, 2019). Akintoye and Tashie (2013) asserted that people's willingness to pay taxes is critical and cannot be overlooked. They urged that the government pay attention to citizens' willingness to pay taxes and improve on it. According to Adams (2012), Taxation is the most important source of revenue for modern governments, accounting for 90% or more of their total revenue. However, this is not the situation in Nigeria, where tax money has historically accounted for a minimal part of total government revenue. This is because bulk of revenue needed is derived from oil (Ayuba, 2014). The provision of basic infrastructure is critical for any society's growth. This explains why the government is so concerned about finding a channel through which cash can be made accessible to meet the society's aims (Fagbemi, 2010).

The main objective of taxation is to raise revenue to meet government expenditure and to redistribute wealth and management of the economy (Ojong et al., 2016). Anyanwu (1993) pointed out that there are three basic objectives of taxation. These are to raise revenue for the government, to regulate the economy and economic activities and to control income and employment. Taxes generally have allocation, distributional and stabilization function (Nzotta, 2007). According to Musgrave and Musgrave (2006). The distributional function is concerned with the distribution of income and wealth in order to guarantee that it adheres to what society views to be a fair or just allocation. The stabilization function aims to achieve a high level of employment, a tolerable degree of price stability, and a suitable rate of economic growth while accounting for trade and balance of payment consequences. The decision of the pattern of production, the goods that should be produced, who should produce them, the interaction between the private and public sectors, and the point of social balance between the two sectors are all part of the tax allocation function.

2.2. Oil and Non-oil Tax Revenue

Oil and non-oil tax revenue are the two main types of tax revenue that a country like Nigeria collects. Petroleum profit tax (PPT), royalty, and gas tax are all included in the oil tax revenue. On the other hand, non-oil tax revenue is revenue from direct and indirect sources paid by other sectors of the economy other than the oil sector. Direct taxes are those that are imposed directly on a person or a company, and the individual or company is expected to pay the tax as recommended by the notification, known as an assessment notice. (Abomaye-Nimenibo et al., 2018). Direct taxes are personal income tax (PIT), company income tax (CIT), capital gains tax, withholding tax and education tax. While, the indirect taxes are taxes in which the burden of the taxes are distributed among the taxpayers who pays the tax knowingly or unknowingly. Tax burden is collected from the taxpayers proportionally, progressively, or regressively. Indirect taxes are value added tax (VAT) and custom and excise duties.

2.3. Economic Growth

Economic growth simply refers to an increase in the value of a country's goods and services produced over time, and it may be used to measure a country's size. (Yahaya and Yusuf, 2019). Economic growth is defined by Dwivedi (2004) as a sustained increase in the nation's per capita output through time, or as the net national product over time. It indicates that the pace of rise in total output must be greater than the rate of population growth, resulting in an improvement in citizens' living standards. According to Olapade and Olapade (2010), A rise in economic activity is referred to as "growth." Economic growth is defined as a rise in the value of a country's goods and services over a period of time. (Ewa et al., 2020). Gross Domestic Product is used to measure this increase in economic growth. As a result, it is likely that a country's economic expansion will not result in economic progress in the short, medium, or long term. (Hadjimichael et al., 2014) Economic growth refers to the monetary values of commodities produced in a country over a period of time by its population, regardless of their nationality. GDP can be calculated using the current basic price (Nominal GDP), the constant basic price (Real GDP), or the current market price. Because it accounts for changes in the price level of goods and services produced inside the country at a given time, real GDP has been a good measure

of economic growth. The study used Real GDP as a proxy for economic growth as a result of this.

2.4. Petroleum Profit Tax

The colonial lords first imposed a petroleum profit tax in 1957, but it only became effective and operational in 1958, when Nigeria began exporting crude oil to the world market. Petroleum profit tax, as defined by the Petroleum Profit Tax Act of 1959, is a liability incurred when a corporation sells chargeable oil and gas. Under the rules of the PPTA in Nigeria, disposal includes delivery of chargeable oil to refineries; the tax is levied on the company's earnings from petroleum operations. Petroleum exploration, development, production, and sales are all included in the act's definition of a petroleum operation.

2.5. Companies Income Tax

Profits of all incorporated entities in Nigeria accruing in, derived from, brought into, or received in Nigeria are subject to corporate income tax. (Yahaya and Yusuf, 2019). Non-residents' revenue (private and public limited firms) derived from doing business in Nigeria is subject to this type of tax. (Appah, 2010). The Company's Income Act of 1979, which oversees the assessment and collection procedures and has its roots in the Income Tax Management Act of 1961, established companies' income tax. A number of other revisions have been enacted as Acts or Degrees.

2.6. Custom and Excise Duty Tax

Importers of certain commodities must pay customs duty, which is an important source of revenue for the federal government (Buyonge, 2008). Customs and excise duties are a large portion of non-oil revenue and has been a significant source of revenue both before and after the discovery of oil in Nigeria, contributing significantly to national development over the years. Customs duties are the sum of all duties collected by the Customs and Excise Department on imports and exports. Excise taxes are levied by the government at various rates on certain commodities produced in a country. (Abomaye-Nimenibo et al., 2018).

2.7. Value Added Tax

According to Abata, (2014) VAT, or value-added tax, is a type of consumption tax in which the tax burden is carried by the consumer. He added that the tax burden is transmitted from the producer to the middlemen (wholesaler and retailer), who then pass it on to the consumer. As a result, Vat cannot be avoided unless individuals refrain from purchasing and consuming value added tax goods and services. The VAT system in Nigeria is a multi-step system in which VAT is collected at each stage of the manufacturing process, from the manufacturer to the consumer . VAT is currently set at 7.5%.

2.8. Benefit Received Theory

This idea believes that the taxpayer and the state have an exchange relationship since the state delivers certain commodities and services to society's members. As a result, society members should contribute to the cost of these supplies in proportion to their benefits. (Bhartia, 2009). This notion is found in the CIT, VAT, and PIT relationships with economic growth, where the non-oil tax levies reflect the advantages obtained in the consumption of social goods. Knut Wicksell (1896) and Erik Lindahl were the first to propose this notion (1919). Tax progressivity, company taxes, and property or wealth taxes have all been studied using this idea.

2.9. Prior Studies

From 1993 to 2012, Akwe (2010) looked at the impact of non-oil tax revenue on Nigerian economic growth. Secondary data from the Central Bank of Nigeria's Statistical Bulletin for 2012 was used (CBN). The Ordinary Least Squares Regression was used to analyse the data. The test's findings indicate that non-oil tax revenue has a favourable impact on Nigeria's economic growth. According to the report, the government should intensify its efforts at all levels to increase non-oil tax collection, particularly from the informal sector, because this rise has the potential to grow the economy. It was also advised that the Federal Inland Revenue Service (FIRS) and other Relevant Tax Authorities' administrative machinery be reinforced in order to eliminate deficiencies and internal control failures in the assessment and collection of Non-Oil Taxes in Nigeria.

Yahaya and Yusuf (2009) looked into the impact of non-oil tax revenue on Nigerian economic growth. Ex-post facto research was used in this study. After running the series via unit root and co-integration tests, the data was analyzed using Auto Regressive Distributive Lag (ARDL). CIT had a positive significant association with economic growth, while VAT had a positive insignificant relationship with economic growth, according to the study's findings. According to the report, the government should focus on raising CIT revenue by strengthening tax compliance standards to reduce tax evasion and avoidance. More emphasis on channelling VAT and CED income collections to infrastructural development will result in the country's economic progress.

Using Economic growth as the dependent variable and Petroleum Profit Tax (PPT), Company Income Tax (CIT), and Customs and Excise Duties (CED) as the independent variables, Abomaye-Nimenibo et al. (2018) empirically examine the tax revenue and economic growth in Nigeria from 1980 to 2015. The study's analysis was conducted out utilizing the Multiple Regression Analysis approach. The major analytical methodology used with Econometric software (E-Views 9.0) was the Ordinary Least Square (OLS) method of econometrics. Bukie and Adejumo (2011) used time series data covering the years 1970-2011 to investigate the impact of tax income on economic growth in Nigeria. The study used the Ordinary Least Square (OLS) regression technique to discover that tax income has a beneficial impact on Nigeria's economic growth. Domestic investment, labour force, and foreign direct investment all have a favourable and significant impact on Nigeria's economic growth, according to the findings.

Olugbemi et al. (2019) investigated the impact of tax income on Nigerian economic growth. To determine the elements that influence tax revenue and economic growth in Nigeria, an exploratory approach was used. To determine the relationship between dependent and independent variables, a multiple regression model was used to analyse the data collected for this project. Using GDP as an index economy, the results demonstrated

a favourable link between tax revenue and economic growth. According to the report, public monies should be appropriately employed to favourably impact the Nigerian economy's growth.

2.10. Gaps in Literature

The government has to reform tax administration and employ revenue earned more efficiently to promote the country's economic growth, according to the literature evaluated in this study. It's also worth noting that the country's over reliance on the oil sector has led to a neglect of the non-oil economy. It was also demonstrated that a lack of fundamental facilities in society causes citizens to avoid or delay paying taxes since they perceive the money is being wasted. As a result, the government is advised to provide basic infrastructure in order to promote inhabitants' well-being.

3. METHODOLOGY

The study examined the impact of oil and non-oil tax revenue on economic growth in Nigeria. The Ex- post facto research design was adopted for the study. This is on the basis that the required data cannot be manipulated because they have already existed. Economic growth was measured using Real Gross Domestic Product (RGDP) while the oil tax revenue (independent variable) was proxied by petroleum profit tax and non-oil tax revenue was proxied by company income tax (CIT), value Added Tax (VAT) and Custom and excise duty tax (CED). The study used annual time series secondary data obtained from Central Bank of Nigeria (CBN) Statistical Bulletins for the period of 39 years (1980-2019) The study Error Correction Model technique to investigate the hypotheses formulated for the study. This technique was adopted after subjecting the series in the model of the study to unit root test and co-integration test.

3.1. Model Specification

This study adopted an economic model previously used by Yahaya and Yusuf (2019) to examine impact of non-oil tax revenue on economic growth in Nigeria. The work examined Companies Income Tax; Value added Tax and Custom and Excise Duty tax. The model was presented as;

$$GDP_T = \beta_0 + \beta_1 CIT_1 + \beta_2 VAT_1 + \beta_3 CED_1 + \mu_1$$

This study modifies the model by adding another variable suitable for this study. Thus, the model was modified as;

$$GDP_t = \beta_0 + \beta_1 PPT_t + \beta_2 CIT_t + \beta_3 CED_1 + \beta_4 VAT_1 + \mu_1$$

Where;
GDP = gross domestic product
PPT= Petroleum profit tax
CIT= companies income tax
CED= custom and excise duty tax
VAT= value added tax
t = Time
β_0 = constant
$\beta_1 + \beta_2 + \beta_3 + \beta_4$ = coefficient of parameters of taxation
μ = Error T-erm (Stochastic Term)

A prior Expectations
$\beta_0>0, \beta_1>0, \beta_2>0, \beta_3>0, \beta_4>0$

4. RESULTS AND DISCUSSION

The data collected for the study were subjected to descriptive statistics and presented for better understanding of the nature and distribution of the series. The results of unit root test, co-integration test and regression analysis were also presented as well as discussion of findings.

Table 1 shows result from descriptive statistics. The descriptive statistics presents the mean, median, standard deviation, coefficient of skewness, coefficient of Kurtosis and coefficient of variation of the variables PPT, CIT VAT and CED. The discrepancies between the means and the medians of the variables is a reflection of the degrees of skewness of the respective variables. The results of the Jarqu-Bera test and the associated asymptotic significance probabilities of 46.5 ($P < 0.000$), 27.6 ($P < 0.000$), 14.2 ($P < 0.00$), 5.07 (0.08) and 20.3 ($P < 0.000$) for GDP PPT, CIT, VAT and CED respectively indicate that only VAT data are approximately normally distributed. The coefficients of skewness also speak volumes of the deviation of the respective variable, expect VAT, from normality as a normal distributed variable should had a coefficient of skewness that is zero or significantly close to zero. In terms of the spread of the data about the mean, the variables that are least dispersed to the most dispersed are CIT, PPT, VAT, CED and GDP, sing the standard deviation. However, in terms of total variation, the ordering of the variables from least to highest is GDP, CIT, PPT, VAT and CED It is pertinent to note that the dispersion of the observations about the mean (captured by the standard deviation) is slightly different from the variation of the observations about the mean using coefficient of variation. The coefficient of variation can also be used to infer the precision of the estimates. In this context, the order of precision of the variables in ascending order is: CED, VAT, PPT, CIT and GDP. But the basis of comparison in this manner is constrained by the differences in the variables. Furthermore, all the variables are leptokurtic (Table 1).

Table 2 shows result from stationarity test. Results of the stationarity tests show that none of the variables was stationary at level; however, all the five variables, Gross Domestic Product (GDP), Petroleum Profit tax (PPT), Company Income Tax (CIT), Value Added Tax (VAT) and (CED) were all significant at first difference (Table 1).

4.1. Cointegration Test

In Table 3, results of the cointegration test indicate that the asymptotic significant probabilities associated with the null

Table 1: Descriptive statistics

Statistics	GDP	PPT	CIT	VAT	CED
Mean	369550.1	15648.52	166.3022	125467.4	187849.4
Median	26909.00	3827.900	35.30000	55000.00	177700.0
Maximum	2812300.	89100.00	802.9647	438300.0	876514.0
Minimum	939.4122	403.0000	0.000000	1616.000	1728.200
SD	694026.9	21761.13	252.4217	146348.1	192851.5
Observations	35	35	35	35	35

Source: Authors computation (2021)

hypotheses that: there is no cointegration equation, at most one, at most two, and at most 4 cointegration equations were P < 0.001, P < 0.001, P < 0.001, 0.059 and 0.0152 respectively. Thus, while we may reject the hypotheses that there is no cointegrating equation, there is at most one cointegration equation, at most 2 cointegrating equations and there are at most 4 cointegrating equations we cannot reject the hypotheses that there are at most three cointegrating equations. The implication is that there are three cointegrating equations and thus, there is a long-run relationship between the variables (Table 2).

4.2. Estimated Equation

D(GDP) = C(1)* (GDP (−1) + 10.5898507651*PPT (−1) + 237.07*CIT (−1) - 47.3*0VAT (−1) + 2.254*CED (−1) +1120567.99781) + C(2)*D(GDP (−1)) + C(3)*D (GDP(−2)) + C(4)*D (PPT (−1)) + C(5)* D (PPT(−2) + C(6)*D (CIT (−1)) + C(7) *D (CIT(−2)) + C(8)*D (VAT (−1) + C(9)*D (VAT(−2) + C(10)*D(CED (−1)) + C(11)*D (CED (−2) + C(12)

4.3. Long Run Estimation

Results of the error correction model present the long run equilibrium relations. The cointegration equation is estimated as:

GDP + 112.06 +10.59 PPT (−1) + 237 CIT (−1) − 47.32 VAT (−1) + 2.354 CED (−1) = 0;

Thus, GDP = – 112.06 − 10.59 PPT (−1) − 23.7 CIT (−1) + 47.32 VIT (−1) −2.34 CED (−1)

Table 2: Results of stationarity tests

Variable	P-value at Level	P-value at 1st Difference	Remark
GDP	0.071	0.0086	Stationary at 1st difference
PPT	0.146	0.000	Stationary at 1st difference
CIT	1.00	0.024	Stationary at 1st difference
VAT	0.996	0.000	Stationary at 1st difference
CED	0.994	0.000	Stationary at 1st difference

Source: Authors computation (2021)

Table 3: Cointegration test

Hypothesized number	Eigenvalue	Trace statistic value	Critical	Asymp. Value Prob.
None *	0.9123	184.91	69.82	0.000
At most 1*	0.8268	104.56	47.86	0.000
At most 2*	0.5585	26.98	21.12	0.007
At most 3	0.3421	13.82	14.26	0.059
At most 4*	0.1634	5. 889	3.8415	0.0152

Source: Authors computation (2021)

The estimated VECM results in Table 4 indicate that a unit change in petroleum profit tax will lead to 1059% change in the level of GDP and thus the economic growth of Nigeria. In the same vein, a unit change in company income tax will cause a 2370% change in the GDP, a unit change in value added tax will cause a 4732% change in the GDP, while a unit change in CED will cause a 235.4% change in the CED. The results further show that three of the explanatory variables (Petroleum Profit Tax, Company Income Tax and Custom and Excise Duty Tax) have negative long-run relationships with the economic growth (GDP), while value added tax (VAT) had a positive relationship (Table 3). Furthermore, it was observed that petroleum profit tax (PPT), company income tax (CIT) and value added tax (VAT) significantly influence economic growth (GDP) in the long run while CED had no significant influence on economic growth (Table 3). Based on the results of the stationarity tests, which indicated that all, the variables were stationarity first difference, the study employed the vector error correction model in data analysis.

4.4. Short Run Estimation

Following the long-run coefficients of the cointegration equations, the short-run coefficients were estimated through the Error correction model (ECM) component (Table 5). The ECM Estimations in the cointegration equation show that the coefficients of all the regressors have the hypothesized (A priori) signs. Two of the variables, petroleum profit tax and company income tax, had statistically significant short run influence on economic growth (GDP) at the ninety-nine percent and ninety-five percent confidence levels respectively; and like the long-run relationships, both variables had a positive short-run effect on economic growth. Furthermore, the coefficient of the error correction term (ECT) is −0.5912 and this coefficient had a calculated t of −5.572 and a P value of (P < 0.001). Thus, the speed of adjustment after short-run fluctuations is 59.12%. The value indicates the speed of restoration of the system to equilibrium after a previous deviation.

D(GDP) = C (1)*(GDP (−1) + 10.5898507651*PPT (−1) + 23707.1701216*CIT (−1) - 47.3018563285*VAT (−1) + 2.25443464447*CED (−1) + 1120567.99781) + C(2)*D(GDP (−1)) + C(3)*D(GDP(−2)) + C(4)*D(PPT (−1)) + C(5)*D(PPT(−2)) + C(6)*D(CIT (−1)) + C(7)*D(CIT(−2)) + C(8) *D(VAT (−1)) + C(9)*D(VAT(−2)) + C(10)*D(CED (−1)) + C(11)*D(CED(−2)) + C(12)

Lastly, results of the error correction model show that that the explanatory variables (petroleum profit tax, company income tax, value added tax and CED) explain about 69.12% of the variation

Table 4: Estimated vector error correction model

Dependent variable	NPI				
Variable	Coefficient	Standard error	t Statistic	Significant P	Remark
GDP (−1)	1.000				
PPT (−1)	10.59	2.29	4.619	0.0010	Significant
CIT (−1)	23.7	64.6	36.65		
VAT (−1)	−47.32	1.698	−27.85	0.062	NS
CED (−1)	2.354	0.790	2.855	0.0752	NS
C	112.05				

Source: Authors computation (2021)

Table 5: Estimated vector error correction model

Error correction	D (GDP)	D (PPT)	D (CIT)	D (VAT)	D (CED)
Coin Eq1	−0.5912	−0.0066	−1.10E04	−0.0061	0.1008
	(0.101)	(0.0021)	(4.3 E06)	(0.0108)	(0.0185)
	[−5.878]	[−3.154]	[−2.557]	[−0.569]	[−0.438]
D (GDP (−1)	−0.481	−0.0016	−3.85E-05	−0.0123	0.0249
	(0.114)	(0.0024)	(4.9E06)	(0.0122)	(0.0211)
	[−4.201]	[−0.683]	[−7.9006]	[−1.005]	[1.1839]
R-squared	0.8020	0.891009	0.9106	0.5415	0.89149
Adj R-squared	0.6912	0.83106	0.86151	0.2893	0.83182
Sum sq Resids	2.30E+12	9.89E+08	4189.9	2.64E+10	7.83-E+10
S.E. Equation	339382	7031.5	14.4740	36330	62551
F-Statistic	7.3661	14.8637	18.5306	2.14698	14.93832
Log likelihood	−445.406	−321.34	−123.40	373.8996	−391.2861
Akaike AIC	28.5876	20.8342	8.4626	24.1187	25.2054
Schwarz SC	29.1372	21.3839	9.0122	24.6684	25.7550

Source: Authors computation (2021)

in the dependent variable (economic growth) as shown by the adjusted coefficients of variation (Table 6).

Diagnostic tests were also performed. Firstly, a test for serial correlation was performed on the residuals using Breusch-Godfrey test. The results indicate an asymptotic probability value on 0.1633 for the Chi-square statistic. Thus, we cannot reject the null hypothesis that the stochastic error terms are not serially correlated. The results are consistent with the computed value of the Durbin Watson statistic of 1.9233 (Table 7) which lies between the range du and 4-du where du is the upper value of the Durbin Watson statistic. The non-correlation of the stochastic error terms is an indication that the results are not spurious.

5. DISCUSSION OF FINDINGS

The results indicate that there is significant direct (positive) relationship between the level of economic growth (dependent variable) and petroleum profit tax and custom and excise duty tax and that there is a significant negative relationship between economic growth (dependent variable) and value added tax and companies' income tax. The implication is that increase in petroleum profit tax and custom and excise duty leads to increase in the level of economic growth. Both PPT and CED has a positive significant relationship. It therefore means that petroleum profit tax and custom and excise duty tax can be used to control economic growth. The study also revealed that increase in value added tax rate lead to decrease in the level of economic growth and increases in and company income tax lead to decrease in the level of economic growth. Thus, instability in the realisation of petroleum profit tax, company income tax, custom and excise duty tax and value added tax stimulate disequilibrium in the level of economic growth in Nigerian. The results are consistent with those of Bukie and Adejumo (2011), Oshiobugie and Akpokerere (2019), Ewa et al. (2020), Kingsley (2014), Ojong et al. (2016), Akwe (2010), Yahaya and Yusuf (2009), Ojong et al. (2016), Bukie and Adejumo (2011), Oshiobugie and Akpokerere (2019), Ewa et al. (2020), Kingsley (2014). However, the results are inconsistent with that of Asaolu et al. (2018) in that they did not find any significant relationship between petroleum profit tax and economic growth.

Table 6: Estimated vector error correction model

Error correction	Coefficient	Std. Error	t-Statistic	Prob.
C (1)	−0.644019	0.115576	−5.572274	0.0000
C (2)	−0.464260	0.133412	−3.479899	0.0022
C (3)	−1.340249	0.325484	−4.117717	0.0005
C (4)	31.71067	7.594860	4.175281	0.0004
C (5)	11.64562	5.816487	2.002173	0.0583
C (6)	−14446.50	4788.413	−3.016971	0.0066
C (7)	14541.90	4617.144	3.149544	0.0048
C (8)	−23.33177	4.832181	−4.828414	0.0001
C (9)	−20.80166	4.169682	−4.988789	0.0001
C (10)	1.786145	0.713346	2.503899	0.0206
C (11)	1.911082	0.769534	2.483429	0.0215
C (12)	546641.0	118852.5	4.599321	0.0002
R-squared	0.716518	Mean dependent var		−107.7709
Adjusted R-squared	0.568028	S.D. dependent var		603023.8
S.E. of regression	396334.8	Akaike info criterion		28.89319
Sum squared resid	3.30E+12	Schwarz criterion		29.43738
Log likelihood	−464.7377	Hannan-Quinn criter.		29.07630
F-statistic	4.825354	Durbin-Watson statson		1.803706
Prob (F-statistic)	0.000981			

Table 7: Breusch-Godfrey serial correlation LM test

F Statistic	1.2486	Prob (F2 23)	0.3056
Obs R squared	3.6238	Prob. Chi-Square (2)	0.1633
Durbin Watson	1.9233		

6. CONCLUSION AND RECOMMENDATION

In the course of the study, annual time series data were accessed and analysed to examine the impact of individual types of oil tax revenue (PPT) and non-oil tax revenue (CIT, VAT and CED) on economic growth (real GDP) in Nigeria over the period 1980-2019. Based on the findings of the study, it was concluded that PPT and CED has positive impact on economic growth in Nigeria, while VAT and CIT had significant but negative impact on the real gross domestic product of Nigeria for the study period. Based on the findings, this study makes the following recommendations. The government should make sure that taxation is appropriately controlled in order to boost economic growth, lower inflation, and

create jobs in the country. The Nigerian government should reform its tax system to meet the demands of the twenty-first century. If economic growth must be achieved in Nigeria, then the Federal Government as a matter of urgency, needs to restructure the tax system in Nigeria. Tax revenue should also be used effectively and judiciously to offer essential services to Nigeria's taxpaying population.

The government should also take steps to diversify the economy, rather than focusing solely on the oil industry. The revenue collected from taxes, particularly the petroleum profit tax and custom and excise duty tax, should be used to build the domestic economy, specifically the agro-allied industry and the manufacturing sector. The government should educate citizens about the importance of paying taxes and not evading them through public awareness campaigns and education. Nigeria's tax regulatory authority must establish strategies to close gaps in tax rules that taxpayers exploit to avoid paying taxes. Finally, the government should prudently use tax income to provide essential services such as good housing, roads, water, stable power supply, education, primary health care and this will aid the growth of numerous economic sectors, hence boosting economic growth.

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