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## EFFECT OF COLLECTED TAX REVENUE ON STRUCTURAL GROWTH BREAK PERIOD IN NIGERIA ECONOMY

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### Abstract

*The objective of the study targets to evaluate the effect of tax revenue on economic growth of Nigeria and also to examine the effect of tax revenue on each of the identified structural and administrative breaks change in Nigeria. Time series data of Real Gross Domestic Product (RGDP), Personal Income Tax (PIT), Petroleum Profit Tax (PPT), Company Income Tax (CIT), Value Added Tax (VAT), Custom and Excise Duties Tax (CED) were collected from 1970 to 2020. Autoregressive Distributed Lag Model (ARDL)/Bounds testing to co-integration, OLS and Chow test were used to analyse the data. From the study, it was revealed that there is significant impact of different taxes on economic growth during the period under review and there is presence of structural breaks change effect in the Nigerian economy as regards the undergoing structural and administrative changes in tax system. The study therefore recommends that administrative mechanism of government taxation be strengthened in order to reduce the several leakages. Also, government should endeavor to subject any policy to reality test before such policy is being enforced, as there is a direct impact of government policies to tax revenue generation in any particular time in the economy. Finally, government should harness effectively personal and corporate income taxes in Nigeria by ensuring that all medium scale businesses be listed or at least register with Corporate Affairs Commission which will increase the tax ratio and improve tax revenue collection in Nigeria.*

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**Keywords:** *Structural break period, Chow Test; Tax Revenue Components, Real Gross Domestic Product.*

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## INTRODUCTION

### Background to the Study

Evidence in Nigeria has shown that since political independence, government revenue has experienced tremendous growth (Ola & Adeyemo, 1998). In the 1960s, emphasis was on accelerated economic growth and development, and the main goal of tax policy was maximum tax generation to finance public sector programmes (Ekuarhare, 1980; Ariyo, 1997). Attention was directed towards increasing the existing tax rates (especially import duties) in the form of high protective tariffs, and as a consequence import duties provided the bulk of federal government revenue in the early 1960s (Ariyo, 1997).

A country's tax system is a major determinant of other macroeconomic indices. Specifically, for both developed and developing economies, there exists a relationship between taxation and the level of economic growth/development within the context of

indigenous investment and foreign direct investment (Hinricks, 1966; Musgrave, 1969; Oparaji, 1996; Ariyo, 1997).

The Institute of Chartered Accountants of Nigeria (2020) and the Chartered Institute of Taxation of Nigeria (2019) defined tax as an enforced contribution of money to government pursuant to a defined authorized legislation. In other words, every tax must be based on a valid statute. Without a valid statute no legitimate tax can be imposed. The income tax is levied on incomes such as salaries, business profits, value added, dividends, commissions, royalties and rent. It may also be charged on capital gains and petroleum profits. Taxation yields very substantial revenue to government. Therefore, it has a bearing on the Gross Domestic Product (GDP) which is the standard indicator for measuring the economic wellbeing of a nation. The nature and level of taxes vary according to the economic policies adopted by the government of the day.

Structurally, the Nigeria economy has been dominated by two sectors. They are agriculture and crude petroleum sectors. In terms of revenue generation, however, the economy is so far mono-cultural. In the 1960s and early 1970s, the major revenue earner was agriculture and since the late 1970s, it has been the oil sector.

The economy, which was largely at a rudimentary stage of development at the first half of the last century, started experiencing some structural transformation immediately after the country's independence in 1960. Throughout the 1950's and 1960's and the early part of 1970's, agriculture was the core of economic activities in Nigeria, followed by manufacturing and mining activities at very low levels of development. The country's participation in international trade was informed by the level of economic activities in agriculture, mainly. This study therefore will reveal the effect of tax revenue on structural growth break period in Nigeria.

### **Statement of the Problem**

Taxation as one of the principal motivator to the growth process of any economy has undergone diversified studies at different level of the growth index of Nigeria Economy. Numerous studies have been carried out to ascertain the effect of individual and collective tax revenue components on the growth of the economy, yet there is limited recent empirical study that examined the dimensional changes of effect of identified tax revenue components on the growth of Nigeria economy and also introduction of chow test methods.

The structural effect of total tax revenue variables as it affect economic growth have not been empirically observed within the period of: Changes in tax policies, Structural Adjustment programme, Change in government from military to civilian, civilian to military and then military to civilian, the Nigerian Civil war; and Recent economic meltdown, insurgencies (Boko Haram, herdsmen, militant, etc.)

The gap in terms of the period covered is also a contributory factor to the disparity in the outcomes of relationship between tax revenue and an economy. The advent of the oil boom encouraged some laxity in the management of non-oil revenue sources like the company income tax and custom and excise duties. This calls for an urgent need in the improvement of the tax system to enhance the evaluation of the performance and facilitate adequate macroeconomic planning and implementation (Adereti et al 2021).

### **Objectives of the Study**

The main objective of this study is to examine the effect of tax revenue on structural growth break period in Nigeria.

The specific objectives are as follows:

- i. To analyze the effect of tax revenue (CIT, PIT, PPT, VAT, CED) on Nigeria economic growth.
- ii. To examine the effect of total tax revenue on each of the identified structural and administrative breaks change in Nigeria economy

### **Research Questions**

The following null research hypotheses will be formulated:

- i. **H<sub>0</sub>:** Total tax revenue (CIT, PIT, PPT, VAT, CED) has no positive significant effect on the Nigerian economic growth.
- ii. **H<sub>0</sub>:** Tax revenue do not have any significant effect on identified structural and administrative breaks change in Nigeria economy.

## **REVIEW OF RELATED LITERATURE**

### **Conceptual Framework**

#### ***Characteristics of Good Tax System***

Adam (1910) maintained that the following are the major characteristics of taxation, usually called cannons of taxation that a good tax system:

- I. It should meet the canon of equity. It should be equitable that is, every person should be taxed according to his ability. The rich should pay more while poor pay less – it should be progressive
- II. It should be used on the cannon of certainty. The time of payment, the manner of payment, the amount to be paid should be certain and clear to the contributor and to every other person. In addition, Ola (1987) has said that “the tax which each individual is bound to pay, ought to be certain and not arbitrary”. He argued that individual should know with certainty what his tax liability should be in order to make adequate provision and to make sure that taxes are levied in a way which does not disrupt the individual’s private activities and that he should see the revenue to which he has contributed used judiciously.
- III. The tax system should satisfy the cannon of convenience. It should be convenient, social, political and economic standing of the person must be taken into consideration. The time of payment, the month of payment should not inconvenient the tax payer. Eckestom (1938) has said that a good tax should not impose taxes that are impossible to enforce even when people comply to tax law voluntary, the government should verify the tax payments, if not the tax becomes an invitation to break the law.
- IV. The principle of Economy: This principle emphasizes that the cost of assessing and collecting a tax should be small in relation to the revenue so collected i.e. economy should be the yardstick so that the cost of collecting tax should not be excessive. For example, if the expenses incurred in the course of collecting a tax exceed even 50 percent of the yield, then such taxes do not conform to the principle of economy.

### ***Administrative Structure***

The administrative structure of the Nigerian tax system has undergone fundamental changes since the coming into effect of Decree 3 of 1993. The changes were at the Federal, States and Local government levels. The tax outfits at both the Federal and States levels which were mere tax departments of the Ministry of Finance were accorded semi-

autonomy under the Finance Ministry. They became extra-ministerial bodies, each with a Board and an executive arm known as the service. The Chairman of the Board who is the Chief Executive of the Service became the accounting officer of the tax administration, thereby making for quick and unfettered financial decisions. At the local government level, finance committees were created to take care of care of revenue generation.

### **Tax Structure**

Essentially, the tax structure of a tax system relates to the following:

- (i) Whether the emphasis is on direct or indirect taxes,
- (ii) Whether the emphasis is on tax rate as against tax base,
- (iii) Whether the emphasis is on multiplicity of taxes or on maximizing tax collection from a few taxes,
- (iv) Whether or not tax incentives are being extensively used to attain economic/industrial objective.
- (v) Whether the burden of taxation is progressively or regressively distributed among the various income groups.
- (vi) Whether border taxes is emphasized as against land taxes,
- (vii) Whether collection procedures conforms with modern taxation or whether antiquated measures of inflicting pains and punishment is the preferred means of tax collection, and
- (viii) Whether convenience of the taxpayer is emphasized as a means of ensuring or fostering voluntary compliance.

### **Collectible Taxes by the Federal Government of Nigeria**

According to Olawunmi and Ayinla (2019), policy guidance represents the objective of economic policy. The main fiscal policy instruments are tax revenue and public expenditure. It is with this in mind that some forms of government generated taxes and their function are discussed below:

#### **Personal Income Tax**

The tax is on the Pay As you Earn (PAYE) basis, that is, the tax payable depends on how much is earned by the tax payer. The tax is easy to collect from civil servants as it is deducted from source by the appropriate authorities unlike the private sector who will have to file returns of each tax payer which is not done in most cases. Documentations from different scholars indicated that even with all efforts through the various tax reforms undertaken by Nigerian government to increase tax revenue over the years, prior statistical evidence has proven that the contribution of income taxes to the government's total revenue remained consistently low and is relatively shrinking. However, of all the taxes, personal income tax has remained the most disappointing, nonperforming, unsatisfactory and problematic in Nigerian tax system (Asada, 2005; Kiabel and Nwokah, 2009; Nzotta, 2017; Odusola, 2006).

#### **Companies Income Tax**

Companies Income Tax Act, 1990 is the current enabling law that governs the collection of taxes on profits made by companies operating in Nigeria excluding companies engaged in Petroleum exploration activities. This Tax is payable for each year of assessment of the profits of any company at a rate of 30% (Adereti 2018).

According to Ola (2016) Companies' income tax administration in Nigeria does not measure up to appropriate standards. If good old tests of equity, certainty, convenience and administrative efficiency are applied, Nigeria will score low considering the following points: Due to inadequate monitoring, persons in the self-employed and unquoted private companies group evade tax. In a study conducted by Festus and Samuel (2017) on company Income Tax and the Nigerian economy, they conclude that Company income tax is a major source of revenue in Nigeria but non-compliance with tax laws and regulations by tax payers is deep in the system because of weak control. There is the need for a general tax reform in the Nigerian company income tax system.

### **Petroleum Profits Tax**

According to Buba (2017), Nigerian law by virtue of the Petroleum Profits Tax Act 1990 requires all companies engaged in the extraction and transportation of petroleum to pay tax. Adigbe (2020) further stated that the taxable income of a petroleum company comprises proceeds from the sale of oil and related substances used by the company in its own refineries plus any other income of the company incidental to and arising from its petroleum operations. Adereti (2011) explained that the taxable income of a petroleum company is subject to tax at 85%, but this percentage is lowered to 65.75% during the first 5 years of operation but where oil companies operate under production sharing contracts they will be liable to tax at a rate of 50%.

This makes the foreign trade sector the major source of revenue in the 1960s. Some structural changes emerged in the revenue profile in the early 1970s whereby indirect taxes gave way to direct taxes with the emergence of the oil boom (Egwakhide, 1988). The fall in non-oil tax revenue due to the neglect of the traditional (agricultural) sources was matched by an increase in import duties until 1973. Further, there was an appreciable increase in revenue from excise duties in the 1970s due to the enhanced performance of the industrial sector. (Buba 2007)

### **Value Added Tax (VAT):**

VAT is a consumption tax that is relatively easy to administer and difficult to evade and it has been embraced by many countries world-wide (Federal Inland Revenue Service, 1993). Value-added Tax Act, 1993 is the law that regulates the collection of tax due on —vatable goods or services. (Adereti 2011). It was introduced to replace the old sales tax. It is a consumption tax levied at each stage of the consumption chain, and is borne by the final consumer. It requires a taxable person upon registering with the Federal Board of Inland Revenue to charge and collect VAT at a flat rate of 5% of all invoiced amounts of taxable goods and services. (Ariyo, 1998).

Adereti (2011) explained that evidence so far supports the view that VAT revenue is already a significant source of revenue in Nigeria. For example, actual VAT revenue for 1994 was N8.189 billion, which is 36.5% higher than the projected N6 billion for the year. Similarly, actual VAT revenue for 1995 was N21 billion compared with the projected N12 billion. In terms of contributions to total federally collected revenue, VAT accounted for about 4.06 % in 1994 and 5.93% in 1995. As much as N404.5 billion was collected on VAT (5.1% of total revenue) in 2008. Every person, whether resident in Nigeria or non-resident in Nigeria, who sells goods or renders services in Nigeria under the VAT Act (as amended) is obligated to register for VAT within six months of its commencement of business in Nigeria. Registration is with the Federal Board of Inland Revenue (FBIR).

**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).

Adegbie (2011) studied the Customs and Excise Duties Contribution towards the development and growth of Nigerian economy. The study reveals that there is a strong relationship between customs and excise duties and economic development of Nigeria. This shows that this is a source of income that Nigeria should develop. Also, the study further shows that fraud and financial malpractices have negative impact on the contribution of customs and excise to Nigerian economic development. Going by the statement of Buba (2007), excise duties were also introduced on several goods to broaden the revenue base in Nigeria in 1962.

**THEORETICAL FRAMEWORK****Ability to Pay Theory**

According to Anyanfo (1996), this theory states that one should be taxed according to the ability to pay. It is simply an attempt to maximize an explicit value judgment about the distributive effects of taxes. Bhartia (2009) argue that a citizen is to pay taxes just because he can, and his relative share in the total tax burden is to be determined by his relative paying capacity.

The most popular and commonly accepted principle of equity or justice in taxation is that citizens of a country should pay taxes to the government in accordance with their ability to pay. Rather than the benefits principle, the "ability-to-pay principle" generally dominates modern equity discussions. Under the ability to pay principle, people with higher incomes should pay more taxes than people with lower incomes. It appears very reasonable and just that taxes should be levied on the basis of the taxable capacity of an individual. For instance, if the taxable capacity of a person A is greater than the person B, the former should be asked to pay more taxes than the latter. It seems that if the taxes are levied on this principle as stated above, then justice can be achieved. But our difficulties do not end here. The fact is that when we put this theory in practice, our difficulties actually begin. The trouble arises with the definition of ability to pay.

**Benefit Theory of Taxation**

According to this theory propounded by Arthur Cecil Pigou, the state should levy taxes on individuals according to the benefit conferred on them. The more benefits a person derives from the activities of the state, the more he should pay to the government. If, in accordance with the "benefits theory of taxation," we conceive of taxes as payments in exchange for government benefits, perhaps states should be obliged to confer personal tax benefits on residents who contribute to their tax coffers. The benefits theory would imply that a resident should be able to collect personal tax benefits to the extent that her tax payments to the source state exceed the money value of any source state government benefits she already receives, including infrastructure, regulated labour and capital markets, and so on.

### **Modern Theories of Taxation**

Modern theories of taxation were motivated by the limitation of the traditional theories of Public Finance. The thinking is that the traditional theories could not adequately deal with the three basic functions of the budget, namely: allocation, distributional and stabilization functions. Consequently, modern theories of taxation postulate five criteria of taxation, namely:

- (i) Equity Principle;
- (ii) Efficiency Principle;
- (iii) Simplicity Principle;
- (iv) Neutrality Principle; and
- (v) Revenue Principle.

### **Empirical Review**

Available empirical evidence on the subject of effect of tax revenue components on Economic Development of Nigeria suggests that the subject matter has enjoyed consistent attention even in recent literature.

Ihendinihu, Jones and Ibanichuka (2014) examined the assessment of the Long-Run equilibrium relationship between tax revenue and economic growth in Nigeria between the period of 1986 – 2012 and adopted time series data on different types of taxes and Real Gross Domestic Product, Bound testing technique was used in analysing the data and it was discovered that total tax revenue has a significant effect on economic growth and no significant causal relationships were shown to exist between Petroleum Profit Tax, Value Added Tax and economic growth. They recommended that government should encourage and sustain strong fiscal responsibility and transparency in governance to promote voluntary compliance to tax payment.

Ehigiamusoe (2020) utilized correlation method and Granger Causality technique to examine the nexus between tax structure and economic growth in Nigeria: a prognosis and observed that tax system has significant impact on growth because of the numerous challenges confronting the system, also there is a negative and insignificant relationship between petroleum profit tax and Company Income Tax on the one hand and between Petroleum Profit Tax and Value Added Tax on the other hand and therefore suggest that Nigerian Tax system be reformed so as to have a significant impact on economic growth.

Ogbonna and Appah (2012) investigated the impact of tax reforms on economic growth of Nigeria (1994- 2009) using Augmented Dickey-Fuller test, Johansen's Cointegration test and Error correction technique and found significant positive relationship between tax revenue and economic growth of Nigeria. In a similar study, Okafor (2012) used multiple correlation and regression methods to evaluate the relationship between tax revenue generation and economic development of Nigeria (1981-2007) and concluded that there exists a strong significant relationship between tax revenue and Gross Domestic Product (GDP)

Success et al., (2012) studied the impact of petroleum profits tax on economic development (2000-2010) using the ordinary least square method of analysis and posited that petroleum profit tax impact positively on the gross domestic product (used as proxy for economic growth) of Nigeria. Abdul-Rahamoh et al., (2013) empirically examined the effect of petroleum profits tax on Nigeria economy using multiple regression and correlation to

analyze the time series data collected for the period 1970-2010 and found that petroleum profit tax has significant effect on economic growth of Nigeria with an adjusted R<sup>2</sup> of 86.3%. Ekeocha et al. (2020) examined the properties of the Nigeria's tax system from 1970 to 2018 particularly the bases of the company income tax, value added tax and personal income tax. The result shows that company income tax base is not persistent, volatile, but sensitive, or pro-cyclical to the state of the economy. The value added tax base is not sensitive to the current state of the economy, not persistent and relatively volatile. It was also discovered that the base of the personal income tax is so volatile, and not persistent, but sensitive to the state of the economy. The policy implication of their finding supports the recent government tax policy reform of a shift in focus in the tax system from direct taxation to indirect taxation (Ekeocha et al 2012).

Babalola and Aminu (2011) utilized Cointegration test and Engle Granger approach, Augmented Dickey-Fuller technique, and Error correction model (ECM) to investigate the relationship between Fiscal policy and Economic growth (1977-2009) and found positive and significant causal relationship between income tax and economic growth.

Medee and Nenbee (2019) carried an econometric analysis of the impact of fiscal policy variables on Nigeria's economic growth (1970-2017) using Vector Autoregression and Error correction mechanism techniques and claimed that tax revenue have effects on the gross domestic product both at the short and long run, meaning that tax revenue positively impact on the economic growth in Nigeria.

Anyanwu (1994) provided empirical evidence on the economic effects of taxes in Nigeria for the period 1981–1996. Using the Ordinary Least Squares (OLS) method of estimation, he proceeded to test the effects of taxes on Nigerian economic growth proxied by the GDP. The variables employed in his six-equations model include Company Income Tax (CIT), Customs and Excise Duties (DUTY), Petroleum Profit Tax (PPT), Personal Income Tax (PIT), other Direct Taxes (example, Capital Gains and Stamp Duties) (OTHERT) and all Direct Taxes (DIRT). The conclusions drawn from his study was that Company Income Tax (CIT) positively and significantly affects GDP just as Customs and Excise Duties (DUTY) does. However, Petroleum Profit Tax (PPT) is positively but insignificantly related to GDP/Economic Growth. His analysis further revealed that Personal Income Tax (PIT), negatively and insignificantly affects Nigeria's GDP. The same is true for other Direct Taxes (Capital Gains and Stamp Duties). Nonetheless, all other Direct Taxes (DIRT) positively and significantly affects Nigeria's GDP.

## **RESEARCH METHODOLOGY**

### **Research Design**

This research adopted ex-post facto research design. The justification for this selection is as a result of the nature of data collected which is secondary data. According to Asika (2004:25) ex-post facto (after the fact) research is a systematic empirical study in which the researcher does not in any way control or manipulate independent variables because the situation for studying already exists or has already taken place.

### **Methods of Data Collection**

Time series data of Real Gross Domestic Product (RGDP), Personal Income Tax (PIT), Petroleum Profit Tax (PPT), Company Income Tax (CIT), Value Added Tax (VAT) and Custom and Excise Duty Tax (CED) were collected from various issues of the Central Bank of Nigeria statistical bulletin, annual report, and financial statements as well as report from Federal Inland Revenue Service and the National bureau of statistics.



### Model Specification

The Multiple Linear Model is built. The model captures the contribution of total tax revenue (petroleum profit tax, company income tax, custom excise and duties and value added tax) to Real Gross Domestic Product (RGDP).

The functional form of the model is expressed as follows:

$$RGDP = f(CIT, PPT, PIT, EDT, VAT, CED)$$

Where:

RGDP	=	Real Gross Domestic Product
CIT	=	Company Income Tax
PIT	=	Personal Income Tax
PPT	=	Petroleum Profit Tax
VAT	=	Value Added Tax
CED	=	Custom and Excise duty

The econometric form of the model is written as:

$$RGDP = \beta_0 + \beta_1 CIT_t + \beta_2 PIT_t + \beta_3 PPT_t + \beta_4 VAT_t + \beta_5 CED_t + \mu_t$$

$$\ln RGDP_t = \beta_0 + \beta_1 \ln CIT_t + \beta_2 \ln PIT_t + \beta_3 \ln PPT_t + \beta_4 \ln VAT_t + \beta_5 \ln CED_t + \mu_t$$

Where:

$\beta_0$  = Intercept Term (Parameter)

$\beta_1$  to  $\beta_4$  = parameters known as Partial Regression Coefficient

$\mu_t$  = Error term or unexplained variables

T = Denotes the value of the variable at Time t

ln = The Natural Logarithm (i.e., log to base e, where  $e=2.718$ )

### Chow Test Model procedures

According to Chow test procedures, the hypothesis says that regressing on the pool observation of 50 years periods means that there is no difference between the two time periods and tax policy has not changed much over the span of 50 years periods, even as policies changed. Therefore estimating the relationship stated above for the entire time period, assumes that the intercept as well as the slope coefficient remains the same over the entire period, (that is there is no structural change), if this is in fact the situation, then  $\beta_1 = \lambda_1$ ,  $\alpha_1$  and  $\beta_2 = \alpha_2$ ,  $\lambda_2$ . Thus, we specified below:

#### (1) 1970 – 1995 period of observation

$$\ln RGDP_t = \beta_0 + \beta_1 \ln CIT_t + \beta_2 \ln PIT_t + \beta_3 \ln PPT_t + \beta_4 \ln VAT_t + \beta_5 \ln CED_t + \mu_t \dots (1) \quad n_1 = 25$$

#### (2) 1996 – 2020 period of observation

$$\ln RGDP_t = \beta_0 + \beta_1 \ln CIT_t + \beta_2 \ln PIT_t + \beta_3 \ln PPT_t + \beta_4 \ln VAT_t + \beta_5 \ln CED_t + \mu_t \dots (2) \quad n_2 = 25$$

#### (3) 1970-2020 of observation

$$\ln RGDP_t = \beta_0 + \beta_1 \ln CIT_t + \beta_2 \ln PIT_t + \beta_3 \ln PPT_t + \beta_4 \ln VAT_t + \beta_5 \ln CED_t + \mu_t \dots (3) \quad N_3 = n_1 + n_2 = 50$$

Equation (1) and (2) in model (2), assume that the regressions in the two time period are different, that is the intercept and the slope coefficients are different, as indicated by the subscripted parameters. In the above model, the  $\mu$ 's represent the error terms and the N's represent the number of observations.

The above models will be used to capture the structural break point effect on administrative changes in tax system and economic growth in Nigeria, since a lot of reforms such as the effect of Nigerian Civil war that ended in 1970, power change over, tax Reforms, and tax law amended (2011), and the consolidation in the banking sector (2008), etc. have

been weaknesses in the country, there is need to check if actually it occurs and if occurred, at what break point and its effect on the economy. The decision rule of this model will be duly observed for proper analysis.

### Estimation Procedure:

The modeling procedure adopted in this study shall follow the following steps:

- i. Unit Root Tests
- ii. Co-integration tests
- iii. Vector Error Correction Model (VECM)
- iv. Error Correction Mechanism (ECM)

The next step is to estimate the equation derived using ordinary least square (OLS) technique. Having ascertained whether or not co-integration exist, then the next step requires the construction of error correction model to model dynamics relationship. The purpose of the error correction model is to indicate the speed of adjustment from the short-run equilibrium to the long-run equilibrium state. If co-integration is accepted, it suggests that the model is best specified in the first difference of its variables with one period lag of the residual {ECM (-1)} as an additional regressor.

### EMPIRICAL RESULTS, FINDINGS AND DISCUSSION

In order to empirically investigate the effect of the selected tax revenue variables, namely, Company Income Tax (CIT), Personal Income Tax (PIT), Petroleum Profit Tax (PPT) Value Added Tax (VAT) and Custom and Excise duty (CED) on the Nigeria economic development (Real Gross Domestic Product (RGDP)) during the period under review, the researcher subjected the time series data, on the variables to unit root tests to avoid arriving at spurious results. Also, vector error correction modelling techniques, Chow test and other standard econometric tests were conducted to enable the researcher make robust and reliable conclusions concerning the estimated parameters.

#### Unit Root Tests:

Table 1 presents the estimates of the unit root tests for the stationarity or otherwise of the variables, using the Augmented Dickey-Fuller and Phillips-Perron test statistic. The tests were conducted at constant and trend, and at five per cent (5%) significant levels.

**Table 1: Augmented Dickey Fuller Unit Root Test with Trend and Intercept**

Series	ADF@ Level	ADF 1 <sup>ST</sup> Difference	5% critical values	Order	Remarks
RGDP	-1.706251	-6.676335	-3.518090	1(1)	Stationary
CED	5.412959	-6.649470	-3.518090	1(1)	Stationary
CIT	-7.043770	-12.49536	-3.518090	1(1)	Stationary
PPT	-9.583578	-6.520763	-3.518090	1(1)	Stationary
PIT	-6.052745	-7.907950	-3.518090	1(1)	Stationary
VAT	-3.428212	-5.403367	-3.518090	1(1)	Stationary

*Sources: researchers' compilation from E-view (version 8.0)*

**Table 2: Phillips-Perron Unit Root Test with Trend and Intercept**

Series	PP@ Level	PP 1 <sup>ST</sup> Difference	5% critical values	Order	Remarks
RGDP	-1.783608	-6.694598	-4.186481	1(1)	Stationary
CED	10.64472	-12.51782	-4.186481	1(1)	Stationary
CIT	-5.610099	-7.094690	-4.186481	1(1)	Stationary
PPT	-18.76763	-6.014950 b	-4.186481	1(1)	Stationary
PIT	-5.968044	-17.28479	-4.186481	1(1)	Stationary
VAT	-3.393286	-5.140677	-4.186481	1(1)	Stationary

*Sources: researchers' compilation from E-view (version 8.0)*

The above tables (tables 1 and 2) were used to test the stationary state of the above variables. Stationary, means to remove or adjustment of trend in the time series in econometrics (Iyoha, 2004 and GuiJarity, 2004). The above unit root test shows that these variables; Real Gross Domestic product (RGDP), Custom and Excise duty (CED) are not stationary (i.e. they are not free from unit root syndrome), at level, with the application of both ADF and PP Test respectively the error was corrected.

However, the ADF and PP unit root test statistic results show that at the first and second difference, all the variables used (i.e. Real Gross Domestic product (RGDP), Company Income Tax (CIT), Personal Income Tax (PIT), Petroleum Profit Tax (PPT) Value Added Tax (VAT) and Custom and Excise duty (CED) became stationary since their statistic value (i.e. -6.694598RGDP, -12.51782CED, -7.094690CIT, -6.014950PPT, -17.28479PIT and -5.140677) for ADF, and -6.694598RGDP, -12.51782CED, -7.094690CIT, -6.014950PPT, -17.28479PIT and -5.140677) for PP respectively, were greater than their 5% (-3.518090, -4.186481) critical value respectively for the tests. In fact all of the variables were stationary after the first difference. In other words, these variables were statistically significant in their absolute terms even at 5% levels of significance. Thus, it means that the Real Gross Domestic product (RGDP), Company Income Tax (CIT), Personal Income Tax (PIT), Petroleum Profit Tax (PPT) Value Added Tax (VAT) and Custom and Excise duty (CED) that exhibited unit root at level test of ADF and PP has been removed after the ADF and PP test at the first and second difference.

This instigated the researcher to carry out the co-integration test, and other estimations since the problem of spurious results in the models has been removed, we then analysis the nature of long-run relationship among the variable for each of the models.

### Co-integration Rank (Trace) Test Hypothesized

This model examined if there is a long run relationship between the DRGDP and the explanatory variables; DRGDP, DCED, DCIT, and DPPT as well as testing the hypothesis of co-integration among the variables used. Firstly, the summary of the Johansen Co-integration Test is shown in the Table 3 below. The model with lag 1 was chosen with the linear deterministic test assumption.

**Table 3: Unrestricted Cointegration Rank Test (Trace)**

Series: D(RGDP,2) D(CED,2) D(CIT,2) D(PPT,2)			
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value
None *	0.845768	149.0774	47.85613
At most 1 *	0.641387	72.43609	29.79707
At most 2 *	0.467304	30.39007	15.49471
At most 3 *	0.105434	4.568078	3.841466

*Sources: researchers' compilation from E-view (version 8.0)*

The results of the cointegration tests shown in Table 3 confirm the existence of four (4) co-integrating relationships. Table 3 is based on the trace statistic or likelihood ratio test while Table 4 is based on the maximum eigenvalue statistic. The null hypothesis of no cointegration among the variables is rejected in at least four equations, both from the trace tests and the maximum eigenvalue tests. The test results show the existence of long run steady state or equilibrium relationships in four cointegrating equations at five per cent (5%) level of significance.

Meanwhile, under the Johansen Co-integration Test, the eigen-value statistic is used to determine whether co-integrated variables exist. As we can see from the eigen-value statistics values, here all the absolute values of the variable was fined to be different from zero values (i.e. DRGDP[ 0.845768] D CED[0.641387] DCIT [0.467304] DPPT [0.105434] respectively. Again, their trace statistical values were greater than the 5% level of critical value (i.e. 149.0774DRGDP > 47.85613, 72.43609CED > 29.79707, 30.39007CIT > 15.49471, 4.568078PPT > 3.841466) respectively. We therefore conclude that there exists a long-run relationship co-integration among four variables. In other words, the null hypothesis of no co-integration among the variables is rejected since at least three variables in the four equations at 5% were statistical significant. The test result shows the existence of a long-run equilibrium relationship among the variables.

**Table 4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)**

Hypothesized No. of CE(s)	Eigen value	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.845768	76.64127	27.58434	0.0000
At most 1 *	0.641387	42.04602	21.13162	0.0000
At most 2 *	0.467304	25.82199	14.26460	0.0005
At most 3 *	0.105434	4.568078	3.841466	0.0326

*Sources: researchers' compilation from E-view (version 8.0)*

In conformation of the above results, we also employed the unrestricted co-integration Max-eigen value. The results showed that the same variables that were significant in Rank Test (Trace statistical value) at 5 percent critical value were found to be significant in Max-eigen statistical value. Thus the Max-Eigen statistical value of these variables (i.e. 76.64127RGDP > 27.58434, 42.04602CED > 21.13162, 25.82199CIT > 14.26460 and 4.568078PPT > 3.841466) were greater than the 0.05 percent. And the Eigen-value coefficients confirmed to the above result (i.e. 0.845768RGDP, 0.641387CED, 0.467304CIT, 0.105434PPT) were greater than zero. The proof of the significant of these results could be obtained from the probability (p-value), the p-value of the whole variables were all zero. Therefore, concluded that Max-eigenvalue test indicated 4 co-integrations (long-run relationship) among five variables.

**Table 5: Vector Autoregression Estimates Results**

	RGDP	CED	CIT	PPT	PIT	VAT
<b>RGDP(-1)</b>	0.416034 (0.22303) [ 1.86537]	0.046339 (0.09010) [ 0.51429]	0.002394 (0.00140) [ 1.71606]	0.011385 (0.00122) [ 9.34451]	0.228411 (0.25277) [ 0.90362]	0.111663 (0.04592) [ 2.43149]
<b>RGDP(-2)</b>	-0.663312 (0.26661) [-2.48793]	0.061638 (0.10771) [ 0.57225]	0.000805 (0.00167) [ 0.48295]	-0.006563 (0.00146) [-4.50636]	-0.259672 (0.30217) [-0.85937]	-0.019859 (0.05490) [-0.36175]
<b>CED(-1)</b>	0.343244 (0.95496) [ 0.35943]	0.956331 (0.38580) [ 2.47881]	0.006498 (0.00597) [ 1.08790]	0.034678 (0.00522) [ 6.64755]	1.334162 (1.08231) [ 1.23270]	0.698504 (0.19663) [ 3.55232]
<b>CED(-2)</b>	-4.803842 (1.70152) [-2.82327]	0.726561 (0.68741) [ 1.05696]	0.003381 (0.01064) [ 0.31765]	-0.045852 (0.00929) [-4.93306]	-2.774262 (1.92842) [-1.43862]	-0.213373 (0.35035) [-0.60902]
<b>CIT(-1)</b>	-33.68948 (86.4938) [-0.38950]	-109.8499 (34.9433) [-3.14366]	0.892566 (0.54100) [ 1.64986]	2.241532 (0.47249) [ 4.74406]	65.99187 (98.0280) [ 0.67319]	77.34603 (17.8096) [ 4.34294]

<b>CIT(-2)</b>	-19.66545 (47.3787) [-0.41507]	-49.62398 (19.1409) [-2.59257]	2.392762 (0.29634) [ 8.07435]	6.354603 (0.25882) [ 24.5525]	38.05462 (53.6968) [ 0.70869]	41.41903 (9.75557) [ 4.24568]
<b>PPT(-1)</b>	9.049736 (28.6306) [ 0.31609]	35.85337 (11.5667) [ 3.09970]	-0.094954 (0.17908) [-0.53024]	-0.236078 (0.15640) [-1.50944]	-23.00106 (32.4487) [-0.70884]	-25.78010 (5.89523) [-4.37304]
<b>PPT(-2)</b>	13.13502 (16.8946) [ 0.77747]	18.11716 (6.82539) [ 2.65438]	-0.915707 (0.10567) [-8.66559]	-2.372597 (0.09229) [-25.7078]	-12.27214 (19.1476) [-0.64092]	-15.80592 (3.47871) [-4.54361]
<b>PIT(-1)</b>	1.098419 (0.38364) [ 2.86315]	0.100795 (0.15499) [ 0.65033]	0.002707 (0.00240) [ 1.12824]	0.006813 (0.00210) [ 3.25088]	-0.272247 (0.43480) [-0.62614]	0.351601 (0.07899) [ 4.45099]
<b>PIT(-2)</b>	-0.290854 (0.77272) [-0.37640]	0.063596 (0.31218) [ 0.20372]	0.003325 (0.00483) [ 0.68795]	-0.014125 (0.00422) [-3.34635]	-0.516931 (0.87576) [-0.59026]	0.164049 (0.15911) [ 1.03106]
<b>VAT(-1)</b>	8.179797 (2.73284) [ 2.99315]	-1.864893 (1.10406) [-1.68912]	-0.018796 (0.01709) [-1.09964]	-0.001969 (0.01493) [-0.13189]	1.267404 (3.09727) [ 0.40920]	0.304800 (0.56271) [ 0.54167]
<b>VAT(-2)</b>	-7.488402 (2.18007) [-3.43494]	1.898022 (0.88074) [ 2.15503]	0.014879 (0.01364) [ 1.09115]	0.014213 (0.01191) [ 1.19348]	-0.267055 (2.47079) [-0.10808]	0.493653 (0.44889) [ 1.09972]
<b>C</b>	-247061.3 (72962.6) [-3.38613]	-28492.77 (29476.7) [-0.96662]	-490.1867 (456.363) [-1.07412]	-1462.466 (398.575) [-3.66923]	23291.19 (82692.5) [ 0.28166]	4599.184 (15023.5) [ 0.30613]
<b>R-squared</b>	0.977022	0.996036	0.998725	0.999857	0.774438	0.999451
<b>Adj. R-squared</b>	0.921874	0.986522	0.995665	0.999513	0.233088	0.998134
<b>Sum sq. resids</b>	2.04E+10	3.33E+09	797598.3	608393.4	2.62E+10	8.64E+08
<b>S.E. equation</b>	63855.40	25797.43	399.3991	348.8247	72370.75	13148.23
<b>F-statistic</b>	17.71638	104.6948	326.3842	2910.590	1.430569	758.8484
<b>Log likelihood</b>	-213.1713	-196.8570	-121.8318	-119.3947	-215.4245	-184.7253
<b>Akaike AIC</b>	25.13014	23.31745	14.98131	14.71053	25.38050	21.96947
<b>Schwarz SC</b>	25.77319	23.96049	15.62436	15.35357	26.02355	22.61252
<b>Mean dependent</b>	364311.7	174851.2	1721.328	5424.330	106771.5	335017.7
<b>S.D. dependent</b>	228454.2	222212.0	6066.174	15812.30	82640.01	304390.0
<b>Determinant resid covariance (dof adj.)</b>	0.000000					
<b>Determinant resid covariance</b>	0.000000					

*Sources: researchers' compilation from E-view (version 8.0)*

From the table above, ECM (-2) was consistent with the assumed theoretical negative values. It is significant at 5% level of significance. It therefore, follows that the ECM could negatively correct any deviations from long-run equilibrium relationship between RGDP and the explanatory variables. The co-efficient indicates a speedy adjustment of -3.38613 (3.3%) of its t- statistic which is too short for it to adjust or correct. This implies that following short-run disequilibrium, 3% approximately of the adjustment to the long – run takes places within three years. The above result shows that the R2 is 0.977022, which shows that the model explains about 97% of the total variations in RGDP are explained by the independent variables during the period of the study. The f – statistic of 17.71638 with

a corresponding zero probability [0.0000] measures the overall statistical influence of the explanatory variables in explaining the dependent variable. It was found to be statistical significant at 5% level. This indicates that the variables included in the model explain approximately the variations caused on Real Gross Domestic product (RGDP), growth in Nigeria.

### Analysis of Result

**Table 7: OLS Regression Results**

Dependent Variable: LOG(RGDP)

Method: Least Squares

Date: 29/12/22 Time: 09:56

Sample (adjusted): 1995 2020

Included observations: 26 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	13.31381	0.735473	18.10238	0.0000
LOG(CED)	0.213831	0.104128	2.053535	0.0592
LOG(CIT)	-0.254651	0.211150	-1.206019	0.2478
PPT	-5.64E-06	1.50E-05	-0.376567	0.7121
PIT	1.48E-06	2.61E-06	0.565828	0.5805
VAT	-4.52E-06	1.15E-06	-3.931772	0.0015
<b>R-squared</b>	0.654934	Mean dependent var	12.49649	
<b>Adjusted R-squared</b>	0.531696	S.D. dependent var	0.897630	
<b>S.E. of regression</b>	0.614273	Akaike info criterion	2.106570	
<b>Sum squared resid</b>	5.282636	Schwarz criterion	2.405290	
<b>Log likelihood</b>	-15.06570	Hannan-Quinn criter.	2.164883	
<b>F-statistic</b>	5.314385	Durbin-Watson stat	1.546073	
<b>Prob(F-statistic)</b>	0.006056			

*Sources: researchers' compilation from E-view (version 8.0)*

t- Critical value at 5% =  $\alpha / 2 t_{0.025} = 2.042$  with reference to n-k, where n is the number of observation = 20 and k is the number of parameters = 6:  $20 - 5 = 14$

f- Critical = k-1 and n-k value. Where k = 6-1 = 5 and k-n = 14: (5, 14)  $F_{0.05} = 2.69$ .

The above equation estimated Company Income Tax (CIT), Personal Income Tax (PIT), Petroleum Profit Tax (PPT) Value Added Tax (VAT) and Custom and Excise duty (CED) as a function of Real Gross domestic product (RGDP). The coefficient of the constant term shows positive; this implies that at zero performance of the independent variables used, Real Gross domestic product (RGDP) will stand at 13.31381 percent.

The regression results reveal that the coefficient of determination  $R^2$  stood at 0.654934, which is about 65% of the systematic variation in the dependent variables which was explained by the five independent variables i.e. Company Income Tax (CIT), Personal Income Tax (PIT), Petroleum Profit Tax (PPT) Value Added Tax (VAT) and Custom and Excise duty (CED). While the variables not capture in the model accounted about 35%, which was accesses by the error term. Based on the  $R^2$ , we conclude that the mode had a good fit and could be used for forecasting.

The F value is (5.314385) significant at the 5% level of significance. This shows that there is a linear relationship between the RGDP and the five independent variables. On the basis of a-priori expectation, all the coefficient of the variables used had their right sign. In other words, they were correct and positively and negatively to their respective signed, in line with the initial assumption. The implication is that a unit change (increase and

decrease) in any of the independent variables used, will led to an increase or decrease in the RGDP respectively.

### Chow-Test. Results

Years	C	LogCED	logCIT	log PPT	PIT	VAT
<b>1970 -1995</b> <b>n<sub>1</sub>= 25</b> <b>Rss<sub>1</sub>= 0.002138</b>	9.917002 (24.3890)	-0.059046 (-1.171512)	0.399764 (4.074195)	-1.96E-06 (0.631862)	-3.26E-05 (1.259936)	
<b>1996 -2020</b> <b>n<sub>2</sub>=2</b> <b>Rss<sub>2</sub> = 5.282636</b>	13.31381 (18.10238)	0.213831 (-2.053535)	-0.254651 (-1.206019)	-5.64E-06 (-0.376567)	1.48E-06 (0.565828)	-4.52E-06 (3.931772)
<b>1970 -2020</b> <b>N<sub>1</sub> 50</b> <b>Rss<sub>r</sub> = 5.464811</b>	434037.2 (3.994326)	-0.861358 (-0.843898)	-10.16518 (-0.443167)	2.128965 (-0.258443)	0.488419 (0.580183)	0.097366 (0.121009)

*Source: E-views 8.0 Estimate results output*

However, recall that we have chosen 5 percent level of significance. Therefore, from the results presented above, following the Formula;

$$F^x = \frac{(RSS_r - RSS_{ur}) K}{RSS_{ur} / (n_1 + n_2 - 2k)}$$

Where the

$F^x$  = f value computed from the result in the Model,

$RSS_r$  = Residual sum of squares restricted form the results of the pull observation (1970-2014) with degree of freedom.

$RSS_{ur}$  = Residual sum of square obtained from  $RSS_1 + RSS_2$  sub period

(i.e. 1970 – 1995, and  $Rss_1$  1996 – 2020  $Rss_2$ ), with degree of freedom

$(n_1 + n_2 - 2k) = (50 - 12) = 38$ .

Is therefore analyzed as follows:-

$RSS_R = 5.464811$ ,  $RSS_1 = 5.282636$ ,  $RSS_2 = 0.002138$

$K = 6$ ,  $n_1 = 25$ ,  $n_2 = 25$

Therefore,

$$F^* = \frac{(5.464811 - 5.384016)/6}{5.384016 / 25 + 25} * 2(6)$$

$$F^* = \frac{(5.464811 - 5.384016)/6}{5.384016} * (50 - 12)$$

$$F^x = \frac{(0.080795)}{5.384016} * (38)$$

$$F^x = 0.080795 / 204.592608$$

$$F^x = \underline{6.5817790}$$

The F-critical ratio = 2.45 (6, 44) df.

Decision Rule:-

The rule stated that the null hypothesis that said “no structural change effect should be rejected if the computed  $f^x$  – value exceed the critical  $f$ - ratio at the chosen level of significance. Therefore, we agree that  $f^x > f$ -tab (i.e.  $f$ - value computed statistical value = (6.5817790) is greater than the  $f$ -value tabulated = (2.45), we then reject the null hypothesis that said no structural changes and accept the alternative hypothesis that there exist structural changes, which effected Nigerian taxation policy on the Nigerian economic growth within the period under study . The second test of hypothesis in chow-test is that the sample population error terms  $u_{1t}$  and  $u_{2t}$ , are independently distributed.

Where,

$u_{1t}$  = the error term in equation one having the period from 1970 - 1995

$u_{2t}$  = the error term in equation two having the period from 1996 – 2020.

Then we test the hypothesis that say’s:-

$H_0: \sigma_1^2 = \sigma_2^2$  that is, the variances in the subpopulation is the same.

$H_1: \sigma_1^2 \neq \sigma_2^2$  that is, the variances in the subpopulation are not the same.

However, the two true error variance is not observable; thus, we use their estimated value to compute their variance below

$$\sigma_1^2 = \text{RSS}_1 / n_1 - 5 = 5.282636 / 25 - 5$$

$$\sigma_2^2 = \text{RSS}_2 / n_2 - 5 = 0.002138 / 25 - 5$$

Where  $\sigma_1^2$  and  $\sigma_2^2$  stand for estimated variance.  $\text{Rss}_1$ ,  $\text{Rss}_2$  and  $n_1$ ,  $n_2$ , remain the same thing in meaning. Thus,  $F^x = \sigma_1^2 / \sigma_2^2$

$$\text{Therefore, } \sigma_1^2 = 5.282636 / 22 =, \quad \sigma_2^2 = 0.310743294$$

$$\sigma_2^2 = 0.002138 / 22 =, \quad \sigma_2^2 = 16.997862$$

Here, the larger value of variance assumed the numerator while the small value of the estimated variance assumed the demodulator.

$$\text{Therefore, } \sigma_1^2 / \sigma_2^2 = 16.997862 / 0.310743294$$

$$F^x = \underline{54.70065661}$$

Thus, with the degree of freedom (5, 44), the  $F$  - critical value at 5 percent stood at 2.49. Therefore  $F^x$  - value of variance computed = 54.7006, is greater than the  $F$ - critical value 2.49. With this, we the reject null hypothesis and accept the alternative hypothesis that the subpopulations are not the same.

The purpose of this model is to check if structural change occurred in Nigerian economy and how it affects tax policy on the economic growth in Nigeria which is our reference topic. In terms of the Chow test for parameter stability conducted by splitting the total sample period into 1970-1995 and 1996-2020, there is no evidence of parameter stability which in other words, there evidence of instability from the results estimated.

However, the variables in the model specified are deemed fit and captured the real picture of Nigerian economy as regard to tax administration and policies in Nigeria during the structural policy change ears, such as Civil war ended 1970, SAP 1986, different tax (law) policy change, introduction of Value Added Tax, 1994, CBN cash base 2005, economic meltdown of 2007 etc. The implication is that the poor contribution of these independent variables CED, CIT, PPT, PIT and VAT to the dependent variable RGDP may have resulted and



affected by these structural and policy change within the period of this study. Thus we conclude that there is structural and policy change effect resulted from change/ instability in the tax administration, policies and other related event in Nigerian economy during this period of study which affected real gross domestic product in Nigeria. Thus, the model could be used for forecast concerning behavior of the variables in the mode.

### **Test of Working Hypotheses**

#### ***Restatement of Hypotheses***

##### **Hypothesis I**

$H_0$ : There is no significant effect of total tax revenue on the Nigerian economic growth

Viewing the ordinary least squared result which we proposed to be used in testing the hypothesis one, with the help of t- statistic, it was observed that t- statistic of the independent variables (CIT, VAT and CED) has their right sign with their t- value as (2.053535, -3.931772 and 4.074195) greater than the 5 percent critical level. This shows that the overall model is statistical significant at 5 % levels of significance. This is because it is greater than the critical t-values of 2.45 at 5 % level. This also means that these the explanatory variables simultaneously explain the impact on Real Gross Domestic Product (RGDP). In other words, there is a significant impact of tax revenue on the Nigerian economic development within the period of observation. We therefore reject the null hypothesis and accept the alternative hypothesis that say's "there is a significant effect of total tax revenue on the Nigerian economic growth since the individual variables have impact on RGDP.

##### **Hypothesis II**

$H_0$ ; There is no presence of administration and structural breaks change effect of total tax revenue on economic development of Nigeria during the period of the study (1970 -2020).

This hypothesis was tested using Chow test techniques. The rule of this test stated that the null hypothesis that said "no structural change effect should be rejected if the computed  $f^x$  – value exceed the critical f- ratio at the chosen level of significance. Therefore, we agree that  $f^x$  – computed is greater than (>) the f-tab (i.e. f- value computed statistical value = (6.5817790, 54.7006) is greater than the f-value tabulated = (2.45), we then reject the null hypothesis that said no structural changes and accept the alternative hypothesis that there exist structural changes. The second test of hypothesis in chow-test is that the sample population error terms  $u_{1t}$  and  $u_{2t}$ , are independently distributed should be rejected base on the outcome of the results. Therefore from the results and decision on the hypothesis above, we could see that the null hypothesis two of this study must be rejected. In other word, there is a presence of structural breaks change effect in the Nigerian economy as regard to the undergoing structural and administrative changes in tax system during the period of the study (1970 -2020).

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **Summary of findings**

On the application of advanced econometric techniques, the following findings were made;

- i. None of the variables were stationary at zero level. This means they all have unit roots; All the variables became stationary at first difference I(1) with the application of ADF and PP; There exists a long-run equilibrium relationship between RGDP and

explanatory variables; The entire regression plane is statistically significant as echoed by the P-value of F-statistics.

- ii. Hypothesis one which states that 'total tax revenue has no positive significant effect on the Nigerian economic growth' was rejected and the alternative was accepted. This was explained by the t-statistical analysis of the independent variables having their right sign and value greater than the critical level of 5% which means that total tax revenue have a significant positive effect on the Nigeria economic growth during the period under review
- iii. Hypothesis two of the study stated in null form 'there is no presence of administrative and structural breaks change effect of total tax revenue on the Nigerian economy during the period of the study (1970 -2020) was used to check if structural change occurred in Nigeria Economy and how this change affect tax revenue, it was discovered that there is evidence of poor contribution of the independence variables (PIT, PPT, CIT, VAT and CED) to the dependent variable (RGDP) which is caused by the administrative and structural policy change like Civil war, CBN cash base policy of 2005, economic meltdown 2007 among others. The researcher therefore accede to the fact that, there exit administrative and structural break effect of total tax revenue on the economic growth of Nigeria.

### **Conclusion**

It was established that the Nigeria tax system has undergone various administrative and structural changes since after independence, and this has affected the economy in no small measure. Proper application of tax policies will helped to enhance the redistribution of wealth, the ratio of taxation was also found to increase Nigeria economic growth and if tax policies, administration and revenues are properly harnessed, taxation may be Nigeria's next oil.

### **Recommendations**

1. We have establish that Nigeria tax system is a viable fiscal tool for government as shown in our findings, government should without hesitation strengthen the administrative mechanism of government taxation in order to harnesses adequately revenue from Company Income Tax (CIT) Value Added Tax (VAT) Custom and Excise Duty (CED) as it have significant impact on economic growth of Nigeria.
2. In the case of company income tax, all medium scale businesses should be listed or at least register with Corporate Affairs Commission (CAC) so their activities becomes transparent and accountable. This will no doubt increase the tax ratio and improve our initial position of a positive relationship.
3. Since Nigeria economy have been characterized with a lot of structural and administrative change since 1970 till date, it is ideal that government should endeavor to subject any tax policy to reality test before enforcing it on the citizenry as there is a direct effect of government policies to tax revenue collection in any particular of time in the economy.
4. Finally, to support and enhance the effectiveness of the cashless economy recently introduced by the Federal government Nigeria, all taxes should be remitted via an e-payment system or via direct payment to the various tax authorities' accounts. This will in no small measure improve the existing nature of the economy.

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