

**IMPACT OF TAX REVENUE ON THE NIGERIA ECONOMY**

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**COLLEGE OF MANAGEMENT SCIENCES**

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**FEBRUARY, 2020**

## **DECLARATION**

I hereby declare that this thesis has been written by me and it is a report of my research work. It has not been presented in any previous application for Masters. All quotations are indicated and sources of information specifically acknowledge by means of references.

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## CERTIFICATION

This thesis entitled “**TAX REVENUE AND SELECTED ECONOMIC INDICATORS: NIGERIA PERSPECTIVES**” meets the regulations governing the award of Masters, of the School of Postgraduate Studies of Salem University, Lokoja for its contribution to knowledge and literacy presentation.

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## **DEDICATION**

This project is dedicated to God Almighty for making my dream a reality.

## **ACKNOWLEDGEMENTS**

I would like to start by appreciating God Almighty for giving me the needed wisdom to make the project work a successful one. My profound gratitude goes to my supervisor Dr. Gbenga Adebayo for his time and constructive criticism and my HOD Dr. David O. Olopade for his advice and encouragement. I also thank our project coordinator Dr. (Mrs.) Hassan Ali for her efforts and her leadership quality. For my course mate, I thank you all for team work.

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## ABSTRACT

*Tax is a compulsory charge imposed by a public authority on the income and properties of individuals and companies as stipulated by the government Decree, Acts or Laws irrespective of the exact amount of service and it contribute to government revenue in any economy. Its role cannot be under emphasis in any economy because it is one of the major ways government gets their revenue. Due to its importance, this study has been carried out to investigate the impact of tax revenue on Nigeria Economy. Four hypotheses were stated and tested. The study used mostly secondary data from the Central Bank of Nigeria Bulletin (CBN) for 2018 and reports from Federal Inland Revenue for the period of 35years (1984 – 2018). The study used Regression Analysis and applied Autoregressive - Distributed Lag (ARDL) based on the outcome of the unit root test and to discover both long and short run effect.. The study revealed that Petroleum Profit Tax has a negative impact on the Nigeria Gross Domestic Product in the short run but has a positive impact on the long run. Custom and Excise Duty has a negative impact on Nigeria Gross Domestic Product in the short run but a positive impact on the long run, Company Income Tax has a both positive and significant effect on Nigeria Gross Domestic Product at both short run and long run and value added as a significant negative impact on economic growth. We recommended that Efforts should be intensified by the government towards increased collection of tax revenue this is due to the low contribution of tax revenue to GDP over the period of study. This can be done through blocking all loopholes in our tax laws as well as bringing more prospective tax payers into the tax net (especially the informal sector). Also there should be stringent penalty imposed on any individual or corporate body who indulge in any form of tax malpractices irrespective of states, if the positive correlation between tax revenue and economic growth should be maintained.*

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## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background to the Study

Taxation is an important fiscal policy instrument at the disposal of governments to mobilize revenue and promote economic growth and development. Governments use tax revenue to carry out their traditional functions such as the provision of public goods and services; maintenance of law and order; defense against external aggression; and regulation of trade and business to ensure social and economic maintenance. Effective tax revenue mobilization reduces an economy's dependence on external flows which have been found to be highly volatile. Taxation also allows governments' greater flexibility in designing and controlling their development agenda; conditions states to improve their domestic economic policy environment, thus creating a conducive environment for the much-needed foreign direct investments; and strengthen the bonds of accountability between governments and the citizens.

Taxation is an age long event. The need for its payment was emphasized by Jesus in "Mathew 22 vs 17-21" when the Pharisees asked Him whether it was lawful to pay taxes or not. His reply „render therefore unto Caesar the things which are Caesar's and to God the things that are to God's" suggests that tax payments should be compulsory, nonnegotiable, binding and obligatory on all citizens of a country regardless of religion and social status.

The 2008/2009 global financial and economic crisis provided useful lessons for countries on the need to direct more attention to domestic resources mobilization efforts, including through increasing tax revenues, and shift away from over-dependence on external financial flows and export revenues.

Although tax structures vary considerably across countries, the primary objective of any tax structure is to attain maximum revenue and economic growth with minimum distortions. Different countries have different philosophies about taxation and different methods of tax collection. In the same manner, countries have different uses for their revenue which affect growth differently. Agell, Lindh, and Ohlsson, (1997) have argued that the different uses of total government expenditure affect growth differently and a similar applies to way tax revenue is raised.

Romer (1986) emphasizes factors such as 'spill-over effect and learning by doing' by which firms' specific decisions to invest in capital and research and development, or investment in human capital, can yield positive external effects that benefit the rest of the economy. Solow (1956) was the first to examine how taxation affects growth. He argued that steady state growth is not affected by tax policy; that is, tax policy, regardless of distortion, has no impact on long term economic growth rates, even if it reduces the level of economic output in the long term. Romer (1986), argued that there exists a structural difference in taxation in developing countries and developed countries. For developing countries, they established that roughly two-thirds of tax revenue is derived from indirect taxes while for developed countries two-thirds comes from direct taxes. He suggested however, that tax structure can change over time to maximize the economic growth.

There are impacts of taxes due to economic growth whether it is positive or negative impacts. According to Bofah(2003), taxes refer to the revenue that is collected by the government to provide services and finance themselves. According to the theory of tax competition, the government will reduce the taxes on mobile asset through the occurrence of globalization due to rise in economic growth in a country. Change in tax rate also will give the different impact to an open economy. According to Bretschger (2010), he found negative impacts of corporate taxes on openness and total tax revenue to the economic growth in 12 OECD countries. He also mentioned on the tax competition theory that argues that, when tax rate of capital is reduced, it will cause

the capital inflow to a country. This is because; the tax rate is one of the cost for capital holder (Bucovetsky, 1991). These two researches were found that private return on investment is influenced by the changes in capital taxes.

However, the need for tax payments has been a phenomenon of global significance as it affects every economy irrespective of national differences (Oboh & Isa, 2012). Tax payment is not for the direct exchange of good and/or services but a transfer of resources and income from the private sector to the public sector in order to achieve some of the nation's economic and social goals (Okpe, 2000). Such goals may be in for high level of employment, stable prices, rapid growth of gross national product, favourable balance of payments position, promotion of a free market economy, satisfaction of collective demands, equitable income redistribution, promotion of infant industries, the encouragement of priority sector, encouragement of balance population development and promotion of labour and capital development (Onoh, 2013). The level of tax to be paid by the citizens and the items to be taxed is determined by the government.

According to Stupak (2019) the goal of fiscal stimulus is to increase aggregate demand within the economy. However, if fiscal stimulus is applied too aggressively, or is implemented when the economy is already operating near full capacity, it can result in an unsustainably large demand for goods and services that the economy is unable to supply. When the demand for goods and services is greater than the available supply, prices tend to rise, a scenario known as inflation. In Nigeria another potential consequence of government fiscal stimulus is an increase in the value of the U.S. dollar and a subsequent increase in the trade deficit, which mitigates some portion of the rise in economic activity and cause interest rates to rise. To engage in fiscal stimulus by either increasing spending or decreasing tax revenue, the government must increase the size of its deficit and borrow money to finance that stimulus. This can lead to an increase in interest rates and subsequent decreases in investment and some consumer spending and rising interest rates generally depress economic activity, as they make it more expensive for businesses to borrow money and invest in their firms. (Stupak, 2019)

Many researchers (Bucovetsky, 1991; Stupak 2019 and Ngerebo & Masa 2012) have worked on the effect of taxation on some indicators, majority had use Gross Domestic Product and inflation, therefore, this study have been designed to investigate the effect of tax revenue on Nigeria economic growth using custom and excise duties, company income tax, petroleum profit tax, value added tax as independent variables and real gross domestic product as dependent variable to measure the Nigeria economy to have a more robust view of the study.

The research work is anchor on the work of Oboh & Isa, 2012 which state that Tax payment is not for the direct exchange of good and/or services but a transfer of resources and income from the private sector to the public sector.

## **1.2 Statement of the problem:**

Tax revenue is primarily an instrument for economic development. This is evident a mirage in the developing country like Nigeria, government upon government has made several efforts coming up with policies and reforms but all that seems not to have yielded any positive results. So far in the last four years, Nigeria has experienced over 20 tax reforms which although has increased the tax revenue but there is no evidence that this has impacted positively on the Nigeria economy.

According to the government records (CBN Bulletin, FIRS), the increase is not seen to have a proportionate influence on the GDP. Several studies have been written concerning the issue of tax and economic growth (IMF, 2013; Reinhart, 2012; Onaolapo, Aworemi, & Ajala, 2013 and Akwe, 2014). All these have not considered the relationship between tax revenue, using all the variables at the same time and economic growth which is the gap this study is able to bridge.

Due to the above reasons this study was carried out to investigate the impact of tax revenue on Nigeria economy. The study independent variables are custom and excise duties, company income tax, petroleum profit tax, and value added tax while the dependent variable is gross domestic product.

### **1.3 Objective of the study:**

The main objective of the study is to investigate the relationship between tax revenue and Nigeria economic growth, while the specific objectives are to:

1. examine the impact of custom and excise duties on Nigeria economic growth (GDP).
2. ascertain the effect of company income tax on Nigeria economic growth (GDP).
3. determine the impact of petroleum profit tax on Nigeria economic growth (GDP).
4. investigate the impact of value added tax on Nigeria economic growth (GDP).

### **1.4 Statement of hypotheses:**

To provide answer to the above research questions, the following hypotheses were formulated

#### **Hypothesis I**

**H1:** Custom and excise duties does not have any impact on Nigeria economic growth (GDP)

#### **Hypothesis II**

**H2:** Company Income Tax does not have any impact on Nigeria economic growth (GDP)

#### **Hypothesis III**

**H3:** Petroleum Profit Tax does not have any impact on Nigeria economic growth (GDP)

#### **Hypothesis IV**

**H4:** Value Added does not have any impact on Nigeria economic growth (GDP)

### **1.5 Scope of the study:**

This research was limited to studying the impact of tax revenue on Nigeria economic growth. The choice of the variables in measuring both independent and dependent variables used was based on the availability of data and popularity of the variables as a measure of economy. The variables used to measure Nigeria economic growth(dependent variable) is gross domestic product and that of tax revenue (independent variables) are custom and excise duties, company income tax, and petroleum profit tax, value added tax and oil revenue as control variable for the model for the period of thirty-five years (1984 to 2018). We used this so has to determine both short and long run effect of the variables under study. The data were sourced from the CBN Bulletin and both quarterly and annual reports from the Federal Inland Revenue Service.

#### **1.6 Significance of the study**

The importance attached to a study of this magnitude cannot be over emphasized as many people stand to gain from the findings.

Firstly the study significantly contributed to the body of knowledge on the concept of effect of tax revenue on economic indicators by providing empirical evidence from Nigeria perspectives. Presently, a serious gap exists in knowledge as to the limited number of variables used in measuring tax revenue by other researchers. This study bridges this gap by using total non-oil revenue as an additional variable.

Secondly, this study will be of benefit to individuals and institutions as it will help them get the report on the efficiency of the government and the Central Bank of Nigeria and provide economic situations to them. Furthermore it will help the entire citizen that are taxpayer understand the effect on the economic situation of the country. And institution will be able to make better decisions on issues that concerns tax in the country among others are IFRS and other institutions and bodies that take decision on taxation and economic.

Thirdly, it will be of benefit to the government in decision making pertaining to tax revenue and the growth of Nigeria economy, the international body is not left out. It will help

other researchers both locally and international to know the association between tax revenue and economic indicators in Nigeria.

Fourthly, it will be beneficial to economic analyst in forecasting government revenue (inflow and outflow) which will assist in financing government project.

Finally, it will be beneficial to researcher especially those authors who studies shall be improved upon as well as those in academic who may wish to carryout similar study in the future.

### **1.7. Limitation to the Study**

The major limitation to this study was the inability to obtain a complete set of data beyond 2018 based on the information available at the period of the study. However, this limitation does not really pose a serious danger in the generalization of its expected findings to the population. Firstly, the period of 35 years, time interval is deemed sufficiently long enough to reveal some current situation of Nigeria tax revenue on economic growth.

### **1.8 Definition of terms.**

**Tax:** A compulsory levy by the government on its citizen for the provision of public goods and services.

**Tax base:** The object which is taxed for instance personal income, company profit.

**Tax rate:** This is the rate at which tax is charged.

**Tax incidence:** It offers to the effect of and where the burden is finally rested.

**FBIRS:** Federal Board of Inland Revenue Services. It is an operational arm of Federal Board of Inland Revenue which is responsible for the Federal Tax matters.

**CIT:** Company Income Tax. These are tax paid on the profit of incorporated companies in Nigeria

**JTB:** Joint Tax Board (JTB) is established under Section 85(1) of Decree 104 of 1993 to arbitrate on tax disputes between one state tax authority and another.

**VAT:** **Value Added Tax** is a multistage tax levied and collected on transactions at all stages of sales and distribution.

**CDT:** Custom and Excise Duties, It is an indirect tax paid to the government of Nigeria by producer of goods both locally and internationally

**OILR:** Oil revenue. This is revenue generated from oil sector in Nigeria.

**PPT:** **Petroleum Profit Tax Act** is an act that regulates the petroleum profit tax and also specifies how profit from petroleum will be taxed.

**Progressive tax:** This is a tax incidence that increases as the size of income increases.

**Regressive tax:** A tax is regressive when its tax rate decreases as the income increases.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1. Introduction**

This chapter presents a review of the existing literatures on the study as well as on the dependent and independent variables, relevant conceptual and theoretical framework. Also presented are the major approaches employed by previous researcher which include the fundamental analysis view of tax revenue and economic growth. It also presents a summary of the major studies that has been carried out by other researchers that are related to the study.

#### **2.2. Conceptual framework**

##### **2.2.1 Economic growth:**

According to Dwivedi (2004), economic growth is a sustained increase in per capita national output or net national product over a long period of time. It implies that the rate on increase in total output must be greater than the rate of population growth.

Another quantification of economic growth is that national output should be composed of such goods and services which satisfy the maximum want of the maximum number of people. Economic growth can be determined by four important determinants namely, human resources, national resources, capital formation and technological development. The theories of economic growth can be examined under the Harrod-Domar theory of growth, Kaldor model of distribution, Pasinetti model of profit and growth, Joan Robinson's model of capital accumulation, Meade's

Neo Classical model of economic growth and the Slow model of long run growth. All these models of economic growth the various views of scholars on the most suitable explanation of growth.

### **2.2.2. Gross Domestic Product**

According to OECD (2009) define GDP in three ways, (1) in terms of size (2) growth and (3) per capita. The word GDP comprises of three words, Firstly "Gross" signifies that no deduction has been made for the depreciation of machinery, buildings and other capital products used in production. "Domestic" means that it is production by the resident institutional units of the country. The products refer to final goods and services, that is, those that are purchased, imputed or otherwise, as: the final consumption of households, non-profit institutions serving households and government; fixed assets; and exports (minus imports). GDP at market prices can be measured in three different ways: (1) as output less subsidies on products; (2) as the income earned from production, equal to the sum of: employee compensation; the gross operating surplus of enterprises and government; the gross mixed income of unincorporated enterprises; and net taxes on production and imports (VAT, payroll tax, import duties, etc., less subsidies); (3) or as the expenditure on final goods and services minus imports: final consumption expenditures, gross capital formation, and exports less imports.

Lequiller and Blades (2007) defined Gross Domestic Product (GDP) as the standard measure of the value of final goods and services produced by a country during a period. While GDP is the single most important indicator to capture these economic activities, it is not a good measure of societies' well-being and only a limited measure of people's material living standards. The sections and indicators that follow better address this and other related issues and this is one of the primary purposes of this publication.

Countries calculate GDP in their own currencies. In order to compare across countries these estimates have to be converted into a common currency. Often the conversion is made using current exchange rates but these can give a misleading comparison of the true volumes of final goods and services in GDP. A better approach is to use purchasing power parities (PPPs). PPPs are currency converters that control for differences in the price levels of products between countries and so allow an international comparison of the volumes of GDP and of the size of economies.

Also, OECD (2009), explained the real GDP as converting nominal values of GDP to real values requires a set of detailed price indices, implicit or directly collected. When applied to the nominal value of transactions, the corresponding volume changes can be captured. The detailed volume changes for goods and services – typically several hundred – are then aggregated to yield an overall change in the volume of GDP. In the past, most countries used fixed weights for this aggregation and the base year to which weights related was only modified every five to ten years.

It is important to recognize that growth rates are not invariant to the choice of this reference period and measures of growth could turn out to be biased for reporting years that were remote from the base year. Since the 1993 System of National Accounts it has therefore been recommended that weights should be representative of the periods for which growth rates are calculated. This means that new weights should be introduced every year, giving rise to chain-linked (volume) indices.

Ahmad, Lequiller, Marianna, Pilat, Schreyer and Wolf (2003) explained it as changes of economies are usually measured by changes in the volume (often referred to as real) of GDP. Real reflects the fact that changes in GDP due to inflation are removed. This provides a measure of changes in the volume of production of an economy.

OECD (2009), define GDP per capita as Gross Domestic Product (GDP) per capita is a core indicator of economic performance and commonly used as a broad measure of average living standards or economic well-being; despite some recognized shortcomings. For example average GDP per capita gives no indication of how GDP is distributed between citizens. Average GDP per capita may rise for example but more people may be worse off if income inequalities also increase.

Equally, in some countries, there may be a significant number of nonresident border or seasonal workers or indeed inflows and outflows of property income and both phenomena imply that the value of production differs from the income of residents, thereby over or understating their living standards. A focus on per capita GDP is also useful in decomposing drivers of overall GDP growth. For example real GDP can grow without there being any improvement in real GDP per capita. Decomposing per capita growth into two parts, labour productivity growth (measured as GDP per hour worked) and labour utilization growth (measured as hours worked per capita) is also helpful. For this study the real GDP will be used.

### **2.2.3. Tax Revenue and Gross Domestic Product**

There are clear arguments both for and against a higher tax ratio leading to higher GDP growth. On the one hand, higher taxes distort the incentives for individuals to supply more labour or for firms to produce more. On the other, higher taxes provide governments with the potential to invest in, for example, infrastructural improvements, education or R&D, all of which can increase the economy's productive capacity.

Many studies argue the relationship between tax policy and the economic growth and how it could affect each one other. Chigbu, Akujuobi, and Appah (2012) examined the relationship between tax revenue and economy in Nigeria. Muibi and Sinbo, (2013) analyzed the level of economic growth that has impacted positively on tax revenue in Nigeria. The general conclusion is that macroeconomic instability and degree of economic activities are the main drivers of tax buoyancy and tax effort in Nigeria. The paper found that taxation is an important instrument to improve economic growth. Canicio and Zachary (2014) showed that there is independence between the economic growth and government tax revenues. The study finds that 30% speedier relationship of adjustment in the short run towards equilibrium level in the long run.

Brender and Navon (2010) aimed to test the relation of the GDP with tax revenues. The paper studies the uncertainty in predicting the tax revenue in Israel. The study showed that the long-run tax-revenue and GDP are elastic. Also Hakim and Bujang (2012) stated that the statistical evidence suggests that the total tax revenue to GDP ratio is higher in the high income countries compared with the low and middle countries. In addition to that (Mashkoor, Yayha and Alli, 2010) show that saving causes the real GDP growth unidirectional and the direct tax to GDP ratio granger causes the real GDP growth significantly.

Furthermore Government spending and tax revenues have been tested by several studies. Hafiz, 2006 points out those tax revenues are very important to underpin the general budget to cover public expenditures (Miswadeh&Al-Mofleh, 2015). In addition, taxes are considered the main motive to control the economic activities.(Hussien, 2005; Nanthakumaret,Kogid, Sakami, &Muhamad, 2011; Taha and Loganathan., 2008) found a causality between government expenditure and tax revenues in there testing models. (Zortuk and Uzgoren, 2008) studied the causality and long-run relationship between the government spending and tax revenues in oil exporting countries during 2000-2009 period. The study finds that the short-run and long-run government spending has a positive impact on taxation. Another study finds bidirectional causality between taxes and expenditures in five of G7 countries (Owoye, 1994). However, (Al-Khulaifi, 2012) and Mehrar and

Rezaei,(2014)found unidirectional causality running from government revenues to government expenditure.

For the analysis of relationship between investment as an important element of GDP and tax revenues, many researcherstest the relationship between investment and tax. Gentry and Hubbard (2000) provide evidence thatEconomic growth is the basis of increased prosperity. Investment in new capital (both human and physical), the implementation of new production techniques and the introduction of new products are the fundamentals of the growth process. Through its effect on the return to investment or the expected profitability of research and development, taxation can affect what choices are made and, ultimately, the rate of growth. According to Gareth (2000) in most developed countries, the level of taxes has risen steadily over the course of the last century. An increase from about 5–10 per cent of GDP at the turn of the century to 20–30 per cent at present is typical. Such significant increases in taxation raise serious questions about the effect they have had upon economic growth.

Until recently, economic models that could offer insight into this question were lacking. Much of the growth literature focused on the steady state where output per head was constant, whilst those that did have sustained growth introduced this through a process exogenous to the model. By definition, such exogenous growth could not be affected by taxation. It is only since the development of endogenous growth theory that a tool has existed for investigating how taxation affects growth. These new models explicitly model the processes through which growth is generated and, by doing so, can trace the effects of taxation upon the individual decision-making that lies behind them. Thus, tax incidence can be understood and predictions made about growth effects.

The researcher position is established on Gentry and Hubbard (2000) which provide evidence that Economic growth is the basis of increased prosperity and the relationship between investment and tax..

#### **2.2.4. Customs and Excise Duties and Economic Growth**

Customs duty is a tax levied on imports (and sometimes on exports) by the customs authorities of a country to raise revenue for the state and/or to protect domestic industries from more efficient or predatory competitors from abroad. Customs duty is based generally on the value of goods or upon the weight, dimensions, or some other criteria that will be determined by the state. Customs and excise duties are the oldest forms of modern taxation and are otherwise known as import duties. They are charged either as a percentage of the value of import or a fixed

amount on specific quantity (Okezie, 2003). Odusola (2006) examined the impact of various taxes on the economic growth in Nigeria, using a time period of 1985-2004. Results showed that customs and excise duties was negatively related to gross domestic product, implying that an inverse relationship existed between customs excise duties and economic growth in Nigeria.

Amunonimim, Ngerebo&Masa (2012) analyzed the impact of non-oil tax revenue on economic growth from 1993 to 2010 in Nigeria. The data sourced from the 2012 statistical bulletin of the Central Bank of Nigeria (CBN), were analyzed using the ordinary least square regression technique. The results showed the existence of a positive relationship and impact of non-oil tax revenue on the economic growth in Nigeria. Baghebo and Edoumiekumo (2012), empirically investigated the impact of taxation on the growth of the Nigerian economy from 1976-2006. The study employed the use of both simple and multiple linear regression analysis of the ordinary least square method to determine the impact between the endogenous variable, RGDP, and the exogenous variables, PPT, CIT, CED and VAT. It was discovered that all exogenous variables, including CED, had a significant impact on the economy of the nation.

### **2.2.5. Company Income Tax and Economic Growth**

Adegbie and Fakile (2011) worked on company income tax and Nigeria's economic development. They used the GDP to capture the Nigerian economy and Petroleum Profit Tax (PPT), Company Income Tax (CIT), Customs and Excise Duties and VAT to measure Company Income Tax. Findings revealed that there is a significant relationship between company income tax and Nigerian economic development and that tax evasion and avoidance are the major hindrances to revenue generation.

Chigbu, Akujuobi, and Appah, (2012) examined the causality between economic growth and Company Income tax in Nigeria for the period 1970-2009. To achieve the objective of the study, data was collected from the Central Bank of Nigeria (CBN) Statistical Bulletin and Federal Inland Revenue Service (FIRS). The data collected from the secondary sources were analysed using relevant econometric models such as Augmented Dickey-Fuller, Diagnostic Tests, Granger Causality and Johansen Co-integration. The results from the econometric analysis reveals that taxation as an instrument of fiscal policy affects the economic growth and taxation granger cause economic growth of Nigeria. On the basis of the econometric result, the study concluded that taxation is a very important instrument of fiscal policy that contributes to economic growth of any country. On the basis of the conclusion useful recommendations were provided that will improve the generation of revenue from taxation that would stimulate the economy of Nigeria positively.

Worlu and Nkoro (2012) studied the impact of revenue from Companies Income tax on the economic growth of Nigeria, judging from its impact on infrastructural development from 1980 to 2007. To achieve this objective, relevant secondary data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin, Federal Inland Revenue Service (FIRS) and previous works done by scholars. The data include; gross domestic product(GDP), infrastructure, petroleum profit tax(PPT), company income tax(CIT), custom and excise duties, foreign direct investment(FDI), domestic investment(DI), interest rate(INT) and consumer price index(CPI) are collected for the period of 1980 to 2007. The data collected were analyzed using the three stage least square estimation technique. The results show that tax revenue stimulates economic growth through infrastructural development.

#### **2.2.6. Petroleum Profit Tax and economic growth in Nigeria**

Onaolapo, Fasina, and Adegbite (2013) studied empirically the effect of petroleum profit tax (PPT) on Nigeria economy, secondary data were obtained from central bank of Nigeria statistical bulletin covering the period of 1970 to 2010. In concluding the analysis, multiple regressions were employed to analyze data on such variables Gross Domestic Product (GDP), petroleum profit tax, inflation, and exchange rate were all found to have significant effects on the Economics Growth.

Ihenyen and Mieseigha (2014) examined taxation as an instrument of economic growth in Nigeria. Using annual time series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin during the period 1980 through 2013, data of Corporate Income Tax (CIT), Value Added Tax (VAT) and Economic Growth (GDP) was estimated using the Ordinary Least Square (OLS) technique. The empirical result suggests that the hypothesized link among corporate income tax, value added tax and economic growth indeed exist in the Nigerian context. Thus the result offer tantalizing evidence that taxation is an instrument of economic growth in Nigeria. This conclusion points to the need for additional measures by government in ensuring that taxpayers do not avoid and evade tax so that income can be properly redistributed in the economy.

Ogbonna and Ebimobowei (2012), studied the effects of petroleum income on the Nigerian economy for the period 2000 to 2009 using the gross domestic product (GDP), per capita income (PCI), and inflation (INF) as the explained variables, and oil revenue, petroleum profit tax/royalties (PPT\R), and licensing fees (LF) as the explanatory variables. The sample covers all the economic.

sectors of the country, including the oil sector and the non-oil sector. This study relied mostly on secondary data from Central Bank of Nigeria's Statistical Bulletin, Nigerian National Bureau of Statistics, and the Nigerian national Petroleum Corporation. Simple regressions models and Statistical Package for Social Sciences were used in this study to evaluate the data collected. The results show that oil revenue has a positive and significant relationship with GDP and PCI, but a positive and insignificant relationship with INF. Similarly, PPT/R has a positive and significant relationship with GDP and PCI, but a negative and insignificant relationship with inflation. It was also found that LF has a positive but insignificant relationship between GDP, PCI and INF, respectively. Based on these findings, this study concludes that petroleum income (oil revenue and PPT/R) has positively and significantly impacted the Nigerian economy when measured by GDP and PCI for the period 2000 to 2009. This study therefore suggests that the effect of petroleum income on the Nigerian economy was positive for the period reviewed.

Saheed, Abarshi and Ejide (2014) examined the empirical relationship between Economic growth and petroleum taxation. In an attempt to investigate the effect of petroleum taxation on economic growth, a simultaneous equation model was used to establish a relationship between the variables Domestic Consumption and production of crude oil, petroleum taxation and government policies. The result obtained from the analysis revealed that a strong positive relationship exist between domestic consumption, Petroleum profit tax (PPT), government policy and economic growth (GDP).

Also, Success, Success and Ifurueze (2012) examined the Impact of Petroleum Profit Tax on the economic development of Nigeria for the period 2000- 2010. The method of analysis used was ordinary least square method. Results showed that Petroleum profit tax impact positively on Gross Domestic Product of Nigeria and it is statistically significant.

Furthermore, Okafor (2012) explored the impact of income tax revenue on the economic growth of Nigeria as proxied by the gross domestic product (GDP) using the ordinary least square (OLS) regression analysis over the period 1981-2007. The regression result indicated positive and significant relationship. However actual tax revenue generated in most years fell below the level expected. The anomaly was attributed to dysfunctional ties in the income tax system, loopholes in tax laws and inefficient tax administration.

### **2.2.7. Value Added Tax and Economic Growth**

Ihenyen and Mieseigha (2014) examined taxation as an instrument of economic growth in Nigeria. Using annual time series data sourced from the Central Bank of Nigeria (CBN) Statistical

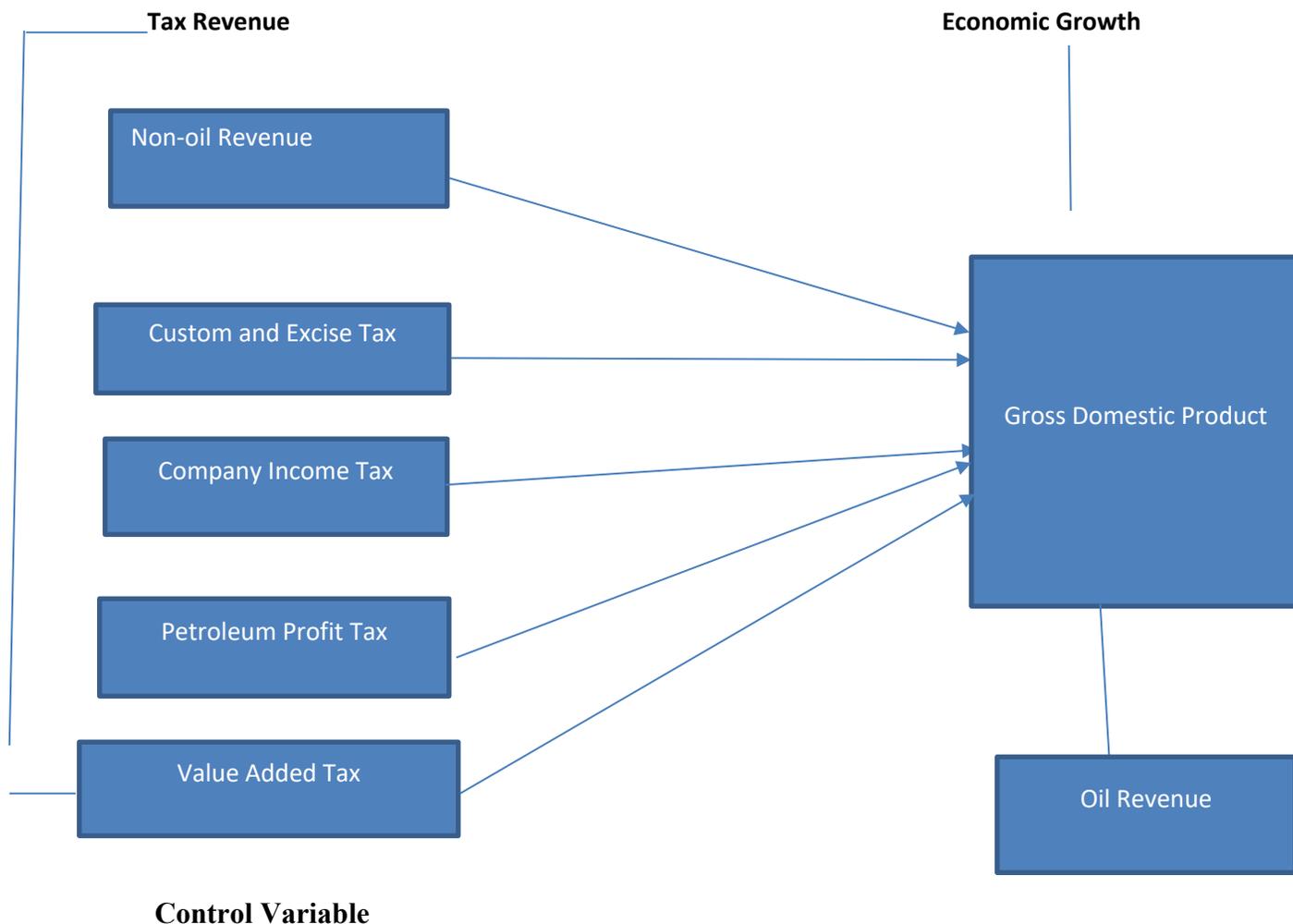
Bulletin during the period 1980 through 2013, data of Corporate Income Tax (CIT), Value Added Tax (VAT) and Economic Growth (GDP) was estimated using the Ordinary Least Square (OLS) technique. The empirical result suggests that the hypothesized link among corporate income tax, value added tax and economic growth indeed exist in the Nigerian context. Thus the result offer tantalizing evidence that taxation is an instrument of economic growth in Nigeria. This conclusion points to the need for additional measures by government in ensuring that taxpayers do not avoid and evade tax so that income can be properly redistributed in the economy.

Again Adegbe and Fakile (2011) worked on company income tax and Nigeria's economic development but made use of VAT as one of their proxies for the independent variable. They used the GDP to capture the Nigerian economy and Petroleum Profit Tax (PPT), Company Income Tax (CIT), Customs and Excise Duties and VAT to measure Company Income Tax. Findings revealed that there is a significant relationship between company income tax and Nigerian economic development and that tax evasion and avoidance are the major hindrances to revenue generation.

Owolabi and Okwu (2011) empirically evaluated the contribution of VAT to the development of Lagos State economy. Development aspects considered included infrastructural development, environmental management, education sector development, youth and social development, agricultural sector development, health sector development and transportation sector development. Result showed that VAT revenue contributed positively to the development of the respective sectors. However, the positive contribution was statistically significant only in agricultural sector development.

Smith, Islam, and Moniruzzaman, (2011) attempt to analysis the contribution and performance of VAT in Bangladesh compared to other developing countries. The result shows that the performance of VAT was quite satisfactory in the initial years; afterwards, VAT collection remained stagnant at a certain level. The study finds that the stagnation happened as a result of: relatively small number of VAT tax-payers, a general lack of awareness, and a weak monitoring system. Samimi, and Abdolahi, (2011) Scan the impact of implementing Value Added Tax on Export of goods and services in selected countries. Four different indices for export; export of goods and services, export of goods and services (BOP), export of goods and services (annual % growth), export of goods and services (% of GDP) to investigate the sensitivity to different definitions. Findings of the study based on Mean Difference Statistical Test in a two three-year periods before and after introduction of VAT show that, in different indices, the impact of VAT on export is positive.

### **Conceptual model**



**Fig 1: Conceptual Model  
Research Study 2020**

## 2.3 Theoretical Review

**2.3.1 Theories of taxation:** According to Bhartia (2009), a taxation theory may be derived on the assumption that there need not be any relationship between tax paid and benefits received from state activities. In this group, there are two theories, namely,

- (i) Socio-political theory
- (ii) The expediency theory

(i) **Socio political theory:** This theory of taxation states that social and political objectives should be the major factors in selecting taxes. The theory advocated that a tax system

should not be designed to serve individuals, but should be used to cure the ills of society as a whole.

- (ii) **Expediency theory:** This theory asserts that every tax proposal must pass the test of practicality. It must be the only consideration weighing with the authorities in choosing a tax proposal. Economic and social objectives of the state as also the effects of a tax system should be treated irrelevant (Bhartia, 2009).

#### 2.4 Empirical studies

Several empirical studies have been conducted on the impact of taxes on economic growth. The studies of Anyanwu (1997), Engen and Skinner (1996), Tosun and Abizadeh (2005) and Arnold (2011) provided different explanations of taxes on economic growth. Engen and Skinner (1996) in their study of taxation and economic growth of U.S. economy, large sample of countries and use of evidence from microlevel studies of labour supply, investment demand, and productivity growth. Their result suggests modest effects on the order of 0.2 to 0.3 percentage points' differences in growth rates in response to a major reform. They stated that such small effects can have a large cumulative impact on living standards.

Tosun and Abizadeh (2005) in their study of economic growth of tax changes in OECD countries from 1980 to 1999 reveal that economic growth measured by GDP per capita has a significant effect on the tax mix of GDP per capita. It is shown that while the shares of personal and property taxes have responded positively on economic growth, shares of the payroll and goods and services taxes have shown a relative decline.

Arnold (2011) in their study found that short term recovery requires increase in demand while long run growth requires increase in supply. As short term concessions can be hard to reverse, this implies that policies to alleviate this crisis could compromise long run growth.

Taifik and Imbarine (2012) investigated the impact and consequences of tax revenue component on economic indicators, evidence from panel group data. They used the ratio of gross

savings to GDP and foreign direct investment as ratio of gross domestic product and related it with all the component of taxes from 1960 to 2009. They used unit test, Harvey Godfrey test, Gleys test and regression analysis. They found out that there is relationship between component of tax revenue and inflation, FDI and savings for a given countries based on the level of income.

Ojijo and Oluwatosin (2018) examined taxation and economic growth in resource rich country, a case of Nigeria. They employed the linkage between availability of higher resources revenue and lower taxation effect of other revenue categories and the effects of these on growth. They used ordinary least square estimation techniques to analyze their data collected. They found out that taxation has a significant effect on real GDP growth rate. They recommended that the government should institute an appropriate tax system with an emphasis on boarding the tax effort as well as ensure optimal contribution of taxation towards economic growth and development.

Enokela (2010) in his study, explore the relationship between Value Added Tax and economic growth of Nigeria using secondary data and multiple regressions. The results revealed that Gross Domestic Product (GDP) is positive and statistically significant to Value Added Tax, Government Capital Expenditure (GCE) is positive but insignificant to Value Added Tax, and Gross Domestic Product per Capita (GDPPC) is negative and statistically significant to Value Added Tax. The researcher recommended a zero tolerance for corruption to enable the revenue generated from VAT to be channeled to appropriate developmental projects.

Ngwoke (2019) evaluated the effect of taxation on economic growth (2007-2017). The study adopted ex-post facto. The study made use of secondary data obtained from the Central Bank of Nigeria Statistical Bulletins for the relevant years. The hypotheses were tested using unit root test and regression analysis statistical tool. He found out that Petroleum profit tax has significant effect on the gross domestic product of Nigeria, Company income tax has significant effect on the gross domestic product of Nigeria and Customs and excise duties have significant

effect on the gross domestic product of Nigeria. The study concluded that; about 96% changes in the dependent variable are explained by the independent variable. This implies that the goodness of fit measured by the R<sup>2</sup> is about 99%.

Maria (2015) investigated the situation of taxation in Nigeria and enumerated the indispensable role of taxation for state development. Primary and secondary data were used. The primary data were collected from the distributed questionnaires while the secondary data were collected from the World Bank Indicators. The data were analyzed and they showed that taxation contributes less to GDP of the Nigerian economy since the IMF threshold of tax revenue to GDP is 15% while the highest taxation was added to the Nigerian GDP is 2.3% in 2010. The paper therefore, concluded that taxation is indispensable for the development of a nation (there is a positive relationship between taxation and state development) and that the ability of tax to stimulate economic growth or development in Nigeria will result from the deliberately designed regimes that will encourage compliance of those who should pay this tax.

Inimino, Abuo and Bosco (2018) examined the impact of tax revenue on economic growth in Nigeria from 1980 to 2015. The data used in the study were sourced from Central Bank of Nigeria (CBN) statistical bulletin. The study used data on real gross domestic product, petroleum profit tax, company income tax and customs and excise duties. The econometrics methods of Co-integration and ECM were employed as the major analytical techniques. The Co-integration result revealed the existence of a long-run relationship among the variables. The Parsimonious Error Correction result revealed that company income tax and customs and excise duties have positive and significant relationship with economic growth in Nigeria. However, petroleum profit tax impacted on economic growth in Nigeria but not significantly. Also, the coefficient of the parsimonious ECM has the appropriate sign (i.e., negative) and statistically significant. This implies that, the short run dynamics adjust to long run equilibrium relationship.

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

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

Emmanuel and Charles (2015) studied the impact of taxation on the Nigerian economy for the period 1994 -2012. The dependent variables used in the model includes: Gross Domestic Product (GDP) as a parameter for measuring economic growth, inflation and unemployment. The objective is study to determine how taxation affects these macroeconomic variables. To avoid spurious results, the data set collected from the Central Bank of Nigeria statistical bulletin and Federal Inland Revenue Services was subjected to Augmented Dickey Fuller Unit Root test, which reveals that the variables are stationary. The co-integration test also reveals that the variables are co-integrated and long run relationships exist between the variables. The results of the statistical analysis reveal that positive relationships exist between the explanatory variables (Custom and Excise Duties, Company Income Tax, Personal Income Tax, Petroleum profit tax and Value Added Tax) and the dependent Variables (Gross Domestic Product, Unemployment). But, the individual explanatory variables have not significantly contributed to the growth of the economy; also the explanatory variables have not significantly contributed to the reduction of the high rate unemployment and inflation in Nigeria for the period under review. Study recommends total restructuring of the tax system in the country and the provision of basic amenities (good roads, steady power supply, internal security, etc.) which will encourage individuals and corporate organizations to honour their tax obligations in Nigeria.

Afolabi (2017) examined the effect of taxation on economic growth in Nigeria. Specifically, this study examined the impact of value added tax on economic growth in Nigeria as well as examined the effect of petroleum profit tax on economic growth in Nigeria. Finally, the study examined impact of companies' income tax on the growth of Nigerian economy. Secondary data was obtained from the Central Bank of Nigeria statistical bulletin. Canonical co-integrating regression was used to achieve the objectives of the study. Results of the regression analysis revealed a positive relationship between taxation and economic growth in Nigeria. The study concluded that taxation is a significant determinant of economic growth in Nigeria.

Eyisi, Chioma&Nwaorgu (2015) ascertained the effects of taxation on microeconomic performance in Nigeria from 2002 to 2011. Data were collected from secondary sources. Three hypotheses were tested using ordinary least squares regression method. Their findings showed that government earnings from taxation will affect consumer spending and boost output production level. They recommended that to ensure rapid economic growth in Nigeria, there is need for government to encourage local manufacturers of output through provisions of incentives from taxation. And through increase of import duties as to discourage importation of foreign goods which competes with local goods thereby increasing income generation from taxation which enhances economic growth. Government should continue to show fairness in fixing income tax of consumers so as to encourage consumers spending.

Oshiobugie and Akpokerere (2019) examined tax revenue and the Nigeria economy from 2000 – 2017. A number of related studies have shown that tax revenue contributed to economic growth. Yet some researchers observed that tax is discriminatory in the sense that it is assessed on persons or property based on profits or income, the benefits derived by citizens from tax payment is without reference to the contribution of individual tax payers. The main objective of the study was to study the effect of tax revenue on economic growth in Nigeria. Secondary data were sourced from Central Bank of Nigeria Statistical Bulletin of various editions. The study adopted the ex-post facto research design while ordinary least square regression techniques was used to process the data gathered using E-view 8.0 software. The null hypotheses (Ho) were tested at 5% level of significance. the findings revealed that there is insignificant effect of tax revenue on economic growth under the period study and concluded that personal income tax and company income tax affect economic growth in Nigeria either negatively or positively

Ironkwe and Agu (2019) analyzed the relationship between total tax revenue and economic growth in Nigeria. Time series data on different types of total tax revenue and economic development from 1986-2016 were collected from Central Bank of Nigeria statistical bulletin, Federal Inland Revenue Service and National Bureau of Statistics. Multiple regression analysis was

used in analyzing the data 13. Their results indicated that there is a significant positive relationship between total tax revenue and unemployment in Nigeria. The study concluded that total tax revenue relates positively to unemployment and recommends that government should distribute its social welfare programmes in such a way to provide direct benefit to tax payers. This makes them believe that the portion of their hard earned money paid for purposes, is being effectively utilized by the government. The tax official needs improvement through adequate training and provision of suitable working materials and facilities.

Jibrin, Blessing and Ifurueze (2012) used Ordinary Least Squares method to examine the impact of Petroleum Profit Tax on Economic Development in Nigeria for the period 2000-2010. His finding revealed that Petroleum Profit Tax has a positive and significant impact on Gross Domestic Product in Nigeria. The author therefore recommended that government should improve on the effectiveness and efficiency of the administration and collection of taxes with a view to increasing government revenue.

Ramot and Ichihashi (2012) used panel data from 65 countries during the period 1970 to 2006 to examine the effects of tax structure on economic growth and income inequality and discovered that company income tax (CIT) rates have a negative impact both on economic growth and income inequality. They also discovered that personal income tax rate does not significantly affect economic growth and income inequality. The authors therefore recommended the need to develop a modest design into the tax system because countries which are able to mobilize tax resources through broad-based tax structures with efficient administration and enforcement will be likely to enjoy faster growth rates than countries with lower efficiency. Also, the government should focus to reduce tax evasion, which is believed happen in the highest income group that could distort the horizontal and vertical equity in redistributing the income. Finally, very high earners or the highest income group should be subject to high and rising marginal tax rates, especially in the statutory top corporate tax rate.

Ariyo (2007) evaluated the productivity of the Nigerian tax system given the negative impact of persistent unsustainable fiscal deficits on the Nigerian economy for the period 1970-1990 to devise a reasonably accurate estimation of Nigeria's sustainable revenue profile. The results of his study showed a satisfactory level of productivity of the Nigerian tax system. The author therefore recommended an urgent need for the improvement of the tax information system to enhance the evaluation of the performance of the Nigerian tax system and facilitate adequate macroeconomic planning and implementation.

## **2.5. Summary**

This chapter covers the conceptual issues covering definition of terms and concepts of the variable under study. Also, there were theories explained and also empirical studies that had been carried out by previous researchers were also discussed in this chapter.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1 Introduction**

This study focuses on the relationship between tax revenue and Nigeria economic growth. It was discovered that much work has not been carried out in this area both in Nigeria and internationally, where five variables have been used to measure tax revenue.

This chapter provides insight into these two approaches in order to achieve its objectives. Information about the design, population and sampling technique, model specification and data analysis plan form the bulk.

### **3.2 Research design**

Research design refers to the blue prints that chart the course of any research. This study adopts the exploratory and ex-post facto design. The exploratory design will be used to gather relevant materials from text books, journal articles and so on while the ex-post facto design was adopted on the basis that it does not provide the study an opportunity to control the variables mainly because they have already occurred and cannot be manipulated.

### **3.3. Population of the Study**

The population of study is Nigerian economy measured by the Gross Domestic Product and Tax Revenue for a period of thirty-five years (1984-2018).

### **3.4. Sample Size**

The population of this study is the sample size. The study made use of the judgmental sampling technique. The Central Bank of Nigeria (CBN) and Federal Inland Revenue Service (FIRS) have been chosen for the purpose of this study. The justification for the choice of these bodies is because they are the custodians of information which includes aggregate tax figures in Nigeria. Hence the researcher deemed it fit to draw from the pool of resources of these organizations and

believes that any information which elicits from these is expected to be effective in meeting the objectives of this study.

### **3.5. Sources of Data**

Data used for this study were secondary data. The secondary data were obtained from the 2018 statistical bulletin of the Central Bank of Nigeria and reports of Federal Inland Revenue Service (FIRS) for the period between 1984 and 2018.

Data from these secondary sources are adjudged appropriate for this study due to the following reasons:

1. They are already validated by professionals and other regulatory bodies before they were published by the Central Bank of Nigeria (CBN).
2. Secondary data have been consistently used in prior studies and have produced good results. For example; Okafor (2012), Success, Success and Ifurueze (2012); Saheed, Abarshi and Ejide (2014).

### **3.6. Sampling Techniques**

Judgmental sampling technique that was used in this study is adopted because the study is limited to the Nigeria context, in which it will be a good work for generalization for all developing countries that are having the same economic situation with Nigeria.

### **3.7. Model Specification**

The purpose of this study is to examine the impact of tax revenue generated on the economic growth of Nigeria. To achieve this, two variables were identified in the study, these are: independent and dependent variables. The independent variables are the Tax revenue generated in Nigeria in the following dimensions as surrogates: Custom and Excise Duties (CED), Companies Income Tax (CIT), Petroleum Profit Tax (PPT), Value

Added Tax (VAT) and Oil Revenue (OILR) as control variable because of its importance to the Nigeria Economy. The dependent variable on the other hand is Economic Growth (EG) measured by Gross Domestic Product (GDP) of Nigeria for the period under study. The following models were adopted.

$$Y = f(X)$$

$$Y = y_1$$

$$X = x_1, x_2, x_3, x_4, x_5$$

Where;

Y = Economic Growth (EG)

y<sub>1</sub> = Gross Domestic Product (GDP)

X = Tax Revenue (TR)

x<sub>1</sub> = Custom and Excise Duties Tax (CDT)

x<sub>2</sub> = Companies Income Tax (CIT)

x<sub>3</sub> = Petroleum Profit Tax (PPT)

x<sub>4</sub> = Value Added Tax (VAT)

x<sub>5</sub> = Oil Revenue (OILR)

$$\text{Log(GDP)}_t = \alpha_1 + \beta_1 \text{Log(CDT)}_t + \mu_1 \dots\dots\dots 1$$

$$\text{Log(GDP)}_t = \alpha_2 + \beta_2 \text{Log(CIT)}_t + \mu_2 \dots\dots\dots 2$$

$$\text{Log(GDP)}_t = \alpha_3 + \beta_3 \text{Log(PPT)}_t + \mu_3 \dots\dots\dots 3$$

$$\text{Log(GDP)}_t = \alpha_4 + \beta_3 \text{Log(VAT)}_t + \mu_4 \dots\dots\dots 4$$

$$\text{Log(GDP)}_t = \alpha_4 + \beta_3 \text{Log(OILR)}_t + \mu_5 \dots\dots\dots 5$$

**The main model**

**ARDL model**

$$\text{Log(GDP)}_t = \alpha_0 + \beta_0 \text{Log(GDP)}_{t-1} + \beta_0 \text{Log(CDT)}_{t-1} + \beta_0 \text{Log(CIT)}_{t-1} + \beta_0 \text{Log(PPT)}_{t-1} + \beta_0 \text{Log(VAT)}_{t-1} + \beta_0 \text{Log(OILR)}_{t-1} + \mu_0$$

**Long run form**

$$\text{Log(GDP)}_t = \alpha_0 + \beta_0 \text{Log(CDT)}_t + \beta_0 \text{Log(CIT)}_t + \beta_0 \text{Log(PPT)}_t + \beta_0 \text{Log(VAT)}_t + \beta_0 \text{Log(OILR)}_t + \mu_5$$

Where:

Log(GDP)<sub>t</sub> is the natural Logarithm of Gross Domestic Product (GDP) in time ‘t’

Log(GDP)<sub>t-1</sub> is the natural Logarithm of Gross Domestic Product (GDP) in time ‘t’ minus

1

Log(CIT)<sub>t</sub> is the natural Logarithm of Company Income Tax (CIT) in time ‘t’

$\text{Log}(\text{CIT})_{t-1}$  is the natural Logarithm of Company Income Tax (CIT) in time 't' minus 1

$\text{Log}(\text{PPT})_t$  is the natural Logarithm of Petroleum Profit Tax (PPT) in time 't'

$\text{Log}(\text{PPT})_{t-1}$  is the natural Logarithm of Petroleum Profit Tax (PPT) in time 't' minus 1

$\text{Log}(\text{CED})_t$  is the natural Logarithm of Custom and Excise Duty (CED) in time 't'

$\text{Log}(\text{VAT})_t$  is the natural Logarithm of Value Added Tax (VAT) in time 't'

$\text{Log}(\text{OILR})_t$  is the natural Logarithm of Value Added Tax (OILR) in time 't'

$\alpha_{1-5}$  are the intercepts.

$\beta_{1-8}$  are the coefficients.

$\mu_{1-5}$  are the stochastic variable of each model. It was introduced in the models to accommodate influences of the other factors that may affects economic growth which are not implicitly included in the model.

### **3.8 Method of data analysis**

The research employs only quantitative method of data analysis. This was done in four folds: firstly, the descriptive analysis was performed using the mean, maximum, minimum, skewness, kurtosis and the probability of jarque-berra statistics. This is with the aim of describing the data set to determine the normality of the series. Thus, p-value of Jarque Berra statistics higher than the acceptable level of significance of 5% implies that the series is normally distributed. Since normality of series is one of the fundamental assumptions of performing regression Analysis, all the series were tested, and if not normally distributed, the natural logarithm of the affected series were used in estimating regression Analysis.

Secondly, trend analysis was carried out to determine the trend of each of independent variable on the dependent variable. Thirdly, the study examined the relationship between each of the measures of tax revenue and economic growth through correlation analysis. Lastly, the study employed the simple linear regression analysis was used to determine the extent to which each of independent variables contributes to the dependent variable and coefficient of determination ( $R^2$ ) was employed to know the degree to which each of the independent variable explained the effect on economic growth in Nigeria. Also, the study performed unit root test and bounds test was carried out through the Auto-regressive distributed lag (ARDL) model for the multiple regression analysis and estimation of long run was determined.

Furthermore, the adjusted R- square was used to explain the degree to which the independent variables combined affect the variations in economic growth for the period of study and post estimation tests like diagnostic test (serial correlation, heteroskedasity and normality tests) and stability tests (cusum and cusum square) were conducted to determine the reliability of the ARDL model specified

## **CHAPTER FOUR**

### **DATA PRESENTATION AND ANALYSIS**

#### **4.1. Introduction**

This chapter contains the presentation, analysis and interpretation of the data collected for the research work. Consequently it contained the statistical techniques to provide basis for the testing of the research hypotheses. It is a vital part of any research since it forms the basis for recommendation and conclusion at the end of the research. The models specified in the previous chapter are empirically examined. The preliminary analysis of the data is first (descriptive and normality analysis) and thereafter, the regression analysis is conducted. The result are presented and interpreted below.

#### **4.2. Presentation of Data and Analysis of Result**

##### **4.2.1. Preliminary Test**

##### **Descriptive Analysis**

**Table 1**

	<b>GDP</b>	<b>CDT</b>	<b>CIT</b>	<b>PPT</b>	<b>VAT</b>	<b>OILR</b>
Mean	35356.16	142321.6	309784.1	909978.0	209246.7	2549.239
Median	25267.54	108040.5	68700.00	525100.0	80283.50	1591.676

Maximum	69810.02	438300.0	1409214.	3201319.	828819.1	8878.970
Minimum	13779.25	1616.000	517.0000	4762.000	1.000000	8.107300
Std. Dev.	19555.21	129243.0	422808.9	1021080.	267227.0	2733.764
Skewness	0.631210	0.590623	1.221360	0.815768	1.115498	0.744849
Kurtosis	1.849363	2.413090	3.172628	2.357067	2.789233	2.268101
Jarque-Bera	4.254933	2.537215	8.745164	4.484771	7.323407	4.017526
Probability	0.119139	0.281223	0.012619	0.106205	0.025689	0.134155
Sum	1237466.	4981257.	10842442	31849231	7323635.	89223.35
Sum Sq. Dev.	1.30E+10	5.68E+11	6.08E+12	3.54E+13	2.43E+12	2.54E+08
Observations	35	35	35	35	35	35

Source: Researcher's compilation (2020) using EViews 10.0

From the above table 1 which shows the descriptive of the variables involve in the study, the mean of GDP, CDT, CIT, PPT, VAT and OILR are N35, 356.16, N142,321.60, N309,784.1, N909978.0, N209246.7 and N2549.239 respectively this shows the average amount collected by Nigeria government for the period under study. Also their standard deviation are N19555.21, N129243.0, N422808.9, N1021080, N267227.0 and N 2733.764 respectively. The p-value for jarque-Bera test for the individual normality are 0.119139 for GDP, 0.281223 for CDT, 0.012619 for CIT, 0.106205 for PPT, 0.025689 for VAT and 0.134155 for OILR, this shows that all the data for the individual variables are normally distributed except CIT and VAT which made us to log the variables so as to attain normality of the variables. Also the above table 4.2.2 shows the median, maximum, minimum, skewness, kutorsis, sum, sum square of deviation and the number of each observation for each variable.

#### 4.3. Pearson Correlation Coefficient Matrix

**Table 2**

	GDP	CDT	CIT	PPT	VAT	OILR
GDP	1.000000					
p-value	-----					
No. of obs.	35					

CDT	0.882641	1.000000				
p-value	0.0000	-----				
No. of obs.	35	35				
CIT	0.948086	0.757693	1.000000			
p-value	0.0000	0.0000	-----			
No. of obs.	35	35	35			
PPT	0.844661	0.717282	0.762475	1.000000		
p-value	0.0000	0.0000	0.0000	-----		
No. of obs.	35	35	35	35		
VAT	0.863824	0.848728	0.788319	0.715262	1.000000	
p-value	0.0000	0.0000	0.0000	0.0000	-----	
No. of obs.	35	35	35	35	35	
OILR	0.845880	0.739302	0.754039	0.986870	0.752274	1.000000
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	-----
No. of obs.	35	35	35	35	35	35

Source: Researcher's compilation (2020) using EViews 10.0

The Pearson coefficient correlation presented in Table 4.2 revealed the interaction between the studied variables. Correlation Coefficient Matrix Analysis shows that Custom and Excise Duty Tax (CDT) has strong correlation link with economic growth (GDP). Company Income Tax (CIT) has a strong correlation against Economic growth (GDP), Petroleum Profit Tax (PPT) has a strong correlation with Economic Growth (GDP), Value Added Tax (VAT), also has a strong correlation with Economic Growth (GDP) and Oil Revenue (OILR) has a strong correlation with Economic Growth (GDP). The overall result of the matrix shows that there is positive and significance links

between the entire variables under investigation. The positive and significance links between the entire variables under investigation is established at 1%. To this end, there is the need for further empirical investigation as correlation analysis is not sufficient.

#### 4.3.1. Unit Root Test

In any time series data, it is usually necessary to validate that the mean, variance and covariance are constant over time to avoid the problem of spurious regression. To this regard, Augmented Dickey-Fuller (ADF) unit root test was conducted to ascertain the order of integration as itemized in table 2. The stationary test shows that at level form only CDT and CIT were stationary at 10% percent and 5% level of significant respectively. The results turn out to different after the first difference where Gross Domestic product (GDP), Petroleum Profit Tax (PPT), Value Added (VAT) and Oil Revenue became stationary I(1) at 1% percent level of significance with constant specification included in the test equation. However, since only Custom and Excise Duty Tax and Company Income Tax were found to be stationary at level I(0) while all other variable became stationary only at first difference, it therefore indicates a mixed order of integration which suggest the adoption of the dynamic ARDL bound test approach.

**Table 3.** ADF Test of Unit Root

<b>Statistics (Level)</b>	<b>LGDP</b>	<b>LCDT</b>	<b>LCIT</b>	<b>LPPT</b>	<b>LVAT</b>	<b>LOILR</b>
$\tau_T$ (ADF)	-0.0442	-2.7082*	-1.4899	-1.4412	-1.4324	-2.0571
$\tau_\mu$ (ADF)	-2.1648	0.5556	-3.5555**	-1.6884	-1.2921	-1.1097
$\tau$ (ADF)	2.3807	1.7372	2.4689	1.8908	0.2896	1.8319

**Statistics (First Difference)**

	<b>LGDP</b>	<b>LCDT</b>	<b>LCIT</b>	<b>LPPT</b>	<b>LVAT</b>	<b>LOILR</b>
$\tau_T$ (ADF)	-3.2275**	-3.3270**	-8.8829***	-5.6576***	-5.5099***	-5.8525***
$\tau_\mu$ (ADF)	-3.1995	-4.4952***	-3.1488	-5.0093***	-5.5905***	-6.0336***
$\tau$ (ADF)	-2.0442**	-3.1752***	-4.2351***	-5.0846***	-5.3311***	-4.9449***

Notes: (\*)Significant at the 10%; (\*\*)Significant at the 5%; (\*\*\*) Significant at the 1%. and (no) Not Significant.

Source: Researcher’s compilation (2020) using EViews 10.0

All of the series are at their natural logarithms.  $\tau_T$  represents the most general model with a drift and trend;  $\tau_\mu$  is the model with a drift and without trend;  $\tau$  is the most restricted model without a drift and trend. When using PP test. Both in ADF and PP tests, unit root tests were performed from the most general to the least specific model by eliminating trend and intercept across the models. \*, \*\* and \*\*\* denote rejection of the null hypothesis at the 1 percent, 5 percent and 10 percent levels respectively.

**4.4. Test of hypotheses**

**Table 4. ARDL Result  $RGDP=f(CDT, CIT, PPT, VAT, OILR)$**

**Short Run**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
----------	-------------	------------	-------------	-------

D(LCDT)	-0.035601	0.023082	-1.542360	0.1489
D(LCIT)	0.045592	0.018472	2.468122	0.0296
D(LPPT)	-0.051137	0.025680	-1.991314	0.0697
D(LVAT)	-0.014757	0.006186	-2.385629	0.0344
D(LOILR)	0.054198	0.029590	1.831619	0.0919
ECT	-0.556008	0.073972	-7.516425	0.0000

### Long Run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LCDT	0.037548	0.047533	0.789921	0.4449
LCIT	0.304697	0.029056	10.48671	0.0000
LPPT	0.105725	0.050677	2.086249	0.0590
LVAT	-0.056885	0.008178	-6.955892	0.0000
LOILR	-0.100137	0.051461	-1.945870	0.0755

**Table 5** .ARDL Bound Test

Test Statistic	Value	K
F-statistic	5.380632	5

### Critical Value Bounds

Significance	I(0) Bound	I(1) Bound
10%	2.331	3.417
5%	2.804	4.013
2.5%	2.88	3.73
1%	3.9	4.15

Source; Author Computation Eview version 10.0

Table 5 above presents the short and long run analysis between the variables. The speed of adjustment is 55% and it is statistically significant at 1% degree of freedom which determines the speed of adjust of economic growth. Though it took on negative sign therefore short run relationship is not guaranteed though the bound test confirmed long run relationship.

### **Hypothesis I**

**Ho:** Custom and Excise Duty does not have significant impact on Nigeria Economy(GDP

From the table 4 above, in the short run Custom and Excise Duty Tax has a negative coefficient of 0.035601 is positive and not significant on gross domestic product but in the long run it has a positive coefficient of 0.037548, also not significant. This means that 1% increase of custom and excise duty tax will result in an increase of approximately 38% increase in the Nigeria GDP, which shows that Custom and excise duty has a long term impact on the gross domestic product of Nigeria. This is in agreement with the work of Onakoya&Afintinni (2016) and Inimino, Abuo&Bosco (2018) and Mathew (2014).

### **Hypothesis II**

**Ho:** Company Income Tax does not have significant impact on Nigeria Economy (GDP

From Table 4 above, company income tax and a positive coefficient of 0.045592 and significant impact on gross domestic product in the short run. Also in the long run it has a positive coefficient of 0.304697 and significant impact on gross domestic product. This means that in the short run 1% increase in company income tax WILL lead to about 5% increase in gross domestic product and in the long run 1 % increase in company income tax will increase the gross domestic product by 30% which is very significant, this shows that company income tax has been one of the major aspect of revenue that really contribute to the gross domestic product of Nigeria. This is consistence with the works of Ojijo and Oluwatosin (2018) and Arnold (2011).

### **Hypothesis III**

**Ho:** Petroleum Profit Tax does not have significant impact on Nigeria Economy (GDP

From the table 4 above, petroleum Profit tax has a negative coefficient of 0.051137 and not significant in the short run, but it has a positive coefficient of 0.105725 in the long run but not also significant which means that in the long run 1% increase in Petroleum profit tax will lead to

10% increase in gross Domestic Product. Although from our result it was shown that in last year at lag 1 and 2, Petroleum Profit Tax was significant at 0.0010 and 0.0129 respectively. This means that Nigeria Government should look into the problems and find solutions to the problems that cause the drop in the Petroleum Profit tax.

This is consistent with the work of Emmanuel and Charles (2015) and Afolabi (2017).

#### **Hypothesis IV**

**Ho:** Value Added Tax does not have significant impact on Nigeria Economy (GDP)

From the table 4 above, it was shown that value added tax has a negative coefficient of 0.014757 and significant impact on the gross domestic product with a p value of 0.0344 which means that 1% increase in value added tax will lead to a decrease of 1% in the gross domestic Product of Nigeria in the short run. The long run result also confirmed this, the coefficient of Value Added tax was negative at 0.056885 with a p-value of 0.0000 which is also significant. Which means that value added tax has a negative significant impact on Gross Domestic Product. This in association with the work of Oshiobugie and Akpokerere (2019) and Ironkwe and Agu (2019)

#### **4.5. Regression Diagnostics**

**Table 6**

<b><i>B-G LM test for serial Corr</i></b>	
<i>F-statistic</i>	0.802357
<i>Obs*R-squared</i>	4.424999
<i>Prob.</i>	0.4751
<i>Prob. Chi-Square</i>	0.1094
<b><i>Heteroskedasticity Test: White</i></b>	
<i>F-statistic</i>	0.369575

<i>Prob (f)</i>	0.9744
<i>Scaled explained SS</i>	1.125524
<i>Prob. Chi-Square</i>	0.8905
<b>Ramsey Reset Test</b>	
<i>t-statistic</i>	0.9980
<i>f-statistic</i>	0.9980
<i>Likelihood</i>	0.9172
<b>Normality Test:</b>	
<i>Jarque-Bera</i>	1.195354
<i>Prob.</i>	0.550088

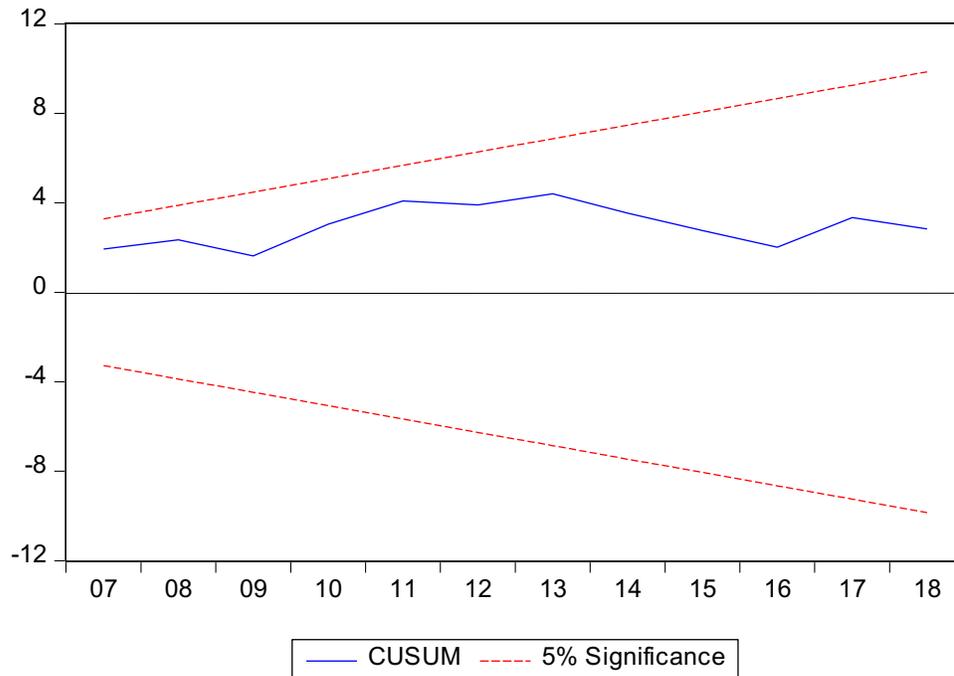
Source: Researchers compilation (2020)

The regression diagnostics is presented in the table 7 above and the Breush-Goffery LM test for serial correlation test for the presence of stochastic dependence between the errors across time and as can be observed, the probability value of the F-stat (0.4751) confirms that the null hypothesis of no serial correlation in the residuals is accepted at 5% level. The white test for Heteroskedasticity also shows that the p-value (0.9744) of the F-stat (0.369575) confirms that the null hypothesis of homoscedastic errors is accepted at 5% level, the Ramsey specification test also confirms that the appropriateness of the functional specification of the model and finally the normality test of residuals usingjarque-bera shows a probability of 0.550088 which shows that the residuals arenormally distributed.

#### 4.6. Model Stability test

If the model's parameters are not stable then the model we estimated will not be very useful, regardless of how well it was estimated. And, if the model's parameters were unstable over

the sample period, then model was not even a good representation of how the series evolved over the sample period. To investigate the stability of our regression model, the CUSUM test (Brown, Durbin, and Evans, 1975) based on the cumulative sum of the recursive residuals is examined below;



Visual examination of the graphs of the recursive parameter estimates can be useful in evaluating the stability of the model. The test finds parameter instability if the cumulative sum goes outside the area between the two critical lines. As observed from the figure, the lines for the cumulative sum lie within the 5% critical lines and hence this suggests that the parameters of the model are stable.

#### 4.7. Discussion of Findings

From the empirical research we discovered that our result was in line with some of the researchers that has carried out work on related study, they are discussed below with reference to our findings.

Custom and Excise Duty has a negative impact on Nigeria Gross Domestic Product in the short run but a positive impact on the long run. This is consistent with work of Onakoya and Afintinni (2016), they investigated the co-integration relationship between tax revenue and Economic growth in Nigeria from 1980 to 2013. Various preliminary tests including descriptive

statistics, trend analysis, and stationary tests using Augmented Dickey Fuller (ADF) test were conducted. The Engle-Granger Co-integration test was employed to determine whether a long run relationship existed between the variables. The Vector Error correction model was employed to confirm the long run relationship and determine the short run dynamics between the variables. Two post estimation diagnostics tests (autocorrelation, and Heteroscedasticity) were also conducted in order to confirm the robustness of the model. Findings indicated that a long run relationship existed between taxation and economic growth in Nigeria. The result also, revealed a significant positive relationship at 5% level of significance between Petroleum profit tax, Company Income tax and economic growth, but a negative relationship between economic growth and customs and Excise Duties. However, the tax components are jointly insignificant in impacting the Nigerian economic growth.

Also, we discovered that Company Income Tax has a both positive and significant effect on Nigeria Gross Domestic Product at both short run and long run and this is in line with the work of Ojijo and Oluwatosin (2018) examined taxation and economic growth in resource rich country, a case of Nigeria. They employed the linkage between availability of higher resources revenue and lower taxation effect of other revenue categories and the effects of these on growth. They used ordinary least square estimation techniques to analyze their data collected. They found out that taxation has a significant effect on real GDP growth rate. They recommended that the government should institute an appropriate tax system with an emphasis on boarding the tax effort as well as ensure optimal contribution of taxation towards economic growth and development.

Moreover, Petroleum Profit Tax has a negative impact on the Nigeria Gross Domestic Product in the short run but has a positive impact on the long run. This also is in line with work of Emmanuel and Charles (2015) studied the impact of taxation on the Nigerian economy for the period 1994 - 2012. The dependent variables used in the model includes: Gross Domestic Product (GDP) as a parameter for measuring economic growth, inflation and unemployment. The objective is study to

determine how taxation affects these macroeconomic variables. To avoid spurious results, the data set collected from the Central Bank of Nigeria statistical bulletin and Federal Inland Revenue Services was subjected to Augmented Dickey Fuller Unit Root test, which reveals that the variables are stationary.

The co-integration test also reveals that the variables are co-integrated and long run relationships exist between the variables. The results of the statistical analysis reveal that positive relationships exist between the explanatory variables (Custom and Excise Duties, Company Income Tax, Personal Income Tax, Petroleum profit tax and Value Added Tax) and the dependent Variables (Gross Domestic Product, Unemployment). But, the individual explanatory variables have not significantly contributed to the growth of the economy; also the explanatory variables have not significantly contributed to the reduction of the high rate unemployment and inflation in Nigeria for the period under review. Study recommends total restructuring of the tax system in the country and the provision of basic amenities (good roads, steady power supply, internal security, etc.) which will encourage individuals and corporate organizations to honour their tax obligations in Nigeria.

Finally, the work of Ironkwe and Agu (2019) is in connection with the result obtain from the effect of value added and economic growth. They analyzed the relationship between total tax revenue and economic growth in Nigeria. Time series data on different types of total tax revenue and economic development from 1986-2016 were collected from Central Bank of Nigeria statistical bulletin, Federal Inland Revenue Service and National Bureau of Statistics. Multiple regression analysis was used in analyzing the data. Their results indicated that there is a significant positive relationship between total tax revenue and unemployment in Nigeria. The study concluded that total tax revenue relates positively to unemployment and recommends that government should distribute its social welfare programmes in such a way to provide direct benefit to tax payers. This makes them believe that the portion of their hard earned money paid

for purposes, is being effectively utilized by the government. The tax official needs improvement through adequate training and provision of suitable working materials and facilities

## **CHAPTER FIVE**

### **5.0. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1. Introduction**

The study attempted to empirically examine the impact of tax revenue on Nigeria economy. This chapter discuss with the summary, conclusion and recommendations.

#### **5.2. Summary**

This study investigated the impact of tax revenue on economic growth. Previous studies on this work have concentrated more on discovering the effect of tax revenue using petroleum profit tax (PPT), company income tax (CIT) and custom and excise duties as measures against Gross Domestic Product (GDP) in Nigeria and not inculcating the stationarity of the various tax sources in examining their impact on GDP. Other research done by some scholars include examining only the CIT and VAT in providing empirical evaluation technique for determining

sensitivity, persistence and volatility of the Nigerian economy. The different methodologies used by the different authors, the environments or settings under which the studies were carried out, the nature of data and sources in different jurisdictions and the policy thrust, among others could account for these differences. Thus the uniqueness of this work is its ability to examine the impact of tax revenue on economic growth in Nigeria, Value Added Tax (VAT), petroleum profit tax (PPT), company income tax (CIT), custom and excise duties as surrogates for tax revenue in Nigeria, while Gross Domestic Product (GDP) was used to measure economic growth in Nigeria.

This study was structured into five chapters. Chapter one looked into the background of the study identified the problems of the study, objectives of the study were defined, research questions and hypothesis to guide the investigation were formulated. The chapter also highlighted the significance of the study, described its scope as well as identified and operationalized the study variables. Also terms relevant to the study were defined based on their contextual use in the work. In summary the chapter serves as the introduction to the study. The chapter two dealt with three basic components of the study. These are the conceptual framework which emphasized the historical background of taxation in Nigeria, the concept of taxation, the Nigerian tax system, the Nigerian national tax policy; the theoretical framework emphasising on the classical school of thought, Behavioural economics, Risk management theory, Benefit received theory and the cost of service theory; empirical review for in-depth knowledge of previous efforts in investigating tax revenue the economy. The review broadened the researcher's knowledge of the scope of the subject matter of study interest and pointed out existing gaps now filled by the current research effort.

Chapter three presented the methodology for the study. Essentially, the chapter discussed the design and population of the study. An appropriate sample size was determined and selected using stratified and purposive sampling method. Type and source of data was also discussed, instruments of data collection, validity, reliability and administration of the instrument. Furthermore, the perceived functional relationships, associated models,

techniques for the evaluation of the models coefficient, apriori expectation and ethical consideration were described.

In chapter four, the data were analyzed into two parts, descriptive analysis and empirical analysis using correlation and linear regression analysis. The descriptive analysis examined the minimum, maximum, mean and standard deviation. The empirical analysis made attempts to establish the effect of tax revenue of the government using the linear regression models. The numerical values of the model's coefficients and intercepts were obtained through the linear regression method. These values were substituted in the functional equations to obtain the regression models that were evaluated for the validation of the apriori expectations and establishment of statistical significance.

This chapter gives the summary of the study as well as the findings and their implications. Conclusions were drawn and recommendations made. Finally, the chapter highlighted the study's contribution to knowledge and suggestion for further research.

### **5.3. Conclusion**

This study has examined the impact of tax revenue on economic growth of Nigeria. All the independent variables (Customs and Excise Duties, Companies Income Tax, Petroleum Profit and Tax, Valued Added Tax,) have impact on the dependent variable (Gross Domestic Product). A graphical representation of the movement and variations in the values of Customs and Excise Duties, Companies Income Tax, Petroleum Profit Tax, Valued Added Tax, using oil revenue as a control variable for the 35 year period was captured to depict the movement of values and also to compare the influence of each of the independent variables on the dependent variable.

Findings of this study therefore provide insight into the effect of tax administration and federal government tax generation on government revenue. It further provided an insight

as to the extent to which each of the independent variables affects the dependent variable through the graphical corroboration and also provides an affirmation of the extent to which the variations in the dependent variable are caused by the independent variables covered in the models as depicted by the R-square and adjusted R-square.

The study concludes that tax revenue combined have impact on the economic growth of Nigeria, although Value Added Tax has not contributed positively to economic growth of this nation over the period of study.

#### **5.4. Recommendations**

Based on the findings and conclusions of this study, the following recommendations are made:

1. Efforts should be intensified by the government towards increased collection of tax revenue this is due to the low contribution of tax revenue to GDP over the period of study. This can be done through blocking all loopholes in our tax laws as well as bringing more prospective tax payers into the tax net (especially the informal sector).
2. There should be stringent penalty imposed on any individual or corporate body who indulge in any form of tax malpractices irrespective of states, if the positive correlation between tax revenue and economic growth should be maintained.
3. Government through Federal Inland Revenue Service should create an effective and reliable data base for companies to minimize (if not eliminate) the incidence of tax evasion and there should be constant training and re-training of Company Tax administrators through seminars, conference to keep them abreast with the modern trend in tax administration.
4. Government should also be able to use taxpayers' monies in the provision of infrastructural facilities. This will in no doubt boost the morale of the citizenry to pay more. Staff that work with the Tax Authorities should be adequately motivated in order to enhance revenue generation and improve the percentage of tax revenue to GDP.

5. There should be constant review of existing tax laws just as it is obtained in the United State of America and other advanced economics, so as to keep the act in pace with the economic reality. As result shown that in the long run, Value Added Tax (VAT) and do not contributed positively to economic growth of this nation.

### **5.5. Contribution to Knowledge**

This study is believed to have made the following contribution to knowledge:

This study has also contributed to the existing literature by an in-depth examination of the economic and social development sustainability through taxation, reasons for insufficiency of tax revenue, problems of tax administration in Nigeria, the Nigerian national tax policy etc.

This study has thrown more light to the government and parastatals involved in the administration of tax in the country on more efficient techniques of tax collection and ways of reducing tax evasion. The tax authority need to develop policies that clearly and purposefully engages tax payers to eliminate impediments to rendering their obligations and arouse a consciousness and directs them towards a sense of duty and commitment to pay their taxes. The psychology of responsive regulation practice should be imbibed in the tax offices that recognizes impediments to full tax compliance and develop strategies and tools to overcome them while deliberate noncompliance is isolated and firmly discouraged.

This study has contributed to the existing literature by attempting to form a nexus between the empirical analysis on the impact of CDT, CIT, PPT, VAT on the Nigerian economy; and a graphical representation showing the trend in the yearly movement of the values of each of the independent variables as juxtaposed with the dependent variable.

This study contributed to the existing literature by the findings that have been examined; implications of the findings, the recommendations that have been made and future research should focus extensively on ways that can improve tax compliance by tax payers in Nigeria.

### **5.6. Suggestion for Further Study**

This study focused on the impact of tax revenue on economic growth of Nigeria. It specifically dealt with the Customs and Excise duties, Companies Income Tax, Petroleum

Profit Tax, Valued Added Tax, It is suggested that future studies should extend the research to other categories of taxes and measure their effect on both the government revenue and on household. This would also necessitate the use of additional data gathering techniques like the questionnaire.

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## Appendixes

YEAR	GDP	CIT	CDT	PPT	VAT	OILR
1984	13,779.25	787.00	1,616.00	4,762.00	-	8.27

1985	14,953.91	1,004.00	2,184.00	6,711.00	-	10.92
1986	15,237.99	1,101.00	1,728.00	4,811.00	-	8.11
1987	15,263.93	1,235.00	3,541.00	12,504.00	-	19.03
1988	16,215.37	1,551.00	5,672.00	6,815.00	-	19.83
1989	17,294.68	1,914.00	5,816.00	10,598.00	-	39.13
1990	19,305.63	2,997.00	8,641.00	26,909.00	-	71.89
1991	19,199.06	3,828.00	11,457.00	38,616.00	-	82.67
1992	19,620.19	517.00	16,055.00	51,477.00	-	164.08
1993	19,927.99	9,554.00	15,485.00	59,208.00	-	162.10
1994	19,979.12	12,275.00	18,095.00	42,803.00	7,261.00	160.19
1995	20,353.20	21,878.00	37,364.00	42,858.00	20,761.00	324.55
1996	21,177.92	22,000.00	55,000.00	76,667.00	31,000.00	408.78
1997	21,789.10	26,000.00	63,000.00	68,574.00	34,000.00	416.81
1998	22,332.87	33,300.00	57,700.00	68,000.00	36,000.00	324.31
1999	22,449.41	46,200.00	87,900.00	164,300.00	47,100.00	724.42
2000	23,688.28	51,100.00	101,500.00	525,100.00	57,500.00	1,591.68
2001	25,267.54	68,700.00	170,600.00	639,200.00	91,800.00	1,707.56

2002	28,957.71	89,100.00	181,400.00	392,200.00	108,600.00	1,230.85
2003	31,709.45	114,800.00	195,500.00	683,500.00	136,400.00	2,074.28
2004	35,020.55	113,000.00	217,200.00	1,183,600.00	159,500.00	3,354.80
2005	37,474.95	140,300.00	232,800.00	1,904,900.00	178,100.00	4,762.40
2006	39,995.50	244,900.00	177,700.00	2,038,300.00	221,600.00	5,287.57
2007	42,922.41	275,300.00	241,400.00	1,600,600.00	289,600.00	4,462.91
2008	46,012.52	420,600.00	205,250.00	2,060,900.00	401,700.00	6,530.60
2009	49,856.10	600,600.00	223,325.00	939,400.00	481,400.00	3,191.94
2010	54,612.26	666,060.00	214,287.00	1,480,360.00	564,890.00	5,396.09
2011	57,511.04	659,595.90	241,400.00	3,070,591.00	659,153.70	8,878.97
2012	59,929.89	816,519.10	281,300.00	3,201,319.00	710,555.10	8,025.97
2013	63,218.72	963,550.60	297,500.00	2,666,367.00	80,283.50	6,809.23
2014	67,152.79	1,180,407.00	309,200.00	2,453,947.00	802,964.60	6,793.82
2015	69,023.93	1,229,017.00	438,300.00	1,097,945.00	635,352.00	3,830.10
2016	67,931.24	933,537.30	438,300.00	1,157,808.10	828,819.10	2,693.90
2017	68,490.98	680,000.00	315,000.00	1,600,000.00	536,000.00	4,109.80
2018	69,810.02	1,409,213.90	108,040.50	2,467,580.70	203,284.80	5,545.80

## Descriptive statistics

Date: 09/14/20

Time: 08:24

Sample: 1984 2018

	GDP	CDT	CIT	PPT	VAT	OILR
Mean	35356.16	142321.6	309784.1	909978.0	209246.7	2549.239
Median	25267.54	108040.5	68700.00	525100.0	80283.50	1591.676
Maximum	69810.02	438300.0	1409214.	3201319.	828819.1	8878.970
Minimum	13779.25	1616.000	517.0000	4762.000	1.000000	8.107300
Std. Dev.	19555.21	129243.0	422808.9	1021080.	267227.0	2733.764
Skewness	0.631210	0.590623	1.221360	0.815768	1.115498	0.744849
Kurtosis	1.849363	2.413090	3.172628	2.357067	2.789233	2.268101
Jarque-Bera	4.254933	2.537215	8.745164	4.484771	7.323407	4.017526
Probability	0.119139	0.281223	0.012619	0.106205	0.025689	0.134155
Sum	1237466.	4981257.	10842442	31849231	7323635.	89223.35
Sum Sq. Dev.	1.30E+10	5.68E+11	6.08E+12	3.54E+13	2.43E+12	2.54E+08
Observations	35	35	35	35	35	35

## Correlation matrix

Covariance Analysis: Ordinary

Date: 09/15/20 Time: 06:38

Sample: 1984 2018

Included observations: 35

Correlation						
Probability						
Observations	GDP	CDT	CIT	PPT	VAT	OILR
GDP	1.000000					
	-----					
	35					
CDT	0.882641	1.000000				
	0.0000	-----				
	35	35				
CIT	0.948086	0.757693	1.000000			
	0.0000	0.0000	-----			
	35	35	35			
PPT	0.844661	0.717282	0.762475	1.000000		
	0.0000	0.0000	0.0000	-----		
	35	35	35	35		
VAT	0.863824	0.848728	0.788319	0.715262	1.000000	
	0.0000	0.0000	0.0000	0.0000	-----	
	35	35	35	35	35	
OILR	0.845880	0.739302	0.754039	0.986870	0.752274	1.000000
	0.0000	0.0000	0.0000	0.0000	0.0000	-----
	35	35	35	35	35	35

**Lag selection**

VAR Lag Order Selection Criteria

Endogenous variables: LGDP LCDT LCIT LPPT LLVA2 LOILR

Exogenous variables: C

Date: 09/14/20 Time: 08:28

Sample: 1984 2018

Included observations: 32

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-161.0568	NA	0.001379	10.44105	10.71587	10.53215
1	11.70457	269.9396	2.79e-07	1.893464	3.817243*	2.531142
2	57.03379	53.82845*	2.01e-07	1.310388	4.883119	2.494647
3	117.3809	49.03200	9.57e-08*	-0.211304*	5.010380	1.519537*

\* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

## Unit root test

### UNIT ROOT TEST RESULTS TABLE (ADF)

Null Hypothesis: the variable has a unit root

		<u>At Level</u>					
		LGDP	LCDT	LCIT	LPPT	LVAT	LOILR
With Constant	t-Statistic	-0.0442	-2.7082	-1.4899	-1.4412	-1.4324	-2.0571
	<b>Prob.</b>	<b>0.9475</b>	<b>0.0830</b>	<b>0.5249</b>	<b>0.5506</b>	<b>0.5549</b>	<b>0.2624</b>
		n0	*	n0	n0	n0	n0
With Constant & Trend	t-Statistic	-2.1648	0.5556	-3.5555	-1.6884	-1.2921	-1.1097
	<b>Prob.</b>	<b>0.4925</b>	<b>0.9991</b>	<b>0.0493</b>	<b>0.7345</b>	<b>0.8730</b>	<b>0.9125</b>
		n0	n0	**	n0	n0	n0

Without Constant & Trend	t-Statistic	2.3807	1.7372	2.4689	1.8908	0.2896	1.8319
	<b>Prob.</b>	<b>0.9947</b>	<b>0.9778</b>	<b>0.9958</b>	<b>0.9840</b>	<b>0.7639</b>	<b>0.9818</b>
		n0	n0	n0	n0	n0	n0
<b><u>At First Difference</u></b>							
		d(LGDP)	d(LCDT)	d(LCIT)	d(LPPT)	d(LVAT)	d(LOILR)
With Constant	t-Statistic	-3.2275	-3.3270	-8.8829	-5.6576	-5.5099	-5.8525
	<b>Prob.</b>	<b>0.0272</b>	<b>0.0216</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0001</b>	<b>0.0000</b>
		**	**	***	***	***	***
With Constant & Trend	t-Statistic	-3.1995	-4.4952	-3.1488	-5.0093	-5.5905	-6.0336
	<b>Prob.</b>	<b>0.1020</b>	<b>0.0057</b>	<b>0.1144</b>	<b>0.0016</b>	<b>0.0003</b>	<b>0.0001</b>
		n0	***	n0	***	***	***
Without Constant & Trend	t-Statistic	-2.0442	-3.1752	-4.2351	-5.0846	-5.3311	-4.9449
	<b>Prob.</b>	<b>0.0409</b>	<b>0.0024</b>	<b>0.0001</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>
		**	***	***	***	***	***

**Notes:**

a: (\*)Significant at the 10%; (\*\*)Significant at the 5%; (\*\*\*) Significant at the 1% and (no) Not Significant

b: Lag Length based on SIC

c: Probability based on MacKinnon (1996) one-sided p-values.

ARDL Long Run Form and Bounds Test

Dependent Variable: D(LGDP)

Selected Model: ARDL(3, 2, 2, 3, 1, 3)

Case 2: Restricted Constant and No Trend

Date: 09/14/20 Time: 08:37

Sample: 1984 2018

Included observations: 32

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Conditional Error Correction Regression

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
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C	3.630176	0.771379	4.706085	0.0005
LGDP(-1)*	-0.556008	0.104334	-5.329129	0.0002
LCDT(-1)	0.020877	0.026108	0.799627	0.4395
LCIT(-1)	0.169414	0.039166	4.325487	0.0010
LPPT(-1)	0.058784	0.027226	2.159126	0.0518
LVAT(-1)	-0.031628	0.007946	-3.980597	0.0018
LOILR(-1)	-0.055677	0.028103	-1.981162	0.0710
D(LGDP(-1))	-0.211516	0.202284	-1.045638	0.3163
D(LGDP(-2))	0.412878	0.238937	1.727982	0.1096
D(LCDT)	-0.035601	0.023082	-1.542360	0.1489
D(LCDT(-1))	-0.029244	0.023400	-1.249730	0.2352
D(LCIT)	0.045592	0.018472	2.468122	0.0296
D(LCIT(-1))	-0.055757	0.022329	-2.497107	0.0281
D(LPPT)	-0.051137	0.025680	-1.991314	0.0697
D(LPPT(-1))	-0.105525	0.024419	-4.321359	0.0010
D(LPPT(-2))	-0.068231	0.023392	-2.916840	0.0129
D(LVAT)	-0.014757	0.006186	-2.385629	0.0344
D(LOILR)	0.054198	0.029590	1.831619	0.0919
D(LOILR(-1))	0.127988	0.035927	3.562449	0.0039
D(LOILR(-2))	0.082559	0.029023	2.844625	0.0148

---

\* p-value incompatible with t-Bounds distribution.

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Levels Equation

Case 2: Restricted Constant and No Trend

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Variable	Coefficient	Std. Error	t-Statistic	Prob.
LCDT	0.037548	0.047533	0.789921	0.4449
LCIT	0.304697	0.029056	10.48671	0.0000
LPPT	0.105725	0.050677	2.086249	0.0590
LLVA2	-0.056885	0.008178	-6.955892	0.0000
LOILR	-0.100137	0.051461	-1.945870	0.0755

---

C                      6.529005      0.415804      15.70212      0.0000

$$EC = LGDP - (0.0375*LCDT + 0.3047*LCIT + 0.1057*LPPT - 0.0569*LLVA2 - 0.1001*LOILR + 6.5290)$$

F-Bounds Test                      Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	5.380632	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15
			Finite Sample: n=35	
Actual Sample Size	32	10%	2.331	3.417
		5%	2.804	4.013
		1%	3.9	5.419
			Finite Sample: n=30	
		10%	2.407	3.517
		5%	2.91	4.193
		1%	4.134	5.761

ARDL Error Correction Regression

Dependent Variable: D(LGDP)

Selected Model: ARDL(3, 2, 2, 3, 1, 3)

Case 2: Restricted Constant and No Trend

Date: 09/14/20 Time: 08:38

Sample: 1984 2018

Included observations: 32

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1))	-0.211516	0.154573	-1.368385	0.1963
D(LGDP(-2))	0.412878	0.110033	3.752298	0.0028
D(LCDT)	-0.035601	0.011429	-3.115039	0.0089
D(LCDT(-1))	-0.029244	0.015489	-1.888037	0.0834
D(LCIT)	0.045592	0.008806	5.177214	0.0002
D(LCIT(-1))	-0.055757	0.014477	-3.851276	0.0023
D(LPPT)	-0.051137	0.013767	-3.714438	0.0030
D(LPPT(-1))	-0.105525	0.018652	-5.657649	0.0001
D(LPPT(-2))	-0.068231	0.017497	-3.899668	0.0021
D(LLVA2)	-0.014757	0.003671	-4.020227	0.0017
D(LOILR)	0.054198	0.015697	3.452681	0.0048
D(LOILR(-1))	0.127988	0.022198	5.765721	0.0001
D(LOILR(-2))	0.082559	0.022146	3.727899	0.0029
CointEq(-1)*	-0.556008	0.073972	-7.516425	0.0000
R-squared	0.864610	Mean dependent var		0.047562
Adjusted R-squared	0.766828	S.D. dependent var		0.036400
S.E. of regression	0.017577	Akaike info criterion		-4.944823
Sum squared resid	0.005561	Schwarz criterion		-4.303563
Log likelihood	93.11717	Hannan-Quinn criter.		-4.732264
Durbin-Watson stat	2.516718			

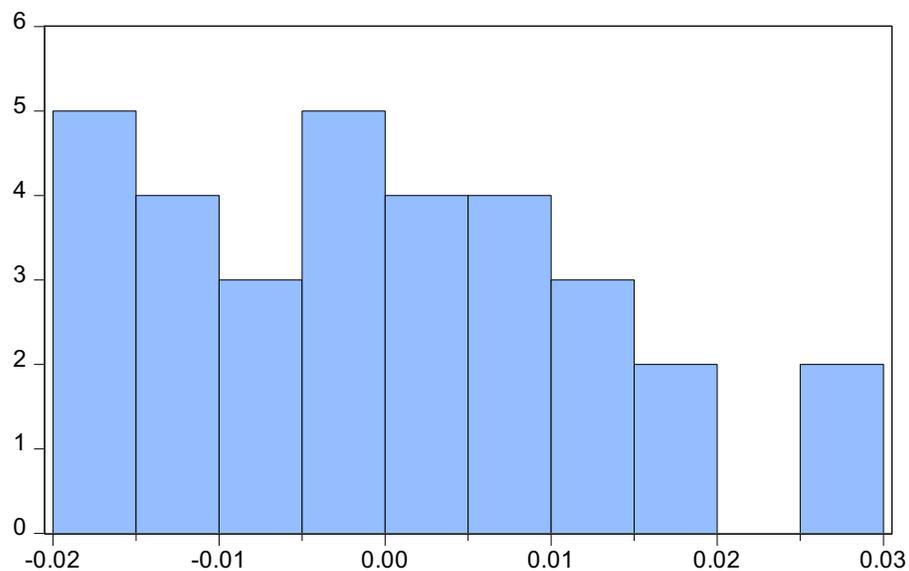
\* p-value incompatible with t-Bounds distribution.

F-Bounds Test Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)

F-statistic	5.380632	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

### Normality test



Series: Residuals	
Sample 1987 2018	
Observations 32	
Mean	1.21e-15
Median	-0.001685
Maximum	0.028963
Minimum	-0.018971
Std. Dev.	0.013394
Skewness	0.346632
Kurtosis	2.355097
Jarque-Bera	1.195354
Probability	0.550088

### Serial correlation test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.802357	Prob. F(2,10)	0.4751
Obs*R-squared	4.424999	Prob. Chi-Square(2)	0.1094

Test Equation:

Dependent Variable: RESID

Method: ARDL

Date: 09/14/20 Time: 08:39

Sample: 1987 2018

Included observations: 32

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP(-1)	0.267180	0.377046	0.708615	0.4948
LGDP(-2)	-0.254200	0.527314	-0.482066	0.6401
LGDP(-3)	0.051422	0.290516	0.177002	0.8630
LCDT	-0.003589	0.025993	-0.138075	0.8929
LCDT(-1)	0.006550	0.026381	0.248289	0.8089
LCDT(-2)	-0.010439	0.026225	-0.398035	0.6990
LCIT	0.000473	0.019070	0.024803	0.9807
LCIT(-1)	-0.008277	0.018714	-0.442276	0.6677
LCIT(-2)	-0.008162	0.023653	-0.345063	0.7372
LPPT	-0.000188	0.027675	-0.006794	0.9947
LPPT(-1)	0.009669	0.025462	0.379727	0.7121
LPPT(-2)	-0.004546	0.026907	-0.168952	0.8692
LPPT(-3)	-0.014119	0.026307	-0.536711	0.6032
LLVA2	0.001672	0.006790	0.246180	0.8105
LLVA2(-1)	0.002470	0.007788	0.317196	0.7576
LOILR	0.004119	0.031369	0.131299	0.8981
LOILR(-1)	-0.015876	0.033512	-0.473726	0.6459
LOILR(-2)	0.002602	0.035134	0.074066	0.9424
LOILR(-3)	0.016259	0.032344	0.502688	0.6261
C	-0.388490	0.843621	-0.460503	0.6550
RESID(-1)	-0.530777	0.419057	-1.266597	0.2340
RESID(-2)	0.089149	0.509286	0.175047	0.8645
R-squared	0.138281	Mean dependent var		1.21E-15
Adjusted R-squared	-1.671328	S.D. dependent var		0.013394
S.E. of regression	0.021891	Akaike info criterion		-4.593649
Sum squared resid	0.004792	Schwarz criterion		-3.585956
Log likelihood	95.49839	Hannan-Quinn criter.		-4.259627

F-statistic	0.076415	Durbin-Watson stat	2.008139
Prob(F-statistic)	0.999999		

Heteroskedasticity Test: White

F-statistic	0.369575	Prob. F(19,12)	0.9744
Obs*R-squared	11.81277	Prob. Chi-Square(19)	0.8935
Scaled explained SS	1.125524	Prob. Chi-Square(19)	1.0000

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 09/14/20 Time: 08:41

Sample: 1987 2018

Included observations: 32

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004042	0.004559	0.886498	0.3928
LGDP(-1)^2	-3.27E-05	0.000131	-0.249196	0.8074
LGDP(-2)^2	0.000109	0.000202	0.540102	0.5990
LGDP(-3)^2	-0.000134	0.000138	-0.977164	0.3478
LCDT^2	-8.63E-06	1.19E-05	-0.725640	0.4820
LCDT(-1)^2	1.68E-05	1.40E-05	1.203977	0.2518
LCDT(-2)^2	-3.71E-06	1.28E-05	-0.288995	0.7775
LCIT^2	9.06E-06	1.10E-05	0.824114	0.4260
LCIT(-1)^2	6.24E-06	1.07E-05	0.585321	0.5692
LCIT(-2)^2	3.84E-06	1.14E-05	0.336979	0.7420
LPPT^2	5.55E-06	1.32E-05	0.419639	0.6822
LPPT(-1)^2	9.10E-07	1.23E-05	0.074185	0.9421
LPPT(-2)^2	-9.27E-06	1.18E-05	-0.788035	0.4460

LPPT(-3)^2	7.75E-06	1.36E-05	0.571458	0.5782
LLVA2^2	-3.38E-06	4.97E-06	-0.679871	0.5095
LLVA2(-1)^2	-1.32E-06	5.14E-06	-0.256470	0.8019
LOILR^2	-2.21E-05	2.67E-05	-0.827399	0.4242
LOILR(-1)^2	-3.19E-06	2.66E-05	-0.120082	0.9064
LOILR(-2)^2	1.64E-05	2.66E-05	0.616839	0.5489
LOILR(-3)^2	-1.19E-05	3.24E-05	-0.365845	0.7208

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R-squared	0.369149	Mean dependent var	0.000174
Adjusted R-squared	-0.629698	S.D. dependent var	0.000206
S.E. of regression	0.000262	Akaike info criterion	-13.38434
Sum squared resid	8.26E-07	Schwarz criterion	-12.46825
Log likelihood	234.1494	Hannan-Quinn criter.	-13.08068
F-statistic	0.369575	Durbin-Watson stat	2.022802
Prob(F-statistic)	0.974427		

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### Ramsey reset test

Ramsey RESET Test

Equation: UNTITLED

Specification: LGDP LGDP(-1) LGDP(-2) LGDP(-3) LCDT LCDT(-1)

LCDT(-2) LCIT LCIT(-1) LCIT(-2) LPPT LPPT(-1) LPPT(-2) LPPT(-3)

LLVA2 LLVA2(-1) LOILR LOILR(-1) LOILR(-2) LOILR(-3) C

Omitted Variables: Squares of fitted values

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	Value	df	Probability
t-statistic	0.002508	11	0.9980
F-statistic	6.29E-06	(1, 11)	0.9980

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F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	3.18E-09	1	3.18E-09
Restricted SSR	0.005561	12	0.000463

Unrestricted SSR            0.005561            11            0.000506

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Unrestricted Test Equation:

Dependent Variable: LGDP

Method: ARDL

Date: 09/14/20    Time: 08:42

Sample: 1987 2018

Included observations: 32

Maximum dependent lags: 3 (Automatic selection)

Model selection method: Akaike info criterion (AIC)

Dynamic regressors (3 lags, automatic):

Fixed regressors: C

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Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	0.234070	0.695402	0.336597	0.7428
LGDP(-2)	0.629190	1.955387	0.321773	0.7537
LGDP(-3)	-0.415824	1.201097	-0.346204	0.7357
LCDT	-0.035854	0.103971	-0.344849	0.7367
LCDT(-1)	0.027407	0.073870	0.371021	0.7177
LCDT(-2)	0.029449	0.085492	0.344466	0.7370
LCIT	0.045941	0.140392	0.327231	0.7496
LCIT(-1)	0.068580	0.206030	0.332866	0.7455
LCIT(-2)	0.056201	0.178816	0.314298	0.7592
LPPT	-0.051508	0.150452	-0.342357	0.7385
LPPT(-1)	0.004424	0.026263	0.168466	0.8693
LPPT(-2)	0.037589	0.120234	0.312628	0.7604
LPPT(-3)	0.068719	0.195998	0.350611	0.7325
LLVA2	-0.014861	0.041909	-0.354589	0.7296
LLVA2(-1)	-0.017006	0.054122	-0.314215	0.7592
LOILR	0.054562	0.148650	0.367051	0.7205
LOILR(-1)	0.018242	0.059180	0.308249	0.7637

LOILR(-2)	-0.045793	0.148740	-0.307872	0.7639
LOILR(-3)	-0.083169	0.244853	-0.339668	0.7405
C	3.617258	5.214503	0.693692	0.5023
FITTED^2	-0.000356	0.142097	-0.002508	0.9980

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R-squared	0.999337	Mean dependent var	10.39565
Adjusted R-squared	0.998132	S.D. dependent var	0.520166
S.E. of regression	0.022484	Akaike info criterion	-4.507324
Sum squared resid	0.005561	Schwarz criterion	-3.545434
Log likelihood	93.11718	Hannan-Quinn criter.	-4.188484
F-statistic	829.0148	Durbin-Watson stat	2.516533
Prob(F-statistic)	0.000000		

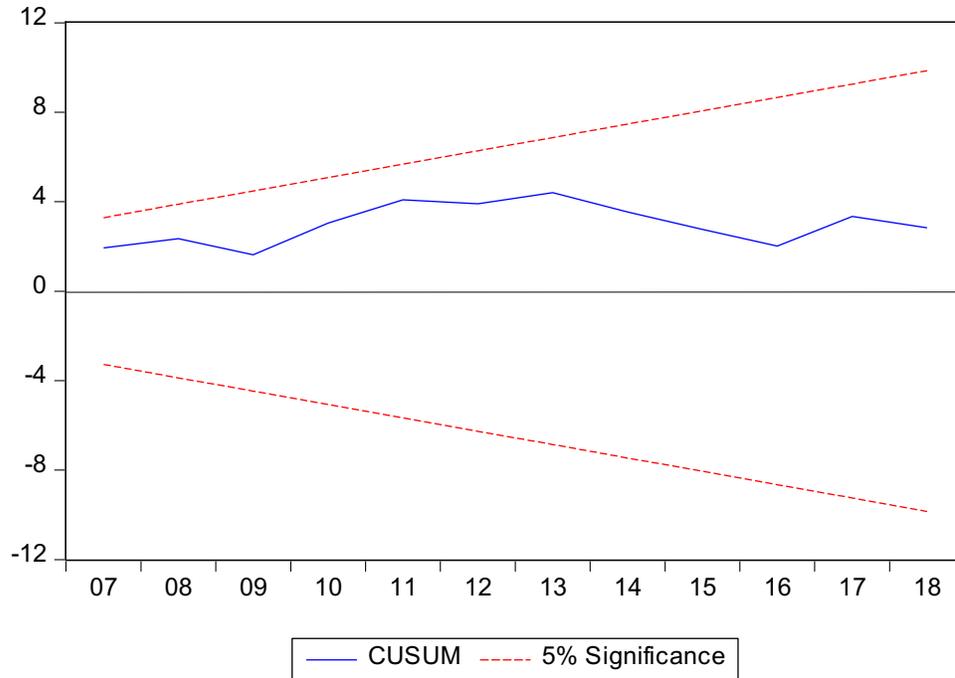
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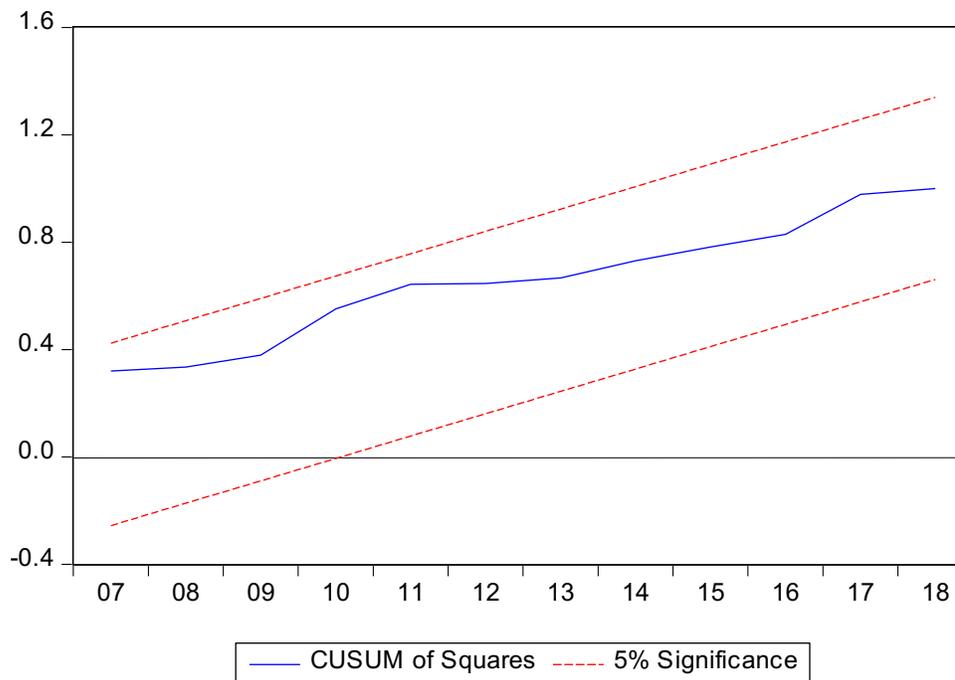
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\*Note: p-values and any subsequent tests do not account for model selection.

### Cusumstability test



**Cusum square**



**Granger causality Test**

Pairwise Granger Causality Tests

Date: 09/14/20 Time: 08:54

Sample: 1984 2018

Lags: 3

Null Hypothesis:	Obs	F-Statistic	Prob.
LCDT does not Granger Cause LGDP	32	1.14743	0.3493
LGDP does not Granger Cause LCDT		1.16881	0.3414
LCIT does not Granger Cause LGDP	32	1.28728	0.3005
LGDP does not Granger Cause LCIT		4.36396	0.0133
LPPT does not Granger Cause LGDP	32	2.31850	0.0998
LGDP does not Granger Cause LPPT		0.49278	0.6905
LLVA2 does not Granger Cause LGDP	32	1.12357	0.3584
LGDP does not Granger Cause LLVA2		0.08074	0.9699
LOILR does not Granger Cause LGDP	32	1.48320	0.2432
LGDP does not Granger Cause LOILR		0.59491	0.6242
LCIT does not Granger Cause LCDT	32	3.61885	0.0269
LCDT does not Granger Cause LCIT		2.16418	0.1174
LPPT does not Granger Cause LCDT	32	0.21856	0.8826
LCDT does not Granger Cause LPPT		3.09488	0.0451
LLVA2 does not Granger Cause LCDT	32	2.29677	0.1021
LCDT does not Granger Cause LLVA2		1.86217	0.1619
LOILR does not Granger Cause LCDT	32	1.13329	0.3547
LCDT does not Granger Cause LOILR		1.83110	0.1673
LPPT does not Granger Cause LCIT	32	2.62639	0.0725
LCIT does not Granger Cause LPPT		0.88723	0.4612
LLVA2 does not Granger Cause LCIT	32	2.81397	0.0598

LCIT does not Granger Cause LLVA2		12.5158	3.E-05
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LOILR does not Granger Cause LCIT	32	3.23288	0.0393
LCIT does not Granger Cause LOILR		0.70436	0.5584
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LLVA2 does not Granger Cause LPPT	32	1.62873	0.2079
LPPT does not Granger Cause LLVA2		0.84245	0.4836
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LOILR does not Granger Cause LPPT	32	0.77737	0.5177
LPPT does not Granger Cause LOILR		0.32278	0.8088
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LOILR does not Granger Cause LLVA2	32	1.71322	0.1899
LLVA2 does not Granger Cause LOILR		0.57654	0.6358
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