CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The world presents a picture of appalling contrasts. Some countries are immensely prosperous, nearly two- thirds of the population of the world subsists on substandard incomes. Some countries of the world are considered as developed and others developing, underdeveloped, or less developed with characteristics including illiteracy, inadequate housing and infrastructural facilities, lack of medical care, malnutrition, unemployment and low levels of technology (World Bank, 1991).

Nigeria is the most populous nation in Africa and the eleventh in the world and is also endowed with vast human and natural resources but unfortunately, Nigeria is also one of the Nations regarded as underdeveloped or developing. According to Udabah (2000) "the fundamental challenge facing countries like Nigeria is in the transformation of their economy or economic structures from an underdeveloped to a developed status". This entails the development of their economic wealth for the well-being of their citizens and the formation of social structures in a manner which improves their capacity to fulfill their aspirations.

Okpe (1998) stated that the existence of government is a necessity that cannot continue without financial means to pay its expenses as there are certain services which the government must provide- to its citizens because of their essential nature. Government does this to ensure that the supply of such goods and services are evenly distributed in any given society so that the rich and poor alike may benefit.

One may ask how government gets such huge amounts to finance the supply of such essential goods and services to her citizens. It is true that government mints money but there are other important economic factors that should be considered so that excessive money is not, in circulation in any economy. Thus, Olashore (1999) noted that for an economic and social balance to be maintained in an economy government found ways of financing her activities and one of such finance apart from loans and grants is taxation.

Taxation is a major source of government revenue all over the world and government use tax proceeds to render their traditional functions, such as: the provision of goods, maintenance of law and order, defence against external aggression, regulation of trade and business to ensure social and economic maintenance (Edame & Okoi, 2014). The primary function of a tax system is to raise enough revenue to finance essential expenditures on the goods and services provided by government; and tax remains one of the best instruments to boost the potential for public sector performance and repayment of public debt (Okoye & Ezejiofor, 2014). A system of tax avails itself as a veritable tool that mobilize a nation's internal resources and it lends itself to creating an environment that is conducive for the promotion of economic growth (Ayuba,2014). Therefore, taxation plays a major role in assisting a country to meet its needs and promote self-reliance.

A tax can be direct and indirect. The distinction between direct and indirect taxes is not always a satisfactory or consistent one. One way of distinguishing between these two has been in terms of the incidence of taxation. It is asserted that if the incidence of a tax rests upon the person who bears its impact it is called direct tax but if the incidence is passed on to others (shiftability) it is called indirect tax. Direct taxes can be income tax, gift tax, inheritance tax, expenditure tax, wealth and corporation tax while indirect taxes are excise duties and sales taxes,

value added taxes, import and export duties, tax on rail and bus fares. Advantage of direct taxes are: ability to pay is the basis of assessment, it helps in reducing income and wealth inequalities while the disadvantage include the tendencies to discourage hard work and savings. There is high incidence of avoidance in direct tax. One of the important merit of indirect taxes is that they are less inconvenient and from that point of view less burdensome. There is low incidence of avoidance since it is built inside the consumption.

According to Adebayo (1986) the history of taxation in Nigeria predated the colonial era. Before independence, local and the then regional governments administered majority of the taxes in the country independently. These taxes were imposed under various tax ordinances passed by local authorities. Examples of such include 1940 direct taxation ordinance passed in the Western region, 1943 direct taxation in the Eastern region; the Pay As You Earn (PAYE) introduced in the Eastern and Western regions in 1956 and 1961 respectively. Adebayo (1986) also observes that taxation in Nigeria especially before the Raisman fiscal committee of 1958 was a regional affair. In the North, the system of direct taxation had existed even before the advent of colonial rule particularly as there was sufficient and stable administration mostly based on the Islamic system. Thus, in the Northern part of the country, several forms of taxation such as the zakkah, jangali, shukka-shukka and kudin khasa existed particularly on agricultural activities.

However, the modern day taxation in Nigeria can be traced back to the work of a committee set up to review the Nigerian taxation in 1958 (Adebayo,1986).The committee recommended for the removal of most of the role exercised by the local authorities as tax administrators. Other major change introduced by the committee dwelled largely on the Companies Income Tax Act (CITA) and Income Tax Management Act (ITMA). Thus, the history of taxation in Nigeria cannot be complete without the mentioning of the Raisman

Committee of 1958.This is particularly so since before 1958 most of the taxes in the country were essentially administered by local and regional governments. For instance, as at that time, direct taxes existed in the East and Western regions, with poll tax collected in the North (Ogundele, 1996).The administration of different types of taxes and rates at regional and local levels especially the direct taxation was abolished in 1961 after that Income Tax Management Act (ITMA) was enacted. The Act was aimed at making taxation uniform all over the country. This shows that before the colonization of the different entities which were later amalgamated under the name Nigeria, there were different systems of taxation existing in form of compulsory services, contribution of goods, money and labour amongst the various kingdoms, ethnic groups and tribes controlled by Obas, Emirs, Ezes, in order to sustain the Monarchs.

The tax system in Nigeria is made up of tax policy, tax laws and tax administration and it is expected that they work together in order to achieve the goal of the nation's economy (Abiola & Asiweh, 2012). In generating revenue to achieve this goal, the tax system is expected to minimize distortion in the economy. Taxes at the federal level are administered by the Federal Inland Revenue Service (FIRS) while those at the state level are administered by the State Inland Revenue Service (SIRS).

In Nigeria, revenue is raised mainly through taxation to finance government expenditure and to influence other activities in the economy. In addition, tax revenue is used to finance developmental activities. In less developed economies it has been difficult to use tax revenue in financing developmental activities because of various forms of resistance, (such as evasion, avoidance and other corrupt practices can easily be perpetuated within the direct taxes bracket). These activities are considered as sabotaging the economy and are readily presented as reasons for the underdevelopment of the country (Onairobi,1998).

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However, over the years, it has been observed that the Nigeria tax has inherent problems in its structure. Odusola (2006) opined that the Nigeria tax system is concentrated on Petroleum Profit Tax (PPT) and Company Income Tax (CIT) while broad- based indirect taxes like the Value- Added Tax (VAT) and Custom and Excise Duty (CEXD) are neglected. Thus, the tax system lacks the potential of diversifying the revenue portfolio for the country to safeguard against the volatility of crude oil prices and to promote fiscal sustainability and economic viability at lower tiers of government (Azaiki & Shagari, 2007).

The major challenges facing tax administration in Nigeria include frontiers of professionalism, poor accountability, lack of awareness of the general public on the imperatives and benefits of taxation, corruption of tax officials, tax avoidance and evasion by taxing units, connivance of taxing officials with taxing population, high rate of tax, poor method of tax collection, etc. Tax administration and individual agencies suffer from limitations in manpower, money, tools and machinery to meet the ever increasing challenges and difficulties. In fact, the negative attitude of most tax collectors toward taxpayers can be linked to poor remuneration and motivation. There is also the problem of accuracy of tax statistics (Nightingale, 1997).

From mid 2014 to 2017, there was a general fall in the prices of crude oil which adversely affected the Nigerian economy (Anyaehie & Areji, 2015; Uzonwanne, 2015).To this effect, Ngozi Okonjo- Iweala and other concerned citizens have called on governments at various levels to look for other means of revenue generation for the sustainable economic development of Nigeria. Kiabel and Nwokah (2009) corroborate this idea by saying that the dwindling revenue and increased cost of running government require all tiers of Nigeria government to look for alternative means of improving their revenue base. It is obvious that the country's revenue from oil can no longer fully support its development objectives. As a result government is

exploring alternative tax avenues to raise funds to finance its project. It is against this background that the study seeks to investigate the effect of tax revenues on the Nigerian economy.

1.2 Statement of the Problem

Revenue is strategic to any government owning to its importance to economic growth and development .This has made various governments all over the world to embark on different sources of revenue so as to maintain the machineries of government and keep the economy moving. Nigeria revenue profile consists of oil and gas, and non –oil sectors with the former contributing over 70% of the total revenue to the federation. Available data from Central Bank of Nigeria (2016) indicate that the oil and gas sector contributed 77.5% from 1986-2016 on the average while the non-oil sector generated only 22.5% during the same period.

In July 2016 the Central Bank of Nigeria (CBN) reported that Nigeria economy is falling into recession. This is as a result of dwindling oil revenue; the fall in the revenue is as a result of drop in oil production and fall in oil price in international market. Fall in oil production is as a result of increased militant attacks in the Niger Delta which has reduced Nigeria oil production to its lowest level since 20 years (Madugba, Ekwe & Okezie, 2016). The fall in oil revenue has made government to look for an alternative way to finance its developmental projects. By that government is looking inward through internal generated revenue in order to raise enough money in implementing its capital projects. Government aims through tax revenue to execute most of its developmental programmes and invest in social programs that can lead to economic growth, development, wealth creation and improved production in the economy. By that government aims to increase the tax base which will help increase tax revenue in the country. It is clear that

government expenditures via infrastructural establishment, road construction, energy and power generations and health facility lead to creation of an atmosphere conducive for capital formation (CF) and gross domestic investment (GDI) which invariably will raise economic growth and development and reduce poverty (Ogamba, 2003). Thus, taxation can be used as a principal tool for generating revenue for the government which it uses to prosecute various expenditure programs targeted at raising the living standard of its people.

In September 2016 during the monetary policy committee meeting, the CBN governor called on the federal government to introduce tax incentives in order to stimulate activities and return the economy to the path of growth. Emefiele (2016) counsels that the Federal Government should toe the line of other developed countries such as the United States that adjusted its tax policy during the period of economic recession to stimulate consumer demand. He was of the view that tax cut will increase savings and investment which will help industries grow, create more jobs and increase the tax base in the economy thereby contributing to economic growth, development and improved production in the economy.

Successive governments have attempted to improve tax revenue in Nigeria given the fluctuations in oil revenue in the country. Therefore this study seeks to ascertain whether tax revenue has significant effect on the Nigerian economy.

1.3 Objectives of the Study

The general objective of this study is to examine the effects of federal government tax revenue on the Nigerian economy. However, the specific objectives are:

1. To ascertain the effect of petroleum profit tax, company income tax, value added tax and total tax revenue on the gross domestic product in Nigeria.

2. To find out the contribution of petroleum profit tax, company income tax, education tax and total tax revenue on the human development in Nigeria.

3. To explore the effect of petroleum profit tax, company income tax, consolidated pool account and total tax revenue on the industrial production in Nigeria.

4. To determine the direction of causality between petroleum profit tax, company income tax, value added tax, education tax, consolidated pool account, total tax revenue in the Nigerian economy.

1.4 Research Questions

The study intends to provide answers to the following pertinent questions:

1. How does petroleum profit tax, company income tax, value added tax and total tax revenue contribute to gross domestic product in Nigeria?

2. To what extent has petroleum profit tax, company income tax, education tax and total tax revenue influenced human development in Nigeria?

3. What is the contribution of petroleum profit tax, company income tax, consolidated pool account and total tax revenue on the industrial production in Nigeria?

4. To what degree has petroleum profit tax, company income tax, value added tax, education tax, consolidated pool account and total tax revenue granger caused a change in the Nigerian economy?

1.5 Research Hypotheses

The study was guided by the following hypotheses formulated based on the objectives of the study:

Ho_1: Petroleum profit tax, company income tax, value added tax and total tax revenue has no significant effect on the gross domestic product in Nigeria.

Ho_2: Petroleum profit tax, company income tax, education tax and total tax revenue exact no significant effect on the human development index in Nigeria.

Ho_3: Petroleum profit tax, company income tax, consolidated pool account and total tax revenue is not a significant predictor of industrial production in Nigeria.

H_{o4}: Petroleum profit tax, company income tax, value added tax, education tax, consolidated pool account and total tax revenue does not significantly granger cause a change in the Nigerian economy.

1.6 Significance of the Study

This study will be of value to any person interested in taxation, it is anticipated that its findings will specifically benefit the following groups of people.

Government: Government on the best way to raise revenue to execute its projects and provide infrastructural facilities in the country. It will also help government to achieve resource allocation, income redistribution, and economic stability in the country.

Investors: Investors will be in a position to utilize the research findings and recommendations from the study to forecast the amount they will pay as tax to the government. It will further bring

to fore the seemingly silent but significant relationship between taxation and economy to the advantage of both prospective and existing investors in the country.

Researchers: The study is expected to contribute to the existing literature in the field of taxation. Future scholars can use this research as a basis for further research in the area of taxation and fiscal policy theories.

Economic Watchers/General Public: The general public will gain some insight about taxation and its importance in the economy. It will further enlighten them on whether or not the hypothesized relationship between taxation and the economy truly exists.

1.7 Scope of the Study

A time frame of 1992 to 2016 has been used for this study. This period is seen as long enough to enable the drawing of the necessary inference and arriving at a conclusion. Nigeria economy will be the area this study tends to cover since it helps to show whether the federal government tax revenue is contributing to economic growth and development of the country. Petroleum profit tax, companies income tax, stamp duty, capital gains tax, national information technology development levy, education tax, consolidated pool account, value added tax are the independent variables while gross domestic product, human development index and industrial production is the dependent variable. The study used secondary data sourced from Central Bank of Nigeria statistical bulletin and Federal Inland Revenue Services .Ordinary least square (OLS) and granger causality test were used for the analysis while Augmented Dickey Fuller (ADF) was used to test for stationarity of the time series data.

1.8 Limitation of the Study

Time series annual data were on gross domestic product, human development index, industrial production, petroleum profit tax, company income tax, value added tax, education tax, consolidated pool accounts, total tax revenue. There are other tax revenue in the country that were not captured such as stamp duty, capital gain tax, national information technology development fund levy and customs and excise duties. It will be more difficult and humongous to add all the tax revenue in this study.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Conceptual Review

2.1.1 Concept of Taxation

Taxation is central to development and provides governments with the funding they require to finance economic development and growth. In any country, developed or less developed, mobilization of resources constitutes a paramount aspect of achieving a higher level of economic growth. And, as a source of resource mobilization, the role of tax revenue is very significant in developing countries such as Nigeria. Just as developed economies regard it as primary for their development.

According to the black law dictionary, tax is a ratable portion of the produce of the property and labour of the individual citizens, taken by the nation, in the exercise of its sovereign rights, for the support of government, for the administration of the laws, and as the means for continuing in operation the various legitimate functions of the state. The Institute of Chartered Accountants of Nigeria (2006) and the Chartered Institute of Tax revenue of Nigeria (2002) view tax as an enforced contribution of money, enacted pursuant to legislative authority. If there is no valid statute by which it is imposed; a charge is not tax. Tax is assessed in accordance with some reasonable rule of apportionment on persons or property within tax jurisdiction.

Anyanwu (1997) defined tax revenue as the compulsory transfer or payment (or occasionally of goods and services) from private individuals, institutions or groups to the government. Sanni (2007) advocated tax as an instrument of social engineering which can be used to stimulate general or special economic growth. Taxation is an instrument employed by the

government for generating public funds (Anyaduba, 2004). It is a required payment imposed by the government on the income, profit or wealth of individuals, group of persons, and corporate organizations.

Fasoranti (2013) ascertains that essentially, tax constitutes a means by which the government appropriates part of the private sector`s income. The revenue so derived is used to finance government expenditures. Among other things, taxation is an important instrument of fiscal policy in the economy. It generates income for the government for the funding of economic activities capable of raising the growth rate. Among other things, it is a means of redistributing income and wealth among consumers. Again, national rulers have always been interested in an income concept that can be used as a yardstick for taxation (Musgrave, 1989).

Taxation as defined by Ogundele (1999) is the process or machinery by which communities or groups of persons are made to contribute in some agreed quantum and method for the purpose of the administration and development of the society. It can be inferred that the payment of tax will in turn be beneficial to the entire citizenry. This view is similar to the definition of Soyode and Kajola (2006) who defined tax as a compulsory exaction of money by a public authority for public purposes. Nightingale (1997) described tax as a compulsory contribution imposed by the government. These various authors concluded that it is possible for tax payers not to receive anything identifiable for their contribution but that they have the benefit of living in a relatively educated, healthy and safe society. However, the infrastructure which tax payers are supposed to enjoy is in a deplorable condition (Fafunwa, 2005). Educational system is in disarray (Obaji, 2005); and the health system is in a worrisome condition (Lambo, 2005). The World Bank (2000) noted that taxes are a compulsory transfer of resources to the government from the rest of the economy. They may be levied in cash or in-kind (for example, involving

mandatory labour), and they can be explicit or implicit. Other classifications of taxes are direct or indirect (Classification by Incidence) and proportional, progressive & regressive (Classification by Burden of Distribution). Adeyeye (2004) described tax as a liability on account of the fact that the tax payer has an income of a minimum amount and from certain specified sources or that he owns certain tangible or intangible property or that he is engaged in certain economic activities which have been chosen for taxation. Therefore, the individual contributes in some quantum measure to the funds available for use by government in providing necessary infrastructure for her citizens. It is simply a levy imposed by the government on the income, wealth and capital gains of individuals and businesses, on spending goods and services, and on properties. Taxation involves compulsion. The taxpayers are required to make payment regardless of their feelings or willingness. Once the tax has been levied, on individual has the choice of paying or not paying unless, of course, doing it illegally like tax evasion (Aderinto & Abdullahi, 2007).

According to Aneke (2009), taxes serves as an instrument of monetary strategy utilized by government to deal with the financial development of the state. The tax framework is open door for government to gather extra income required in releasing its present commitment. Government also gets involved in activities geared towards stabilization of the economy, redistribution of income, maintenance of law and order, defence against external aggression, regulation of trade and business to ensure social and economic maintenance, provision of services in the form of public goods (Abiola & Asiweh, 2012).

Taxation is one of the oldest means by which the cost of providing essential services for the generality of persons living in a given geographical area is funded by government which is also saddled with the responsibility of providing some basic infrastructures for their citizens

(Oladipupo & Ibadin, 2015). Tax under any jurisdiction is discriminatory. It is assessed on persons or property based on profits/income or gain, the benefit conferred on the citizens is without reference to the contributions of individual tax payers. Taxes are endogenous and dependent on one's income. It can be divided into two forms; direct taxes: These are those levied on private individuals, corporations, and property; and Indirect Taxes: import and export duties. In a country such as Nigeria, the indirect taxes constitute the primary source of fiscal revenue. Both direct and indirect taxes are far from progressive in Nigeria. Taxation has undergone a lot of emotional factors despite its important role in the state development (Aderinto & Abdullahi, 2007). More importantly, the tax revenue collected in any economy depends on the level of income. There is a positive correlation between tax revenue and national income. Taxable income in Nigeria is expected to determine the tax revenue being collected by the Federal Revenue Service (FIRS). But this is not so in Nigeria tax system which is characterized with high level of tax evasion and avoidance by the rich class (Okpara, 2010).

The usefulness (effectiveness and efficiency) of taxes can be measured by several parameters, some which are its revenue generating capacity and its impact on the consumption and savings pattern in the economy. Even if the totality of tax system cannot be comprehensively measured, the various types of tax can be subjected to this measurement (Nzotta, 2007).

Ejoor (2013) stresses that taxation is a concept and the science of imposing tax on citizens .According to him, the imposition of tax is expected to yield income which should be utilized in the provision of amenities, both social and security and create condition for the economic well-being of the society. He stressed that efficient tax system affords the government of adequate revenue which in turn leads to the provision of massive infrastructures and then leads to economic growth and development. He illustrated this concept thus:

Fig 2.1 Concept of Efficient Tax System

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┌─────────────────────────────────────────┐
│           Efficient Tax system            │
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┌─────────────────────────────────────────┐
│            Adequate Revenue               │
└─────────────────────────────────────────┘
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┌─────────────────────────────────────────┐
│          Massive Infrastructures          │
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│          Good Standard of Living          │
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                    │
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│      Economic Growth and Development      │
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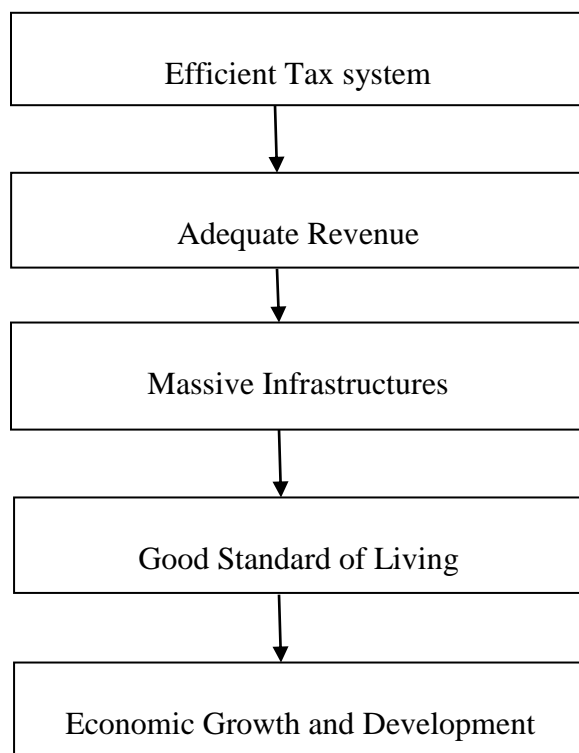
Source: Ejoor (2013) Taxation policy and concept

Fiscal policy

This is the erection of tax structure and direction of government expenditure for the purpose of attaining specific objectives such as balance of payment or avoidance of inflation. It is the combination of measures to influence, regulate and control the flow of income, expenditure and distribution of resources in an economy (Uzoagu, 2008).

Fiscal policies, regardless of how articulated may not have a response to implementation problems if done in isolation, that is even if well implemented, the desired result may never manifest. Therefore they are formulated along with other new already existing social and

economic policies which ensure that micro and macro-economic fundamentals are sound. The key instruments are government expenditure and taxation.

2.1.2 Fiscal Federalism

Nigeria as a nation operates a federal structure of government, federalism refers the existence in one country, more than one level of government, each with different expenditure responsibilities and taxing powers. This shows that fiscal federalism, a consequence of federalism, is all about the relationship among the different units of government with respect to the allocation of national revenue and the assignment of functions and tax powers to the constituent units. Fiscal federalism therefore relates to the division of tax income and functional responsibilities among the various tiers of government in a federal state.

The sharing of funds from the federation account is one of the contentious and sensitive issues in the Nigeria polity this has remained a central element of inter fiscal relations. In Nigeria, revenue allocation is taken as the distribution of nation revenue among the various tiers of government in federation in such a way as to reflect the structure of fiscal federalism. Fiscal federalism according to Ajibola (2008) denotes an intergovernmental fiscal relation defining functions and responsibilities among the various tiers of government as well as the financial resources to achieve stated objectives. It is a term used to describe a system of government in which the fiscal responsibilities rest with the various tiers of government in the country. In Nigeria, for instance, the federal, state and local governments have the joint responsibility of generating and expanding revenue to carry on government responsibilities.

Ozor (2004) argues that in a federalism, federal government is responsible for the allocation of taxing power, federally collectable revenue and federal expenditure to the different

level/components of government in a federation so as to enable them discharge their constitutionally assigned functions and responsibilities to their citizens. He added that in most federations, the taxes of citizens(corporate and biological) constitute the major items that go into the common purse of the federation while in Nigeria, the mining rents and oil royalties by over 80% account for the largest items in the federation account i.e the common fund that is shared amongst the units of the federation.

In view of the underlying imperatives of fiscal federalism, Okoli (2004) maintained that the principle of fiscal autonomy and fiscal integrity is a sine qua non for the survival and continued existence of a truly federal system of government. She advocated that each level of government- federal, state and local must necessarily have a minimum source of independent revenue and full control of such revenues in order to enable it discharge its constitutional responsibilities. As such the greater the fiscal independence through internally generated revenue amongst the component states, the stronger the foundation of its federal system and the greater the chances of the survival and continued existence of the federation. It is therefore essential that each unit of the government in the federation must not only have identifiable independent sources of revenue, but that such independent source should to a large extent, provide a solid base for its revenue needs and economic potentialities.

Distinction between Taxation and other components of Revenue

A further but brief discussion may be necessary on the distinction between taxes and other internal revenue items such as charges, levies and penalties. Such other revenue items are not usually income or transaction based, but may be imposed for the use of utilities or infrastructure, or the right of way or simply imposed on certain category of persons, activities or

persons within a particular area. Okonkwo (2012) provided a working definition of similar items below:

(i) Charge – a charge is an amount paid for the use of goods, services or infrastructure provided by the government.

(ii) Fee – a fee is a payment for the labour or services provided by a public body, such as a government entity or agency. Examples of fees include payments for use of utilities and for obtaining government documents such as passports and visas.

(iii) Fines – these are sums of money imposed by the government as penalties for an offence or indiscretion by a person within the jurisdiction of the government. Examples of fines include court fines, fines imposed for traffic violations, unauthorized usage of government property etc.

(iv) Penalty – this is similar to a fine and is usually an amount paid or forfeited for not meeting a particular condition or fulfilling an undertaking. Examples of penalties include payments for late filing of revenue or the late or non- provision of information at the time required to government agencies.

(v) Rates – these are usually imposed on property or other assets and are usually determined with reference to the value of the property or in relation to some other thing. Examples of rates include tenement rates and rates on shops and kiosks.

2.1.3 Objectives of Taxation

In both developed and developing economies, the primary purpose of taxation is mainly to generate revenue for settling government expenditure and for the provision of social amenities and the welfare of the populace. Again, taxation is used as an instrument of economic regulation for the purpose of discouraging or encouraging certain forms of social behavior.

According to Dalton (1964) cited in Asada (2005) the major objectives for designing a tax policy include

1. Instrument of Revenue Generation to cover Expenditure: It is used to raise income revenue for the government to cover its own expenditure and to provide services and infrastructural facilities such as schools, hospitals, roads and social security payments made to individuals in respect of unemployment, sickness etc.

2. Instrument of Stabilization: It is used as an instrument of stabilization such as inflation and to stimulate economic growth. For example (a) if a country or state is experiencing inflation, one way to deal with the situation is to raise direct taxes on individual income as well as business profit made by individuals and this will reduce demand for consumption of goods and at the same time lower the investments by business men.(b) when an economy of a country or state is experiencing depression, the overall level of taxes may be lowered in the economy.

3. Instrument of Income and Wealth Distribution: By levying taxes in a progressive manner, the gap of income is somewhat reduced and this may be the prime reason of levying taxes in some cases. That is it is used to re-distribute income and wealth. That is, the rich pay

more tax than poor. This is achieved by the graduation or "progressiveness" of the rates at which the taxes are levied.

4. Instrument of Regulation: It helps to regulate the consumption and production of certain goods in a country or state. Suppose the government wishes to discourage the consumption of certain type of imported goods, it may impose higher import duties on them to raise the price of those goods which may reduce the demand for them. Therefore, it controls the volume of imports into the country.

5. Instrument of Payment: The government uses taxation in the payment of teaching and non teaching staff's salaries, to those in medical areas such as hospital and for poverty alleviation, for building of social amenities like, hospitals, schools, and provision of irrigation for the development of agriculture. It is used in the provision of ammunitions for defence, for the armies, police force and force workers, construction of barracks and their uniforms.

6. Instrument of Mobilization: It helps in the mobilization of resources to pay gratuity, for the payment of public debts and loans, finally to maintain the well-being of the people in the state.

Additionally, taxation can be used to achieve specific economic objectives of nations. In Nigeria, governments oftentimes introduce tax incentives and attractive tax exemptions as an instrument to attract and retain local and foreign investors. It is also a device to improve gross domestic product, induce economic development and influence favourable balance of payments with other countries.

Types of Taxes and Nigeria Tax System

In Nigeria, there are at least some types of taxes that are commonly applied to qualifying citizens and items. These are the personal income tax, the company income tax, petroleum profit tax, customs and excise duties and value added tax. The assessment of these forms of tax independently or otherwise becomes more necessary given the multiplicity of taxes in Nigeria, together with the problems of tax evasion and avoidance. Nigeria tax system somehow, is structured purely towards revenue generation without minding its effects to other macroeconomic variables, which have negative effect on the economy.

Nigeria tax is an assessment imposed by the states and the federal government to enable them to provide services for the Nigerian citizens. According to Okpe (1998) tax administration in Nigeria is guided by the following Acts

a. Personal Income Tax Act, Cap P8, LFN 2004 (as amended). This governs the taxation of individuals.

b. Companies Income Tax Act, Cap C21, LFN 2004 which regulates the taxation of registered companies.

c. Petroleum Profit Tax Act, Cap P13, LFN 2004. This Act regulates the assessment and collection of petroleum profit tax payable by organization that engage in the extraction and sale of petroleum products in Nigeria.

d. Capital Gains Tax Act, C1, LFN 2004 which takes care of gains accruing to any person on or after 1st April 1967 on the disposal of chargeable assets.

e. Value Added Tax, Cap V1, LFN 2004 which imposes tax on some selected goods and services manufactured in or imported into the country. The Decree repealed sales tax in the country.

f. Education Tax Act (as amended).

g. Stamp Duties Act, Cap S8, LFN 2004.

h. Taxes and Levies (Approved List of Collection) Act, Cap T2, LFN 2004.

i. Customs, Excise Tariff, etc. (Consolidation) Act (as amended)

2.1.4 Structure of the Nigeria Tax System

According to Orji (2001) the structure of the tax system in Nigeria can be classified into two forms; modes of payment and incidence of tax. Under the first form of classification, Nigerian taxes are classified as proportional, progressive and regressive systems.

(I)   Proportional Tax System

This form of tax assesses taxpayers on a fixed percentage. As a result, the amount of tax payable is proportional to every taxpayer's income. For example, if the tax rate is fixed at 10%, every taxpayer will have to pay income tax at this rate, as his or her income increases or decreases. A taxpayer, whose income doubles, pays double the amount of tax. That is, when the income was N15,000, the tax payable was N1,500, but when the income increased to N30,000, the tax payable went up to N3,000.00.

(II)   Progressive Tax System

This form of tax is graduated as it applies higher rates of tax as income increases. For instance, the progressive tax concept can be explained with the following illustration:

Taxable Income	₦	Tax Rate (%)
First	30,000	5
Next	30,000	10
Next	50,000	15
Next	50,000	20
Over	160,000	25

From the illustration progressive tax system has a main objective of redistributing the income of the rich to that of the poor in some ways. For instance, the rich are taxed heavily to finance projects of common interest.

(III)   Regressive Tax

Under this type of tax, the tax payable decreases as the taxpayer's income increases. A high income person pays less tax than a low income person in a regressive tax system.

Illustration 2

Regressive Tax Table

Taxable Income	Tax Rate	Tax Payable
₦	%	₦
20,000.00	30	6,000.00
40,000.00	20	8,000.00
60,000.00	10	6,000.00
80,000.00	5	4,000.00

This system may not be suitable for developing countries as it yields low revenue and condone political and social reactions. However, it is not commonly applied even in developed economies.

The second form of tax classification is by incidence: Thus tax can be direct or indirect tax.

(I)   Direct Tax

This form of tax is assessable directly on the taxpayer who is required to pay tax on his property, income or profit, etc. He/She is not only advised by notification (called assessment notice), but he/she is duly receipted. The purpose of these formalities is to bring to the taxpayer's notice the incidence of such tax. The types of tax that fall under this heading include the following:

i. Personal income tax: this is levied on an individual's income which he earned during a specified period of time usually one fiscal year. It varies with the size and sources of the tax payer's income and some other factors contained in the personal income tax Act. 104 of 1993.

ii. Companies income tax: This is levied on the net profit of companies. The gross incomes of companies are adjusted by deducting all allowable expenses before taxation is imposed on the net profit.

iii. Capital gains tax: A capital gain accrues when the value of capital assets goes up and is realized when the asset is sold. Capital gains are unearned increments brought about by the market and development forces. Capital gains tax is levied with references to it's realization and it rates are progressive.

iv. Petroleum profit tax: Nigeria law by virtue of the petroleum profits tax act requires all companies engaged in the extraction and transportation of petroleum to pay tax. The taxable income of a petroleum company is subject to tax at 85% but this percentage is lowered to 65.75% during the first 5 years of operation.

v. Education tax: ET is levied on all Nigeria companies' assessable profits. The rate of tax is 2% of Assessable profits. This has now been replaced by the Tertiary Education Tax.

Advantages of Direct Taxes

The following are the important advantages or merits of direct taxes:-

1. **Equity**

   There is social justice in the allocation of tax burden in case of direct taxes as they are based on the principle of ability to pay. Person in a similar economic situation are taxed at the same rate. Persons with different economic standing are taxed at a different rate. Hence, there is both horizontal and vertical equity under direct taxation. Progressive direct taxation can reduce income inequalities and bring about adequate social & economic justice.

2. **Certainty**

   As far as direct taxes are concerned, the tax payer is certain as to how much he is expected to pay, as the tax rates are decided in advance. The government can also estimate the tax revenue from direct taxes with a certain degree of accuracy. Accordingly the government can make adjustments in its income and expenditure.

3. Relatively Elastic

The direct taxes are relatively elastic. With an increase in income and wealth of individuals and companies, the yield from direct taxes will also increase. Elasticity also implies that the government's revenue can be increased by raising the rates of taxation. An increase in tax rates would increase the tax revenue.

4. Creates Public Consciousness

They have educative value. In the case of direct taxes, the taxpayers are made to feel directly the burden of taxes and hence take keen interest in how public funds are spent. The taxpayers are likely to be more aware about their rights and responsibilities as citizens of the state.

5. Economical

Direct taxes are generally economical to collect. For instance, in the case of personal income tax, the tax can be deducted at source from the income or salaries of the individuals. Therefore, the government does not have to spend much in tax collection as far as personal income tax is concerned. However, in the case of indirect taxes, the government has to set up an elaborate machinery to collect taxes.

6. Anti- inflationary

The direct taxes can help to control inflation. During inflationary periods, the government may increase the tax rate. With an increase in tax rate, the consumption demand may decline, which in turn may reduce inflation.

Disadvantages of Direct Taxes

Though direct taxes possess merits mentioned above, the economist (Akrani, 2010) have criticized them on the following grounds:-

1. **Tax Evasion**

   In Nigeria, there is a high level of tax evasion. The tax evasion is due to high tax rates, documentation and formalities, poor and corrupt tax administration. It is easier for the businessmen to evade direct taxes. They invariable suppress correct information about their incomes by manipulating their accounts and evade tax on it. In less developed countries like Nigeria due to high rate of progressive tax evasion & avoidance are extensive and led to rise in black money.

2. **Arbitrary Rates**

   The direct taxes tend to be arbitrary. Critics point out that there cannot be any objective basis for determining tax rates of direct taxes. Also, the exemption limits in the case of personal income taxes, wealth taxes etc. are determined in an arbitrary manner. A precise degree of progression in taxation is also difficult to achieve. Therefore direct taxes may not always fulfill the canon of equity.

3. **Inconvenient**

   Direct taxes are inconvenient in the sense that they involve several procedures and formalities in the filing of returns. For most people payment of direct tax is not only inconvenient, it is psychological painful also. When people are required to pay a sizeable part

of their income as a tax to the state, they feel very much hurt and their propensity to evade tax remains high. Further everyone who is required to pay a direct tax has to furnish appropriate evidence in support of the statement of his income and wealth and for this he has to maintain his accounts in proper form. Direct tax is considered inconvenient by some people because they have to make few lump sum payments to the governments, whereas their income receipts are distributed over the whole year.

4. Narrow Coverage

In Nigeria, there is a narrow coverage of direct taxes. It is estimated that only three percent of the population pay personal income tax. Due to low coverage, the government does not get enough funds for public expenditure. Estate duty and wealth tax are equally narrow based and thus revenue proceeds from these taxes are invariably small.

5. Affects Capital Formation

The direct taxes can affect savings and investment. Due to taxes, the net income of the people gets reduced. This in turn reduces savings. Reduction in savings result in low investment. The low investment affects capital formation in the country.

6. Effect on Willingness and Ability to Work

Highly progressive direct taxes reduce people's ability and willingness to work and save. This in turn may have a negative impact on investment and productive capacity in the economy. If tax burden is high, people's consumption level gets adversely affected and this has an impact on their ability to work and save. High taxes also discourage people from working harder in order to earn and save more.

7. Sectoral Imbalance

In Nigeria, there is sectoral imbalance as far as direct taxes are concerned. Certain sectors like the corporate sector is heavily taxed, whereas, the agriculture sector is 100% tax free. Even the large rich farmers are exempted from payment of personal income tax (Akrani, 2010)

In direct tax, burden of tax cannot be shifted. The disadvantage of direct taxation are mainly due to administrative difficulties and inefficiencies. The extent of direct taxation should depend on the economic state of the country. A rich country has greater scope for direct taxation than a poor country. However direct taxation is an important aspect of the modern financial system.

2.1.5 Direct Tax and Economic Growth in Nigeria

Direct taxes in Nigeria include the Personal Income Taxes (PIT), Company Income Tax (CIT), the Petroleum Profit Tax (PPT) and Education Tax. Eugene and skinner (1996) believe that taxation can effect economic growth in major five ways. First, higher taxes can discourage the investment rate through high statutory taxes rates on corporate and individual income, high effective capital gains taxes and low depreciation allowances. Secondly, taxes discourage labour force participation or distort occupational choices and also affect the choice for acquisition of skills, education and training. Third, tax policy has the potential to discourage productive growth by attempting to tax research and development and the development of ventures capital. Fourth, tax policy can influence the marginal productivity of capital by channelling investment from heavily tax sectors to more highly taxed sector with lower overall productivity.

Fifth, heavy taxation on labour supply can distort the efficient use of human capital by discouraging worker from employment in sectors with high social productivity but a heavy tax burden.

(II) Indirect Taxes

Indirect taxes are borne by persons other than the ones from whom the tax is collected. These are taxes which are imposed on commodities before reaching consumers and are paid by those upon whom they ultimately fall, not as taxes, but as part of the selling price of the commodities (Akrani, 2010).

The types of tax that fall under this heading include the following:

i.   Value Added Tax (VAT): This is not a tax on the total value of the goods being sold but only on the value added (the difference between the value of factor services and materials that the firm purchased as input and the value of the output) it requires a taxable person upon registering with the federal board of inland revenue to charge and collect VAT at a flat rate of 5% of all invoiced amounts of taxable goods and services.

ii. Stamp duties: stamp duty is duty payable on any agreement executed in Nigeria, or relating, whatsoever, to any property situated in or to any matter or thing done in Nigeria. Stamp duty is chargeable either at fixed rates or ad valorem.

iii. Excise duties: these are levied on goods produced or manufactured locally.

iv. Customs duties: Custom duties are levied on imported goods: costs, insurance and freight with varying rates for different items.

Indirect taxes may affect the cost of living, as they constitute taxation on expenditure (Akrani, 2010).

Advantages of Indirect Taxes

The merits of indirect taxes are briefly explained as follows

1. Convenient

Indirect taxes are imposed on production, sale and movements of goods and services. These are imposed on manufacturers, sellers and traders, but their burden may be shifted to consumers of goods and services who are the final taxpayers. Such taxes, in the form of higher prices, are paid only on purchase of a commodity or the enjoyment of a service. So taxpayers do not feel the burden of these taxes. Besides, money burden of indirect taxes is not completely felt since the tax amount is actually hidden in the price of the commodity bought. They are also convenient because generally they are paid in small amounts and at intervals and are not in one lump sum. They are convenient from the point of view of the government also, since the tax amount is collected generally as a lump sum from manufacturers or traders.

2. Difficult to evade

Indirect taxes have in built safeguards against tax evasion. The indirect taxes are paid by customers, and the sellers have to collect it and remit it to the Government. In the case of many products, the selling price is inclusive of indirect taxes. Therefore, the customer has no option to evade the indirect taxes.

3. Wide Coverage

Unlike direct taxes, the indirect taxes have a wide coverage. Majority of the products or services are subject to indirect taxes. The consumers or users of such products and services have to pay them.

4. Elastic

Some of the indirect taxes are elastic in nature. When government feels it necessary to increase its revenues, it increases these taxes. In times of prosperity indirect taxes produce huge revenues to the government.

5. Universality

Indirect taxes are paid by all classes of people and so they are broad based. Poor people may be out of the net of the income tax, but they pay indirect taxes while buying goods.

6. Influence on Pattern of Production

By imposing taxes on certain commodities or sectors, the government can achieve better allocation of resources. For e.g. By Imposing taxes on luxury goods and making them more expensive, government can divert resources from these sectors to sector producing necessary goods.

7. May not affect motivation to work and save

The indirect taxes may not affect the motivation to work and to save. Since, most of the indirect taxes are not progressive in nature, individuals may not mind to pay them. In other

words, indirect taxes are generally regressive in nature. Therefore, individuals would not be demotivated to work and to save, which may increase investment.

8. Social Welfare

The indirect taxes promote social welfare. The amount collected by way of taxes is utilized by the government for social welfare activities, including education, health and family welfare. Secondly, very high taxes are imposed on the consumption of harmful products such as alcoholic products, tobacco products, and such other products. So it is not only to check their consumption but also enables the state to collect substantial revenue in this manner.

9. Flexibility and Buoyancy

The indirect taxes are more flexible and buoyant. Flexibility is the ability of the tax system to generate proportionately higher tax revenue with a change in tax base, and buoyancy is a wider concept, as it involves the ability of the tax system to generate proportionately higher tax revenue with a change in tax base, as well as tax rates.

Disadvantages of Indirect Taxes

Although indirect taxes have become quite popular in both developed and developing countries yet suffer from various demerits, of which the following are important (Akrani, 2010).

1. High Cost of Collection

Indirect tax fails to satisfy the principle of economy. The government has to set up elaborate machinery to administer indirect taxes. Therefore, cost of tax collection per unit of revenue raised is generally higher in the case of most of the indirect taxes.

2. Increase income inequalities

Generally, the indirect taxes are regressive in nature. The rich and the poor have to pay the same rate of indirect taxes on certain commodities of mass consumption. This may further increase income disparities among the rich and the poor.

3. Affects Consumption

Indirect tax affects consumption of certain products. For instance, a high rate of duty on certain products such as consumer durables may restrict the use of such products. Consumers belonging to the middle class group may delay their purchases, or they may not buy at all. The reduction in consumption affects the investment and production activities, which in turn hampers economic growth.

4. Lack of Social Consciousness

Indirect taxes do not create any social consciousness as the taxpayers do not feel the burden of the taxes they pay.

5. Uncertainty

Indirect taxes are often rather uncertain. Taxes on commodities with elastic demand are particularly uncertain, since quantity demanded will greatly affect as prices go up due to the imposition of tax. In fact a higher rate of tax on a particular commodity may not bring in more revenue.

6. Inflationary

The indirect taxes are inflationary in nature. The tax charged on goods and services increase their prices. Therefore, to reduce inflationary pressure, the government may reduce the tax rates, especially, on essential items.

7. Possibility of tax evasion

There is a possibility of evasion of indirect taxes as some customers may not pay indirect taxes with the support of sellers. For instance, individuals may purchase items without a bill, and therefore, may not pay Sales tax or VAT (Value Added Tax), or may obtain the services without a bill, and therefore, may evade the service tax.

Elaborate analysis of merits and demerits of direct and indirect taxes makes it clear that whereas the direct taxes are generally progressive, and the nature of most indirect taxes is regressive. The scope of raising revenue through direct taxation is however limited and there is no escape from indirect taxation in spite of attendant problems. There is common agreement amongst economists that direct & indirect taxes are complementary and therefore in any rational tax structure both types of taxes must find a place.

Basis of Indirect Taxes

Indirect taxes may take the following forms:

Ad valorem Duty: this is where the rate of duty is a percentage of the value of the goods e.g. wrist watches, 20% ad valorem.

Specific Duty this is where the rate of duty is based on some physical attribute or a combination of physical attributes of the commodity being taxed e.g. weight, gallonage. Wheat flour at 0.20 per kilo.

Alternative Duty this is where the rates are both ad valorem and specific, the rate which provides the higher or lower amount of duty as demanded by law, being applied.

Sliding Scale this is where the ad valorem or specific rate varies according to the unit price of the commodity.

2.1.6 Indirect Taxation and Economic Growth

Indirect taxes are also called taxes on consumption expenditure it is usually on that rate or regressive as the same tax paid by everybody. Indirect taxes in Nigeria include: The value added tax (VAT) and custom duty. They are easier to collect and less prone to evasion. The Nigeria taxes system has since shifted more towards indirect taxation as the alternative to direct taxation which is often more difficult and more costly to collect, prone to high rate of tax and tax avoidance. Theory suggest that the different impact of some of the major indirect taxes such as those on consumption, is fairly limited at least as regards long-run economic performance: these taxes are relatively neutral with respect to savings and investment decisions, they do not discriminate between imports and domestically produced goods and provide for a symmetric treatment of labour and capital income. Hence from the point of view of economic efficiency, a tax system with a relatively low level of direct taxation and a larger share of indirect taxes may have certain advantages (Troset, 1993). Ariyo (1997) contend that distortionary taxation (taxes) on income reduces that rate of economic growth and that non-discretionary taxation (indirect taxes) does not.

2.1.7 Canons of Taxation

According to Anyafo (1996), the principles of taxation mean the appropriate criteria to be applied in the development and evaluation of the tax structure. Such principles are essentially an application of some concepts derived from welfare economists. In order to achieve the broader objectives of social justice, the tax system of a country should be based on sound principles. Jhingan (2004) and Bhartia (2009) listed the principles of taxation as equality, certainty, convenience, economy, simplicity, productivity, flexibility and diversity.

i.   Equity principle: states that every taxpayer should pay the tax in proportion to his income. The rich should pay more and at a higher rate than the other person whose income is less (Jhingan, 2004). Anyafo (1996) states that it is only when a tax is based on the tax payer's ability to pay can it be considered equitable or just. Sometimes this principle is interpreted to imply proportional taxation.

ii. Certainty principle: of taxation states that a tax which each individual is bound to pay ought to be certain, and not arbitrary. The time of payment, the manner of payment, the quantity to be paid ought to all be clear and plain to the contributor and every other person (Bhartia, 2009).

iii. Convenience principle: of taxation states that the time and manner should be convenient to the taxpayer. According to Anyafo (1996), this principle of taxation provides the rationale for Pay –As - You - Earn (PAYE) system of tax payable system of tax collection.

iv. Economy principle: states that every tax should be economical for the state to collect and

the taxpayer to pay (Appah, 2004; Jhingan, 2004; Bhartia, 2009). Anyafo (1996) argues that this principle implies that taxes should not be imposed if their collection exceeds benefits.

v. Productivity principle: states that a tax should be productive in the sense that it should bring large revenue which should be adequate for the government. This is the major reason why governments in all parts of the globe continuously employ tax reforms.

vi. Simplicity principle: states that the tax should be plain, simple and intelligible to common taxpayer. Anyafo (1996) argue that there should be no hidden agenda in the tax law.

vii. Flexibility principle: implies that there should be no rigidity in taxation.

viii. Diversity Principle of taxation states that there should be different variety of taxes.

2.1.8 Economic and Social Effects of Taxation

Orjih (2001) discussed the effects of taxation. These are

A. Effects on Supply of Resources: if savings are taxed, investors would naturally be able to have smaller volume of savings and the overall level of investment will decline. When the government taxes earnings from investment, it might become a problem for firms to raise adequate capital in the financial market.

B. Effects on Retained Profits: When retained profits are taxed, firms fail to depend on their internal resources for expansion but resort to borrowing if they can obtain such loans. Thus the internal capacity to invest is likely to decrease as retained profits are taxed.

C. Effects on Corporate Profit: Taxation has the effect of reducing the net profit after tax

available to the shareholders. If the tax rate is high, the net profit of the firm will be low and this hampers ability of the firm to raise money internally.

D. Effects on Inflation: During periods of rapid and unsustainable economic depression, especially when such expansion has inflationary consequences, the government may attempt to dampen the level of economic activities by increasing tax rate. When tax rates are raised, both personal disposable incomes and corporate profits after tax are reduced, this reduces the purchasing power of both firms and individuals and their demand falls and prices consequently fall as well.

E. Effects on Dividends: when dividends are taxed very heavily, the shareholders would prefer to capitalize their earnings instead of receiving it as cash dividend. However, those investors who are dependent on cash dividend for their living will no longer invest in shares and the implication for the firm would be a fall in available resources.

2.1.9 Challenges Facing Tax System, in Nigeria

The Nigeria tax system is beset by a myriad of challenges (FRN,1997, 2002;Ariyo, 1997; Ola, 2001; Odusola, 2002, 2003; study group on tax reform, 2003);

1. Non availability of Tax Statistics: Taxation has been the oldest governmental activity since the country's unification in 1914, so one would expect tax statistics to be readily available. This expectation, however, is misplaced. With the exception of the states of Delta, Lagos, Kaduna and Katsina and the Nigeria Customs Services, other agencies of the states and relevant federal tax offices have serious failures in data management. Moreover, there are no efforts to have the limited data that are available collated or analyzed on a routine basis, not

to mention, having it stored, or made more easily assessable or retrievable. This situation does not provide much input to policy process.

2. Inability to Prioritize Tax Effort: The political economy of revenue allocation in Nigeria does not prioritize tax efforts. It is, instead, anchored on such factors as equality of states (40 percent), pollution (30 percent), landmass and terrain (10 percent), social development needs (10 percent), and internal revenue effort (10 percent). The approach, discourages a proactive revenue drive, particularly for internally generated revenue, makes all government tiers heavily reliant on unstable oil revenues which are affected by the volatility of the international oil markets. Aside from the national syndrome of "cakesharing", the instability and volatility of oil revenue should have created an opportunity for improved tax efforts within the provisions on taxation ratified in the 1999 constitution. Although some state governments have initiated measured to enhance their tax generation attempts, the outcome has not reflected any level of serious effort

3. Poor Tax Administration: Tax administration and individual agencies suffer from limitations in manpower, money, tools and machinery to meet the ever increasing challenges and difficulties. In fact, the negative attitude of most tax collectors toward taxpayers can be linked to poor remuneration and motivation. Philips (1997) consider the paucity of administrative capacity as a major impediment to the government in its attempts to raise revenue in Nigeria. As of March 2003, the Federal Inland Revenue service (FIRS) had 7,643 staff members throughout the country; of these a mere 12.6 percent, or 645 employees, were tax professionals/officers. The predominance of support staff in a professionally inclined agency like the FIRS does not augur well for the country. The situation at the local government level is more precarious. Anecdotal evidence shows that staffs are not provided

with regular training to keep them abreast of developments in tax related matters. This makes the administration of taxes in terms of total coverage and accurate assessment very weak.

4. Multiplicity of Tax: A major problem facing the country is the multiplicity of taxes. Individuals and corporate bodies complain about the ripple effects associated with the duplication of tax, this problem arose from the states" complaints about the mismatch between their fiscal responsibilities and fiscal powers or jurisdiction. To compensate, some states took the initiative of levying certain taxes, which has led to arbitrariness, harassment and even closure of businesses. To rectify this embarrassing situation, the taxes and Levies Act of 1998 was enacted. Lagos State is a good example of efforts to offset the inequitable distribution of VAT proceeds: it imposed certain taxes and proposed a re-introduction of the sales tax. To control multiple taxation, the joint tax board started to publish a list of approved taxes and levies and to declare another unspecified taxes illegal. This has created a degree of harmony, and checked the hitherto rampant taxation that had made the business environment in Nigeria so harsh.

5. Regulatory Challenges: Political risk and exchange controls pose by far one of the greatest business and regulatory challenges for companies during business in Nigeria. Also company law, protection of intellectual property are challenging are as for companies. Protecting your investment and workforce, being able to extract profits and freely move the workforces are often taken for granted when investing in first world countries. Not so in Africa and Nigeria in particular, where the possibility of forfeiture of the business, or ability to remit profits could.

6. Fraud and Corruption on the part of tax-collecting institutions is an issue that needs to be addressed. Revenue Collectors still engage in fraudulent practices, in spite of the various control measures and the presence of Independent Corrupt Practice Commission (ICPC), and the Economic and Financial crime Commission (EFCC).

7. Lack of equality especially in PIT is major problem of taxation in Nigeria. Self-employed outnumber paid workers and they earn as much as four times that of the formal sector employees, the bulk of PIT is paid by employees whose salaries are deducted at source (Mamud, 2008).

8. Compliance challenges; The failure of employers to keep accurate records and remit all personal income tax (PIT) to relevant authorities remains a challenge in spite penalties and the payment of all tax arrears by defaulters. Also some business concerns keep different versions of record at times all certified by auditors. The correct version is different from the version for the tax authority. There is yet another robust version for the bank showing a buoyant business. Also, most tax-payers have limited ability to keep accurate accounts and are ignorant on their tax responsibilities.

2.1.10 Tax Policy Reforms and Institutional Development in Nigeria

The need to address the problem of low tax returns motivated the Federal government to embark on a number of reforms to existing tax laws. According to Ocran (2009), the objectives of tax reforms in Nigeria include: to bridge the gap between the national development needs and the funding of the needs; to ensure taxation, as a fiscal policy instrument, in achieving improved infrastructure and public service delivery to the public; to improve on the level of tax derivable from non-oil activities, vis-à-vis revenue from oil activities; efforts at constantly reviewing the

tax laws to reduce/manage tax evasion and avoidance; and to improve the tax administration to make it more responsive, reliable, skilful and taxpayers friendly and to achieve other fiscal objectives. The Nigerian tax system has experienced series of reforms since 1904 to date. Some of the various reforms include:

1. Federal Inland Revenue Service (Establishment) Act No. 13 of 2007

2. Companies Income Tax Act (CITA) CAP C21 LFN, 2004 (commencement 1st Jan, 1958)

3. Personal Income Tax Act (PITA) CAP 8 LFN, 2004 (as amended)

4. Petroleum Profits Tax Act (PPTA) CAP 13 LFN, 2004 (commencement 1st Jan, 1958)

5. Deep Offshore and Inland Basin Production Sharing Contracts Act

6. Value Added Tax Act (VATA) CAP D1 LFN, 2004 (commencement 1st Dec, 1993)

7. Education Tax Act CAP E4 LFN, 2004 (commencement 1st Jan, 1993)

8. Capital Gains Tax Act (CGT) CAP C1 LFN, 2004 (commencement 1st April, 1967)

9. Stamp Duties Act CAP S8 LFN, 2004 (commencement 1st April, 1939)

10. National Information Technology Development Agency Act (NITDA)

11. Nigeria LNG (Fiscal Incentives, Guarantees & Assurances) Act

12. Industrial Development (Income Tax Relief) Act

13. Industrial Inspectorate Act

14. Investment and Securities Act, 2007

15. Insurance Act of 1997 (as amended)

16. Custom and Excise Tariffs (Consolidation) Act 2004

2.1.11 Taxation as a tool for Wealth Creation and Employment

Somorin (2011) stated that taxation is recognized as a very important tool for National Development and growth in most societies. One of the major indices by which development and growth can be measured in any society is the amount of wealth, which is created by economic activities undertaken in that society. Furthermore, she stressed that one of the means of creation of wealth for citizens is through meaningful employment, so that citizens are able to earn income to cater for their needs and also contribute taxes to the Government as part of their contribution to National Development.

Somorin (2011) stated that taxation can play a vital and pivotal role in the creation of wealth and employment in the Nigerian economy in the following ways:-

i.   Stimulating growth in the economy, by increased trade and economic activities: In this regard, tax revenues should be used to provide basis infrastructure such as power, roads, transportation and other infrastructure which would facilitate trade and other economic activities.

ii. Stimulating domestic and foreign investment: It is necessary to mention that where the tax system creates a competitive edge for investments in the economy, local investments would be retained in the country while also attracting foreign investments. Increased investment would generate employment and provide wealth in the hands of individuals.

iii. Revenue generated from taxes can also be applied directly to identify sectors of the Nigerian economy to stimulate such sectors: Somorin (2011) emphasized that for this statement to apply, the sectors must be those which have potential for creating

employment, developing the economy and creating wealth for the greater benefit of citizens and government of this country.

iv. Revenue earned from taxes can be used to develop effective regulatory systems, strengthen financial and economic structures and address market imperfections and other distortions in the economic sector: Taxes realized from specific sectors of the economy can be channeled back to those sectors to encourage their continued growth and development.

v. Redistribution of income, whereby tax revenue realized from high income earners is used to provide public infrastructure and utilities to the lowest income earners.

2.1.12 Composition of Nigeria Tax System

The federal tax system in Nigeria refers to the range of taxes over which the federal government has either exclusive or shared jurisdiction. The system also covers the machinery put in place by government for the administration and collection of such taxes. The federally collectable taxes in Nigeria include the petroleum profit tax (PPT), the company's income tax (CIT), capital gain tax (CGT),stamp duty (SD),national information technology development fund levy (NITDEF),education tax(ET),consolidated pool accounts (PIT & POL) and the value added tax (VAT). Though VAT is managed by an agency of the federal government the bulk of the proceeds go to the state governments. The tax which has direct and immediate impact on the average individual is of course, the personal income tax (PIT). The bulk of PIT is derived from the states and accrues to the states of derivation. Each state has its independent machinery for PIT administration and collection. PIT revenue accruable to the federal government comprises PIT derived from residents of the Federal Capital Territory (FCT), armed forces personnel and staff of diplomatic missions.

As at 2007 the federal government agency responsible for the administration and collection of these taxes, (except customs/excise duties) was known as the Federal Board of Inland Revenue (FBIR). The FBIR was later scrapped and replaced with the Federal Inland Revenue Services (FIRS). The collection of customs and excise duties is handled by the Customs and Excise Service.

a. Petroleum Profit Tax

According to Petroleum Profit Tax Act (1959) as amended states that petroleum profit tax is a liability to petroleum profit arising where a company disposes off chargeable oil and gas. It is imposed on the profits of all corporate entities registered in Nigeria or who derive income from oil and gas operations in Nigeria.

Nwezeaku (2005) affirms that PPT involves the charging of tax on the income accruing from petroleum operations. He notes that the importance of petroleum to the Nigeria economy gave rise to the enactment of different laws regulating taxation of incomes from petroleum operations. Federal government collects : 85% for petroleum operations carried out under a Joint Venture (JV) arrangement with the Nigerian National Petroleum Corporation(NNPC) or any non-Production Sharing Contract(PSC) over 5 years. 65.75% for non PSC operation in its first 5 years during which the company has not fully amortised all pre-production capitalised expenditure.50% for petroleum operations under Production Sharing Contracts (PSC) with the NNPC. Petroleum profit tax is a tax applicable to upstream operations in the oil industry as it is related to rent, royalties, margin, oil mining prospecting and exploration leases. It is the most important tax in Nigeria in terms of its share of total revenue, contributing over 70% of government revenue and 95% of foreign exchange earnings Odusola (2006). Okpe (2003), have

it that petroleum profit is levied on the current year basis. That is to say, the basis period for petroleum profit tax (PPT) is the actual profit of the accounting period. Put in another way, the basis period for any assessment year is the same as the accounting period of the company.

According to Nwete (2004) the following are the objectives of petroleum taxation in Nigeria

1. To achieve government's objective of exercising right and control over the public asset, Government imposes very high tax as a way of regulating the number of participants in the industry and discouraging its rapid depletion in other to conserve some of it for future generation. This in effect will achieve government aim of controlling the petroleum sector development.

2. The high profit profile of a successful investment in the oil industry makes it a veritable source for satisfying government objective of raising money to meet its socio-political and economic obligations to the citizenry.

3. To re-distribute wealth between the wealthy and industrialized economics represented by the multinational organizations, who own the technology, expertise and capital needed to develop the industry and the poor and emerging economies from where the petroleum resources are extracted.

4. The high potential for environmental pollution and degradation stemming from industry activities makes it a target for environmental taxation, as a way of regulating its activity and promoting government quest for a cleaner and healthy environment.

5. Cleaner production may be achieved by imposing tax on it for pollution and environmental offences. Under the petroleum Profits Tax Acts of 1959 an oil company, in computing its taxable profits from petroleum operations, is entitled to deduct all

outgoings and expenses which are wholly, exclusively and necessarily incurred by such company for the purpose of such petroleum operations.

The petroleum tax system has also been designed to provide neutrality, so that an investment project which is profitable for an investor before tax will also be profitable after tax. This makes it possible to harmonise the desire to secure significant revenues for the community with the requirement to provide sufficient post-tax profitability for the companies Kjell & Petter (2011).Conversely, increase in natural resources income encourages rent-seeking in the economy whereby all economic units, whether public and private, domestic and foreign have overwhelming incentives to seek links with the state in order to share in the resource pie. This incentive for rent-seeking penalizes productive activities, distorts the entire economy and hinders economic growth (Bawa & Mohammed, 2007).

In 2009, persistent inflation and environmental degradation led to deprivation of means of livelihood and other socio-economic factors to the people of Niger Delta which is the major oil producing state in Nigeria. Despite the fact that crude oil has been the source of Nigerian economy, the economy is faced with high rate of unemployment, wide spread oil spillage, increasing poor standard of living as a result of decreasing gross domestic product, per capita income and high rate of inflation which has an effect on the economic development (Nwezeaku,2010).

b. Company Income Tax

Companies operate with profit motives. They operate within a nation state and government. Government embarks on the construction of good road networks, effective and efficient telecommunication, electricity and water supply. Government also develops human

resources by establishing universities and colleges of technology. It is expedient that the companies should pay tax. Thus how much tax they pay and whether, they are paying the right amount of tax to government, will be determined by the tax laws. Of course, tax is a cost that has to be managed like any other cost, and the level of taxes paid is one of the factors that are taken into account when government is making decisions on where, when and how to provide social amenities and infrastructural facilities to the citizens. Company tax is a tax on the taxable profits of limited companies and some organisations including clubs, societies, associations, co-operatives, charities and other unincorporated bodies.

Many countries impose company tax (corporation tax or company tax) on the income or capital of some types of legal entities. This company income tax generally only applies to companies and treated as taxable entities separate from their shareholders. That is, company income is taxed once at the company level according to the company income tax system. When company dividend payments are made or capital gains are realized income is taxed again at the individual-shareholder level according to the individual tax system. The company tax system serves to ensure a comprehensive income tax system. According to Simeon, Caralee, Rita and Andrei (2009), the principal company income tax measure is the effective tax rate that company pays if it complies with its country's laws, defined as the actual company income tax owed by the company relative to pre-tax profits.

Company's income taxes are chargeable on the income of all companies operating in Nigeria except those that are specifically exempted by the enabling act. Company taxation is administered by the Federal Inland Revenue Service using the Company's Income Tax Act (CITA). The relevant section of CITA provides that company income tax shall be levied and payable for each year of assessment at the rate of thirty kobo for every Naira in respect of a

company's total profits. For the purpose of calculating the amount of tax payable by a company, the Federal Inland Revenue board normally makes use of the audited accounts of the Company. The audited accounts will be adjusted to arrive at a taxable profit to which a tax rate of 30% will be applied for Income Tax and 2% will be applied for Education Tax (Olufunke, 2012).

Firms maximize profits by optimizing on output and prices. Taxes on pure profits or economic rents do not distort a firm's choice of output, and thus do induce distortions or efficiency losses. In practice, since pure profits and economic rents are difficult to measure, taxes are levied on accounting profits. Company tax as currently applied is not a tax on pure profits or economic rents. Consequently, the company tax in its current form does distort economic decision making, which can reduce overall economic output (Mark & Molly, 2014). The amount of company income tax paid by companies has become increasingly important in recent years as government adapt their policies to encourage growth, while recognising the need to raise revenue to fund social investment programme and to repair public finance in the wake of the global economic downturn. It is important to recognise and understand the impact of company tax policies on the revenues received by government.

Companies typically pay income tax on income earned at the company level and then shareholders pay personal income tax upon the income when it is distributed to them Austan (2002). According to Stephen (2010), the effects of company tax are:

i.   Company tax increases the output prices in the company sector. It leads to reduced demand for company sector output and consumer substitution towards output of unincorporated sector. If prices rise, consumers bear some of the burden of the company tax.

ii.   Corporate-sector firms will change use of labour and capital. That is a reduction in output will absolutely reduce demand for all factors and they may also substitute labour for capital.

iii.   Impact on wage rates will depend on the impact on overall labour market. That is wages may rise or fall, depending on substitutability of labour for capital, and relative labour intensity of corporate and unincorporated sectors.

iv.   Overall demand for labour (and hence wages) may rise if corporation can easily substitute labour for capital, and the unincorporated sector is relatively labour intensive. If wages rise, burden of the company tax lies on consumers. But if wages fall, some part of company tax is incident on workers (in all sectors)

Company tax reforms and company tax systems designed to minimize economic distortions can help promote an efficient economy. Generally, tax systems that impose large tax rates on broad tax bases limit tax-induced distortions in economic activity. Broadly, the company tax system distorts the allocation of capital across economic sectors. The company tax may reduce economic efficiency to the extent that it causes a misallocation of capital between corporate and non-corporate business forms (Mark & Molly, 2014)

Company taxes might reduce investment in manufacturing because most manufacturing firms operate in the formal sector, but shift activity from the formal to the informal sector in services, where informality is more prevalent (Davis & Henrekson, 2004).

Lower company tax rates increase returns on company investment but to date they have had no measurable impact on economic growth. Nevertheless, company tax rate reductions

generate significant economic benefits for the economy as a result of their positive impact on after tax business profits.

According to Kimberly (2012) the company income tax raises sizable revenue, and it has important interactions with the personal income tax system. Company taxes fall on both domestic and multinational actors that can respond to taxation along a multitude of behavioral margins that frequently stretch across national borders. And the company tax has implications for the progressivity of the tax system, but these implications are anything but straightforward.

It can be derived that the company tax policy can affect consumption, investment activity and employment to some extent. An appropriate tax system can lead to the optimal resources allocation and to the increase of economic growth. Most studies which are interested in this area however employ only statutory tax rates which have only limited informative value about actual tax burden (Kotlán, Machova & Janickova, 2011).

c. Stamp Duty

Stamp duty is a tax that is levied on documents and instruments to give it legal effectiveness. Historically, this included the majority of legal documents such as cheques, receipts, commissions, marriage licences and real estate transactions. It is required by the State from such transactions so that the parties could contribute in their own measure to the revenue that is so much needed for the running of the affairs of the state. Originally it was a postage stamp that was affixed to the document or instrument to denote stamping. However, this was found to be clumsy and untidy as many people who had carried out transactions worth millions of Naira bought postage stamps as they thought fit and affixed to the documents as they deemed necessary. No checks were carried out as to the appropriateness of the stamp so affixed and the

assessment. The physical stamp (a revenue/postage stamp) so affixed or impressed upon the document denoted that stamp duty had been paid. Any document so lacking in this very important exercise was not acceptable in evidence in any court of law in Nigeria. More modern versions of the tax no longer require postage stamp (Chikezie, 2013).

Stamp duty originated from Spain, and later introduced (or re-invented) in the Netherlands in the 1620s, France in 1651, Denmark in 1657, Prussia in 1682 and England in 1694.Stamp duty was introduced into Nigeria with the coming of the British and Portuguese merchants in the 1890s. It was institutionalized in the early 1900s but did not get the legal backing until 1st April, 1939 when the Stamp Duties Act was enacted. The law has been severally amended; the last resulting in the Stamp Duties Act Cap 411 Laws of the Federation of Nigeria 1990.

Stamp duty is chargeable either at fixed rates or ad valorem (i.e., in proportion to the value of the consideration) depending on the class of instrument. All instruments relating to an act to be performed in Nigeria must be stamped, except such instrument is specifically exempted. Instruments which are required to be stamped under the Stamp Duties Act must be stamped within40 days of first execution. The penalty for late stamping of instruments is N20;but where the unpaid duty exceeds N20, there is a further penalty in the form of interest on the stamp duty payable at the rate of 10% per annum subject to a maximum of the unpaid duty. Also, unstamped documents are generally not admissible as evidence in civil proceedings (PWC, 2015).

d. Capital Gains Tax (CGT)

According to CITA (2004) Capital gains tax is a tax imposed or levied on gains arising from the disposal of items of capital nature of companies and individuals. The capital gains tax

was originally introduced for the first time in Nigeria through Decree No 44 of 1967 as amended to Capital Gains Tax Act Cap C1, LFN 2004.The capital gains tax rate was 20% between 1967 and 1995. In order to stimulate activities in the capital market and encourage capital formation, the capital gains tax rate was reduced from 20% to 10% from 1996– to date (Dike, 2014).

Chargeable assets are: Options, debts and incorporeal property generally, any currency other than Nigeria currency, any form of property created by the person disposing of it, or otherwise coming to be owned without being acquired. Goodwill, copyrights, buildings and chattels.

Exemptions of capital gains tax (PWC, 2015)

Exempt assets and gains: These include gains from disposal of shares and stocks, Nigerian government securities, life assurance policies, main residence or dwelling house of an individual, compensation for wrong or injuries suffered by an individual, mechanically propelled road vehicles for the carriage of passengers (except those not suitable for private use), and decorations awarded for valour or gallant conduct.

Allowable deductions: Initial cost of the asset; Stamp duties; Cost of enhancing the value of the asset; Expenditure incurred in establishing, preserving or defending the title to, or right over the asset; Incidental expenses for the purpose of acquiring or disposing of the assets, such as fees, commission or remuneration paid for professional services of any surveyor, or valuer, or auctioneer, or accountant, or agent, or legal and cost of transfer or conveyance; and cost of advertisement to find a seller during acquisition and advertisement cost to find a buyer during disposal.

Non Allowable deductions are: Premiums paid under a policy of insurance taken against any risk, or damage to, or injury to, or depreciation of or loss of an asset. Expenses that are deductible under Companies Income Tax Act or Personal Income Tax Act.

Relief: Rollover relief can be claimed where proceeds of disposal are used to purchase a new asset of the same class as the disposed asset. The new asset must be acquired (or an unconditional contract for its acquisition formed) within twelve months before or twelve months after the disposal of the old asset. The classes of the assets eligible for relief are as follows:

Class 1:

1A - (i) Building (ii) Land

1B - Plant or Machinery which does not form part of the building

Class 2 - Ships

Class 3 - Aircraft

Class 4 - Goodwill.

Statute of Limitation: 6 years after the end of the year of assessment in which that gain accrues.

e. Value Added Tax

Value Added Tax (VAT) has its origin traceable to the French Economist, Maurice Laure in 1954 originally referred to as "taxesur la valueur" (Wikipedia.org). He envisioned that a sales tax on goods does not affect the cost of manufacture or distribution but was collected on the final price charged to the consumer. VAT, having being introduced in France in 1954 and recorded an influential increase of 45% on the state revenue and consequently, the formation of common

market in Europe (presently the European Union) it became a sin-qua-non requirement for joining of the union for all member countries (Ezejulue, 2001).

In Nigeria, Value Added Tax (VAT) was introduced though Decree No 102 LFN of 1993 to replace sales tax which was in existence. VAT is imposed on goods and services. However, according to the act, certain goods and services are exempted from VAT which include the following: Medical and Pharmaceutical products, product meant for kids, basic food items, Commercial vehicles and their parts, books and other educational Materials, fertilizer, faming machine, Agricultural products, faming transportation equipment and ventinary machine and magazines and Newspapers (Owolabi & Okwu, 2011). VAT is imposed on the net sales value of non-exempt qualifying goods and services in Nigeria (Okoyeuzu, 2013; Ezejulue, 2001;Okpe, 1998). It is levied on individuals, corporations, group, body corporate or organization that consumes buys, procures or imports taxable goods and services.

The beauty of value added tax (VAT) lies in the relative merits when compared with other types of taxes (Ezejulue ,2001). Hence, the credible performance of VAT in countries where it existed created the need for its introduction in Nigeria, which became obvious in 1993 but came into force in January 1994 through decree No 102 LFN of 1993 as amended to date. It has supplanted the income tax as the most important single source of revenue for several governments. As a consumption tax, it is easy to administer and of course difficult to evade and has been embraced by many countries worldwide (Federal Inland Revenue Service, 1993).

Evidence so far supports the view that VAT revenue is already a significance source of revenue to Nigeria government as it contributed 7.26 billion which is 36.5% to federal government revenue in 1994 when it was first practiced in Nigeria. In the same vein, it

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contributed about 20.76 billion 1995 while the budgeted revenue from VAT was 12 billion naira in the same year.

In 1996, revenue from VAT increased to 31 billion naira and 1997 also witnessed revenue of 34 billion naira while in 2016 revenue from VAT is 828.2 billion naira. In terms of total contribution in total federally collected revenue, VAT accounted for about 4.6% in 1994, 5.93% in 1995, 6.2% in 1996, 5.83% in 1997and 3.9% in 2016respectively. Thus, suffice it to say from the evidences above, that it became compelling that VAT has performed extremely well as it contributed to at least 20% of the total government revenue. Hence, it is assisting in the diversification of revenue source of the government and however, reduces over dependence on oil for revenue (Ajiakaiye, 1999). VAT is a self-assessment tax hence it is a fairly precise measurement of the growth of an economy since purchasing power (which determines yield) increases with economic growth that is paid when returns are being rendered. An observation of the Federal Inland Revenue Services (FIRS) was that VAT being a consumption tax, that its administration will be easy and evasion will be more challenging.

Value added tax administration in Nigeria

Value Added Tax (VAT) is administered in Nigeria by the Federal Inland Revenue Service (FIRS) through the VAT directorate Abuja. The jurisdiction of VAT lies with the federal government of Nigeria and the proceeds from VAT are distributed among the three tiers of government in Nigeria in an approved ratio, currently, the federal government receives fifteen percent (15%), state government gets fifty percent (50%) while the local government gets thirty-five percent (35%) (Sani, 2011).In Nigeria VAT consists of import VAT and non import VAT.

Features of good value added tax system

According to Norregard (2013), the benchmark which form the basis for appraising a VAT system in order to determine its good over other taxes are:

Neutrality: The interference of VAT with the choices made by both producers and consumers is minimal. This implies that the economic distortion resulting from changing relative prices compared to the pre-tax situation must minimize.

Fairness: VAT is accompanied by appropriate change in other taxes or in social transfer system to alleviate or neutralize negative distributional consequences.

Prices stability: VAT does not lead to sustained inflationary pressure either at its introduction or in the long run.

Revenue aspect: VAT supplies the government with good amount of tax revenue and reduces the possibility of tax evasion and avoidance.

Administration and compliance cost: VAT minimizes or reduces government administrative and compliance cost, this is because much machineries are not needed for its administration.

Merits of value added tax over other types /forms of taxes

- Neutrality: This implies a situation where a tax has no influence on the behaviour of both the consumers and the producers. A tax that has a neutral effect will obviously have a non-distortionary effect, hence VAT has only one rate and the broadest possible base and this potential makes it better than any other type of tax since it minimizes tax induced distortions.

- Large revenue earner: VAT is a reliable valuable and large potential source of revenue for the government; it contributes 12-30 percent of (GNP) Gross National Product (Messre & Nlorregard, 1998)

- Efficiency: VAT has eliminated the inefficient distortionary or badly administered taxes, such as taxes on capital goods, export or imports that reduces the tax base, as well as those that involves a cumbersome (and sometimes corrupt) administration. This is due to the system, which applies taxes to only a few items and is easy to administer with broader, more neutral tax base (Ezejulue, 2001).

- Broad base: VAT is a higher yielding source of revenue because it has inherent potentiality of having the broadest base in tax history as a consumption tax. It cut across all consumables goods and services rather than sales tax which it repealed (Ezejulue, 2001)

f. National Information Technology Development Fund Levy (NITDEF)

National information technology development fund levy can also be regarded to as information technology tax (IT Tax). IT Tax is payable by specified companies with turnover of N100 million and above. The tax when paid is tax deductible for company income tax purposes. The tax is governed by the National Information Technology Development Act (NITDA) 2007.The rate is 1% of profit before tax.

Entities liable:

  i.   GSM service providers and all telecommunications companies;
 ii.   Cyber companies and internet providers
iii.   Pension managers and pension related companies;

iv.   Banks and other financial institutions; and

v.   Insurance companies.

Returns and Payment: IT Tax is assessed by the FIRS and is payable within 60 days of service of a notice of assessment. Penalty for non-compliance is 2% of the tax payable.

g. Consolidated Pool Account: Consists of personal income tax and pre-operational levy

i. Personal Income Tax (PIT)

According to Akintoye and Tashie (2013) personal income tax is tax paid on one's personal income as distinct from the tax paid on the firm's earnings. In an incorporated firm, the owners (shareholders) pay taxes on both their income (salary or dividend from the firm) firm's income (profits). In partnerships and sole-ownerships, the tax is paid only once on the firm's profits. Personal Income Tax Rate in Nigeria is reported by the Federal Inland Revenue Service, Nigeria. The Personal Income Tax is a tax collected from individuals and is imposed on different sources of income like labour, pensions, interest and dividends. Individuals including employees, Partnerships and Unincorporated Trusts are liable to tax under this act.

PIT rate is applied on a graduated scale on taxable annual income as set out below:

First N300,000	**7%**
Next N300,000	11%
Next N500,000	15%
Next N500,000	19%
Next N1,600,000	21%
Above N 3,200,000	24%

Note: As a result of the consolidated relief allowance of at least 21% of gross income, the top marginal tax rate is 18.96% for income above N20 million as only 79% of income is taxed at 24% while for income below N20 million the top marginal rate is 19.2%.Minimum tax is

computed at 10% of an individual's gross income .This is applicable where actual tax payable using the above table results in less than 1% of gross income

Business income

PIT is applicable on the business income earned by individuals, partnerships, trusts and other unincorporated entities which have an identifiable place of operation in Nigeria. Other conditions that create an exposure to PIT include: a, the individual, executor or trustee habitually operates a trade or business through a person in Nigeria authorised to conclude contracts on his behalf; B, the trade or business in Nigeria involves a single contract for surveys, deliveries, installations or construction; C, the trade or business is carried out in a manner which in the opinion of the relevant tax authority is deemed to be artificial. The PIT so determined will be payable to the relevant state tax authority where the individuals, partnerships, trusts or other unincorporated entities is resident. Revenues from the Personal Income Tax Rate are an important source of income for the government of Nigeria (Anyafo,1996).

Employment Income

In the case of employment income, a person is liable to tax income in Nigeria under two criteria:

1. If the duties of his employment are wholly or partly performed in Nigeria, unless the duties are performed on behalf of an employer who is in a country other than Nigeria, and the remuneration of the employee in not borne by a fixed base of the employer in Nigeria; and the employee is not in Nigeria for a period or periods amounting to an aggregate of 183 days or more inclusive of annual leave or temporary period of absence in any twelve month period ; and the remuneration

of the employee is liable to tax in that other country under the provisions of the avoidance of double taxation treaty with that other country.

2. If the employer is in Nigeria unless the employment duties are wholly performed and the remuneration paid outside Nigeria. Employers are required to deduct and account for personal income tax on the employment income of their employees through the Pay-As-You-Earn (PAYE) system. PAYE tax must be remitted on or before the 10th day of the month following the payment of salary (e.g. PAYE tax deducted from January salary should be remitted by 10th of February).

ii. Pre-Operational Levy

Where an enterprise has not commenced business after at least six months since its incorporation date, it shall, for each year it obtains a tax clearance certificate (TCC), pay the following levies: ₦20, 000 ($63.10) for the first year; and ₦25, 000 ($78.90) for every subsequent year before a TCC is issued.

h. Education tax

Tertiary Education Trust Fund (TET Fund) was established as an intervention agency under the TET Fund ACT - Tertiary Education Trust Fund (Establishment, etc) Act, 2011; charged with the responsibility for managing, disbursing and monitoring the education tax to public tertiary institutions in Nigeria. To enable the TET Fund achieve the above objectives, TETFUND ACT, 2011 imposes a 2 percent (2%) Education Tax on the assessable profit of all registered companies in Nigeria. The Federal Inland Revenue Service (FIRS) is empowered by the Act to assess and collect Education Tax. The Fund administers the tax imposed by the Act

and disburses the amount to tertiary educational institutions at Federal and State levels. It also monitors the projects executed with the funds allocated to the beneficiaries.

The mandate of the Fund as provided in Section 7(1) (a) to (e) of the TETFUND ACT, 2011 is to administer and disburse the amount in the Fund to Federal and State tertiary educational institutions, specifically for the provision and maintenance of the following: Essential physical infrastructure for teaching and learning, instructional material and equipment, research and publication, academic staff training and development

Any other need which, in the opinion of the Board of Trustees, is critical and essential for the improvement of quality and maintenance of standards in the higher educational institutions.

TET Fund ensures that funds generated from education tax are utilized to improve the quality of education in Nigeria without direct contract awarding by: Providing funding for educational facilities and infrastructural development. Promoting creative and innovative approaches to educational learning and services. Stimulating, supporting and enhancing improvement activities in educational foundation areas like Teacher Education, Teaching Practice, Library Development, etc. Championing new literacy-enhancing areas such as scientific, information and technology literacy.

A good tax system as a macro-economic policy tool have a direct impact on economic growth of a nation given it various effects on savings, investment, labour and research and the possible substitution between these factors. Thingan (1995) believed that tax is the most potent economic tool which facilitates reduction of private consumption, increase investment, resource allocation and transfer to government resources for economic growth is also a tool for expansion and contraction of an economy.

2.1.13 Human Development Index (HDI)

Human Development Index measures long-term progress in three basic areas of human development namely: access to safe and healthy life, access to education, and a decent living standard (United Nations Development Programme (UNDP), 2014). Human Development Index (HDI) is a move towards a more holistic view of development which had previously focused more on per capita income. United Nation's Human Development released Human Development Index (HDI) first as part of her 1990 Report. The report stated that "development is much more than just the expansion of income and wealth; it should be a process of enlarging people's choices" (UNDP, 1990). The United Nations developed Human Development Index (HDI) as a measuring tool that ranks countries' levels of social and economic development based on three criteria: Health Index, Education Index, and Standard of Living Index. The health index represents life expectancy (i.e. the numbers of years) of a particular region or country under study. It correctly describes the extent to which life expectancy of the people in the area or country under study is greater than the minimum life expectancy. According to the United Nations (UN), the minimum and maximum life expectancy in the world is set at 25years and 85 years respectively (UNDP, 2014).

The education index represents the literacy rate and enrolment rate of people, in a particular region or country under study. The Literacy rate means the percentage of people of 16 years of age and above who are literates (UNDP, 2014). These people must be able to write, read and understand a simple statement regarding their day-to-day life. While enrolment rate is the percentage of children of school-going age (primary, secondary and tertiary), who go to school.

The standard of living index represents the per capita income of a region or country expressed in US$ at purchasing power parity (PPP) rate. They consist of the income of a country, the exchange rate between the country's currency and US$, and the price level index of the country in comparison to the US price level. Nigeria's HDI value for 2014 is 0.504, which is in the low human development category ranking the country at 152 out of 187 countries and territories. The Nigeria's HDI value increased from 0.466 to 0.504, between 2005 and 2014, an average annual growth of about 0.81 percent or an increase of 8.1 percent (UNDP, 2014).

Taxation and Human Capital

In the growth model, human capital is the next factor which is influenced by taxation. Because of growing marginal product, human capital has such an effect that investment into education is effective in economies which are in the steady state. A positive relation between investment into human capital and long-term economic growth was confirmed in many studies (Jones & Manuelli, 2001;or Teixeira & Fortuna ,2003). Lin (2001) confirms that a positive dependency can exist between economic growth and taxation if revenues from taxes are used only for human capital accumulation. Individual companies invest into their employees' training and development only once, usually in the first period of employment (Becker, 1993). However, when companies invest into human capital, they must differentiate between the general and specific capital. General capital can be utilized by employees also at other employer, but they do not bear any investment costs and the employer can therefore afford to pay the employee a higher salary (corresponding to higher labour productivity). Due to this, companies require that spending connected with investments into general human capital is taken up by the employees themselves (Kotlán, Machová & Janíčková, 2011). The situation is different in the case of specific capital since employee productivity is increasing only with the given employer who is

then logically willing to take up a part of the investment costs and pay the employee a higher salary than is his/her productivity. However, this salary will be lower than increased productivity (connected with the investment into specific human capital) due to the fact that employer bears the risk of losing the employee (Kotlán, et al.2011).

It is necessary to realize that human capital is typical for its illiquidity, it is highly risky, and presents insufficient level of certainty (Grochulski & Piskorski (2007), and it is especially due to these reasons that financial institutions provide funds for investment into human capital only in a small rate. Tax reliefs are the most important motivation element for the employer to invest in human capital (Jacobs, 2007).

2.1.14 Gross Domestic Product

The Organisation for Economic Co-operations and Developments (OECD) defines GDP as "an aggregate measure of production equal to the sum of the gross values added of all resident, institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs)." GDP by Industry can also measure the relative contribution of an industry sector. This is possible because GDP is a measure of 'value added' rather than sales; it adds each firm's value added (the value of its output minus the value of goods that are used up in producing it). For example, a firm buys steel and adds value to it by producing a car; double counting would occur if GDP added together the value of the steel and the value of the car. Gross output (GO) measures sales at all stages of production and therefore involves some degree of "double counting." Because it is based on value added, GDP also increases when an enterprise reduces its use of materials or other resources ('intermediate consumption') to produce the same output. The more familiar use of GDP estimates is to calculate the growth of the economy from year to year (and recently from quarter to quarter). The

pattern of GDP growth is held to indicate the success or failure of economic policy and to determine whether an economy is 'in recession'.

History

William Petty came up with a basic concept of GDP to defend landlords against unfair taxation during warfare between the Dutch and the English between 1652 and 1674. Charles Davenant developed the method further in 1695. The modern concept of GDP was first developed by Simon Kuznets for a US Congress report in 1934. In this report, Kuznets warned against its use as a measure of welfare . After the Bretton Woods conference in 1944, GDP became the main tool for measuring a country's economy. At that time Gross National Product (GNP) was the preferred estimate, which differed from GDP in that it measured production by a country's citizens at home and abroad rather than its 'resident institutional units' . The switch to GDP was in the 1980s (Apostolides, 2013).

The history of the concept of GDP should be distinguished from the history of changes in ways of estimating it. The value added by firms is relatively easy to calculate from their accounts, but the value added by the public sector, by financial industries, and by intangible asset creation is more complex. These activities are increasingly important in developed economies, and the international conventions governing their estimation and their inclusion or exclusion in GDP regularly change in an attempt to keep up with industrial advances. In the words of one academic economist "The actual number for GDP is therefore the product of a vast patchwork of statistics and a complicated set of processes carried out on the raw data to fit them to the conceptual framework." Maddison (1991) calculated historical GDP figures going back to 1830 and before.

Determining Gross Domestic Product (GDP)

GDP can be determined in three ways, all of which should, in principle, give the same result. They are the production (or output or value added) approach, the income approach, or the expenditure approach. The most direct of the three is the production approach, which sums the outputs of every class of enterprise to arrive at the total. The expenditure approach works on the principle that all of the product must be bought by somebody, therefore the value of the total product must be equal to people's total expenditures in buying things. The income approach works on the principle that the incomes of the productive factors ("producers," colloquially) must be equal to the value of their product, and determines GDP by finding the sum of all producers' incomes.

Tax Policy and Economic Growth

Tax structure varies all around the world with the prime motive of attaining maximum revenue with minimum distortion, different country have different philosophies about taxation and have different method for collection, in the same manner countries have different uses of their revenue which affect the growth differently (Masood, Sohaib, & Syed, 2000).

Taxes have different effects on various economic activities. Taxes affect individuals' decisions to save, the decision of firms to produce, invest, create jobs, innovate investment in human capital and supply of labour. Taxation has both positive and negative effects on GDP i.e. income taxes have strong negative effects on economic growth (Poulson & Kaplan, 2008); Customs and excise duties inversely affect economic growth (Ebiringa & Yadirichukwu, 2012). Corporate taxes are more harmful for economic growth than other taxes. As higher corporate tax rates have multiple effects on entire economy i.e. it affects entrepreneur decisions to invest that effects employment level as well as production and inflation rate (Lee & Gordon, 2005).

Statutory corporate tax rates are related with lower per capita income in all countries under analysis over time (Dahlby, 2012).

Distortions to choice and disincentive effects cause negative effects whereas the expenditures directly financed by taxation cause the positive effects (Myles, 2007). Some studies present positive relationship between tax and economic growth (Mashkoor,Yahya & Ali, 2010; Ioan & Constanti, 2010). Padovano and Galli (2001) analyzed the relationship between tax rates and economic growth and also found negative effects of marginal income tax rates on economic growth. Koester and Kormendi (1989) analysed effects of taxation on aggregate activity and economic growth and found marginal tax rate has significant negative effects on economic activity. In the case of investment incentives, high tax rates depress the rate of investment, or slow down the growth in the capital stock through high corporate income and individual income tax rates, high capital income tax rates, high payroll tax rates and high tax rates on production.

Tax policy can also distort the investment from high tax sector to the low tax sector with low efficiency by affecting the marginal productivity of the capital Harberger (1966). Investment decisions of firms do not depend on effective average tax rates (EATR) but do depend on effective marginal tax rates (EMTR) when these firms are financially constrained. Gupta (2012) analysed the economic impacts of income tax on saving and investment. He concluded that with low income tax people has more disposable income that can be used for saving and investment. Schreiber, Spengel and Lammersen (2002) analysed effects of taxation on financing decisions and investment. Decision makers may take wrong decisions by ignoring complicated tax features and rely on just statutory tax rates. They concluded that effective tax rates are useful for both business managers and policy makers to access the investment tax burden.

In the case of consumption taxes have adverse effects on house hold consumption as well as aggregate consumption. An increase in taxes on consumption through increase in VAT rates reduces the consumption in short-run and a larger reduction in the long-run (Alm & Asmaa ,2013). Similarly VAT have different effects on consumption behaviour depending on the after and before the time of implementing the tax rates. Before implementing the VAT rate consumption is increased after implementing its immediate response is negative, then with the passage of time consumption is gradually increased (Miki, 2011). Richter (2000) described different types of consumption taxes in Jamaica i.e. value-added tax as general consumption tax (GCT) and several excise duties as special consumption tax (SCT). Garner (2005) explored the macroeconomic effects of replacing the current income tax based federal tax system with consumption tax. He found that taxing income rather than consumption is higher tax burden for households. Parker (1999) explored the reaction of household consumption in response to predictable change in payroll tax rates in USA. They concluded that if the expected change in tax rates influenced the consumption behaviour, then the fiscal stabilization might affect consumption.

Romer (1986) emphasizes factors such as "spillover effect and learning by doing" by which firms specific decision to invest in capital and research and development, or individual investment in human capital, can yield positive external effects that benefit the rest of the economy, in this model government spending and tax policies can have a long-run of permanent growth effects. Gordon (1998) shows a low corporate tax rate relative to personal tax rates encourages risk-taking. Viewed from this perspective, Gentry and Hubbard (2000) also provide evidence that a progressive personal tax structure discourages risk-taking.

Solow (1956) was the first to examine how taxation affects growth. The neoclassical growth model of Solow implies that steady state growth is not affected by tax policy. In other words, tax policy; however distortion has no impact on long term economic growth rates, even if it does reduces the level of economic output in the long term. Atkinson (1995) argued that the different uses of total government expenditure affect growth differently and a similar argument applies to the way tax revenue is raised. Due (1964) supports that countries which are based on indirect taxation have grown more rapidly than those based on direct taxation.

For example, the economic growth of Singapore can be attributed to low rates of corporate taxation and personal income taxation. Burgess and Sterm (1993) argue that the structure of taxation in developing countries differs from that of developed. For developing countries, we have roughly two-thirds of tax revenue coming from indirect taxes, while for developed countries two-thirds comes from direct taxes. They suggested that tax structure can change over time to maximize the economic growth rate.

Kneller, Bleaney and Gemmell (1998) studied the effect of the structure of taxation and public expenditure to the steady-state growth. Taking account of the financing assumption associated with the government budget constraint, their results are consistent with the Barro (1990) model. Specifically they find that non-distirtionary taxation and productive expenditure enhances growth.

Engen and Skinner (1999) have suggested five possible mechanisms by which the taxes may affect the growth, taking into account the decomposition rate of growth based on the contribution factors of production:

(1) Investment rate may be inhibited by high taxes, by taxing personal and corporate income as well as taxes on capital gains or reduced deductibility of depreciation;

(2) Taxes reduce labour supply by influencing labour-leisure choice for leisure or determination to achieve qualification, training, education;

(3) Fiscal policy can affect productivity growth by discouraging effect on research and development expenses, which can boost share capital and labour productivity.

(4) Taxes can influence the marginal productivity of capital by targeting investments in a high tax area to another with lower taxes, which have a lower productivity

(5) High taxes on labour supply can distort the efficient use of human capital, discouraging workers to work in areas with high productivity, through high tax burden.

2.1.15 Industrial Production

The Organisation for Economic Co-operations and Developments (OECD, 2001) states that industrial production measures the real or inflation-adjusted output produced by the manufacturing, mining, and electric and gas utilities industries. The data published include the total capacity utilization rate and month-over-month and year-over-year changes for industrial production and manufacturing output. The change in industrial production is measured monthly using the industrial production index. The Industrial Production Index is sensitive to consumer demand and interest rates. As such, Industrial Production becomes an important tool for future GDP and economic performance forecasts. Industrial Production figures are also used to measure inflation by Central Banks as high levels of industrial production may lead to uncontrolled levels of consumption and rapid inflation.

The Industrial Production reacts quickly to ups and downs in the business cycle, and is correlated with consumer conditions like unemployment rates and earnings. In any given month, one can observe if production of capital goods is growing more than the consumer goods or vice versa. One can also see whether manufacturers are still producing construction supplies and other materials. Therefore, it serves as a leading indicator of economic health, as it gives a more current view of business activities and a general picture of which sectors of the economy are growing and which are not. Hence, investors can use the industrial production to find out what the economic backdrop is for various markets and their portfolios. Stock market prefers healthy economic growth because it translates to higher corporate earnings. While bond market likes to see a more subdued growth so that they will have less inflationary pressures (Ogunbanjo, 2016).

2.1.15.1 History of Industrial Production in Nigeria

Ayodele and Falokun (2003) told the story of Nigeria and taxation. Before the discovery of oil in commercial quantity in Nigeria, the country was one of the major agrarian countries in Africa, and as such depended largely on proceeds of agricultural products. After Nigeria gained her independence, the drive towards industrialization led the government to adopt the import substitution strategy, in order to reduce heavy independence on the foreign manufactured products and equipments. Sequel to this, the government created incentives such as tax holidays to new firms, export license waiver, granting of pioneer status, etc to encourage foreign investors to invest in the industrial sector of Nigeria. Subsequently, the import substitution strategy gave rise to export promotion industrialization, particularly after the 1972/1973 windfall gains from crude oil price explosion at the global crude oil market; which led to heavy reliance oil revenue. The windfall gains improved the foreign exchange earned to purchase equipments and machines, thereby, enhancing the performance of the industrial sector and the manufacturing sub-sector. In

1981, the price of crude oil fell sharply, which had implications for the Nigerian economy, since oil revenue was the mainstay of the country; for instance, in the manufacturing sub-sector, the manufacturing value-added in 1985 was 8.7%, while it was 8.2% and 6.7% in 1990 and 1995 respectively, and by year 2000, the manufacturing value added stood at an average of 6% while in 2015 it stood at 9.5% CBN (2015).

It is equally to note that due to the oil-dependent nature of the Nigerian economy, the country had transformed into an inefficient and import-dependent economy. As a result there was the need to evolve a structure that will support a diversified, dynamic and export oriented economy. This led to the adoption of the proposed World Bank/International monetary fund (IMF) Structural Adjustment Programme (SAP) in July, 1986. Policies targeted at improving industrialization included technical devaluation of the Nigerian currency to favour manufactured exports, tax holidays for entrepreneurs wishing to invest in economically disadvantaged areas, promulgation of the Export Incentive Decree of 1986, as well as adoption of privatization and commercialization policy the enhancement of industrial productivity and efficiency. Relevant laws were made to energise the processes of effective industrialization, most of which are documented in the 1988 industrial policy of Nigeria (Ayodele & Falokun, 2003).

The adoption of the SAP had some implications for the industrial performance in Nigeria. For instance, the proportion of industrial output to GDP revealed that the contribution of the industrial sector to GDP was 40% in 1980, while in the mid-1980s, it fell to 23%. This could be as a result of the oil glut experienced in the late 1970s. But by mid-1980s, the global oil price started picking up again and by 1990s the contribution of the industrial sector to GDP began to rise from 41% in 1990 to 45% 1995 and in year 2000, it was about 50%, in 2015 38.4% (CBN,2015). It is pertinent to note that the increasing contribution of the industrial sector to the

GDP was largely as a result of the performance of oil sub-sector. For instance, in 1980, the share of oil revenue in total revenue was 81.6% in 1980, while in 1985, it was 72.2%; in 1990 and year 2000, the share of oil revenue in total revenue was 73.3% and 83.5% and by 2014, it was about 82% but fell below 75% in 2015 CBN(2015) .

One of the policies also designed to enhance industrial advancement is the National Economic Empowerment and Development Strategy (NEEDS) which started in the year 2001. As part of its plan, it was expected that an annual growth rate of 7% will be achieved in the industrial sector while special support be given to industries, oil and gas as well as small and medium scale enterprises. A major policy thrust of NEEDS was the idea that Nigeria should stop squandering its natural resources by selling them as crude products, instead, these products in crude form should be processed within Nigeria, thereby, creating opportunities for more jobs. In essence, the policy of the NEEDS proposed developing the industrial sector by relying more on local resources and less on imports. This was expected to be guided by a local research and development strategy that seeks to promote science and technology-based small and medium-size enterprises (Adejumo, Olomola & Adejumo, 2013).

The industrial sector in Nigeria has challenges. Some of the principal challenges include poor infrastructure, while the most serious of all is the problem of inadequate power supply. In addition, the failure of past government at infusing greater transparency and accountability in the oil and gas industry affected the expected growth in the industrial sector. The government has consequently introduced the Petroleum industry bill in order to establish the legal and regulatory framework, as well as the institutions and regulatory institutions for the petroleum industry (Ogunbanjo, 2016).

2.1.15.2 Taxation and Production

According to (Esmaeel, 2013) the main effects of taxation on production are: 1. Effects on Ability to work, 2. Effect on the Ability to Save, 3. Effect on Ability to Invest. These are highlighted as follows:

1. **Effects on Ability to work**: Taxes reduce disposable income. As such, the buying capacity and consumption expenditure are curtailed. These cause the standard of living to deteriorate. Consequently, efficiency and ability to work is adversely affected. This happens in the case of low income group people. For the rich, however, the ability to work is not so much affected by taxation. To avoid the ill-effects of taxation, it is essential to grant exemption limits in income tax for the benefit of poor and middle income groups. Again, there are some taxes which carry a beneficial impact on the ability to work. For instance, taxes on goods like liquor, cigarettes, opium, etc. which prohibit their consumption will lead to an improvement in general health and efficiency of those who are addicted to them.

2. **Effect on the Ability to Save:** All taxes always have an adverse effect on one's saving capacity. Ability to save is adversely affected by taxation as taxes fall on income and saving is the function of disposable income. As disposable income declines, savings tend to decline. Though normally, taxation is on the surplus income (the income which is in excess of the minimum standard of consumption level), the ability to save will be reduced proportionally to the amount of taxation, as it will adversely affect the marginal propensity to save by reducing the surplus income out of which saving is generated.

Hence, taxation would cause a reduction in the saving potentiality. Especially, the rich, having a high marginal propensity to save, are affected most due to progressive taxation based on the ability to pay criterion. A progressive taxation substantially reduces the ability to save of the rich class. Ability to save is also reduced by indirect or commodity taxation, because these taxes cause a rise in prices which induces a higher spending from a given income, thus, resulting in less saving.

Similarly, the corporate savings (that of business firms), too, are reduced by corporate taxation. Corporate ability to save is, however, less affected than a wealthy individual's ability to save since equity does not demand progression generally in the taxation of corporate income. But, when government spends the tax income for the benefit of the poor, then their ability to save is enhanced. So, while evaluating the effects of a tax, the effects of public expenditure should also be taken into consideration to appraise the correct position in the economic system. It is equally true that when direct taxes are imposed, they absorb the excessive purchasing power of the commodity, cause a deflationary effect which in turn enhances the real income of the common people and their capacity to save.

3. **Effect on Ability to Invest:** Ability to invest in the private sector evidently falls on account of the reduced saving ability caused by the tax imposition. Hence, all taxes have the immediate effect of reducing the amount of resources available for investment in the private sector.

In fact, taxation leads to a vicious circle in that when a tax is imposed, ability to save is reduced, less saving resources are available for investment in capital formation of the private sector, so there will be reduction in capital which in turn would lead to low productivity and low

income, causing a further reduction in the ability of the people to save. As such, it may be stressed that to maintain and improve the investment function in a free economy, it is necessary to ensure that the rate of savings is not discouraged by taxation.

This gloomy picture of effect of taxation is, however, painted without taking into account the beneficial effects of public expenditure. In fact, public spending compensates and tends to surmount the adverse effects of taxation. The reduction in ability to work and save caused by taxation is more than mitigated by the amenities of life provided by State expenditure.

When the overall social benefits of expenditure exceed the social sacrifice involved in taxation, the net benefits of public spending will produce a favourable effect on the ability to save and work. Similarly, the reduction in private investment caused by taxation is more than offset by the public investment programmes.

In fact, the public sector investment may fill the investment gap of effective demand of the community and with due capital formation, can accelerate the tempo of economic development. Public investment may be designed to break the vicious circle of poverty in an underdeveloped economy. Thus, though analytically, the effects of taxation are discussed separately from those of public expenditure, in practice economic consequences of a fiscal policy can hardly be segregated.

2.1.16 Tax Revenue and Nigerian External Debt Performance

The act of borrowing creates debt .Debt therefore refers to the resources of money in use in an organization which is not contributed by its owners and does not in any other way belong to them (Oyejide, Soyede & Kayode, 2004). It is a liability represented by financial instrument or other formal equivalent. Public debts (internal and external) are debt incurred by the government

through borrowing in the domestic and international markets in order to finance government projects. Table 2.1 shows the Debt stocks and Revenue of the Federal Government of Nigeria from 1992 to 2016.

Table 2.1: Total Revenue, Total Tax Revenue, Domestic Debt, External Debt and National Debt from 1992 to 2016.

YEAR	Total Revenue (N'Billion)	Total Tax Revenue (N'Billion)	Domestic Debt (N'Billion)	External Debt (N'Billion)	National Debt (N'Billion)
1992	190.45	56.8939	177.96	544.26	722.22
1993	192.77	68.7617	273.84	633.14	906.98
1994	201.91	62.3383	407.58	648.81	1,056.39
1995	459.99	85.4972	477.73	716.87	1,194.6
1996	523.60	106.4	419.98	617.32	1,037.3
1997	582.81	130.8	501.75	595.93	1,097.68
1998	463.61	99.4	560.83	633.02	1,193.85
1999	949.19	171.9	794.81	2,577.37	3,372.18
2000	1,906.16	455.3	898.25	3,097.38	3,995.63
2001	2,231.60	586.6	1,016.98	3,176.29	4,193.27
2002	1,731.84	433.9	1,166.00	3,932.88	5,098.88
2003	2,575.10	703.1	1,329.68	4,478.33	5,808.01
2004	3,920.50	1,194.8	1,370.33	4,890.27	6,260.6
2005	5,547.50	1,741.8	1,525.91	2,695.07	4,220.98
2006	5,965.10	1,863.2	1,753.26	451.46	2,204.72
2007	5,727.50	1,846.9	2,169.63	438.89	2,608.52
2008	7,866.59	2,972.2	2,320.31	523.25	2,843.56
2009	4,844.59	2,197.6	3,228.03	590.44	3,818.47
2010	7,303.67	2,839.3	4,551.82	689.84	5,241.66
2011	11,116.90	4,628.5	5,622.84	896.85	6,519.69
2012	10,654.75	5,007.6	6,537.53	1,026.90	7,564.43
2013	9,759.79	4,805.9	7,118.98	1,387.33	8,506.31
2014	10,068.85	4,714.5	7,904.02	1,631.52	9,535.54
2015	6,912.50	3,741.6	8,837.00	2,111.53	10,948.53
2016	5,679.03	3,307.40	11,058.20	3,478.92	14,537.12

Source: Central Bank of Nigeria Statistical Bulletin (CBN) and Federal Inland Revenue Services (FIRS) 2016.

A closer observation of the figures in the Table 2.1 is reflected in subsequent sub-sections.

2.1.16.1 Total Tax Revenue

Total tax revenue was ₦56.96b in 1992 and all time high at ₦5trillion in 2012 which is connected to increase in revenue from petroleum profit tax. From 2013 to 2016 tax revenue has been decreasing this can be attributed to recession in the economy.
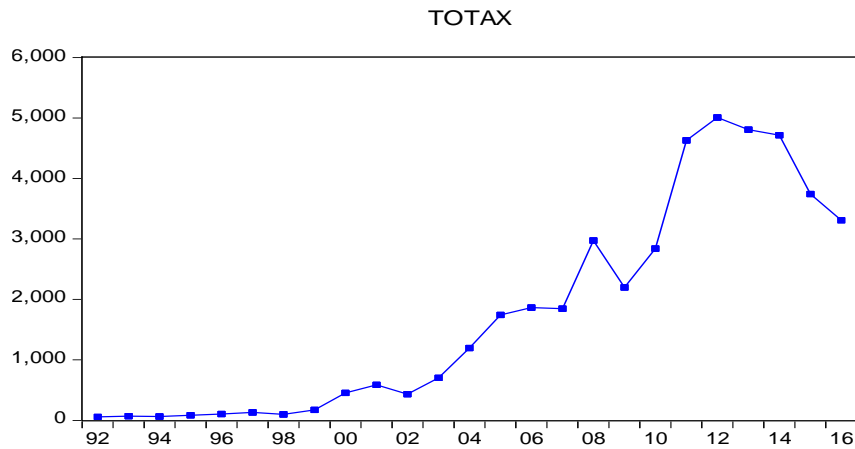
Fig 2.1: *Trend in Total Tax Revenue 1992 to 2016 (Derived from table 2.1)*
        Source: *Federal Inland Revenue Service (FIRS) 2016.*

2.1.16.2 Total Revenue

Total revenue in Nigeria for the period under study has been fluctuating. It was ₦190billion in 1992 from there it has been increasing with sharp decline in 2009. From 2014 total revenue has been declining which is connected to fall in oil price and oil production.
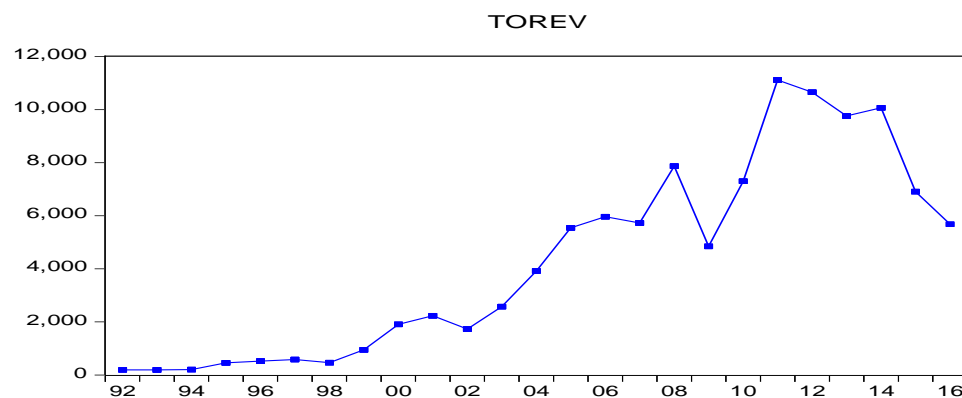
Fig 2.2: *Trend in Total Revenue 1992 to 2016 (Derived from table 2.1)*
        Source: *Central Bank of Nigeria (CBN) Statistical Bulletin 2016.*

2.1.16.3 Domestic Debt

Domestic debt for the period under study has been increasing with the bulk of the debt coming from the banking system. It was ₦177.96b in 1992 with the highest debt occurring in 2016 which is ₦11trillion.

DDEBT
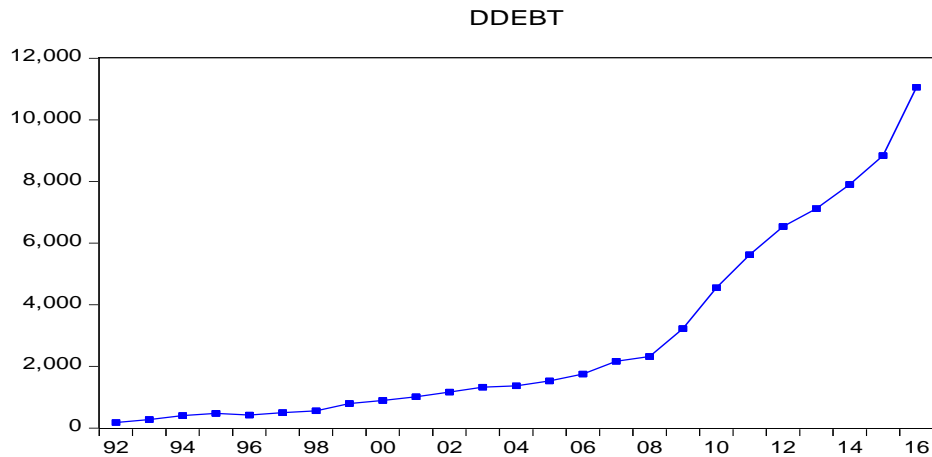
Fig 2.3: Trend in Domestic Debt 1992 to 2016 (Derived from table 2.1)
    Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2016.

2.1.16.4 External Debt

External debt in the country was 544.26 in 1992 but increased to 4,890.27 in 2004. In 2005 there was a decline in external debt which is as a result of debt cancellation received by the country. From 2006 to date Nigeria external debt has been increasing.

EXDEBT
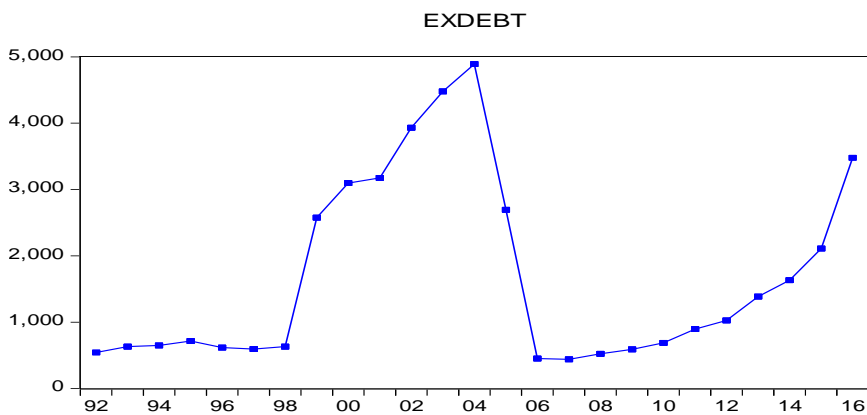
Fig 2.4: Trend in External Debt 1992 to 2016 (Derived from table 2.1)
    Source: Central Bank of Nigeria (CBN) Statistical Bulletin 2016.

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2.1.15.5 National Debt

National debt in the country has been increasing with all time high at ₦14trillion in 2016.

NDEBT
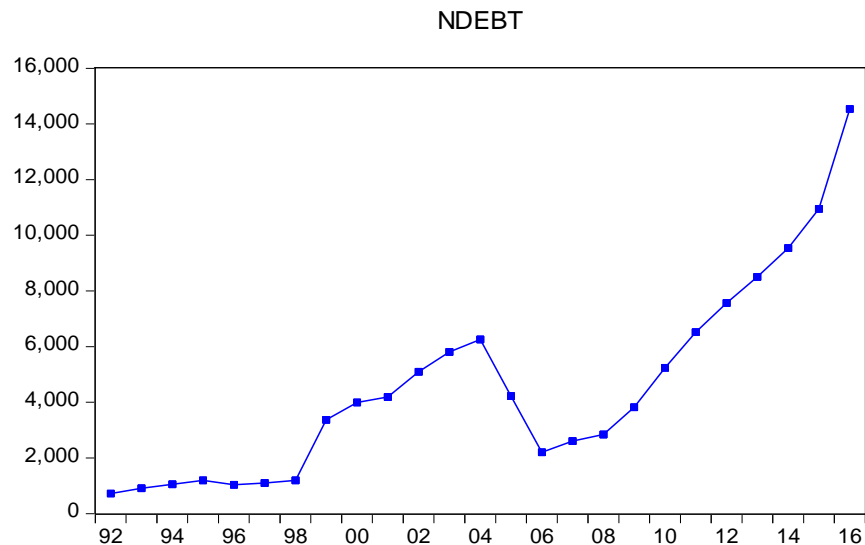
Fig 2.5*: Trend in National Debt 1992 to 2016 (Derived from table 2.1)*
Source: *Central Bank of Nigeria (CBN) Statistical Bulletin 2016.*

Matters Arising

Figure 2.1 to 2.5 shows that external debt has negative relationship with total revenue and total tax revenue but it has positive relationship with domestic debt. Government borrow when the money they take from citizens in the form of tax or other revenue is less than the money they spend in order to finance its expenditure that can generate income in the future. But in Nigeria the huge debt has been used on recurrent expenditure and on wasteful projects instead of investing it in capital projects or infrastructure that will help increase the tax base and revenue to the government. Equally the huge debt means that the resources that would have been used for investment are diverted to meeting debt service obligations. The debt servicing and the adjustment policies required to address the debt burden have also worsened social welfare in the area of education, health, communication, etc. The most serious implication of debt overhang is that, it has reduced the amount of foreign exchange available to finance the importation of raw materials and capital goods needed for rapid economic development. This means that the debt

burden has denied the industrial and agricultural sectors the needed inputs, holding back new investments and even the maintenance of capital stock. This has put pressure on the tax authority to raise enough revenue that will be used to service the debt and restore the confidence of international community on Nigeria economy.

According to Iyoha (1997) heavy debt burden payments have inevitably put great pressure on budget leading to rising fiscal deficits in the heavily indebted countries, the implication of this impact are : it has to increase tax to service the debt and reduce the deficit ,it equally has the effect of depressing investment on the debt over hung effect. According to World Bank (1989) external debt act as an important constraint in the development prospect and poverty reduction in Sub-Saharan African countries thus slowing their growth and making the fight against poverty a less effective one. A country suffering from debt overhang will invest less than it would in the absence of such an overhang and consequently, may forego projects with positive net present value and high debt stock act as an implicit tax on investment (Sachs,1990). Also ratio of interest payment to tax revenue has doubled to 66% as such IMF encouraged Nigeria to increase its tax revenue.

According to IMF (2015) Nigeria should increase its VAT rate from 5% since the country has the lowest VAT rate in the world which will help it generate more revenue in order to service its debt and repay the borrowed fund. Since tax revenue is the result of the application of a tax rate to a tax base. Increase in tax base result in more socially acceptable increase in revenue than an increase in the rate, which in turn, in certain macroeconomic conditions (inflation and employment) could even backfire.

Therefore government should aim to increase the tax base by investing the borrowed fund on capital projects that will help increase the tax base and increase the tax revenue in the country. But how the federal government tends to be fiscal responsible by channeling the funds to projects that will bring growth in the economy and restore the confidence of international community in Nigeria economy is what the international community and foreign investors are watching to see. If care is not taken to improve on tax revenue and total revenue in general, Nigeria will find it difficult to obtain the needed fund and assistance from international community.

2.2 Theoretical Review

Theoretical review shows the theories guiding the study which are Wagner's law, displacement effect hypothesis and Laffers curve.

2.2.1 Wagner's Law

Wagner's Law: The Law of Increasing State Activities or increasing expansion of fiscal requirements was propounded by Adolf Wagner in 1876 from the study of the economic growth of Germany. The law states that as an economy industrializes, the share of public expenditure in national income increases "extensively" and "intensively". Wagner noted that social progress has led to increasing state activity with resultant increase in public expenditure. According to Mohammadi, Cak and Cak (2008) the reasons given by Wagner for the increases include; first, the traditional functions of the state were expanding. Defence and security was becoming more expensive than ever before. Within the country administration set up was increasing both in coverage and intensity. Second, the state activities were increasing in their coverage. Traditionally the state activities were limited to only defence, justice, law and order and

maintenance of the state. But with the growing awareness of its responsibilities to the society, the government was expanding its activities in the field of various welfare measures. Third, government spending may also complement the private sector funding for long-term investments as a result of economic developments and changes in technology. Fourth, it is noticed that prices have a secular tendency to go up. Though there are periods when prices have fallen, the over-all trend has been for them to rise. Another reason is the decentralization of administration and the increase in the expenditure of local bodies. Critics have, however, argued that: The Wagner's law was not presented mathematically and this has led to the use of different mathematical specifications to test the law; and the hypothesis was not explicitly formulated and it was not clear if the share of government in national income or just absolute level of government should be used as the growth of government.

2.2.2 Displacement Effect Hypothesis

Displacement Effect Hypothesis: The Displacement effect Hypothesis was propounded by Peacock and Wiseman (1961) on the basis of their study on the "Growth of Public Expenditure in the UK, 1891-1955" to validate the Wagner's Law. According to the theory, the growth in public expenditure is determined by the growth in revenue. The hypothesis is built on the principle of tolerable taxation level, which states that maximum amount of tax revenue accruable to government is based on citizen's perception of what is the fair and equitable amount of tax. Ordinarily, the citizens are resistant to higher taxes, but in times of war they become more tolerant of tax increases. According to Henry and Olekalns (2000), after a period of exposure to the new tax regime, the maximum tolerable taxation level is raised as voters become increasingly familiar with the new arrangements. The government is then able to maintain the expenditure at historically high level even though the period of emergency or crisis has passed. This is called

"displacement effect". Displacement effect is created when the earlier lower tax and expenditure levels are displaced by new and higher budgetary levels. Apart from war and military expenditure, other factors like "social upheavals", natural calamities-droughts and famine have also been attributed to the increase in public expenditure in the literature. These events tend to create new emergency demands on government- new social welfare scheme; war and pensions, all leading to higher level of expenditure.

2.2.3 Laffers Curve

The Laffer Curve is a theory developed by supply-side economist Arthur Laffer to show the relationship between tax rate and the amount of tax revenue collected by governments. The curve is used to illustrate Laffer's main premise that the more an activity such as production is taxed, the less of it is generated. Likewise, the less an activity is taxed, the more of it is generated (Nwadialor & Ekezie, 2016)..
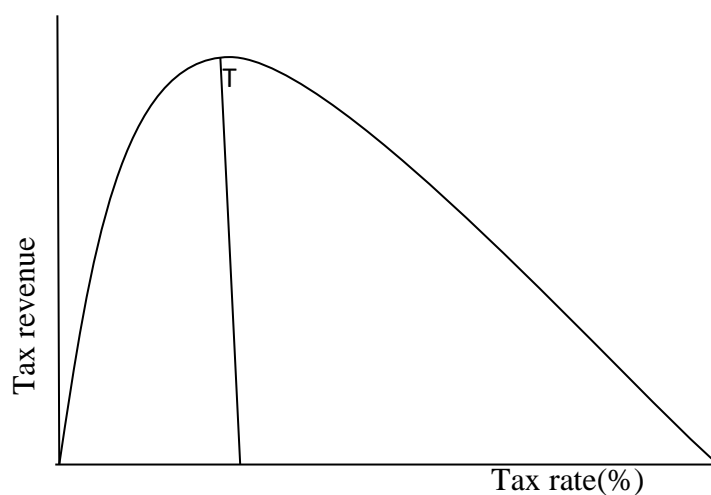
Fig 2.6 Laffers curve.

Source: Nwadialor & Ekezie (2016) Tax policy on economic growth

The Laffer curve suggests that, as taxes increase from low levels, tax revenue collected by the government also increases. It also shows that tax rates increasing after a certain point (T*) would cause people not to work as hard or not at all, thereby reducing tax revenue. Eventually, if tax rates reached 100%, shown as the far right on his curve, all people would choose not to work because everything they earned would go to the government. Governments would like to be at point T*, because it is the point at which the government collects maximum amount of tax revenue while people continue to work hard.

Implication of the theories

1. Wagner's law is law of increasing state activities through government revenue collection (taxes).

2. The law states that with urbanization and industrialization there would be additional needs for government services in areas that go beyond its traditional functions of defence and legal systems like welfare and social services.

3. Displacement effect hypothesis is based on principle of tolerable taxation level.

4. The hypothesis states that maximum amount of tax revenue accruable to government is based on citizen's perception of what is fair and equitable amount of tax.

5. The hypothesis also states that citizens are not resistant to higher tax rate in times of war and other social upheavals. Also the new tax regime can be maintained even after the war or social upheavels.

6. Laffers' curve is a theory that shows the relationship between tax rate and the amount of tax revenue collected by the government. The theory believes that there should be optimum tax level. In the curve government should not increase the rate of tax at a point above T in order not to discourage production.

Relevance of the theory

This research work is anchored on Wagner's law and supported by Displacement effect hypothesis.

Wagner's law of increasing state activities through government revenue collection is the theory upon which the federal government believes to increase its expenditure in the country in order to bring Nigeria out of recession. Increase in government spending on roads, education, health, power and energy, security and social services (payment of #5,000 to indigent Nigerians and N-power) will help lead to creation of an atmosphere conducive for capital formation and gross domestic investment which invariably will raise economic growth and development and reduce poverty. Equally with increased government spending on power and energy, security and infrastructure, it is expected that savings, investment and production will increase which will translate to more revenue to the government. This shows that various project embarked upon by the federal government like N-power and payment of #5000 to indigent Nigerians were to stimulate activity in the economy aimed to increase the standard of living of the populace and encourage enterprise activity in the economy or increase the number of small scale business in the country. By that, government hopes to increase the tax base and capture more people that will pay tax thereby increasing the revenue of the government.

2.3 Empirical Review

Many researchers, locally and internationally have tried to explain the effect of total tax revenue on the economy. The following are the results of some empirical which have been divided according to their location, beginning with the works carried out in the Nigerian economy and then other countries.

2.3.1 Reviews Related to Nigeria

Onakoya, Afintinni and Oyeyemi (2016) studied taxation and economic growth in Nigeria (1980-2013). The engle-granger cointegration test was employed to determine whether a long run relationship existed between the variables. The vector error correction model was employed to confirm the long run relationship and determine the short run dynamics between the variables. The result revealed a significant positive relationship at 5% level of significance between petroleum profit tax, company Income tax and economic growth, but a negative relationship between economic growth and customs and excise duties. However, the tax components are jointly insignificant in impacting the Nigerian economic growth.

Yakubu and Jibrin (2013) analyzed the impact of value added tax (VAT) on economic growth in Nigeria (1994 -2010). Unrestricted vector autoregressions (VARs) technique were employed to analyze and draw policy inferences. The results derived from the impulse response function (IRF) and forecast error variance decomposition (FEVD) imply that value added tax have positive impact on economic growth in Nigeria , where variation in this variables growth rate will causes variation in real economic activity with about 50 percent in the near future. The study concludes that the policy makers in Nigeria should continues this fiscal policy with other macroeconomic indicators.

Adegbite (2015) did a study on the analysis of the effect of corporate income tax (CIT) on revenue profile in Nigeria. Secondary data were obtained from Central Bank of Nigeria statistical bulletin from 1993 to 2013 for the analysis. Multiple regressions analysis was employed to analyze the relationship between the dependent variable (Gross Domestic Product and Revenue profile in Nigeria).The independent variables are (company income tax, value added tax, petroleum profit tax, inflation and exchange rate). The study shows that corporate income tax has positive significant impact on revenue profile in Nigeria.

Nwadialor and Ekezie (2016) investigated the effect of tax policy on economic growth in Nigeria. The study uses annual time serial data of 20 years (1994-2013) collected from the published report of the FIRS of various years, OLS regression analysis was use to investigate the relationship that exist between the dependent and independent variables. The findings revealed that tax have a significant effect on the economic growth in Nigeria. It showed that the proportion of indirect to total tax have increased over the years.

Ibadin and Oladipupo (2015) examined the impact of indirect taxes on economic growth of Nigeria, utilizing time series data spanning a thirty-four year period, from 1981 to 2014. Parsimonious error correction model was used to analyze the data while the dependent variable was real gross domestic product and the independent variables were petroleum profit tax, value added tax and customs and excise duties. The findings revealed that VAT and PPT exert a positive and significant relationship on the RGDP While CED has negative and insignificant relationship with GDP. It was also revealed that CED of two period lags has a positive relationship with RGDP and VAT of two-period lags showing a negative but significant relationship with RGDP.

Akhor and Ekundayo (2016) did a study on the impact of indirect tax revenue on economic growth in Nigeria. The study employed secondary data collected from Central Bank of Nigeria statistical bulletin for the period covering 1993 to 2013 for the empirical analysis. The study uses value added tax revenue and custom and excise duty revenue as independent variables and economic growth was proxy with real gross domestic product as the dependent variable. The research design is time series and the data were analyzed using descriptive statistics, correlation, unit root test, cointegration test and error correction model regression. The result revealed that value added tax had a negative and significant impact on real gross domestic product. In the same vein, past custom and excise duty had a negative and weakly significant impact on real gross domestic product. The Error Correction Model (ECM (-1)) coefficient had a correct negative and statistically significant sign.

Ilaboya and Mgbame (2012) examined indirect tax and economic growth in Nigeria between 1980-2011. The study adopted a combination of cointegration and error correction mechanism after series of diagnostic tests which helped to check the adequacy of the specified model. The Engel-Granger two step procedure was used to test the short run dynamic behaviour of the model, while the Autoregressive Distributed Lag (ARDL) was used to correct the discrepancies between short and long run impact of the explanatory variables. The result of the diagnostic tests shows the adequacy of the specified model. The study found a negative and an insignificant relationship between indirect tax and economic growth in Nigeria. The ratio of total indirect tax to total tax revenue reported a negative coefficient of (0.5817). The ratio of total tax to total federal revenue reported a robust t-value of (19.9276) and a positive coefficient of (2.0886) at the 1% level of significance.

Ogbonna and Ebimobowei (2012) investigated the impact of tax reforms and economic growth of Nigeria: A time series analysis 1994-2009.To achieve the objective of the study, relevant secondary data were collected from the Central Bank of Nigeria (CBN) Statistical Bulletin, Federal Inland Revenue Service (FIRS), Office of the Accountant General of the Federation, and other relevant government agencies. The data collected were analysed using relevant descriptive statistics and econometric models such as White test, Ramsey RESET test, Breusch Godfrey test, Jacque Berra test, Augmented Dickey Fuller test, Johansen test, and Granger Causality test. The results from the various test shows that tax reforms is positively and significantly related to economic growth and that tax reforms granger cause economic growth. On the basis of the findings, the study concluded that tax reforms improves the revenue generating machinery of government to undertake socially desirable expenditure that will translate to economic growth in real output and per capita basis.

Effect of value added tax, customs and excise duties on Nigeria economic growth was investigated by Inyiama and Ubesie (2016).Secondary sources were explored in data gathering while simple regression technique was employed in data analysis for test of the study hypotheses. Furthermore, correlation analysis was applied in the assessment of the relationship between the non-oil revenue sources and Nigeria gross domestic product. The outcome reveals that all the non-oil tax revenue affects Nigeria gross domestic product. On the side of the relationship among the variables studied, the strength of their relationship is very high for all the variables. The study concludes that value added tax and customs and excise duties are some of the major contributors to Nigeria gross domestic product. The revenue sources could be used to predict the value and status of the nations' gross domestic product as indicated by the strength of

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the relationship between the variables. The federal, state and local authorities therefore could finance a reasonable proportion of their capital and recurrent budget through non-oil tax revenue.

Madugba, Okpe and Ogbonnaya (2016) did a study on an assessment of the casual relationship between economic growth and indirect taxes in Nigeria. Ex-post facto research design was employed and time series data were sourced from Central Bank Nigeria (CBN) statistical bulletin of various years 1994-2014. Multiple regression inferential statistics was used for data analysis. The result reveals that VAT has a positive significance effect on GDP. This is because the computed t-statistic of 3.142 is greater than the critical value table value of 2.120. The result of the second hypothesis also showed that the computed t- statistic of 4.557 is greater than the critical table value of 2.120 thus, proving that CED actually has a positive significance effect on GDP. The study concludes that VAT and CED as indirect taxes contributes to economic growth in Nigeria, hence government should intensify effort to ensure immediate response of payment by the general public as flow of fund will encourage faster economic growth.

Ayuba (2015) did a study on impact of non-oil tax revenue on economic growth: the Nigerian perspective. This study analyses the impact of non-oil tax revenue on economic growth from 1993 to 2012 in Nigeria. To achieve the research objective, relevant secondary data were used from the 2012 Statistical Bulletin of the Central Bank of Nigeria (CBN). These data were analyzed using the Ordinary Least Squares Regression. The result from the test shows that there exists a positive impact of non-oil tax revenue on economic growth in Nigeria.

Abdul-Rahamoh, Taiwo and Adejare (2013) did a study on the analysis of the effect of petroleum profit tax on Nigerian economy. Secondary data were obtained from Central Bank of

Nigeria statistical bulletin covering the period of 1970 to 2010. Multiple regression 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 with the Adjusted R^2 of 86.3%. Following the outcome of this study, it is therefore concluded that the abundance of petroleum and its associated income has been beneficial to the Nigerian economy for the period 1970 to 2010. Income from a nation's natural resource has a positive influence on economic growth and development.

Saheed, Abarshi and Ejide (2014) examined the impact of petroleum tax on economic growth in Nigeria. 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). It was found in the study that crude oil production had a negative but significant effect on economic growth and other variables.

Worlu and Nkoro (2012) examined the impact of tax revenue 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 collected were analyzed using the three stage least square estimation technique. The results show that tax revenue stimulates economic growth through infrastructural development. That is, it highlights the channels through which tax revenue impacts on economic growth in Nigeria. The study also reveals that tax revenue has no independent effect on growth

through infrastructural development and foreign direct investment, but just allowing the infrastructural development and foreign direct investment to positively respond to increase in output. However, tax revenues can only materialize its full potential on the economy if government can come up with fiscal laws and legislations and strengthen the existing ones in line with macro-economic objectives, which will check-mate tax offenders in order to minimize corruption, evasion and tax avoidance. These will bring about improvement on the tax administration and accountability and transparency of government officials in the management of tax revenue. Above all, these will increase the tax revenue base with resultant increase in growth.

Ojong, Anthony and Arikpo (2016) investigated the impact of tax revenue on economic growth: evidence from Nigeria 1986 to 2010.The objectives of the study were; to examine the relationship between petroleum profit tax and the Nigeria economy, the impact of company income tax on the Nigerian economy and the effectiveness of non-oil revenue on the Nigerian economy. Data were sourced from Central Bank Statistical Bulletin and extracted through desk survey method. Ordinary least square of multiple regression models was used to establish the relationship between dependent and independent variables. The finding revealed that there is a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It showed that there is a significant relationship between non-oil revenue and the growth of the Nigeria economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy.

Edame and Okoi (2014) examined the impact of taxation on investment and economic growth in Nigeria from 1980-2010. The ordinary least square method of multiple regression analysis was used to analyze the data. The annual data were sourced from the central bank of

Nigeria statistical bulletin and NBS. The result of the analysis showed in conformity to our prior expectation because the parameter estimates of corporate income tax (CIT) and personal income tax (PIT) appears with negative signs, this means that an inverse relationship exist between taxation and investment. The economic implication of the result is that a one percent (1%) increase in CIT will result in decrease in the level of investment in Nigeria. Consequently, an increase in PIT will result in decrease in the level of investment. Finally, the result therefore showed that taxation is negatively related to the level of investment and the output of goods and services (GDP) and is positively related to government expenditure in Nigeria. We also observed that taxation statistically is significant factor influencing investment, GDP and government expenditure in Nigeria.

Chigbu and Njoku (2015) investigated 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 the study is 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 cointegration test also reveals that the variables are cointegrated 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.

Ebiringa and Emeh (2012) did a study on the analysis of tax formation and impact on economic growth in Nigeria. Secondary data were sourced within the periods of 1985-2011 and model was specified and estimated using some econometric. The result showed that the determinant factor of economic growth in the country through tax, is custom and excise duties which is capable of influencing growth but has an inverse relationship and significant to the GDP. It is observed that economic instability were experienced between 1986-1987 and 1993 to 1995 but evident in the stability in economic growth from the graph is the rest of the years of the study, around bench mark value of zero line of the GDP predicted graph based on tax generations in Nigeria.

Eugene and Abigail (2016) examined the effect of tax policy on economic growth in Nigeria. The study uses annual time serial data of 20 years (1994-2013) collected from the published report of the FIRS of various years, OLS regression analysis was use to investigate the relationship that exist between the dependent and independent variables. The findings revealed that tax have a significant effect on the economic growth in Nigeria. It showed that the proportion of indirect to total tax have increased over the years.

Adudu and Ojonye (2015) examined the impact of tax policy on economic growth in Nigeria 1990-2011.In contemporary economic literatures, there exist, considerable disagreement about how tax policies influence economic growth and development. While the traditional schools of thought advocated the theory of low income tax rates as major factor influencing economic development, the modern schools propagated the theory of higher income tax rates that

is capable of developing nations. Using time series data between 1990 and 2011, this study attempts to justify these lines of thinking by making Nigeria as a case study with the main objective of identifying the impact of tax policy on economic growth in the country. Applying the Granger – causality and co integrations framework, this study finds statistical evidence that efficient tax reforms are necessary conditions for enhanced sustainable economic growth.

Ekwueme and Chikezi (2016) did a study on the assessment of the impact of tax reforms on economic growth in Nigeria. Time series data were extracted from the Central Bank of Nigeria statistical bulletin, Federal Inland Revenue Service and Federal Ministry of Finance from the period 1985-2011. The ordinary least squares based multiple regression was adopted to analyse the data. The study found that the adjusted R-square of 0.99 implies that 99% of the total variation in gross domestic product, that is economic growth, is as a result of variation in petroleum profit tax, company income tax, customs and excise duties, value added tax, personal income tax and education tax and tax reforms in Nigeria. Customs and excise duties, value added tax, personal income tax and education tax have no statistical significant impact on economic growth at 5% level of significance. However, petroleum profit tax and company income tax each has positive significant impact on economic growth at 0.35% and 2.87% level of significance respectively. The Durbin Watson statistic of 1.98 indicates that there is no presence of serial autocorrelation in the model. The probability of the F statistic, a test for the overall significance of the model is rightly specified at zero level of significance. We would therefore conclude that overall, tax reforms have significant impact on the economic growth in Nigeria. This confirms the existence of long-run equilibrating relationship between the variables, i.e. economic growth and all the independent variables in the model.

Okoli, Njoku and Kaka (2014) did a study on taxation and economic growth in Nigeria, covering the period 1994-2012. Taxation was disaggregated into: value added tax, personal income tax, company income tax and petroleum profit tax, while the gross domestic product was used as a parameter for measuring economic growth in Nigeria. In order to establish causality between taxation and economic growth in Nigeria, secondary data were collected from the Central Bank of Nigeria Statistical Bulletin and the Federal Inland Revenue Services Bulletin. The data collected were analyzed using the Granger Causality Approach. The hypothesis one was tested using F-Ratio, while hypotheses two, three, four and five were tested using T-Statistics. The results of the analysis reveal that a significant positive relationship exists between Taxation and economic growth in Nigeria.

Ihenyen and Mieseigha (2014) examined taxation as an instrument of economic growth in Nigeria. Using annual time series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin during the period 1980 through 2013, a linear model of corporate income tax (CIT), value added tax (VAT) and economic growth (GDP) was estimated using the Ordinary Least Square (OLS) technique. The empirical result 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. In addition, regulatory authorities charged with the sole responsibility of collecting tax should further be strengthened to enforce compliance by taxpayers. Above all, the tax collected should be properly distributed so that economic growth can be properly harnessed.

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

Onwuchekwa and Aruwa (2014) investigated value added tax and economic growth in Nigeria 1994 – 2011. Value added tax (VAT) is a consumption tax, levied at each stage of the consumption chain and borne by the final consumer of the product or service. The administration of VAT is relatively easy, unselective and difficult to evade. The study investigated the impact of value added tax on the economic growth of Nigeria. Ordinary least square technique was employed to test the hypotheses formulated. The result shows that VAT contributes significantly to the total tax revenue of government and by extension the economic growth of Nigeria. VAT revenue growth had consistent increase though it was not that explosive. To boost tax revenue we need to boost revenue collected from VAT. This can be achieved not necessarily by increasing the VAT rate of 5% percent but by closing every VAT revenue leakage, sensitizing the managers of companies operating in Nigeria on the need to remit the VAT revenue collection and proper training of the Federal Inland Revenue staff in charge of VAT revenue collection.

Okoli and Afolayan (2015) examined the correlation between value added tax (VAT) and national revenue in Nigeria: An ECM model. The main objective of taxation is to raise government revenue. Taxation is a lumpy setup. When disaggregated it has four components. For example in Nigeria we have VAT, company income tax, personal income tax and petroleum profit tax. This paper therefore examines the extent to which VAT has been contributing to Nigeria total federally collected revenue and subsequently it's position among the other three components. Hence the study employed an error correction model (ECM) for the analysis. Data spanning 1994 -2012 sourced from Central Bank of Nigeria annual report & CBN Statistical Bulletin were used for the analysis. Result from the study revealed that VAT in the second long term source of the total federally collected revenue.

Adegbie, Olajumoke and Danjuma (2016) did a study on the assessment of value added tax on the growth and development of Nigeria economy: imperative for reform 1994-2015. The main focus of the work was to evaluate the impact of VAT on Nigerian economy between its introductions to date to discover the imperativeness of its reform. Ex-post-factor, descriptive and analytical research approach were adopted for the work. Data of VAT and GDP were obtained from 1994-2015, and analyzed to determine the relationship that has been existing between them. It was discovered that VAT has a positive relationship with GDP. The coefficient of the model indicate that a 1% increase in VAT will lead to a 0.88% increase in GDP. This shows a perfect positive correlation between VAT and GDP. It therefore becomes imperative for a reform in VAT. In conclusion, VAT is due for a total reform in rate and clear definition of exempted goods and services.

Omokhuale (2016) evaluated empirically the contribution of value added tax (VAT) to the Nigerian economic growth from 2000-2012. Data were collected from Central Bank of

Nigeria (CBN) statistical bulletin and Federal Inland Revenue bulletin. Ordinary least square techniques were used to estimate the model, which reveals a strong positive significant relationship between values added tax and Nigerian economy.

Salami, Apelogun, Omidiya and Ojoye (2015) investigated the impacts of taxation on the growth of the economy 1976-2006. The Nigerian government has embarked on monitoring its collection but the economy has failed to experience the desired growth that will lead to the targeted economic development. The chosen economic growth indicator, the real gross domestic product (RGDP), is specified to depend on the taxation indicators which are the petroleum profit tax (PPT), company income tax (CIT), customs and excise duties (CED), value added tax (VAT). The study employed the use of both simple and multiple linear regression analysis of the ordinary least square method. These were used to determine the impact and relationship between the endogenous variable, RGDP, and the exogenous variables, PPT, CIT, CED and VAT. It was discovered that if all the exogenous variables were tested individually on the economic growth, they show a significant impact individual on economic. The F-statistic shows that the overall model is statistically significant.

Tosuna and Abizadeh (2005) examined empirically the changes in the tax mix of the OECD countries in response to economic growth from 1980 to 1999. It is found that economic growth, measured by GDP per capita, has had a significant effect on the tax mix of the OECD countries. Analysis reveals that different taxes respond differently to the growth of GDP per capita. It is shown that while the shares of personal and property taxes have responded positively to economic growth, shares of the payroll and goods and services taxes have shown a relative decline.

Kizito (2013) examined the nexus between the Nigerian tax system and economic growth using the correlation method and granger causality to establish the relationship. The paper revealed that the tax system has no significant impact on growth because of the numerous challenges confronting the system. Further analysis of the components of the tax system shows that custom duties have more impact on economic growth than company income tax, value added tax and petroleum profit tax. The paper also revealed a negative and insignificant relationship between petroleum profit tax and company income tax on the one hand, and between petroleum profit tax and value added tax on the other hand.

Adeyemo (2017) the essence of the paper is to re-evaluate the effectiveness and efficiency of the administration of VAT in Nigeria, within the period 1994-2014. To effectuate the objectives of the study, relevant secondary data were sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin, Federal Inland Revenue Service (FIRS), and other relevant government agencies. The empirical analysis was based on multiple regression technique. Economic growth was proxy by gross domestic product and the result shows that there is no significant relationship between value added tax and economic growth, there is a significant relationship between values added tax and the total revenue generated in Nigeria and that VAT administration in Nigeria is effective and not efficient.

Bukie and Adejumo (2013) examined the effect of tax revenue on economic growth in Nigeria, utilizing time series data for the period spanning from 1970 to 2011. The study adopts the Ordinary Least Square (OLS) regression technique and established that tax revenue has positive effect on economic growth in Nigeria. The result shows that domestic investment, labour force and foreign direct investment have positive and significant effect on economic growth in Nigeria.

Ikechukwu and Nkechinyere (2016) investigated the effect of company income tax and tertiary education tax on Nigeria gross domestic product (GDP). Time series data were sourced from annual reports and accounts of sampled firms, Central Bank of Nigeria statistical bulletin, Nigeria Stock Exchange fact book, Federal Inland Revenue service website and related journals. The tool employed for the test of hypotheses was the simple regression technique. The Relationship between the model variables (including the dependent variables) was tested using correlation analysis. The outcome of the analysis depicts that company income tax and tertiary education tax significantly affects Nigeria gross domestic product. In terms of the relationship between the model variables, it was found that the independent variable relate strongly and significantly with gross domestic product. In conclusion, the researcher concludes that company income tax and tertiary education tax, both are major determinants of the growth or otherwise of gross domestic product in most developing countries such as Nigeria hence, the implication is that company income tax and tertiary education tax are good predictors of gross domestic product. The three tiers of government: federal, state and local authorities must strive to improve their internally generated revenue through non-oil tax sources; judging by the outcome of data analysis.

Nwanne (2015) evaluated the effect of the Nigerian tax policy on the ability of local governments to raise and spend money in discharge of their statutory responsibilities. The investigation was prompted by the fact that local governments seem to be carried away by the euphoria of the periodical statutory allocations from the federation account to the extent that they are blinded towards the potential of fiscal operations that would make them less dependent on the statutory allocations. The study therefore re-awakens the senses of local government administrators to the need to exploit more efficiently the opportunities that come with the recent

national tax policy. The study is anchored on the decentralization theory as postulated by Richard Musgrave (1959) cited in Arowolo (2011). The study adopted a descriptive approach. The secondary data were analysed by means of Ordinary Least Square regression and by employing the Chow Test of structural stability it was established that the tax policy which came into operation in January 2010, has a significant impact on the fiscal operation of local governments in Imo State. Furthermore, the study found that the tax policy had a significant positive effect on the expenditure of local governments, for instance, for Owerri-Municipal local government, a unit increase in tax revenue brought about one million naira increase in total expenditure of the local government. It was also found that the tax policy improved the ability of local governments to raise revenue through various forms of taxes.

Ayuba (2014) did a study on the impact of non-oil tax revenue on economic growth from 1993 to 2012 in Nigeria. To achieve this research objective, relevant secondary data were used from the 2012 Statistical Bulletin of the Central Bank of Nigeria (CBN). These data were analyzed using the ordinary least squares regression. The result from the test shows that there exists a positive impact of non-oil tax revenue on economic growth in Nigeria.

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

granger cause gross domestic product of Nigeria. On the basis of the empirical analysis, the paper concludes that petroleum profit tax is one of the most important components of direct taxes in Nigeria that affects the economic growth of the country and therefore should be properly managed to reduce the level of evasion by petroleum exploration companies in Nigeria.

Olatunji and Adegbite (2014) examined the effects of petroleum profit tax (PPT), interest rate (INTR) and money supply (MONSPL) on Nigeria economy. Data were obtained from Statistical Bulletins of Central Bank of Nigeria (1970 to 2010). Multiple regressions were employed to analyze the relationships among variables- gross domestic product (GDP) as dependent variable and petroleum profit tax, money supply and interest rate as independent variables. The short run effect of petroleum profit tax (PPT) was positive, while that of interest rate was negative and the effects of money supply (MONSPL) was positive on economic growth. The effects on economic growth were significant with the adjusted R^2 of 96.83%. The output effects of the three variables on economic growth on the long run were positive with an R^2 of 92.5% and adj. R^2 of 0.8882. That is, economic growth on the long run may be explained up to 89% by these independent variables. It is therefore concluded that the income from petroleum had been beneficial to the Nigerian economy. Similarly, the interest rate regimes had been helpful to stimulate economic growth and the monetary policies implemented within the period had been effective in achieving regulation of money supply to spur economic growth.

Onaolapo, Aworemi and Ajala (2013) examined the impact of value added tax on revenue generation in Nigeria. The secondary source of data was sought from Central Bank of Nigeria statistical bulletin (2010), Federal Inland Revenue service annual reports and Chartered Institute of taxation of Nigeria journal. Data analysis was performed with the use of stepwise

regression analysis. Findings showed that value added tax have statistically significant effect on revenue generation in Nigeria.

Okoh, Onyekwelu and Iyidiobi (2016) examined the effect of petroleum profit tax on economic growth of Nigeria. Income from petroleum taxes is the proxy for PPT while economic growth was measured using gross domestic product (GDP). The research adopted expos-facto research as secondary data were used for the analysis. Data were sourced from the Central Bank of Nigeria Statistical Bulletin and the Federal Statistical Bureau. The study covered twelve year period (2004-2015). Time series data were analyzed using the simple linear regression. The result reveals that PPT had positive and significant effect on Nigerian GDP.

Ofishe (2015) analyzed the impact of value added tax (VAT) on economic growth (GDP) in Nigeria from 1994 – 2012. Relevant data were collected from Central Bank of Nigeria (CBN) statistical bulletin and Federal Inland Revenue Service (FIRS) reports. The Ordinary Least Square techniques were used to estimate three models in line with the formulated hypotheses. The results from the models revealed a strong positive significant impact of VAT on economic growth as proxy by GDP in Nigeria. It also revealed that there is positive relationship or impact of VAT on total tax revenue over the period studied.

Ojong, Ogar and Arikpo (2016) examined the impact of tax revenue on the Nigerian economy. The objectives of the study were; to examine the relationship between petroleum profit tax and the Nigeria economy, the impact of company income tax on the Nigerian economy and the effectiveness of non-oil revenue on the Nigerian economy. Data were sourced from Central Bank Statistical Bulletin and extracted through desk survey method. Ordinary least square of multiple regression models was used to establish the relationship between dependent and

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independent variables. The finding revealed that there is a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It showed that there is a significant relationship between non-oil revenue and the growth of the Nigeria economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy.

Abiodun, Taiwo and Flomo (2014) examined the impact of tax revenue shocks on economic growth in Nigeria during the period from 1961 to 2011. Times series data on variables (government expenditure, tax revenue, GDP and consumer price index) were used. The data were sourced from the CBN Statistical Bulletin 2012 edition and World Development Indicators (WDIs) version 2012. The unit root property of each of the variables was investigated using ADF and PP unit root tests. The study also employed Johansen co integration technique to test for the co integration relationship among the variables in the VAR model. The results indicate that tax revenue shocks have positive effect on government expenditure and real output. The findings also suggest that tax revenue turns out to contribute increasingly to innovations in government spending and real output from the first year up to the end of the period. The study concluded that any policy that induces tax revenue will equally induce government expenditure and real output, hence, tax revenue shocks have positive effect on long-run economic growth in Nigeria.

Sabina, Oleka and Bassey (2015) investigated the impact of taxation on the macroeconomic performance of the Nigerian economy ranging from 2002 to 2011. Ordinary least squares regression method was applied in analyzing obtained data. Result obtained showed that government earnings from taxation has positive significant effect on real gross domestic product in Nigeria; government revenue from taxation has negative significant influence on unemployment rate in Nigeria; and that petroleum profit tax has negative significant effect on

real interest rate in Nigeria. The implication of the study shows that revenue generation from taxation enhances economic growth and that changes in taxation, automatically will affect individuals real standard of living (GDP), employment rate and interest rate.

Bukie and Adejumo (2013) investigated the effect of tax revenue on economic growth in Nigeria, utilizing time series data for the period spanning from 1970 to 2011. The study adopts the ordinary least square (OLS) regression technique and established that tax revenue has positive effect on economic growth in Nigeria. The result shows that domestic investment, labour force and foreign direct investment have positive and significant effect on economic growth in Nigeria.

Etale and Bingilar (2016) examined the impact of companies' income tax, value-added tax on economic growth (proxy by gross domestic product) in Nigeria. Secondary time series panel data was collected for the period 2005 to 2014 from the Statistical Bulletin of the Central Bank of Nigeria (CBN). The study employed ordinary least squares (OLS) technique based on the computer software Windows SPSS 20 version for the analysis of data, where gross domestic product (GDP), the dependent variable and proxy for economic growth, was regressed as a function of company income tax (CIT) and value-added tax (VAT), the independent variables. The results of the analysis showed that both company income tax and value-added tax have significantly positive impact on economic growth.

Onwuchekwa and Aruwa (2014) investigated the impact of value added tax on the economic growth of Nigeria. Ordinary least square technique was employed to test the hypotheses formulated. The result shows that VAT contributes significantly to the total tax revenue of government and by extension the economic growth of Nigeria. VAT revenue growth

had consistent increase though it was not that explosive. To boost tax revenue we need to boost revenue collected from VAT. This can be achieved not necessarily by increasing the VAT rate of 5% percent but by closing every VAT revenue leakage, sensitizing the managers of companies operating in Nigeria on the need to remit the VAT revenue collection and proper training of the Federal Inland Revenue staff in charge of VAT revenue collection.

2.3.2 Reviews Related to Other Countries

Taha, Loganathan and Colombage. (2011) examined the effects of economic growth on government tax revenue in Malaysia during the period of 1970-2009. Theoretically and empirically it was shown that taxes affect the allocation of resources and often distort the economic growth. However finding of the study clearly shows that there is a unidirectional relationship between economic growth and total government tax revenue with 21% speed of adjustment in the short run to reach equilibrium level in the long run.

Islam (2016) did a study on the contribution of indirect taxes on GDP of Bangladesh, of indirect taxes on GDP of Bangladesh, where indirect taxes have been classified under two broad categories- import export level and local level indirect taxes. Data have been analyzed by using SPSS and MS Excel program after they have been collected from various sources like- research journals, reports, texts and relevant websites. From the regression result the study found almost perfect positive correlation between indirect taxes and GDP in Bangladesh during the period covering 2001-02 to 2013-14. It has also been investigated that during the study period up to 2009-10 contribution of import export level indirect taxes was more than the local indirect taxes on GDP. But after 2009-10, amount of locally collected indirect taxes exceeded the collection of import export level indirect taxes because of faster increase of local indirect tax collection. In the

study the literature claims that indirect taxes are one of the reasons for the gap between poor and rich classes of people that can be minimized by decreasing the dependency on indirect taxes and increasing the collection of direct taxes.

Owusu-Gyimah (2015) examined the impact of tax revenue on the economic growth of Ghana. Gross domestic product which measures economic growth was used as a proxy. The paper also examines tax reforms and the effect of automation on tax revenue performance, sources of revenue leakages and measures to improve the collection of taxes. The Least Square Multiple Regression was used to explore the relationship between GDP (the dependent variable) and Tax Revenue (Independent Variable) for the period 1999-2014. Tax revenue is made up of direct taxes, indirect taxes and taxes collected by the customs division. This has been on the increase but more is need to reduce the deficit of Ghana. A simple hypothesis was formulated in the null form which states that there is no significant relationship between tax revenue and Ghana's GDP. The regression result indicated a very positive and significant relationship and hence a positive impact of tax revenue on economic growth of Ghana.

Njogu (2015) investigated the effect of value added tax on economic growth in Kenya. The research design adopted in this study was causal study. The target population for this study consisted of the quarterly reports on the state of the Kenyan economy in relation to productivity as measured by gross domestic product (GDP), consumer prices as measured by consumer price indexes (CPI), and employment as measured by the unemployment rate, from the inception of VAT as administered by Kenya Revenue Authority (KRA) from 1990 to 2014. This study used secondary data which consisted of VAT rates, gross domestic product growth rates, consumer price indices and unemployment rates which were obtained from Kenya Revenue Authority (KRA), International Monetary Fund (IMF), Kenya National Bureau of Statistics (KNBS) and

World Bank data bases respectively, for the study's period as this period is representative and long enough to capture the responsiveness of changing VAT rates. With regard to the effect of VAT rates on economic growth as measured by GDP, the findings indicated that a percent change in the incident rate of GDP is an increase of 7% for every unit decrease in VAT. It can therefore be concluded that there exists a significant negative relationship between VAT rates and GDP; hence the researcher recommended that KRA should strive to reduce and/or maintain a low VAT rate in order to increase overall GDP. As regards the effect of VAT rates on economic growth as measured by CPI, the findings indicated that a percent change in the incident rate of CPI is an increase of 9.2% for every unit increase in VAT. It can therefore be concluded that there exists an insignificant positive relationship between VAT rates and CPI.

Ahmad, Ahmad and Yasmeen (2013) investigated the impact of tax on economic growth of Pakistan: An ARDL Approach by using time series data for the period of 1976-2011. GDP is taken as dependent variable while taxes, exchange rate, life expectancy and trade liberalization as independent variables. After checking the stationary of the variables (through ADF test), Autoregressive Distributive Lag (ARDL) approach to co-integration is used to find association among variables. Results show that tax and exchange rate have negative and significant effect on economic growth in short and long run. The impact of trade liberalization and life expectancy on economic growth is positive in both periods. Diagnostic tests confirm that our model is free from hetroskedasticity and autocorrelation with satisfactory functional form. The CUSUM and CUSUMSQ show that model is structurally stable. Direct taxes should be increase (rather than indirect taxes) as these would help in the economic prosperity of the country.

Saqib, Ali, Riaz, Anwar and Aslam (2014) did a study on taxation effects on economic activity in Pakistan. Economic activity is examined through real GDP, consumption and

investment, and for each from the said proxies a different econometric model is developed for analysis. Tax to GDP ratio for growth model, sales tax for consumption model and income tax for investment model are used. Real GDP, total investment and household consumption expenditures are used as dependent variables. Time series data from 1973 to 2010 are used for empirical analysis. Keeping in view the alternate order of integration of different variables ARDL approach to co-integration for growth model is utilized. While Johansen's co-integration technique is used in investment and consumption models as all the variables involved in these said models are found to be I(0). We found negative effects of tax to GDP ratio on real GDP, negative effects of income tax on investment and negative effects of sales tax on household consumption expenditures. Finally, the study concluded that the present level of taxation in Pakistan needs to be revised carefully as this has negative effects on economic activity in Pakistan.

Scarlett (2011) examined tax policy and economic growth in Jamaica 1990 – 2010.Numerous studies have indicated that tax policies aimed at increasing government revenue have been regarded as an impediment to economic growth in both the short and long run. The study uses general autoregressive distributed-lag model, which jointly captures both short and long run effects. Additionally, an attempt to ascertain the directional relationship between the explanatory variables and economic growth is done using Granger causality tests. The findings indicate that increasing revenue from indirect taxes is more conducive to economic growth in the long run. On the other hand, increasing the share of taxes from personal income (P.A.Y.E.) has the greatest harm on per capita GDP over time and correction to equilibrium from such an impact would take up to nine quarters.

Canicio and Zachary (2014) the effects of economic growth on government tax revenue growth were investigated for Zimbabwe during the period of 1980-2012. Short-run and long-run relationship between the tax revenue and economic growth in Zimbabwe were also investigated. Theoretically and empirically it has been found that taxes affect the allocation of resources and often distort the economic growth. The study applied the Granger Causality test, Johansen's co-integration test and vector error correction model to serve the purpose. However, findings of this study clearly showed that there is an independence relationship between economic growth and total government tax revenue with 30% speed of adjustment in the short run towards equilibrium level in the long run. This implies that there is fiscal independence between tax revenue and growth. The empirical analysis also provides the evidence of long-run equilibrium relationship. Based on the findings, we highlighted some of major issues that policymakers should consider for effective taxation policy formulation and implementation in line with the complexity nature of the Zimbabwe economy. Therefore, the outlook is that the economists and policy makers should suggests an ideal, efficient and buoyant tax system so that gross tax revenue of the government would increase substantially thereby leading to optimum mobilization of resources for higher economic growth of the country. This can only be achieved through efficient allocation of collected tax revenue to production sectors of the economy to try to achieve distributive principle through societal welfare maximization.

Ahmad, Sial and Ahmad (2016) investigated the relationship between total tax revenues and economic growth in Pakistan. For estimation annual time series data from 1974 to 2010 is used .The main purpose of the research is to find long run and short run relationship in-between total tax revenues and economic growth. Auto Regressive Distributed lag (ARDL) bounds testing approach for co-integration, is applied to estimate, the long run and short run relationship,

among the variables. Total tax revenues have negative and significant effect, on economic growth in long run .Due to one percent increase in total taxes, economic growth would decrease by -1.25 percent .ECM coefficient of total taxes shows 51 percent speed of adjustment in a year. According to research results it is imperative to decrease the indirect taxes and to increase the direct taxes, if we want to augment economic growth. Currently contribution of direct taxes, out of whole tax revenues is only 33 percent and the share of indirect taxes is 63 percent, while it should be reversed, if economic growth has to increase.

Takumah (2014) examined the effect of tax revenue on economic growth in Ghana using quarterly data for the period 1986 to 2010 within the VAR framework. The study found that there exist both short run and long run relationship between economic growth and tax revenue. The result indicated a unidirectional causality between tax revenue and economic growth and it flows from tax revenue to economic growth. The result suggests that tax revenue exerted a positive and statistically significant effect on economic growth both in the long run and short-run implying that tax revenue enhances economic growth in Ghana.

Macek (2015) investigated the impact of individual types of taxes on the economic growth by utilizing regression analysis on the OECD countries for the period of 2000 – 2011. The impact of taxation is integrated into growth models by its impact on the individual growth variables, which are capital accumulation and investment, human capital and technology. The analysis in this paper is based on extended neoclassical growth model of Mankiw, Romer and Weil (1992), and for the verification of relation between taxation and economic growth the panel regression method is used. It is evident from the results of both analyses that corporate taxation followed by personal income taxes and social security contribution are the most harmful for economic growth. Concurrently, in case of the value added tax approximated by tax quota, the

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negative impact on economic growth was not confirmed, from which it can be concluded that tax quota, in this case as the indicator of taxation, fails. When utilizing World Tax Index, a negative relation between these two variables was confirmed, however, it was the least quantifiable. The impact of property taxes was statistically insignificant. Based on the analysis results it is evident that in effort to stimulate economic growth in OECD countries, economic-politic authorities should lower the corporate taxation and personal income taxes, and the loss of income tax revenues should be compensated by the growth of indirect tax revenues.

Helhel and Demir (2012) the relationship between tax revenues and economic growth for the Turkish economy has been examined between 1975-2011. Johansen Juselious cointegration test and Granger causality test have been used in order to find long term and short term relationship, respectively. Impulse-response function and variance decomposition analysis have been applied via VAR model. The findings have shown that there is interaction between tax revenue types and the economic growth in the long term and is not such an interaction in the short term. The effect of the shock given to indirect tax revenue to economic growth rate has decline; the response of growth rate to shock given to direct tax revenue has been tendency to rise up towards the end of the period. In the variance decomposition method; direct tax revenue is more effective than indirect one. But, the growth rate that is expressed by GDP (gross domestic product) or other factors affecting growth rather than tax revenue has been appeared affected itself.

2.3.3 Reviews Related to Human Development

Okafor (2012) examined tax revenue generation and Nigerian economic development. The ordinary least square (OLS) regression analysis was adopted to explore the relationship

between the GDP (the dependent variable) and a set of federal government income tax revenue heads over the period 1981-2007. The regression result indicated a very positive and significant relationship between GDP and petroleum tax revenue, company tax revenue, customs and excise duty and value added tax.

Ofoegbu, Akwu and Oliver (2016) studied empirical analysis of effect of tax revenue on economic development of Nigeria. The purpose of this study is to examine the effect of tax revenue on the economic development of Nigerian, and to ascertain whether there is any difference in using HDI and GDP in establishing the relationship. The approach adopted in this study was that of using annual time series data for the period 2005 - 2014 to estimate a linear model of tax revenue and human development index using ordinary least square (OLS) regression technique. Findings show a positively and significantly relationship between tax revenue and economic development. The result also reveals that measuring the effect of tax revenue on economic development using HDI gives lower relationship than measuring the relationship with GDP thus suggesting that using gross domestic product (GDP) gives a painted picture of the relationship between tax revenue and economic development in Nigeria. The researcher, therefore, conclude that tax revenue can be an instrument of economic development in Nigeria. Development of any tax policy on tax revenue for economic development should better be based on human development index rather than GDP.

Ibanichuka, Ikebujo and Akani (2016) did a study on a time series analysis of effect of tax revenue on economic development of Nigeria. This study investigated the effect of tax revenue on the economic development of Nigeria for the period of 1995-2014, with the purpose of finding out if tax revenue represented by value added tax (VAT), company income tax (CIT) and customs and excise duties (CED) could affect economic development proxied by human

development index for the period of the study. The data were analysed using Multiple Regression Analyses in line with the research objectives of the study. The findings reveal that revenues collected by the federal government through CIT, VAT and CED have a positive relationship with human development index. Based on the findings, it was concluded as follows: That revenues collected by the federal government through company income tax, value added tax, customs and excise duties help to improve the human development index of Nigeria.

Adesola (2013) investigated the effect of government taxes on Nigerian unemployment. Taxes do not only provide sustainable revenue for government to carry out its activities and provide development to its citizens, it also puts citizens in the role of stakeholders who are directly contributing to national development. In this way, wealth and employment opportunities can be created for those who are currently outside the tax net, due to low or no income, so, that they in turn also earn income on which taxes are paid and the circle of growth and development in the economy is sustained. It was based on this premise that, this study sought to examine the effect of government taxes on Nigerian unemployment, in doing this ,the weighted least square regression techniques was utilised. The result showed that a positive relationship exist between unemployment, company income tax and custom and excise duty, while a negative relationship exist between the unemployment, petroleum profit tax and value added tax.

Ugochukwu and Azubike (2016) did a study on value added tax and economic development in Nigeria. The study covered 18years period between 1994 and 2012. Multiple regression was used to analyse the data gotten from Central Bank of Nigeria (CBN) Statistical Bulletin of various years. The result of the multiple regression showed a negative significant relationship between value added tax revenue and Gross domestic product. Also, the result

showed a positive significant relationship between Gross domestic product and Total consolidated revenue.

Jibrin, Blessing and Ifurueze (2012) investigated the Impact of Petroleum Profit Tax on the economic development of Nigeria. Its primary objective is to ascertain the Impact of Petroleum Profit Tax on the growth of Nigerian economy for the period 2000- 2010. The method of analysis used was ordinary least square method, after the analysis the research findings includes: Petroleum profit tax impact positively on gross domestic product of Nigeria and it is statistically significant. Also total oil revenue impact positively on gross domestic product of Nigeria and it is statistically significant.

Doki and Abubakar (2015) examined company income tax in the light of its potential for alternative financing for sustainable development in Nigeria. This inquiry has become important because of the need to diversify and increase the revenue base of the government which is currently in distress owing to many factors. The study employed ordinary least square (OLS) method and co integration test over the period of 1987 – 2013 to analyse the long-run relationship between company income tax and revenue generation in Nigeria and also to evaluate the effect of major macroeconomic indicators (foreign direct investment, interest rate, corruption perception index, inflation rate, and exchange rate) on company income tax generation in Nigeria. Results show that increasing the contribution of CIT by one per cent increase revenue generation by 0.42%. Then macroeconomic determinants of CIT portray that there is a long run relationship with foreign direct investment, interest rate and corruption proxied by CPI. The study recommends that, since CIT has shown potential as source of alternative income, conditions for companies to flourish so that taxes from them can be beneficial and should be set in the long-run.

Madugba and Joseph (2016) examined the relationship between Value added tax and Economic development: in Nigeria. It is expected that this study will be of immense use to both the Government and general public. The study covered 18years period between 1994 and 2012. Multiple regression was used to analyse the data gotten from Central Bank of Nigeria (CBN) Statistical Bulletin of various years. The result of the multiple regression showed a negative significant relationship between value added tax revenue and Gross domestic product. Also, the result showed a positive significant relationship between gross domestic product and total consolidated revenue.

2.3. 4 Reviews Related to Industrial Production

Ezejiofor, Adigwe and Echekoba (2015) investigated whether tax as a fiscal policy tool affects the performance of the selected manufacturing companies in Nigeria. To achieve the aim of the study, descriptive method was adopted and data were collected through the use of six years financial accounts of the selected companies. The hypothesis formulated for the study was tested with the ANOVA, using the Statistical Package for Social Sciences (SPSS) version 20.0 software package. The study found that taxation as a fiscal policy instrument has a significant effect on the performance of Nigerian manufacturing companies. The implication of the finding is that the amount of tax to be paid depends on the companies' performances.

Tatom (2007) investigated the importance of tax policy for investment in Morocco and whether there are opportunities to accelerate economic growth through tax reform. The study found that higher corporate tax rates tend to raise the cost of capital to firms and reduce investment.

Djankov, Ganser and Ramalho (2009) conducted a survey by sampling 85 countries in all continents to determine the effect of corporate taxes on investment and entrepreneurship. The results presented evidence that effective corporate tax rates had a large and statistically significant adverse effect on corporate investment and entrepreneurship. Effective corporate income tax was also associated with lower investment in manufacturing, a larger unofficial economy and greater reliance on debt as opposed to equity finance.

Karumba (2009) study analyzed the extent to which institutional factors impacted on private investment. The study concluded that among the institutional factors that were considered for analysis, tax administration was of a greater importance to private investors. Therefore, an efficient tax administration ought to have been put in place and properly enhanced before liberalization of the Kenyan economy.

Njuru, Ombuki, Wawire and Okeri (2013) investigated the impact of taxation on private investment in Kenya. Vector auto-regression technique was used to achieve study objectives. Time series research design was used covering period 1964-2010. The study found that VAT, income tax and establishment of Kenya Revenue Authority (KRA) had negative impact on private investment while excise tax, import tax and tax amnesty impacted positively on private investment. The study concludes appropriate tax system and progressive tax reforms are necessary to ensure that private investors are given enabling environment to establish.

Table 2.2 Literature Exploration

Author /year	Title of the Study	Theoretical Framework	Methodology	Findings
Adeyemo.K. A(2017)	Assessing the 'value' in value added tax: evidence from Nigerian economy		Ordinary least Square (OLS). RGDPG=f (VAT, TGR, TCE, GFCF, LFPR).	The result shows that there is no significant relationship between value added tax and economic growth, there is a significant relationship between values added tax and the total revenue generated in Nigeria and that VAT administration in Nigeria is effective and not efficient.
Ahmad.S, Sial.M.H & Ahmad.N (2016)	Taxes and economic growth: An empirical analysis of Pakistan.(1974 - 2010)		Co-integration GDP=f(TTR HCP IMP)	The result of the analysis showed that total tax revenues have negative and significant effect on economic growth in long run. Due to one percent increase in total taxes, economic growth would decrease by -1.25 percent .ECM T coefficient of total taxes shows 51 percent speed of adjustment in a year.
Akhor, S.O.& Ekundayo, O. U(2016)	The impact of indirect tax revenue on economic growth: the Nigeria experience(1993-2013)		Descriptive statistics, correlation, unit root test, cointegration test and error correction model regression. RGDP = (Value Added Tax and Customs and Excise Duties).	The result revealed that value added tax had a negative and significant impact on real gross domestic product. In the same vein, past custom and excise duty had a negative and weakly significant impact on real gross domestic product.
Etale.L.M & Bingilar.P.F(2016)	The impact of company income tax and value-added tax on economic growth: evidence from Nigeria (2005-2014)		Ordinary Least Squares (OLS) GDP = f (CIT, VAT)	The results of the analysis showed that both company income tax and value-added tax have significantly positive impact on economic growth.
Eugene.N & Abigail.E.C (2016)	Effect of tax policy on economic growth in Nigria (1994-2013)	Laffer Curve	Ordinary Least Square regression GDP = f (TTR, Indirect Tax, Direct. Tax)	The findings revealed that tax have a significant effect on the Economic growth in Nigeria. It showed that the proportion of indirect to total tax have increased over the years.
Ikechukwu.I.O. &Nkechinyere. N.C (2016)	Effect of corporate and tertiary education		Ordinary Least Square (OLS) regression	The outcome of the analysis depicts that company income tax and tertiary education tax significantly affects Nigeria gross

				domestic product. in terms of the relationship between the model variables, it was found that the independent variable relate strongly and significantly with gross domestic product. In conclusion, the researcher concludes that company income tax and tertiary education tax, both are major determinants of the growth or otherwise of gross domestic product in most developing countries such as Nigeria.
	tax on Nigeria economic growth(2000 -2015)		GDP=f(CT ,TEDUTAX)	
Okoh, J. I,Onyekwelu, U. L & Iyidiobi , F. C (2016)	Effect of petroleum profit tax on economic growth in Nigeria(200 4-2015)	Benefit theory	Simple linear regression GDP=f(PPT)	The result reveals that PPT had positive and significant effect on Nigerian GDP.
Onakoya.A.B ,Afintinni. O.I & Oyeyemi .O.G(2016)	Taxation and economic growth in Nigeria(198 0-2013)	Benefit theory of taxation and Ability to pay theory of taxation	Regression RGDP = f (PPT, CIT, C&ED).	The study indicates a long run (but no short run) relationship exists 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.
Ojong.C.M, Ogar,A.& Arikpo.O. F(2016)	The impact of tax revenue on economic growth: evidence from Nigeria(198 6-2010)	Theories of taxation Cost of service theory Socio-political theory	Ordinary least square of multiple regression models GDP = f (PPT, C1T, NOR)	The finding revealed that there is a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It showed that there is a significant relationship between non oil revenue and the growth of the Nigeria economy. The finding also revealed that there is no significant relationship between company income tax and the growth of the Nigeria economy.
Onakoya.A.B. & Afintinni. O.I (2016)	Taxation and economic growth in Nigeria(1980- 2013)	Benefit theory of taxation and Ability to pay theory of taxation	Regression RGDP = f (Petroleum Profit Tax, Company Income Tax, Customs &Excise Duties).	The study indicates a long run (but no short run) relationship exist 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.
Madugba, J .U&Joseph,U.B. (2016)	Value added tax and economic development in Nigeria (1994-2012)	Benefit received theory & Cost of service theory	Multiple regression GDP= f(VAT,TCR)	The result of the multiple regression showed a negative significant relationship between value added tax revenue and Gross domestic product. Also, the result showed a positive significant relationship between Gross domestic product and Total consolidated revenue.
Nwadialor. E, & Ekezie. C .A. (2016)	Effect of Tax Policy on Economic Growth in Nigeria(1994-2013)	Laffer Curve	OLS regression GDP = f (Total tax revenue, Indirect Tax, Direct tax).	The findings revealed that tax have a significant effect on the economic growth in Nigeria. It showed that the proportion of indirect to total tax have increased over the years.
Ofoegbu.G.N, Akwu.D.O& Oliver O(2016)	Empirical analysis of effect of tax revenue on economic development of Nigeria (2005-2014)		Ordinary least square (OLS) regression technique Model 1= HDI=f(Total revenue) Model 2=GDP=f(Total revenue)	Findings show a positively and significantly relationship between tax revenue and economic development. The result also reveals that measuring the effect of tax revenue on economic development using HDI gives lower relationship than measuring the relationship with GDP thus suggesting that using gross domestic product (GDP) gives a painted picture of the relationship between tax revenue and economic development in Nigeria. The researcher, therefore, conclude that tax revenue can be an instrument of economic development in Nigeria.
Adegbite .T A.(2015)	The Analysis of the effect of corporate income tax (CIT) on revenue profile in Nigeria(1993-2013)		Multiple regressions analysis **Model 1** GDP=f(company income tax, value added tax, petroleum profit tax and inflation rate) **Model 2** Revenue profile = Company Income Tax, Value Added Tax, Petroleum Profit Tax and exchange rate.	The result shows that corporate income tax has positive significant impact on revenue profile in Nigeria.

Ezejiofor.R.A, Adigwe, P.K.& Echekoba, F. N(2015)	Tax as a fiscal policy and manufacturing company's performance as an engine for economic growth in Nigeria		ANOVA Tax=f(turnover)	The study found that Taxation as a fiscal policy instrument has a significant effect on the performance of Nigerian manufacturing companies. The implication of the finding is that the amount of tax to be paid depends on the companies' performances.
Nwanne,T. F(2015)	Effects of tax policy on the expenditure of local government councils in imo state	Theory of taxation, Dalton'sprinciple of maximum ,Maximum aggregate benefit, voluntary exchange theory, Decentralization Theory.	Ordinary Least Square regression, TEXP = f (FAAC, TAXREV, FGAP)	It was established that the tax policy which came into operation in January 2010 has a significant impact on the fiscal operation of local governments in Imo State. Furthermore, the study found that the tax policy had a significant positive effect on the expenditure of local governments, for instance, for Owerri-Municipal Local Government, a unit increase in tax revenue brought about one million naira increase in total expenditure of the local government. It was also found that the tax policy improved the ability of local governments to raise revenue through various forms of taxes.
Ofishe, O.W(2015)	The Impact of value added Tax on economic growth in Nigeria (1994 - 2012)	Socio Political Theory Expediency Theory Benefit Received Theory Cost of Service Theory Faculty Theories Theory of Laffer Curve IbuKhaldun's theory of Taxation	Ordinary Least Square techniques. GDP=f(VAT) TRV=F(VAT)	The results from the models revealed a strong positive significant impact of VAT on economic growth as proxy by GDP in Nigeria. It also revealed that there is positive relationship or impact of VAT on total tax revenue over the period studied
Macek.R.(2015)	The impact of taxation on economic growth: Case study of OECD countries	Neoclassical Growth Theory	Regression analysis GDP=f(RINV,HUM,GOV,TAX)	It is evident from the results of both analyses that corporate taxation followed by personal income taxes and social security contribution are the most harmful for economic growth. Concurrently, in case of the value added tax approximated by tax quota, the negative impact on

				economic growth was not confirmed, from which it can be concluded that tax quota, in this case as the indicator of taxation, fails. When utilizing World Tax Index, a negative relation between these two variables was confirmed, however, it was the least quantifiable. The impact of property taxes was statistically insignificant.
Owusu-Gyimah.A.(2015)	Tax revenue generation and the economic development of Ghana (1999-2014)		The Least Square Multiple Regression. GDP=f(Tax Revenue(direct, indirect tax and customs duty)	The result shows that there is no significant relationship between Tax Revenue and Ghana's GDP. The Regression result indicated a very positive and significant relationship and hence a positive impact of Tax Revenue on economic development of Ghana.
Sabina.E.A, Oleka.C.D & Bassey.B.E (2015)	An empirical investigation of the effect of taxation on macroeconomic performance in Nigeria	The Traditional Society The Pre-conditions for Take-off The Take-off	Ordinary least squares regression RGDP =f(Unemp,INTR , Taxation ,PPT)	Result obtained showed that government earnings from taxation has positive significant effect on real gross domestic product in Nigeria; government revenue from taxation has negative significant influence on unemployment rate in Nigeria; and that petroleum profit tax has negative significant effect on real interest rate in Nigeria. The implication of the above study shows that revenue generation from taxation enhances economic growth and that changes in taxation, automatically will affect individuals real standard of living (GDP), employment rate and interest rate.
Doki .N.O & Abubakar.S (2015)	The potential of company income tax on the search for sustainable alternative financing in Nigeria	Economy Principle and Revenue Productivity Theory	Ordinary Least Square (OLS) method and Co integration Test. TDT = F (CIT, PPT, OOR, PIT)	Results show that increasing the contribution of CIT by one per cent increase revenue generation by 0.42%. Then macroeconomic determinants of CIT portray that there is a long run relationship with foreign direct investment, interest rate and corruption proxied by CPI.
Abiodun.D.M, Taiwo.O & Flomo.D.H. (2014)	Tax revenue shocks and economic growth in Nigeria, 1961-2011	Wagner Law	VAR Model (TAXREV,GDP,GE,consumer price index)	The results indicate that tax revenue shocks have positive effect on government expenditure and real output. The findings also suggest that tax revenue turns out to contribute increasingly to innovations in government spending and real output from the first year up to the end of the

period.

Ayuba.A.J (2014)	Impact of non-oil tax revenue on economic growth: the Nigerian perspective (1993-2012)	Socio political theory & Expediency theory	Ordinary Least Squares Regression. GDP=f(non oil tax revenue)	The result from the test shows that there exists a positive impact of Non-oil Tax revenue on economic growth in Nigeria.
Canicio.D & Zachary.T (2014)	Causal relationship between government tax revenue growth and economic growth: a case of Zimbabwe (1980-2012)	Neo-classical growth model, endogenous growth theory, tax and grow hypothesis, grow and tax hypothesis ,tax smoothing model	Granger Causality test, Johansen's cointegration test and vector error correction model. GDP=f (TR)	The findings of this study clearly showed that there is an independence relationship between economic growth and total government tax revenue with 30% speed of adjustment in the short run towards equilibrium level in the long run. This implies that there is fiscal independence between tax revenue and growth. The empirical analysis also provides the evidence of long-run equilibrium relationship.
Olatunji, T.E &Adegbite, T.A(2014)	The effects of petroleum profit tax, interest rate and money supply on Nigerian economy(1970-2010)		Multiple regressions GDP=f(PPT,INTR,MONSPL)	The result showed that the short run effects of Petroleum Profit Tax (PPT) was positive, while that of Interest Rate was negative and the effects of Money Supply (MONSPL) was positive on economic growth. The effects on economic growth were significant with the adjustedR^2 of 96.83%. The output effects of the three variables on economic growth on the long run were positive with an $R^2$of 92.5% and adj. R^2 of 0.8882. That is, economic growth on the long run may be explained up to 89% by these variables.
Takumah.W (2014)	Tax revenue and economic growth in Ghana: a cointegration approach(1986-2010)		VAR framework GDP=f(K , L , TAXR, FDI , CPI , GOV)	The study found that there exist both short run and long run relationship between economic growth and tax revenue. The result indicated a unidirectional causality between tax revenue and economic growth and it flows from tax revenue to economic growth. The result suggests that tax revenue exerted a positive and statistically significant effect on economic growth both in the longrun and short-run implying that tax revenue enhances economic growth in Ghana.
Onwuchekwa.J. C& Aruwa.A.S (2014)	Value added tax and economic		Ordinary Least Square GDP=f(CVTR)	The result shows that VAT contributes significantly to the total tax revenue of government

	growth in Nigeria(1994-2009)		TAXR=f(VATR)	and by extension the economic growth of Nigeria. VAT revenue growth had consistent increase though it was not that explosive. To boost tax revenue we need to boost revenue collected from VAT.
Bukie.O.H & Adejumo.T.O (2013)	The effects of Tax Revenue on Economic growth in Nigeria (1970 – 2011)	Diffusion theory of taxation, Benefit Theory of Taxation, Ability to Pay Theory ,Exogenous growth model, Endogenous or New Growth Theory,	Ordinary Least Square (OLS) regression GDP = (LAB, DINV, FDI, TAXREV)	The result shows that domestic investment, labour force and foreign direct investment have positive and significant effect on economic growth in Nigeria.
Bukie.O.H&Adejumo.T.O(2013)	The effects of tax revenue on economic growth in Nigeria (1970 – 2011)	Exogenous growth model and Endogenous or New Growth Theory	Ordinary Least Square (OLS) GDP = f(LAB, DINV, FDI, TAXREV)	The result shows that tax revenue has positive effect on economic growth in Nigeria. The result shows that domestic investment, labour force and foreign direct investment have positive and significant effect on economic growth in Nigeria. I
Njuru.S.G, Ombuki.C, Wawire.N & Okeri.S(2013)	Taxation and private investment: evidence for Kenya(1964 -2010)	Keynesian approach neo classical economists Real option theory	Vector auto-regression technique I= f (Y MT VAT ED CIT D1 D2)	The study found that VAT, income tax and establishment of Kenya Revenue Authority (KRA) had negative impact on private investment while excise tax, import tax and tax amnesty impacted positively on private investment. The study concludes appropriate tax system and progressive tax reforms are necessary to ensure that private investors are given enabling environment to establish.
Yakubu .M & Jibrin A. S (2013)	Analyzing the Impact of Value Added Tax (VAT) on Economic Growth in Nigeria(1994-2010)		An unrestricted vector autoregressions (VARs) technique. Impulse response functions (IRFs) and Forecast error Variance decompositions (FEVDs) RGDP=f(VAT and oil revenue.	The results derived from the impulse response function (IRF) and forecast error variance decomposition (FEVD) imply that value added tax have positive impact on economic growth in Nigeria , where variation in this variables growth rate will causes variation in real economic activity with about 50percent in the near future. We conclude that the policy makers in Nigeria should continues this fiscal policy with other macroeconomic indicators.
Mahmood.H & Chaudhary.A.R (2013)	Impact of FDI on tax revenue in Pakistan		Auto-Regressive Distributive Lag $TRG_t = f (FDIG_t , GDPE_t)$	The study finds the long run and short run relationships in the model. Foreign direct investment and gross domestic product per person employed have positive

				and significant impact on tax revenue. So, the study concludes the positive contribution of foreign direct investment in tax revenue in Pakistan.
Onaolapo, A. A, Aworemi, R.J & Ajala, O.A (2013)	Assessment of value added tax and its effects on revenue generation in Nigeria(2001-2010)		Regression TFCR=f(VAT,PPT,CI,ET)	Findings showed that value added tax has statistically significant effect on revenue generation in Nigeria.
Kizito.E.U(2013)	The nexus between tax structure and economic growth in Nigeria: a prognosis	Tax- smoothening hypothesis, endogenous growth theories ,exogenous growth model	Granger Causality. GDP=f (PIT, CIT, VAT, PPT and Duties)	The paper revealed that the tax system has no significant impact on growth because of the numerous challenges confronting the system. Further analysis of the components of the tax system shows that custom duties have more impact on economic growth than company income tax, value added tax and petroleum profit tax. The paper also revealed a negative and insignificant relationship between petroleum profit tax and company income tax on the one hand, and between petroleum profit tax and value added tax on the other hand.
EbimoboweI.A & Ebiringa, O.T.(2012)	Petroleum profit tax and economic growth in Nigeria(1970 -2010)	Socio Political Theory, Expediency Theory, Benefit Received Theory, Cost of Service Theory ,Faculty Theory	Johansen Co-integration, and Granger Causality. GDP=f(PPT)	The results showed that there exists a long run equilibrium relationship between economic growth and petroleum profit tax. It was also found that petroleum profit tax does granger cause gross domestic product of Nigeria.
Ilaboya, C. J & Mgbame, C.O. (2012)	Indirect Tax and economic growth(1980 -2011)	Endogenous framework	Engel-Granger two step procedure and Autoregressive Distributed Lag. Gross Domestic Product growth rate=f(Custom and Excise duties as a percentage of total indirect tax, Value Added Tax as a percentage of total indirect tax).	The study found a negative and an insignificant relationship between indirect tax and economic growth in Nigeria. The ratio of total indirect tax to total tax revenue reported a negative coefficient

Helhel.Y & Demir.Y(2012)	The relationship between tax revenue and economic growth in turkey: the period of 1975-2011		Johansen Juselious cointegration test & Granger causality test. GDP=f(TAXR,INDIRECT TAX)	The findings have shown that there is interaction between tax revenue types and the economic growth in the long term and is not such an interaction in the short term. The effect of the shock given to indirect tax revenue to economic growth rate has decline; the response of growth rate to shock given to direct tax revenue has been tendency to rise up towards the end of the period.
Jibrin.S.M, Blessing.S.E & Ifurueze, M.S.K (2012)	Impact of petroleum profit tax on economic development of Nigeria(2000-2010)		Ordinary least square (OLS) technique GDP=f(PPT)	Petroleum profit tax impact positively on Gross Domestic Product of Nigeria and it is statistically significant. Also total oil revenue impact positively on Gross Domestic Product of Nigeria and it is statistically significant
Okafor. R. G.(2012)	Tax Revenue Generation and Nigerian Economic Development(1981-2007)		Ordinary least square (OLS). GDP=f(Petroleum tax revenue, Company tax revenue, Customs and excise duty, Value added tax.	The regression result indicated a very positive and significant relationship between GDP and petroleum tax revenue, Company tax revenue, Customs and excise duty, Value added tax.
Taha,R, Loganathan ,N. & Colombage.,S.R (2011)	The Effect of economic growth on taxation revenue: The Case of a Newly Industrialized Country(1970-2009)	Neoclassical growth models and endogenous growth theory.	Vector Error Correction Model and Causality. GDP=f(government tax revenue, total tax revenue(direct and indirect tax).	The finding of this study shows that there is a unidirectional relationship between economic growth and total government tax revenue with 21% speed of adjustment in the short run to reach equilibrium level in the long run
Tosuna.M.S & Abizadeh.S (2005)	Economic growth and tax components: an analysis of tax changes in OECD(1980-1999)	Wagnerian approach, macroeconomic models that are based on the Keynesian paradigm, neoclassical growth models, rates. The new endogenous growth theory.	Regression T=PT+CT+SST+PAYT+PROPT+GST+IT+OT	The study found that economic growth, measured by GDP per capita, had a significant effect on the tax mix of the OECD countries. Analysis reveals that different taxes respond differently to the growth of GDP per capita. It is shown that while the shares of personal and property taxes have responded positively to economic growth, shares of the payroll ,goods and services taxes have shown a relative decline.

2.4 Summary of Literature

The aim of this study is to examine the effect of federal government tax revenue on the Nigerian economy viewing the economy from different perspectives. In doing so chapter two provided the conceptual and theoretical foundation as well as empirical evidence for the study. In this endeavour various classes of theories were discussed and two were adopted namely Wagner's law and Displacement effect hypothesis under the theoretical framework and finally several research works of notable authors around the world as well as locally were reviewed. From the literatures reviewed, over 70% of the studies focused on growth of the economy while less than 30% focused on development. The variables used in most cases were GDP,HDI, consumer price index , government expenditure, direct tax, indirect tax, petroleum profit tax company income tax, education tax , personal income tax, value added tax, customs &excise duty and total tax revenue and less than 2% on index of industrial production and consolidated pool account(pre-operational levy and personal income tax).

2.5 Gap in Literature

From table 2.1 and other reviewed literature, most of the works done to examine the effect of tax revenue on the Nigerian economy revealed the following gap;

i.   Most of the works reviewed to the best of researcher's knowledge studied effect of tax revenue on economic growth and development using gross domestic product (GDP) and human development index (HDI) as proxy to measure economic growth and development respectively.(Onakoye, Afintinni and Oyeyemi, 2016; Nwadilor and Ekezie,2016; Worlu and Nkoro,2012; Ojong,

Anthony and Arikpo,2016; Ofoegbu, Awku and Oliver,2016; Ibanichuka, Ikebujo and Akani, 2016)

ii. There were explicit discrepancies in some of the results obtained by various researchers particularly when compared with a priori expectations.(Onakoye, Afintinni & Oyeyemi, 2016; Edame & Okoi,2014; Chigbu, Akwu & Oliver,2016).

This study will ride on the above listed observed gaps to cover the following;

i. This work shall focus on the effect of federal government tax revenue on the Nigerian economy, while we decompose the economy to growth, development and consumer demand to give a holistic view on the effect of tax revenue on the economy.

ii. The proxy to be used to capture the economy will be gross domestic product, human development index and industrial production index. Industrial production index is sensitive to consumer demand and interest rate and is used by Central Bank to forecast future GDP, measure inflation and employment rate in the economy.

iii. Validate existing findings of erudite scholars from studies on the effect of tax revenue on the Nigerian economy.

iv. Present a more current work on the subject (1992-2016) and add to the existing literature.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1   Research Design

The study adopts the ex post facto research method which is a very common and ideal method in conducting research in business and social sciences. There are two key reasons for the choice of the ex post facto method. Firstly, the data records from Federal Inland Revenue Services, Central Bank of Nigeria statistical bulletin and United Nations Development Programme. The data set captures already completed and reported economic growth variables and tax revenue. Secondly, the reported figures are not susceptible to the manipulations of the researcher. They are information in public domain and are easily verifiable.

3.2   Sources and Nature of Data

The data for this work were drawn from Federal Inland Revenue Service, the statistical bulletin of the Central Bank of Nigeria and United Nations Development Programme .These data were extracted from the soft copy of the named sources as made available by the authorities and via the internet. They were carefully analysed and the appropriate calculations where made where necessary based on the derivation formular given in the literatures.

The data used are purely time series. Time series are observations that are ordered in time or numerical values of variables from time to time, (Osuala, 2010; Koutsoyiannis, 2001). Gujarti and Porter (2009) see time series as "a set of observations on the values that a variable takes at different times. Brooks (2008) holds that time series are ordered by frequency which represents the interval over or regularity with which the data were collected or recorded.

The second characteristic of the data set is that it is secondary. Secondary data are data collected by someone other than the user. Common sources of secondary data for social science include journals, publications, organizational records and data collected and kept in existing bodies of literature (McCaston & Katherine,1998). Conversely, primary data are collected by the investigator conducting the research.

3.3 Technique of Data Analyses

Several data analyses techniques were employed for the purposes of analyzing the collected data and drawing conclusions based on them. The following analytical techniques and steps shall be followed:

i.   Diagnostic/ Standard Tests

ii.   Test for Stationarity (Unit Root Test)

iii. Regression Analyses

iv.   Cointegration Test

v.   Granger Casuality Tests

3.3.1 Diagnostic Tests

This is a test for the data behaviour and goodness for the purposes of using them for the model estimation. This covers descriptive statistics like skewness, kurtosis, normality, mean, median, variance and standard deviation. The mean, median and mode would be used to test the aggregative tendencies of the data set while variance, standard deviation, minimum and maximum would test spread and variability of the data sets.

The Jaque-Bera test for normality were conducted to confirm that the data is normally distributed. According to Jacque & Bera (1980) the null hypothesis is a joint hypothesis of the skewness being zero and the excess kurtosis being zero. Samples from a normal distribution have an expected skewness of 0 and an expected excess kurtosis of 0 (which is the same as a kurtosis of 3).

3.3.2   Unit Root Test (URT)

The Unit root is a standard approach in co-integration analysis used for determining the stationarity of time series data. Augmented Dickey Fuller (ADF) was used to determine the stationarity of time series data.

3.3.3   Regression Analyses

The Ordinary least square (OLS) method of regression analysis was the fundamental technique of data analyses for this work. Regression analyses is basically concerned with the study of the dependence of one variable (dependent variable) on one or more other explanatory or independent variables (regressors) with the view to finding out or estimating/predicting the mean or average value of the former in terms of known or repeated values of the latter. (Gujarti & Porter, 2009).

In specific terms, regression analyses explains the variation in an outcome (dependent variable) Y, as it depends on a predictor (independent explanatory) variable X.

3.3.3A Overall Significance of the Model (F-TEST)

The F-test is used to show if the model adopted is statistically significant. This was done on a tail test with the comparison of the table value to the estimated value of F statistic.

3.3.3B Durbin Watson Test (DW TEST)

The DW-test is used to determine the presence of Autocorrelation in a model. It could either show positive, negative or no autocorrelation, depending on the region which the DW statistical value falls.

3.3.3C Co-Efficient of Determination

This statistical tool is employed for better interpretation of result. It explains the degree of variation in tax revenue as explained by its relationship with growth of Nigeria economy. This was principally used at the point that this work tested federal government tax revenue against all the variants of gross domestic products, human development index and industrial production combined in a multiple regression. Multiple coefficient of determination (R^2) is used to measure such variations in y-variable which is explained by the independent variables- x_1, x_2 and x_3.

3.3.3D Test for Autocorrelation

Autocorrelation refers to the correlation of successive values of the same variables. That is, if presents values of variables that are ordered in time correlates with the preceding values, it becomes a case of autocorrelation. (Koutsoyiannis, 2001). Traditionally, the Durbin Watson Statistic is used to test first order autocorrelation or in a case where the dependent variable

includes a lag of its own value. This is linearly mapped to the Pearson Correlation between values and their lags (Durbin, 1960).

However, the Breush-Pagan-Godfrey LM serial correlation test is used in a more flexible test covering higher order autocorrelation and whether or not the lagged values of the dependent variable are involved (Godfrey, 1978; Pagan & Godfrey, 1979). These two tests were used in this work to confirm the presence or absence of autocorrelation in the variables of interest. A confirmatory test for all the variables in a joint hypothesis that all the variables are not auto correlated were done.

3.3.3E Test for Heteroscedasticity

This is when the assumption of homoscedasticity is violated by the variables in the model. It is a situation where the variance of the error term is not constant. The presence of this error will make the regression estimators not to be best linear unbiased estimators (BLUE) any longer. Ways to correct this will include use of White tests (1980); Generalized Least Square (GLS); Use of log-linear models (Brooks, 2014).

3.3.3F Test for Multicollinearity

This is said to exist when the same explanatory variable is inadvertently used twice in a regression and in such a case the model parameters can not be estimated. This can be corrected by: ignoring it; dropping one of the collinear variables or by transforming the highly correlated variables (Brooks, 2014)

3.3.3G Test for Ramsey Reset Specification

Ramsey's (1969) Reset test is a general test for misspecification of functional form. It is also known as non-linearity test. It reveals a situation where the share of the regression model estimated is linear but it should have been non-linear. It is essentially a model stability tests and helps to give strong level of reliability to the results of the model.

3.3.4 Co-Integration Test

The Johansen's co-integration test is adopted in this study and it is to show the long-run relationship subsisting between the dependent and the independent variables. This is done by evaluating both the trace and maximum Eigen statistics to determine the co-integration rank.

3.3.5   Granger Causality Test

The granger causality test is used to bridge the limitation of the explanation of the causes of one variable by another. It shows whether the identified explanatory variables truly cause the behaviour of the explained variable. This can either be Unidirectional or Bidirectional, and it is tested using the Probability value and the F-statistic.

3.4 Model Specification

The model for this study assumes an underlying relationship between some tax variables and economic variables. This is backed up by the plethora of evidence given in various literatures and theoretical framework explored in this work. The research model was based on the modification of Ogbonna and Ebimobowei (2012) and Ofoegbu, Akwu & Oliver (2016) models.

Their model were used to examine the impact of tax reforms and economic growth of Nigeria: A time series analysis; and empirical analysis of the effect of tax revenue on economic development of Nigeria respectively.

GDP=∫ (PPT, CIT, VAT, EDT, PIT, CED)..Eqn.1

HDI= ∫ (TR)..Eqn.2

Where GDP is gross domestic product ; and HDI is human development index, PPT=Petroleum profit tax ; CIT= company income tax ; VAT= Value added tax ; EDT= education tax ; PIT=personal income tax ; CED=Custom and Excise Duties; and TR= total revenue.

This study examines the effect of federal government tax revenue on the growth of Nigeria economy, the proposed models inter alia:

GDP=∫(PPT,CIT,SD,CGT,VAT,NITDEF,CONS,EDT)................................Eqn.3

HDI= ∫(PPT,CIT,SD,CGT,VAT,NITDEF,CONS,EDT)...............................Eqn.4

Where,

SD =   Stamp duty

PPT   =   Petroleum profit tax

CIT   =   Company income tax

CGT =   Capital gain tax

VAT =   Value added tax

NITDEF =   National information technology development fund levy

CONS =   Consolidated pool accounts

EDT =   Education tax

This study excluded SD, CGT and NITDEF because they were introduce later than the base period of this study :

From equation (1) PIT and CED were removed and replaced with TTR. Then in the second equation PPT, CIT, VAT and EDT were included. This work therefore presents three functional models:

Mathematically the models can be stated as:

GDP=∫(PPT, CIT, VAT, TTR)... Eqn.5

HDI= ∫(PPT,CIT,EDT,TTR)... Eqn.6

IDP= ∫(PPT,CIT,CONS,TTR)... Eqn.7

Hypothesis One (Model 1)

$$GDP= \beta_0+\beta_1 PPT+\beta_2 CIT+\beta_3 VAT+\beta_4 TTR+Ut .... \text{Eqn.8}$$

$$Log(GDP) = \beta_0+\beta_1 \log(PPT)+\beta_2 \log(CIT)+\beta_3 \log(VAT)+\beta_4 (TTR)+Ut .... \text{Eqn.9}$$

Hypothesis Two (Model 2)

$$HDI= \beta_0+\beta_1 PPT+\beta_2 CIT+\beta_3 EDT+\beta_4 TTR+Ut .... \text{Eqn.10}$$

$$Log(HDI) = \beta_0+\beta_1 \log(PPT)+\beta_2 \log(CIT)+\beta_3 \log(EDT)+\beta_4 (TTR)+Ut ….……….. \text{Eqn.11}$$

Hypothesis Three (Model 3)

$$IDP= \beta_0+\beta_1 PPT+\beta_2 CIT+\beta_3 CONS+\beta_4 TTR+Ut .... \text{Eqn.12}$$

$$\text{Log(IDP)} = \beta_0 + \beta_1 \log(\text{PPT}) + \beta_2 \log(\text{CIT}) + \beta_3 \log(\text{CONS}) + \beta_4 (\text{TTR}) + U_t \ldots\ldots\ldots\ldots \text{ Eqn.13}$$

Where;

GDP	=	Gross Domestic Product
HDI	=	Human Development Index
IDP	=	Industrial Production
PPT	=	Petroleum Profit Tax
CIT	=	Company Income Tax
VAT	=	Value Added Tax
EDT	=	Education Tax
TTR	=	Total Tax Revenue
CONS	=	Consolidated pool accounts
$\int$	=	Funtional Notation
μ_t	=	Error term
$\beta_0 - \beta_4$	=	Coefficients of Estimates

3.5 A priori Expectation

The a priori expectations of the coefficients were determined by the principles of economic theory and refer to the expected relationship between two variables or more. In this study, it is expected that Petroleum profit tax (PPT) will be positively related to the level of GDP, HDI and IDP. This is denoted in mathematical terms as in f' (PPT)>0. This implies that an increase in PPT is expected to result into a positive effect on GDP, HDI and IDP.

Company income tax (CIT) will be positively related to the level of GDP, HDI and IDP. This is denoted in mathematical terms as in f' (CIT)>0. This implies that an increase in the company income tax is expected to result into a positive effect on GDP, HDI and IDP.

Value added tax is expected to either have a positive effect on GDP, HDI and IDP. This is denoted mathematically as: f' (VAT)>0. This implies that an increase in value added tax will result into an increase in GDP, HDI and IDP.

Education tax is expected to have a positive relationship with GDP, HDI, and IDP as in: f' (EDT)>0. This implies that an increase in education tax is expected to have a positive (increase) effect on GDP, HDI and IDP.

Total tax revenue is expected to have a positive effect with GDP, HDI, IDP as in: f' (TTR)>0. This implies that an increase in total tax revenue is expected to have a positive (increase) effect on GDP, HDI and IDP.

Table 3.1 A priori Expectation

REGRESSAND	REGRESSOR	RELATIONSHIP
GDP	PPT,CIT,VAT,TTR	+
HDI	PPT,CIT,EDT,TTR	+
IDP	PPT,CIT,CONS,TTR	+

Author's Computation

Any parameter estimates with a positive sign (+) indicates that the independent variable in question has a direct or positive effect with the dependent variable; meaning that if the independent variable increases, the dependent variable will increase. However, a negative sign (-

) implies an inverse or negative relationship meaning that if the independent variable increases, the dependent variable will decrease.

The relationship expressed in Table 3.1 shows that petroleum profit tax, company income tax, value added tax, education tax, consolidated pool account and total tax revenue is expected to exert a positive effect on gross domestic product, human development index and industrial production.

Table 3.2 Summary of the Model

Models	Functional Forms	Econometric Form	A priori expectations
Growth Model	GDP=f(PPT,CIT,VAT,TTR)	$GDP=\beta_0+\beta_1 PPT+\beta_2 CIT+\beta_3 VAT+\beta_4 TTR+Ut$	$\beta_1>0$
Development Model	HDI=f(PPT,CIT,EDT,TTR)	$HDI=\beta_0+\beta_1 PPT+\beta_2 CIT+\beta_3 EDT+\beta_4 TTR+Ut$	$\beta_2>0$
Production Model	IDP=f(PPT,CIT,CONS,TTR)	$IDP=\beta_0+\beta_1 PPT+\beta_2 CIT+\beta_3 CONS+\beta_4 TTR+Ut$	$\beta_3>0$

Author's Computation

3.6   Variables Description and Sources of Data

Companies Income Tax – imposed on the profits of all corporate entities who are registered in Nigeria or derive income from Nigeria, other than those engaged in petroleum operations.

Consolidated Pool Accounts: A consolidated pool account consists of personal income tax and pre-operational levy. Personal Income tax is payable on any income that has accrued in Nigeria from productive assets, brought into Nigeria in form of emoluments while operational levy is a levy paid by an enterprise that has not commenced business after at least six months since its incorporation date, it shall, for each year it obtains a tax clearance certificate (TCC), pay the levy.

Education Tax: Tertiary education tax is imposed on every Nigerian resident company at the rate of 2% of the assessable profit for each year of assessment. The tax is payable within two

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months of an assessment notice from the FIRS. In practice, many companies pay the tax on a self-assessment basis along with their CIT.

Gross Domestic Product (GDP): Is the monetary value of all the finished goods and services produced within a country's borders in a specific time period. Though GDP is usually calculated on an annual basis, it can be calculated on a quarterly basis as well. GDP includes all private and public consumption, government outlays, investments and net exports that occurred within a defined territory. That is, GDP=C+G+I+NX.

Human Development Index: HDI is a summary measure for assessing progress in three basic dimensions of human development: a long and healthy life, access to knowledge and a decent standard of living.

Industrial Production is a measure of output of the industrial sector of the economy. The industrial sector includes manufacturing, mining, and utilities. It also gives an idea of the industrial activities in an economy over a specified period of time. A high industrial production index is a reflection of high industrial activities which translates to real output of the economy.

Petroleum Profits Tax: PPT is levied on the income of companies engaged in upstream petroleum operation. The rate is 85% for Joint Ventures and 50% for Production Sharing Contracts (PSC).

Value-Added Tax: VAT is an indirect tax placed on the domestic consumption of goods and services, except for those that are zero-rated (not liable to tax), such as food and essential drugs, or goods or services generally exempted by law. It is a consumption tax that is levied on a product or services whenever value is added at each stage in the chain of production and at the final sale.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1   Data Presentation

The study investigates the effect of tax revenue on the Nigerian economy. The data were analyzed following a methodological approach that allows for determining the short and long run relationships between the dependent variable and independent variables.

The datasets collected and collated were from the Federal Inland Revenue Services (FIRS) and Central Bank of Nigeria statistical bulletins for the periods under study (1992-2016).

The datasets were presented in tabular forms for the purposes of clarity. In addition, the results of various econometric and statistical methods of estimations adopted in line with the objectives and aforementioned methodology of this work are also contained in this chapter. The tests of the formulated hypotheses are also presented with conclusions drawn against the backdrop of the formulated models and a priori expectations. The various diagnostic and validity tests conducted are shown with the main aim of vouching for the reliability of the used datasets and estimated models.

The data gathered on all variables from 1992-2016 are shown in table 4.1 presented in the appendix 1.

4.1.1 Visual Plot of Time Series Data

The visual plots of the time-series are depicted in Figure 4.1. The figure shows that all the variables namely: Gross Domestic Product, Index of Industrial Production, Petroleum Profit Tax, Company Income Tax, Value Added Tax, Consolidated Pool Accounts, Education Tax, Total

Tax Revenue and Human Development Index (GDP, IDP, PPT, CIT, VAT, CONS, EDT, TTR and HDI) trended upwards with varying degrees of fluctuations as shown graphically. Thus variables were generally non-stationary.
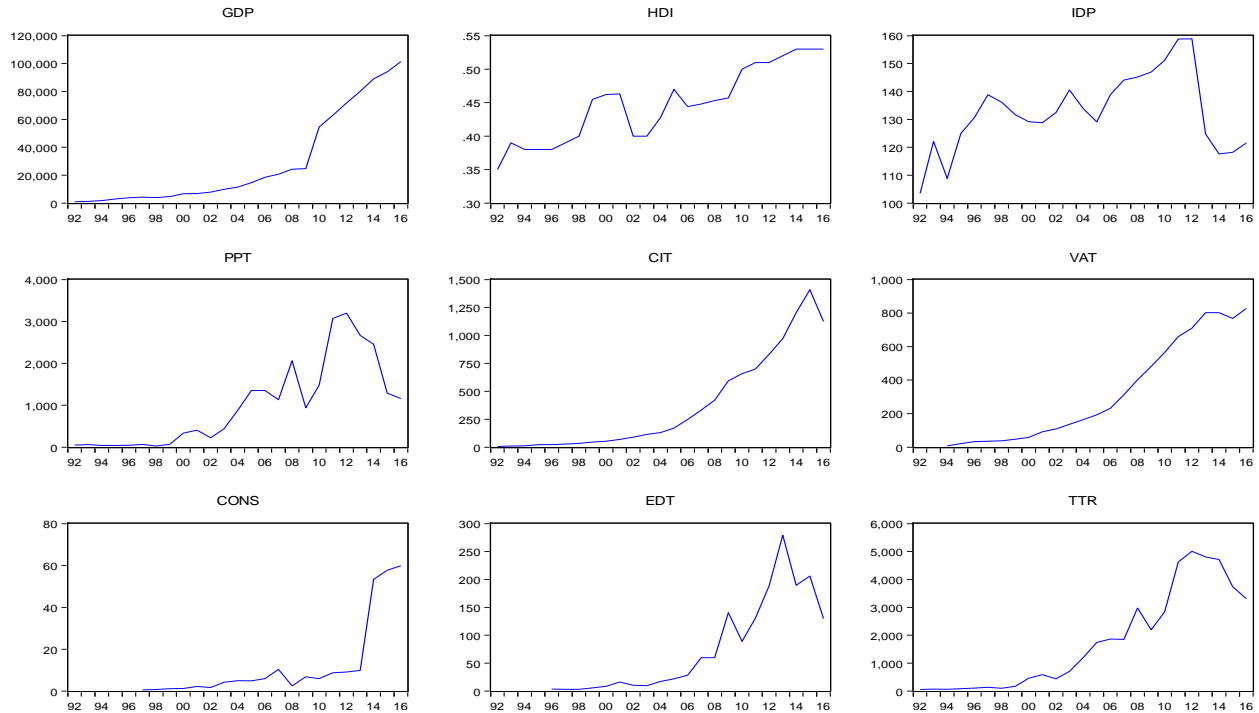
Figure 4.1 Visual Plots of Time Series Data

Source: Graphs Using E-view Statistical Package, Version 3.1
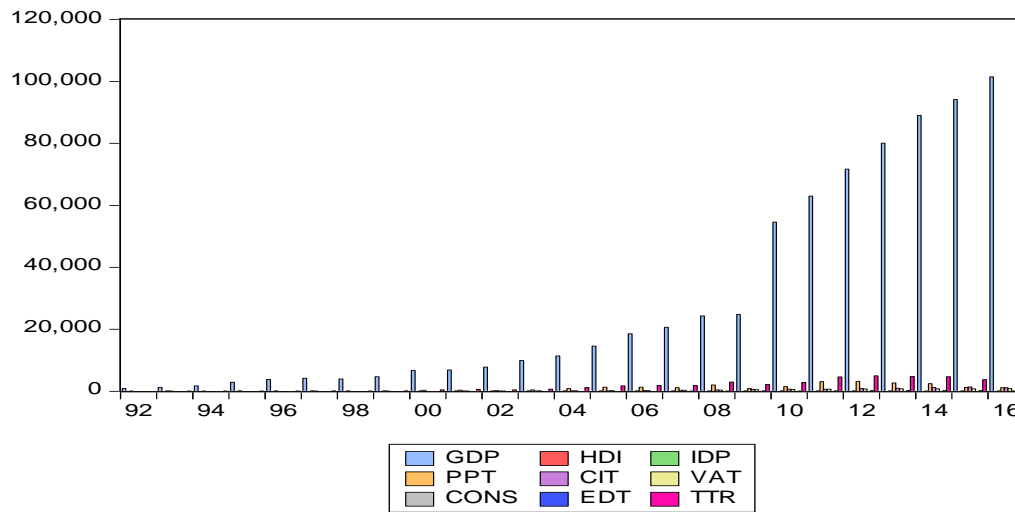
Figure 4.2 Bar Chart of the Time Series Data

Figure 4.2 (bar chart) indicate that Index of Industrial Production, Petroleum Profit Tax, Company Income Tax, Value Added Tax, Consolidated Pool Accounts, Education Tax and Human Development Index for the period under review 1992 to 2016 were stable with little or minor increase. Total Tax Revenue has been increasing with minor increase occurring from 2005 to 2016.Gross Domestic Product for the period under review has been increasing with major increase occurring in 2003 to 2009 and superlative increase occurring from 2010 to 2016. This shows that gross domestic product in Nigeria for the period under study has been increasing when compared to other variables used in the study.

4.2   Data Analysis

4.3   4.2.1 Diagnostic Testing

4.2.1.1 Descriptive Statistics

Descriptive statistics describe the variables used in the model and give an idea of the characteristics of the variables. The mean and the standard deviation of any given set of data are usually reported together, though standard deviation in most cases is a measure of uncertainty .They measure how spread out a trend is in a set of data. A high standard deviation of any given set of data indicates that the data points are far from the mean and a low standard deviation indicates that the data points tend to be very close to the mean. The criteria used in this study is

that at a 95% confidence level, when the probability value of Jarque-Bera score is less than 0.05, the residuals are not normally distributed an indication that a key variable may be missing from the model.

Table 4.2.1 Descriptive Statistics

Variable	Mean	Standard deviation	Probability
	Growth Model		
GDP	31348.90	34144.40	0.140395
PPT	1075.231	1017.616	0.286187
CIT	403.5936	441.5394	0.172432
VAT	325.9227	304.2617	0.245844
TTR	1899.849	17559.726	0.308498
	Development Model		
HDI	0.460950	0.049297	0.543813
PPT	1173.548	1011.126	0.382539
CIT	440.4048	445.0709	0.259533
EDT	76.17143	83.98012	0.201170
TTR	2073.748	1743.884	0.380004
	Production Model		
IDP	135.2845	13.73719	0.782336
PPT	1229.850	1003.052	0.429505
CIT	461.2700	445.9709	0.307420
CONS	12.57500	19.40979	0.000884
TTR	2172.115	1728.379	0.417021

Source: Author's E-view 3.1 computations (Appendix 1, page 199 for details)

The descriptive statistics in Table 4.2.1 show the basic aggregative averages like mean, median and mode for all the observations. The spread and variations in the series are also indicated using the standard deviation. Growth model shows that the mean of PPT, VAT and TTR is greater than its standard deviation except GDP and CIT. Development model shows that the mean of HDI, PPT, and TTR is greater than its standard deviation except EDT and CIT. Production model shows that the mean of IDP, PPT, CIT and TTR is greater than its standard deviation except CONS. The variables of standard deviations were found to be positively skewed towards normality as evidenced by the positive values of the skewness statistic. The Kurtosis value shows that all the variables are leptokurtic in nature except for CONS as evidenced by the less than 3 values of the Kurtosis statistic.

The Jarque-Bera suggests that all the variables are normally distributed as the p-values of these variables in all the models (GDP, HDI IDP PPT, CIT, VAT, EDT and TTR) are in excess of the 5% level of significance except CONS which will be tolerated as its still consistent with the behavour of most economic and financial time series (Brooks, *ibid*).

4.2.1.2 Unit Root Test

Time series data are often assumed to be non-stationary and thus, it is necessary to perform unit root test to confirm the non stationarity of data. The test would also be employed to avoid the problem of spurious regression. In conducting this test, the Augmented Dickey-Fuller (ADF) unit root test with intercept would be employed to determine the stationarity of data.

The hypothesis for the test is as follows:

H_0: X_t has a unit root i.e. data is non-stationary

H_1: X_t has no unit root i.e. data is stationary

Decision Rule: Augmented Dickey-Fuller (ADF) test statistics must be greater than Mackinnon Critical Value at 5% and at absolute term i.e. ignoring the negativity of both the ADF test statistics and Mackinnon critical value, before the variable can be adjudged to be stationary, otherwise we accept the null hypothesis (H_0) and reject the alternative hypothesis (H_1).The results of the ADF unit root test is reported in table 4.2.2 and 4.2.3

Table 4.2.2: Result of ADF Unit Root Test at level

VARIABLES	ADF TEST STATISTICS VALUE	MACKINNON CRITICAL VALUE AT 5%	ORDER OF INTEGRATION	DECISION RULE		REMARKS
				H_0	H_1	Non-Stationary
GDP	2.194416	-2.9907	I(0)	Accept	Reject	Non-Stationary
HDI	-1.293129	-2.9907	I(0)	Accept	Reject	Non-Stationary
IDP	-1.466499	-2.9907	I(0)	Accept	Reject	Non-Stationary

PPT	-1.498601	-2.9907	**I(0)**	Accept	Reject	Non-Stationary
CIT	0.575392	-2.9907	**I(0)**	Accept	Reject	Non-Stationary
VAT	1.361704	-3.0038	**I(0)**	Accept	Reject	Non-Stationary
EDT	-1.222243	-3.0199	**I(0)**	Accept	Reject	Non-Stationary
CONS	0.253340	-3.0294	**I(0)**	Accept	Reject	Non-Stationary
TTR	-0.799682	-2.9907	**I(0)**	Accept	Reject	Non-Stationary

Source: Author's Computation (Appendix 2, page 208 for details)

From the table 4.2.2 the results of the test for stationarity of data at level i.e. before differencing, it could be deduced that all the variables have their ADF test statistics value lesser than the Mackinnon critical value (at absolute term) and at 5%. Therefore, we accept H_0 and reject H_1 for GDP, HDI, IDP, PPT, CIT, VAT, EDT, CONS and TTR.

To ensure the stationarity of data for variables found to be non-stationary at level, there is need to proceed to test for stationarity at first difference. The first difference ADF unit root test is presented in table 4.2.3:

Table 4.2.3: Result of ADF Unit Root Test at First Difference

VARIABLES	ADF TEST STATISTICS VALUE	MACKINNON CRITICAL VALUE AT 5%	ORDER OF INTEGRATION	DECISION RULE		REMARKS
				H_0	H_1	Stationary
GDP	-3.631240	-2.9969	**I(1)**	Reject	Accept	Stationary
HDI	-4.704553	-2.9969	**I(1)**	Reject	Accept	Stationary
IDP	-3.385431	-2.9969	**I(1)**	Reject	Accept	Stationary
PPT	-4.648078	-2.9969	**I(1)**	Reject	Accept	Stationary
CIT	-2.203520	-1.9566	**I(1)**	Reject	Accept	Stationary
VAT	-4.798429	-3.0199	**I(2)**	Reject	Accept	Stationary
EDT	-5.311950	-3.0294	**I(1)**	Reject	Accept	Stationary
CONS	-4.054674	-3.0294	**I(1)**	Reject	Accept	Stationary
TTR	-3.955736	-2.9969	**I(1)**	Reject	Accept	Stationary

Source: Author's Computation (Appendix 2, page 208 for details)

From the table 4.2.3 it could be revealed that all the variables (GDP, HDI, IDP, PPT, CIT, EDT, CONS and TTR except VAT) were stationary at first difference. This is because their respective ADF test statistics value is greater than Mackinnon critical value at 5% and at

absolute term. Hence, we accept H_1 for all the variables and reject H_0. Thus, the study model variables were processed at first order of integration.

4.2.1.3 Test for Serial Correlation – Breusch-Godfrey (BG) Tests

The Breusch-Godfrey tests is used to test for the presence or absence of serial or autocorrelations in the model with the Null hypothesis stating that there is No autocorrelation. This holds if p-value is greater than the chosen level of significance otherwise reject.

H_0= There is no serial correlation in the model

H_1= There is serial correlation in the model

Decision rule

If the probability value is less than 0.05 reject the H_0 and accept the H_1

Table 4.2.4: Breusch-Godfrey Serial Correlation Test

Breusch-Godfrey Serial Correlation LM Test: Growth Model			
F-statistic	2.033445	Probability.F	0.163350
Obs*R-squared	4.661334	Probability Chi-Square	0.097231
Breusch-Godfrey Serial Correlation LM Test: Development Model			
F-statistic	1.935662	Probability.F	0.181050
Obs*R-squared	4.549064	Probability Chi-Square	0.102845
Breusch-Godfrey Serial Correlation LM Test: Production Model			
F-statistic	3.145815	Probability.F	0.097866
Obs*R-squared	3.669485	Probability Chi-Square	0.055417

Source: Author's E-view 3.1 computations (Appendix 1, page 200 for details)

From table 4.2.4, the p-value is greater than the chosen level of significance of 5%, indicating the absence of autocorrelation in the models. The result of the serial correlation shows that the probability value in the growth model is 0.163350, in development model 0.18050, in production model 0.097866 which is greater than 0.05 implying that we accept H_0 and reject H_1.

We then conclude that there is no serial autocorrelation in the models and that the models are appropriate for the study.

4.2.1.4 – Normality Test

The normality test was done using the Jarque-Bera Normality test, which requires that for a series to be normally distributed; the histogram should be bell-shaped and the Jarque-Bera statistics would not be significant. This implies that the p-value given at the bottom of the normality test table should be greater than the chosen level of significance to accept the Null hypothesis, that the series is normally distributed (Brooks, 2014).

Table 4.2.5 Normality test

Normality Test: Growth Model	
Jarque-Bera	4.785593
Probability	0.091374
Normality Test: Development Model	
Jarque-Bera	0.547086
Probability	0.760679
Normality Test: Production Model	
Jarque-Bera	0.868088
Probability	0.647884

Source: Author's E-view 3.1 computations (Appendix 1, page 201 for details)

The result of the normality test shows that the probability value of growth model is 0.091374,development model 0.760679 and production model 0.868088 is greater than 0.05.Based on this however we accept H_0 and reject H_1. We then conclude that the residuals is normally distributed and random.

4.2.1.5 Test for Heteroskedasticity

     The assumption of the classical linear regression that the variance of the errors is constant is known as *Homoskedastycity*. If the variance of the errors is not constant, this would be known as *Heteroskedasticity*. Hence, we test for the presence of heteroskedasticity with the intention of treating same if found. The Null hypothesis states that there is no Heteroscedasticity if the p-value is greater than the level of significance (Brooks, 2014).

H_0= There is no heteroskedasticity

H_1= There is heteroskedasticity

Table 4.2.6: Heteroskedasticity Test

Heteroskedasticity Test: Growth Model			
F-statistic	1.490265	Probability.F	0.290682
Obs*R-squared	16.62521	Probability Chi-Square	0.276701
Heteroskedasticity Test: Development Model			
F-statistic	0.736232	Probability.F	0.703127
Obs*R-squared	13.27337	Probability Chi-Square	0.505120
Heteroskedasticity Test: Production Model			
F-statistic	0.521753	Probability.F	0.844836
Obs*R-squared	11.87292	Probability Chi-Square	0.616508

Source: Author's E-view 3.1 computations (Appendix 1, page 203 for details)

     From the result in Table 4.2.6 we accept the Null hypothesis that there is no heteroskedasticity in the models since p-value is greater than the chosen level of significance of 5%. This shows that the models have global utility and is normally distributed. And based on this we conclude that this is the best model to explain the relationship between these variables included in the models.

4.2.1.6 Multicollinearity Test

     Correlation indicates the degree of association between variables. It assesses the extent and strength of the association between two variables. The result as presented in the table 4.2.7 showed that most of the variables employed are highly correlated and that there is significant

correlation between the variables used in the models as most of them are not considered insignificant as they are above 50% level of significant. The directions of the correlation for some are positive while some variables are negative. Hence, there is no suspicion of possible multicollinearity.

Table 4.2.7 Multicollinearity Test

GDP	HDI	IDP	PPT	CIT	VAT	CONS	EDT	TTR
1.000000	0.890808	-0.457937	0.699052	0.974031	0.967350	0.811915	0.884234	0.885563
0.890808	1.000000	-0.402655	0.718576	0.869807	0.881316	0.673048	0.814220	0.850157
-0.457937	-0.402655	1.000000	-0.124247	-0.507777	-0.494513	-0.418468	-0.387500	-0.316760
0.699052	0.718576	-0.124247	1.000000	0.670693	0.794831	0.275944	0.758830	0.943479
0.974031	0.869807	-0.507777	0.670693	1.000000	0.967285	0.829046	0.910674	0.876897
0.967350	0.881316	-0.494513	0.794831	0.967285	1.000000	0.707986	0.929464	0.947919
0.811915	0.673048	-0.418468	0.275944	0.829046	0.707986	1.000000	0.579500	0.536423
0.884234	0.814220	-0.387500	0.758830	0.910674	0.929464	0.579500	1.000000	0.903286
0.885563	0.850157	-0.316760	0.943479	0.876897	0.947919	0.536423	0.903286	1.000000

Source: Author's E-view 3.1 computations

4.2.1.7 Ramsey Reset Test

The result of the Ramsey RESET test shows that the p-value of about 81.7% (0.816922) and 81.1% (0.810943) are greater than the critical value of 0.05 for the development model and production model respectively while the p-value of 0.0308% (0.000308) is less than critical value for the growth model (see appendix 1).This shows that there is no apparent non- linearity in the regression equations and it would be concluded that the linear models are appropriate.

4.3   Co-Integration Test

The co-integration test is used in the determination of the long-run relationship that exists between variables. It is in line with the proposition of the Johansen in 1991.

Decision rule: - If the trace statistics (Likelihood ratio) is greater than the 5% critical value at none[**], we reject the Null hypothesis (H$_0$) which says that there is no long-run relationship and accept the Alternate hypothesis (H$_1$) which says that there is long-run relationship between the variables.

The table in 4.3.1a shows the result of the Johansen co-integration test obtained from the co-integration result as duly presented in the appendix 3 page 211.

Table 4.3.1 -**Presentation of Johansen Co-Integration Result-Growth Model**

EIGEN VALUE	LIKELIHOOD RATIO	5% CRITICAL VALUE	1% CRITICAL VALUE	HYPOTHESISED NO OF (CEs)
0.974306	171.4115	68.52	76.07	None **
0.900270	94.73985	47.21	54.46	At most 1**
0.742600	46.32887	29.68	35.65	At most 2**
0.555482	17.82929	15.41	20.04	At most 3*
0.037527	0.803234	3.76	6.65	At most 4

*(**) denotes rejection of hypothesis @ 5%(1%) Significant level

L.R. test indicates 4 co-integrating equation @ 5% significant level

Table 4.3.2 -**Presentation of Johansen Co-Integration Result-Development Model**

EIGEN VALUE	LIKELIHOOD RATIO	5% CRITICAL VALUE	1% CRITICAL VALUE	HYPOTHESISED NO OF (CEs)
0.987180	171.1235	68.52	76.07	None **
0.894927	88.34473	47.21	54.46	At most 1**
0.809200	45.53577	29.68	35.65	At most 2**
0.514924	14.06169	15.41	20.04	At most 3
0.016501	0.316134	3.76	6.65	At most 4

*(**) denotes rejection of hypothesis @ 5%(1%) Significant level

L.R. test indicates 3 co-integrating equation @ 5% significant level

Table 4.3.3 -**Presentation of Johansen Co-Integration Result-Production Model**

EIGEN VALUE	LIKELIHOOD RATIO	5% CRITICAL VALUE	1% CRITICAL VALUE	HYPOTHESISED NO OF (CEs)
0.993734	201.1227	68.52	76.07	None **

0.940988	109.8157	47.21	54.46	At most 1**
0.896853	58.87558	29.68	35.65	At most 2**
0.489854	17.98679	15.41	20.04	At most 3*
0.278344	5.871726	3.76	6.65	At most 4*

*(**) denotes rejection of hypothesis @ 5% (1%) Significant level

L.R. test indicates 5 co-integrating equation @ 5% significant level

Source: -   *Co-integration result Computed (See table in the Appendix 3)*

Table 4.3.1, 4.3.2 and 4.3.3 shows that long-run relationship (co-integration) exist among the variables in the tables. Growth model has 4 co-integrating equation, Development model has 3 co-integrating equation while Production has 5 co-integrating equation. This is reflected in the **LIKELIHOOD RATIO** of the table that shows a value greater than that of the **5% CRITICAL VALUE** respectively. Hence, the hypothesis of no co-integration (H_0) is rejected and that of presence of co-integration (H_1) is upheld.

4.4.0 Summary of OLS Results

Table 4.4.1: A priori expectation – Growth Model

Dependent Variables	Independent Variables					Summary of Results			
GDP	Constant	PPT	CIT	VAT	TTR	R^2	Adj.R^2	F-Cal	DW-Stat
	5.582388	0.043656	0.928499	0.016612	-0.155894	0.973763	0.967933	167.0166	1.102544
	(5.181923)	(0.081006)	(2.996908)	(0.048484)	(-0.156411)				

Source: Author's Computation Using E-view 3.1

Table 4.4.2: A priori expectation – Development Model

Dependent	Independent Variables	Summary of Results

Variables									
HDI	Constant	PPT	CIT	EDT	TTR	R^2	Adj.R^2	F-Cal	DW–Stat
	-1.168732	-0.089845	-0.063475	0.065051	0.153644	0.760655	0.700818	12.71225	1.162534
	(-3.085610)	(-0.564420)	(-0.504337)	(1.361394)	(0.545545)				

Source: Author's Computation Using E-view 3.1

Table 4.4.3: A priori expectation – Production Model
Source: Author's Computation Using E-view 3.1

Dependent Variables	Independent Variables					Summary of Results			
IDP	Constant	PPT	CIT	CONS	TTR	R^2	Adj.R^2	F-Cal	DW–Stat
	5.006108	0.038785	-0.190389	0.041248	0.086709	0.568846	0.453871	4.947584	1.246092
	(10.32494)	(0.188218)	(-1.248540)	(1.403976)	(0.237388)				

Note:- T-statistics are stated in parenthesis

From tables 4.4.1, 4.4.2 and 4.4.3 the models can be mathematically expressed in the short run as:

GDP= 5.582388 + 0.043656$_{PPT}$ + 0.928499$_{CIT}$ + 0.016612$_{VAT}$ - 0.155894$_{TTR}$ + μ

HDI= -1.168732 - 0.089845$_{PPT}$ - 0.063475$_{CIT}$ + 0.065051$_{EDT}$ + 0.153644$_{TTR}$ + μ

IDP = 5.006108 + 0.038785$_{PPT}$ - 0.190389$_{CIT}$ + 0.041248$_{CONS}$ +0.086709$_{TTR}$ + μ

The constant parameters for the growth and production models are positively related with gross domestic product and production model respectively. It has a positive coefficient of 5.582388 and 5.006108 which implies that if all explanatory variables are held constant in the short-run, gross domestic product and industrial production will increase by 5.582388 and 5.006108 units respectively. While the development model the constant parameter is negatively related with human development index. It has a negative coefficient of 1.168732 which implies that if all explanatory variables are held constant in the short-run, human development index will decrease by -1.168732 units.

The coefficient of the Petroleum Profit Tax (PPT) showed a figure of 0.043656 for the growth model, -0.089845 for the development model and 0.038785 for production model. It therefore implies that a unit increase in Petroleum Profit Tax will result into 0.043656 and

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0.038785 units increase in gross domestic product and industrial production respectively while it will lead to -0.089845 decrease in human development which is against the stated a priori expectation.

The coefficient of Company Income Tax is 0.043656 for the growth model,-0.063475 for the development model and-0.190389 for the production model. This signifies that in the short run, company income tax (CIT) is positively related to gross domestic product and negatively related to human development and industrial production respectively. A unit increase in CIT means that GDP will increase by 0.043656 units which conform to the stated a priori expectation. This however agrees with previous studies of Adegbite (2015) who found positive impact of company income tax on gross domestic product in Nigeria. While a unit increase in CIT means that HDI and IDP will decrease by -0.063475 and -0.190389 which is against the stated a priori expectation.

Table 4.4.1 shows that value added tax (VAT) has a coefficient of 0.016612 and this implies that a direct relationship exist between Gross Domestic Product and Value Added Tax in the short run. The short run equilibrium relationship existing between gross domestic product and value added tax which conform to the a priori expectation. The relationship shows that a unit increase in Value Added Tax will cause GDP to rise by 0.016612 units. The result is consistent with the finding of Yakubu and Jibrin (2013) who found a positive effect between VAT and GDP in Nigeria for the period under review.

The coefficient of Education Tax (EDT) in table 4.4.2 is 0.065051 and this implies that a direct relationship exist between Human Development Index and Education Tax in the short run. The short run equilibrium relationship existing between Human Development Index and

Education Tax which conform to the a priori expectation. The relationship shows that a unit increase in Education Tax will cause Human Development Index to rise by 0.065051 units for the period under review.

Table 4.4.3 shows that the coefficient of Consolidated Pool Accounts (CONS) is 0.041248 and this implies that direct relationship exists between Industrial Production and Consolidated pool accounts in the short run. The short run equilibrium relationship existing between Index of Industrial Production and Consolidated Pool Accounts conform to the a priori expectation. The relationship shows that a unit increase in CONS will cause IDP to increase by 0.041248units for the period under review.

Total tax revenue (TTR) has a coefficient of -0.155894 for growth model, 0.153644 for development model and 0.086709 for production model. This shows that in short run there is inverse relationship between GDP and TTR while there is direct relationship between HDI, IDP and TTR. This shows that a unit increase in TTR will lead to decrease in GDP by 0.155894 units. A unit increase in TTR will lead to an increase in IDP by 0.086709 units. A unit increase in TTR will lead to increase in HDI by 0.153644 units. This result however agrees with previous studies of Ofoegbu, Akwu and Oliver (2016) who found a positive effect between total tax revenue and HDI in Nigeria for the period under review.

Meanwhile, the coefficient of multiple determinants (R^2) showed a coefficient of 0.973763 ≈ 0.97 for the growth model, 0.760655 ≈ 0.76 for development model and 0.568846 ≈ 0.57 for the production model which implies a 97%, 76% and 57% explanation of the behaviour of Gross Domestic Product, Human Development Index and Index of Industrial Production by the totality of the explanatory variables: Petroleum Profit Tax, Company Income Tax, Value

Added Tax, Education Tax, Consolidated Pool Accounts and Total Tax Revenue) on the short-run. The Adjusted R^2 further prove this with the adjusted value of 0.967933 ≈ 0.97 for the growth model, 0.700818 ≈ 0.70 for development model and 0.453871 ≈ 0.45 for production model which implies that 97 percent,70 percent and 45 percent explanation of the behaviour of gross domestic product, human development index and index of industrial production by the totality of the explanatory variables with the remaining 3 percent,33 percent and 50 percent behaviour attributed to other variables outside the model otherwise referred to as the stochastic variables.

The F-statistic indicates that the model is well fit for the estimation because F-stat for growth model is 167.0166, 12.71225 for development model and 4.947584 for production model is greater than F-critical value of 2.87 at 95 percent significance level. However, the Durbin Watson Statistic value of 1.102544, 1.162534 and 1.24609 is symptomatic of auto correlation. As a result, the serial correlation test in table 4.2.4 shows that there is no auto correlation problem in the model and could be used for statistical inference like hypothesis testing and forecasting.

4.5: Test of Hypotheses

The tables 4.5.1, 4.5.2 and 4.5.3 present the ordinary least square results conducted on the specified model. The OLS results reveal the short run effect that exists between the dependent variable and each of the independent variable.

4.5.1 Test of null hypothesis one: Growth Model

H_0= There is no significant positive effect of federal government tax revenue on the gross domestic product in Nigeria.

Table 4.5.1 Dependent variable: GDP @ 5% level of Significance

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision		Remark
					H_0	H_1	
C	5.582388	1.077281	5.181923	0.0001	Reject	Accept	Significant
PPT	0.043656	0.538918	0.081006	0.9363	Accept	Reject	Non significant
CIT	0.928499	0.309819	2.996908	0.0077	Reject	Accept	Significant
VAT	0.016612	0.342628	0.048484	0.9619	Accept	Reject	Non significant
TTR	-0.155894	0.996691	-0.156411	0.8774	Accept	Reject	Non significant

Source: Computation using E-view Statistical Package, version 3.1

The probability value of 0.9363 and t- Statistic of 0.081006 which is less than 2 implies that there is positive and insignificant effect of petroleum profit tax on gross domestic product in Nigeria for the period under review. This result however disagrees with previous study of Ibadin and Oladipupo (2015) who found a positive significant effect of petroleum profit tax on gross domestic product.

The probability value of 0.0077 and t- Statistic of 2.996908 which is greater than 2 implies that there is positive and significant effect of company income tax on gross domestic product in Nigeria for the period under review. This result however agrees with previous study of Adegbite (2015) who found a positive significant effect of company income tax on gross domestic product.

The probability value of 0.9619 and t- Statistic of 0.048484 which is less than 2 implies that there is positive and insignificant effect of value added tax on gross domestic product in Nigeria for the period under review. This result however disagrees with previous study of Madugba,Okpe and Ogbonnaya (2016) who found a positive significant effect of value added tax on gross domestic product in Nigeria for the period under review.

The probability value of 0.8774 and t- Statistic of -0.156411 which is less than 2 implies that there is negative and insignificant effect of total tax revenue on gross domestic product in Nigeria for the period under review. This result however disagrees with previous study of Nwadialor and Ekezie (2016) who found a positive significant effect of total tax revenue on gross domestic product in Nigeria for the period under review. The disagreement in the finding of the study was as a result of increased revenue from customs & excise duties during the period of the study.

4.5.2 Test of null hypothesis Two: Development Model

H_0= There is no significant positive contribution of federal government tax revenue on the human development index in Nigeria.

Table 4.5.2 Dependent variable: HDI @ 5% level of Significance

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision		Remark
					H_0	H_1	
C	-1.168732	0.378769	-3.085610	0.0071	Reject	Accept	Significant
PPT	-0.089845	0.159181	-0.564420	0.5803	Accept	Reject	Non significant
CIT	-0.063475	0.125859	-0.504337	0.6209	Accept	Reject	Non significant
EDT	0.065051	0.047782	1.361394	0.1923	Accept	Reject	Non significant
TTR	0.153644	0.281634	0.545545	0.5929	Accept	Reject	Non significant

Source: Computation using E-view Statistical Package, version 3.1

The probability value of 0.5803 and t- Statistic of -0.564420 which is less than 2 implies that there is negative and insignificant effect of petroleum profit tax on human development in Nigeria for the period under review. This result however disagrees with previous study of Adegbie and Fakile (2015) who found a positive significant effect of petroleum profit tax on human development in Nigeria. The disagreement in findings was as a result of method of data collection and analysis, the researcher used primary data.

The probability value of 0.6209 and t- Statistic of -0.504337 which is less than 2 implies that there is negative and insignificant effect of company income tax on human development in

Nigeria for the period under review. This result however agrees with previous study of Ibanichuka, Ikebujo and Akani (2016) who found insignificant effect of company income tax on human development in Nigeria.

The probability value of 0.1923 and t- Statistic of 1.361394 which is less than 2 implies that there is positive and insignificant effect of education tax on human development in Nigeria for the period under review.

The probability value of 0.5929 and t- Statistic of 0.545545 which is less than 2 implies that there is positive and insignificant effect of total tax revenue on human development in Nigeria for the period under review. This result however disagrees with previous study of Ofoegbu, Akwu and Oliver (2016) who found a positive significant effect of total tax revenue on human development in Nigeria for the period under review. The inconsistency in the result was as a result of the number of years covered and the researcher failed to lag the variables used in the study in order to bring it at par.

4.5.3 Test of null hypothesis Three: Production Model

H_0= The federal government tax revenue has no significant positive effect on the industrial production in Nigeria.

Table 4.5.3 Dependent variable: IDP @ 5% level of Significance

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Decision H_0	H_1	Remark
C	5.006108	0.484856	10.32494	0.0000	Reject	Accept	Significant
PPT	0.038785	0.206066	0.188218	0.8532	Accept	Reject	Non significant

CIT	-0.190389	0.152489	-1.248540	0.2310	Accept	Reject	Non significant
CONS	0.041248	0.029380	1.403976	0.1807	Accept	Reject	Non significant
TTR	0.086709	0.365262	0.237388	0.8156	Accept	Reject	Non significant

Source: Computation using E-view Statistical Package, version 3.1

The probability value of 0.8532 and t- Statistic of 0.188218 which is less than 2 implies that there is positive and insignificant effect of petroleum profit tax on industrial production in Nigeria for the period under review.

The probability value of 0.2310 and t- Statistic of -1.248540 which is less than 2 implies that there is negative and insignificant effect of company income tax on industrial production in Nigeria for the period under review.

The probability value of 0.1807 and t- Statistic of 1.403976 which is less than 2 implies that there is positive and insignificant effect of consolidated pool accounts on industrial production in Nigeria for the period under review.

The probability value of 0.8156 and t- Statistic of 0.237388 which is less than 2 implies that there is positive and insignificant effect of total tax revenue on industrial production in Nigeria for the period under review.

4.6   Tests for Overall Significance of Model (F-TEST)

The F-test is used to test the statistical significance of the entire model. This is done to determine the overall significance of behaviour of all explanatory variables adopted in the model. It is done by comparing the F-statistics in the OLS result and the table value (F-test). The hypothesis is formulated as depicted below: -

H_0: - The overall model is not significant

H_1: - The overall model is significant

Decision Rule: If F-calculated is greater than F-tabulated, we accept Alternate hypothesis (H_1) and reject Null hypothesis (H_0) and if F-calculated is less than F-tabulated, accept Null hypothesis (H_0) we reject Alternate hypothesis (H_1).

For F-tabulated, the F-distribution value with

$$K - 1 = K'$$

And N – K degree of freedom @ 95% confidence level

Hence, (F_{95}, V_1, V_2)dof

Where $V_1 = K - 1 = K'$ $\qquad\qquad$ $V_2 = N - K$

$V_1 = 5 - 1 = 4$ $\qquad\qquad$ $V_2 = 25 - 5 = 20$

($F_{95} \simeq 4, 20$)dof

F-tab = 2.87   (as given in the statistical table)

F-cal = 167.0166, 12.71225 and 4.947584   (as given in the OLS result)

Since F-cal of 167.0166, 12.71225 and 4.947584 in growth model, development model and production model is greater than F-tab (2.87), the model is said to be statistically significant in explaining the behaviour of GDP, HDI and IDP. The results are presented in table 4.6.1:

Table 4.6.1: - F-Tests

F-CALCULATED	F-TABULATED	H_0	H_1	REMARKS
167.0166	2.87	Reject	Accept	Significant
12.71225	2.87	Reject	Accept	Significant
4.947584	2.87	Reject	Accept	Significant

Source: OLS result in the appendix 2, page 207

The table in 4.6.1 shows that F-calculated is greater than F-tabulated; therefore, we accept the Alternate hypothesis (H_1) and reject the Null hypothesis (H_0).

4.7   Interpretation of Granger Causality Test

The Granger Causality test is used to determine the causation that exists between two variables. The regression analysis including using the OLS method can only show the existence of a relationship, but fail in the establishment of causation between variables, hence, the need for causality tests.

Decision Rule: - If the probability value is less than 5% and the F-calculated is greater than the F-tabulated at 95% confidence level (5% significant level), we accept Alternate Hypothesis (H_1) and reject the Null Hypothesis (H_0). If the probability value is greater than 5% and the F-calculated is less than the F-tabulated at 95% confidence level (5% significant level), we reject the Alternate Hypothesis (H_1) and accept the Null Hypothesis (H_0).

For F-tabulated, the F-distribution value with $K - 1 = K'$

And $N - K$ degree of freedom @ 95% confidence level

Hence, (F_{95}, V_1, V_2)dof

Where $V_1 = K - 1 = K'$ $V_2 = N - K$

$V_1 = 5 - 1 = 4$ $V_2 = 25 - 5 = 20$

$(F_{95} \simeq 4, 20)$dof

F-tab $= 2.87$ (as given in the statistical table)

4.7.1a Petroleum Profit Tax (PPT) and Gross Domestic Product (GDP)

	HYPOTHESIS	F-STATISTICS	PROBABILITY
A	H_0: - PPT does not Granger Cause GDP	5.20772	0.01642
	H_1: - PPT does Granger Cause GDP		
B	H_0: - GDP does not Granger Cause PPT	6.57136	0.00720

H$_1$: - GDP does Granger Cause PPT

Source: *Granger Causality test result in the appendix 4*

There exist a bilateral causality between Petroleum Profit Tax (PPT) and Gross Domestic Product (GDP) since the probability value of both is less than 5% and the F-statistic is greater than the F-tabulated, therefore, we reject the Null Hypothesis (H$_0$) and accept the Alternate Hypothesis (H$_1$) in both cases.

4.7.1b Company Income Tax (CIT) and Gross Domestic Product (GDP)

	HYPOTHESIS	F-STATISTICS	PROBABILITY
A	H$_0$: - CIT does not Granger Cause GDP	4.71182	0.02261
	H$_1$: - CIT does Granger Cause GDP		
B	H$_0$: - GDP does not Granger Cause CIT	9.58942	0.00146
	H$_1$: - GDP does Granger Cause CIT		

Source: *Granger Causality test result in the appendix 4*

There exist a bilateral causality between Company Income Tax (CIT) and Gross Domestic Product (GDP) since the probability value of both is less than 5% and the F-statistic is greater than the F-tabulated, therefore, we reject the Null Hypothesis (H$_0$) and accept the Alternate Hypothesis (H$_1$) in both cases.

4.7.1c Value Added Tax (VAT) and Gross Domestic Product (GDP)

	HYPOTHESIS	F-STATISTICS	PROBABILITY
A	H$_0$: - VAT does not Granger Cause GDP	12.2942	0.00058
	H$_1$: - VAT does Granger Cause GDP		
B	H$_0$: - GDP does not Granger Cause VAT	1.64105	0.22476
	H$_1$: - GDP does Granger Cause VAT		

Source: *Granger Causality test result in the appendix 4*

There exist a Unilateral causality between Value Added Tax (VAT) and Gross Domestic Product (GDP) since the probability value of the first case is less than 5% and its corresponding F-statistic is greater than the F-tabulated, we reject the Null Hypothesis (H$_0$) and accept Alternate Hypothesis (H$_1$) for the first case (Case A) while in the second case, the probability value is

greater than 5% and the F-statistic is less than the F-tabulated, therefore, we reject the Alternate Hypothesis (H_1) and accept the Null Hypothesis (H_0) in the second case (Case B).

4.7.1d Total Tax Revenue (TTR) and Gross Domestic Product (GDP)

	HYPOTHESIS		F-STATISTICS	PROBABILITY
A	H_0: -	TTR does not Granger Cause GDP	6.73910	0.00654
	H_1: -	TTR does Granger Cause GDP		
B	H_0: -	GDP does not Granger Cause TTR	8.17915	0.00297
	H_1: -	GDP does Granger Cause TTR		

Source:　　　*Granger Causality test result in the appendix 4*

There exist a bilateral causality between Total Tax Revenue (PPT) and Gross Domestic Product (GDP) since the probability value of both is less than 5% and the F-statistic is greater than the F-tabulated, therefore, we reject the Null Hypothesis (H_0) and accept the Alternate Hypothesis (H_1) in both cases.

4.7.2a Education Tax (EDT) and Human Development Index (HDI)

	HYPOTHESIS		F-STATISTICS	PROBABILITY
A	H_0: -	EDT does not Granger Cause GDP	5.22002	0.02024
	H_1: -	EDT does Granger Cause GDP		
B	H_0: -	GDP does not Granger Cause EDT	0.61793	0.55313
	H_1: -	GDP does Granger Cause EDT		

Source:　Granger Causality test result in the appendix 4

There exist a Unilateral causality between Education Tax (EDT) and Human Development Index (HDI) since the probability value of the first case is less than 5% and it corresponding F-statistic is greater than the F-tabulated, we reject the Null Hypothesis (H_0) and accept Alternate Hypothesis (H_1) for the first case (Case A) while in the second case, the probability value is greater than 5% and the F-statistic is less than the F-tabulated, therefore, we reject the Alternate Hypothesis (H_0) and accept the Null Hypothesis (H_1) in the second case (Case B).

4.7.3a Company Income Tax (CIT) and Index of Industrial Production (IDP)

	HYPOTHESIS		F-STATISTICS	PROBABILITY

A	H$_0$: -	CIT does not Granger Cause IDP	3.65263	0.04662
	H$_1$: -	CIT does Granger Cause IDP		
B	H$_0$: -	IDP does not Granger Cause CIT	1.39612	0.27311
	H$_1$: -	IDP does Granger Cause CIT		

Source: *Granger Causality test result in the appendix 4*

There exist a Unilateral causality between Company Income Tax (CIT) and Index of Industrial Production (IDP) since the probability value of the first case is less than 5% and it's corresponding F-statistic is greater than the F-tabulated, we accept the Alternate Hypothesis (H$_1$) and reject Null Hypothesis (H$_0$) for the first case (Case A) while in the second case, the probability value is greater than 5% and the F-statistic is less than the F-tabulated, therefore, we accept the Null Hypothesis (H$_0$) and reject the Alternate Hypothesis (H$_1$) in the second case (Case B).

4.8   Discussion of Findings

This study examined the Effect of Federal Government Tax Revenue on Nigerian Economy from 1992 to 2016 with a view to affirming or refuting the nexus between federal government revenue and the economy using empirical evidence from Nigeria. Following a detail theoretical review and empirical analyses, findings were made in line with the research questions as well as set and tested hypotheses. The findings are hereby discussed in line with the objectives of this study.

Objective one

To ascertain the effect of federal government tax revenue on the gross domestic product in Nigeria.

From the analysis it was discovered that petroleum profit tax, value added tax, total tax revenue have no effect on gross domestic product in Nigeria while company income tax has

significant effect on the gross domestic product for the period under study. In macroeconomic terms, gross domestic product is a major determinant of tax revenue. The higher the GDP the larger the tax base the higher the tax revenue. Taxation helps to reduce imbalance between desired aggregate investment and savings. By taxing the rich and more in general people with large savings and spend in public goods conducive to private investment(or directly productive public investments), the government spurs modernization and GDP growth. However, in certain business cycle conditions and if public investment is highly irrational and wasteful, the opposite result is achieved, by depressing private entrepreneurship and social pain.

The insignificant effect of tax revenue in Nigeria for the period under review could be associated to wasteful spending on poorly conceived public goods and corruption in Nigeria. Huge amount of money spent on the power sector without commiserate results and large amount of tax payers money spent by executives and legislatures on luxurious items are glaring evidences. We have limited number of people paying tax in Nigeria; the rich and wealthy in the country do not pay tax, equally large number of informal sector in the country are not excluded. The insignificant effect of tax revenue on gross domestic product also shows that under payment of tax via the use of tax havens and other evasion strategies has not been helpful to the country. This practice has been principally perpetrated by multinational companies and high net worth individuals. Nigeria has the lowest tax to GDP ratio of 3% and out of 180 million people only 214 individuals pay in excess of ₦20million (Fowler,2017).

Objective two

To determine the contribution of federal government tax revenue on the human development index in Nigeria.

The result of the analysis showed that petroleum profit tax, company income tax, education tax and total tax revenue have insignificant effect on human development in Nigeria for the period under review. This shows that federal government tax revenue has not contributed to human development in Nigeria. Human Development Index measures long-term progress in three basic areas of human development namely: access to safe and healthy life, access to education, and a decent living standard. But inability of the government to invest in the health facilities, in our educational system and provide basic infrastructure has affected the country negatively. The tertiary education systems are underfunded. The low education budgets over the years gave credence to this. There is also incessant increase in tuition fees in our higher institutions making it difficult for people to have access to education, not mention the deterioration of basic infrastructure including shortages in electricity and water supply.

Federal government seems to pay inadequate attention to research and human development which makes it difficult for the country to have technological breakthrough that will help grow human development. Corruption and Misappropriation of funds as well as political inaptitude may have been the reasons why government has not invested much on health, education and infrastructure in order to improve the standard of living of the country.

Objective three

To examine the effect of federal government tax revenue on industrial production in Nigeria.

The analysis showed that petroleum profit tax, company income tax, consolidated pool accounts and total tax revenue have insignificant effect on industrial production. This shows that the government has not used the tax revenue properly in providing the necessary infrastructure

that will help in industrial production. Inability of government to spend its revenue judiciously in providing good road net works, portable water, rail network, power (energy generation and distribution) and security makes the cost of production high. Also bureaucracies in tax administration as well as lack of accountability in the utilization of tax proceeds tend to limit the ability of companies to pay tax in Nigeria. Issues of multiple taxation, numerous levies on businesses, tax laws and regulations, tax compliances and modes of enforcements remain major challenges limiting effective tax administration. Even though that TIN (Unique Taxpayers Identification Number) was introduced to track tax positions of   taxpayers using e-payment system, bottlenecks still exists in tax administration in the country. It is important to note that tax is not bad but the ability of government to use the tax revenue to provide the necessary infrastructure and social programme that out weights the tax burdens that in turn improves the well beings of its citizens and promote growth in the economy is valued. However, it may be inferred that there are too much spending or spending on the wrong infrastructure. These constitute wastefulness and slow economic growth and development.

Objective four

To determine the direction of causality between federal government tax revenue and Nigeria economy.

The result of granger causality tests shows that there is bi-directional causality between petroleum profit tax, company income tax and total tax revenue on gross domestic product while

value added tax has a uni-directional causality with gross domestic product. There is also a uni-directional causation between education tax and human development index. Company income tax has a uni-directional causation with industrial production index. The bi-directional causality between petroleum profit tax, company income tax and total tax revenue on gross domestic product shows that they can be source through which government can achieve its macroeconomic objective in areas of fiscal and monetary policies in Nigeria. Revenue from PIT,CIT and TTR help create economic prosperity such that available and willing human and other resources are gainfully employed, infrastructure provided, essential public services and programs (maintenance of law and order and welfare programmes) put in place. The increase in government expenditure helps stimulate activity in the economy and bring growth in the economy. This thus provide the needed enabling environment for companies to operate thereby reducing their cost of production which translate to better revenue for them in order to meet their tax obligation to government. From the result of granger causality the government needs to pay more attention to petroleum profit tax, company income tax and total tax revenue to bring about the needed growth in the economy. The uni-directional causality between value added tax and gross domestic product shows that VAT as a consumption tax can help government control the production and consumption of certain goods and services, control adverse economic conditions, inflational rates and help sharpen the economy. Curb the level of unemployment through building of industries skill acquisition centers, encourage local manufacturer which in turn will help curd the level of unemployment in the country. The unilateral causality between education tax and human development index shows that revenue from education tax helps to increase the literacy and enrolment rate. The revenue from education tax will help provide fund for training, building of schools, providing books, investment in research and development thereby

contributing to economic development of the country. Unilateral causality between company income tax and index of industrial production shows that company income tax can help stimulate consumer demand, measure inflation, unemployment rates and forecast future GDP. From the analysis it is clear that if government wants to achieve the desired result in the growth of the economy there is need to focus more on company income tax, petroleum profit tax and value added tax while for economic development and production emphasis should be on education tax and company income tax respectively.

In fact, public spending compensates and tends to surmount the adverse effects of taxation. The reduction in ability to work and save caused by taxation is more than mitigated by the improved amenities of life provided by state expenditure. When the overall social benefits of expenditure exceed the social sacrifice involved in taxation, the net benefits of public spending will produce a favourable effect on the ability to save and work. Similarly, the reduction in private investment caused by taxation is more than offset by the public investment programmes.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1   Summary of Findings

The findings from the specific objectives of this study are as follows:

1. The petroleum profit tax has no significant effect on the gross domestic product, industrial production and human development in Nigeria for the period under review.

2. The company income tax has significant effect on gross domestic product but insignificant effect on industrial production and human development in Nigeria for the period under study.

3. The value added tax has no significant effect on the gross domestic product in Nigeria for the period under review.

4. Total tax revenue has no significant effect on the gross domestic product, industrial production and human development in Nigeria for the period under study

5. The education tax has no significant contribution on human development in Nigeria for the period under review.

6. The Consolidated pool account has no significant effect on industrial production in Nigeria for the period under study.

7. Petroleum Profit Tax (PPT), Company Income Tax (CIT), Total Tax Revenue (PPT) has bilateral causality with Gross Domestic Product (GDP).

8. Value Added Tax (VAT) has unilateral causality with Gross Domestic Product (GDP).

9. Education Tax (EDT) has unilateral causality with Human Development Index (HDI).

10. Company Income Tax (CIT) has unilateral causality with Index of Industrial Production (IDP).

5.2 Conclusion

This study was carried out to empirically examine the effect of federal government tax revenue on the Nigerian economy. Since 2010 Nigeria started experiencing economic recession there has been a widely held argument that higher tax rates are needed to bring in desperately

needed revenue. On the other side are those who believe that raising taxes is a bad idea during a recession, and that lower rates will actually increase revenues by stimulating the economy.

From the study it is clear that federal government tax revenue do not have significant effect on the Nigerian economy. This shows that revenue collected from tax are becoming sizeable; its impact is insignificant in Nigeria. These may be associated to many factors like non availability of tax statistics, difficulty in registration and payment of tax, poor tax administration, multiplicity of tax, low tax collection rate, regulatory challenges, fraud and corruption, poorly structured tax system, large number of informal sector, low tax base and large incidence of avoidance and evasion.

The research has helped to expose the importance of tax revenue on the economy and therefore concludes that there is need for increased tax revenue and judicious use in Nigeria in order to stimulate growth within the economy.

5.3   Recommendations

In line with the specific objectives of this study, we recommend as follows:

1, Government should improve on its tax collection rate. The introduction of voluntary assets and income declaration scheme (VAIDS) which provides for amnesty periods (July 2017 to March 2018) should be enforced since it allows, anyone who hadn't paid taxes or had under- declared their income to pay what they owe without being prosecuted or paying penalties. After the deadline, tax evaders could be denied some public services. This planned increase in tax collection drive should be encouraged and public awareness should be created on the importance of the scheme.

2, Invest in Education and infrastructure: You cannot tax unemployed youths roaming the streets or business that are closing up due to lack of power and raw materials or because they are being suppressed by harsh economic policies. A vibrant tax system can only run alongside solid public infrastructure and sound economic policies that encourage investment and entrepreneurship. Increased government expenditure on education and infrastructure will help broaden the tax base which will help increase tax revenue.

3, To sanitize the tax system Federal Inland Revenue Services (FIRS) should set up anti corruption and transparency unit (whistle blower unit) that will work in hand with other anti-graft agencies such as Economic and Financial Crime Commission (EFCC) and Independent Corrupt Practices and other related Offences Commission (ICPC) in order to arrest and prosecute tax defaulters and corrupt tax officials to serve as deterrent to others.

4, Introduce a Net Wealth Tax: Wealthy Nigerians will have to pay more taxes. A net wealth tax is a levy of personal including owner-occupied housing, cash and bank deposits and savings in insurance and pension plans, investment in real estate and unincorporated businesses and corporate stock, financial securities and personal trusts, luxury cars and private jets. To enforce this, every Nigeria citizen resident in Nigeria who owns any assets covered will have to submit online, a tax return disclosing all assets held in Nigeria and overseas and pay the required tax value of the assets.

5, Ensure fair taxation: Government should ensure that multinational companies that operate within the shores of Nigeria and those that provide internet services pay the correct tax to the federal government. This will help close some revenue linkages in the country and limit capital flight.

6, Re- evaluate all tax incentives: Review all tax incentives offered under various Nigerian law every year to ascertain the real cost of these incentives as compared to the economic benefits derived from them. When the cost to the government exceeds the economic benefits derived then they should be scrapped immediately. In addition, the government should regulate the issuance of tax incentives to avoid abuse. Tax incentives or wavier to specific companies involved in the importation of rice, cement, sugar and other raw materials that can be sourced locally should be discouraged.

7, Tackle waste and corruption at all levels: tax revenue should be transparently and judiciously utilized for investment and in the provision of infrastructure and public goods and services so as to accelerate economic growth, development, employment and wealth creation. If the government is transparent and accountable to the people in the utilization of tax revenue in providing good roads, electricity supply, social amenities and other infrastructural facilities, taxpayers such as individuals and companies would be committed to tax payments and tax evasion and avoidance will be drastically reduced. Nobody wants to pay taxes to help fund the ostentatious lifestyles of government officials. The Nigerian government must be and be seen to be fiscally responsible. Unnecessary government purchases, large entourages, state sponsored medical trips at foreign hospitals and state sponsored foreign vacations should be discouraged. This suggests that government should invest more on providing good and well equipped hospitals with well trained doctors and recreational centers.

8, On the informal sector, the government should reorganise tax administration so as to strengthen monitoring, services and incentives for administrators. This involves segmental organisation of tax administration with separate departments to deal with small, medium and large firms. It would allow services to be specifically tailored to the needs and realities of

specific types of firms. Tanzania took advantage of this approach and introduced Block Management System (BMS) aimed at promoting compliance and registering eligible traders within particular geographic area.

9, There is need to improve our record or database to be able to track all potential taxpayers. In Nigeria an improvement in our tax revenue can be enhanced through a regularly updated, comprehensive database. This would and enable the country to be able to track all potential taxpayers as well as to reduce incidences of tax avoidance.

5.4 Contribution to Knowledge

The study empirically proves that federal government revenue has no significant effect on the Nigerian economy which validates the research hypotheses.

1. This work contributes to current literature on the subject matter by extending the number of years used by other scholars up to 2016.

2. This work further validates the finding of some researchers such as Onakoye,Afintinni and Oyeyemi (2016),Worlu and Nkoro (2012),Chigbu and Njoku (2015) that federal government tax revenue has no significant effect on the Nigerian economy.

3. Most reviewed literature studied the effect of tax revenue on economic growth and development but this work included industrial production.

4. Consolidated pool account which is made up of pre-operational levy and personal income tax was used in the study as most of the study carried out on this subject used only personal income tax.

5.4 Suggestion for Further Study

The study on the effect of various tax revenue on the economy is far from over among scholars. Further studies should be done on other variables that are not covered in this study like stamp duty, capital gain tax and information technology development fund levy. The outcome of such studies may provide more robust finding which will further strengthen the findings of this study.

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APPENDIX 1

REGRESSSION DATA

Data for the Variables of Interest

Table 1: Real GDP, Human Development Index, Index of Industrial Production from 1992 to 2016

YEAR	Real Gross Domestic Product (N'Billion)	Human Development Index (%)	Index of Industrial Production(Points)
1992	909.80	0.35	136.2
1993	1,259.07	0.39	131.7
1994	1,762.81	0.38	129.2

1995	2,895.20	0.38	128.8
1996	3,779.13	0.38	132.5
1997	4,189.25	0.39	140.6
1998	3,989.45	0.40	133.9
1999	4,679.21	0.455	129.1
2000	6,713.57	0.462	138.9
2001	6,895.20	0.463	144.1
2002	7,795.76	0.4	145.2
2003	9,913.52	0.4	147
2004	11,411.07	0.427952	151.2
2005	14,610.88	0.47	158.8
2006	18,564.59	0.444	158.9
2007	20,657.32	0.448	124.8
2008	24,296.33	0.453	117.6
2009	24,794.24	0.457	118.2
2010	54,612.26	0.50	121.5
2011	62,980.40	0.51	132
2012	71,713.94	0.51	136.7
2013	80,092.56	0.52	138.24
2014	89,043.62	0.53	139.11
2015	94,144.96	0.53	120.24
2016	101,489.49	0.53	109.6

Source: Central Bank of Nigeria Statistical Bulletin, 2016, and United Nations Development programme.

Descriptive Statistics Growth Model

	GDP	PPT	CIT	VAT	TTR
Mean	31348.90	1075.231	403.5936	325.9227	1899.849
Median	14610.88	939.4000	170.2000	192.7000	1741.800
Maximum	101489.5	3201.300	1408.400	828.2000	5007.600
Minimum	1762.810	24.60000	12.27480	7.260800	62.33830
Std. Dev.	34144.40	1017.616	441.5394	304.2617	1759.726
Skewness	0.948208	0.758583	0.928605	0.542444	0.540057
Kurtosis	2.292241	2.443926	2.531899	1.676693	1.865232
Jarque-Bera	3.926594	2.502219	3.515502	2.806118	2.352083
Probability	0.140395	0.286187	0.172432	0.245844	0.308498
Observations	23	23	23	23	23

Descriptive Statistics Development Model

	HDI	PPT	CIT	EDT	TTR
Mean	0.460950	1173.548	440.4048	76.17143	2073.748
Median	0.457000	1132.000	246.7000	28.40000	1846.900
Maximum	0.530000	3201.300	1408.400	279.4000	5007.600
Minimum	0.380000	24.60000	23.10000	2.900000	99.40000
Std. Dev.	0.049297	1011.126	445.0709	83.98012	1743.884
Skewness	-0.051642	0.661612	0.811792	0.945407	0.421753
Kurtosis	1.824552	2.332560	2.331342	2.699656	1.775216
Jarque-Bera	1.218301	1.921848	2.697740	3.207209	1.935149
Probability	0.543813	0.382539	0.259533	0.201170	0.380004
Observations	21	21	21	21	21

Descriptive Statistics Production Model

	IDP	PPT	CIT	CONS	TTR
Mean	135.2845	1229.850	461.2700	12.57500	2172.115
Median	137.4700	1144.900	289.5500	5.450000	1855.050
Maximum	158.9000	3201.300	1408.400	59.90000	5007.600
Minimum	109.6000	24.60000	27.80000	0.500000	99.40000
Std. Dev.	13.73719	1003.052	445.9709	19.40979	1728.379
Skewness	-0.024111	0.617721	0.750545	1.869653	0.360839
Kurtosis	2.233968	2.291500	2.239982	4.700226	1.743709
Jarque-Bera	0.490942	1.690243	2.359080	14.06098	1.749239
Probability	0.782336	0.429505	0.307420	0.000884	0.417021
Observations	20	20	20	20	20

Breusch-Godfrey Serial Correlation Test Growth Model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.033445	Probability	0.163350
Obs*R-squared	4.661334	Probability	0.097231

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 01/09/18   Time: 13:43
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.

LOG(PPT)	0.190309	0.521683	0.364798	0.7200
LOG(CIT)	0.082338	0.299801	0.274643	0.7871
LOG(VAT)	0.080703	0.328382	0.245759	0.8090
LOG(TTR)	-0.345924	0.959910	-0.360371	0.7233
C	0.342853	1.034864	0.331302	0.7447
RESID(-1)	0.518729	0.264663	1.959963	0.0677
RESID(-2)	-0.117613	0.295080	-0.398581	0.6955

R-squared	0.202667	Mean dependent var	-5.31E-16
Adjusted R-squared	-0.096333	S.D. dependent var	0.206092
S.E. of regression	0.215791	Akaike info criterion	0.016775
Sum squared resid	0.745050	Schwarz criterion	0.362360
Log likelihood	6.807086	F-statistic	0.677815
Durbin-Watson stat	1.932495	Prob(F-statistic)	0.669734

Breusch-Godfrey Serial Correlation Test Development Model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.935662	Probability	0.181050
Obs*R-squared	4.549064	Probability	0.102845

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 01/28/18   Time: 09:26
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	0.092817	0.164717	0.563492	0.5820
LOG(CIT)	0.098408	0.132051	0.745228	0.4685
LOG(EDT)	-0.025013	0.047615	-0.525325	0.6076
LOG(TTR)	-0.168623	0.293223	-0.575068	0.5744
C	0.148899	0.390842	0.380970	0.7089
RESID(-1)	0.558401	0.284425	1.963263	0.0698
RESID(-2)	-0.269195	0.289995	-0.928275	0.3690

R-squared	0.216622	Mean dependent var	6.41E-17
Adjusted R-squared	-0.119111	S.D. dependent var	0.052880
S.E. of regression	0.055941	Akaike info criterion	-2.667842
Sum squared resid	0.043811	Schwarz criterion	-2.319668
Log likelihood	35.01234	F-statistic	0.645221
Durbin-Watson stat	2.039167	Prob(F-statistic)	0.693469

Breusch-Godfrey Serial Correlation Test Production Model

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.145815	Probability	0.097866
Obs*R-squared	3.669485	Probability	0.055417

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 01/28/18   Time: 09:31

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	-0.102681	0.201247	-0.510221	0.6178
LOG(CIT)	-0.052039	0.145615	-0.357371	0.7261
LOG(CONS)	-0.037212	0.034574	-1.076324	0.3000
LOG(TTR)	0.192886	0.358533	0.537986	0.5990
C	-0.365737	0.498182	-0.734144	0.4750
RESID(-1)	0.619817	0.349460	1.773645	0.0979

R-squared	0.183474	Mean dependent var	-9.80E-16
Adjusted R-squared	-0.108142	S.D. dependent var	0.067352
S.E. of regression	0.070900	Akaike info criterion	-2.211762
Sum squared resid	0.070376	Schwarz criterion	-1.913043
Log likelihood	28.11762	F-statistic	0.629163
Durbin-Watson stat	1.603645	Prob(F-statistic)	0.680691

Normality Test Growth Model

Series: Residuals	
Sample 1994 2016	
Observations 23	
Mean	-5.31E-16
Median	-0.001292
Maximum	0.266133
Minimum	-0.595585
Std. Dev.	0.206092
Skewness	-0.967293
Kurtosis	4.118498
Jarque-Bera	4.785593
Probability	0.091374

Normality Test Development Model

Series: Residuals	
Sample 1996 2016	
Observations 21	
Mean	6.41E-17
Median	-0.005812
Maximum	0.103672
Minimum	-0.097993
Std. Dev.	0.052880
Skewness	0.207775
Kurtosis	2.327274
Jarque-Bera	0.547086
Probability	0.760679

Normality Test Production Model

Series: Residuals	
Sample 1997 2016	
Observations 20	
Mean	-9.80E-16
Median	0.001002
Maximum	0.105183
Minimum	-0.116835
Std. Dev.	0.067352
Skewness	-0.247188
Kurtosis	2.107085
Jarque-Bera	0.868088
Probability	0.647884

Heteroskedasticity Test Growth Model

White Heteroskedasticity Test:

F-statistic	1.490265	Probability	0.290682
Obs*R-squared	16.62521	Probability	0.276701

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/09/18   Time: 13:48
Sample: 1994 2016

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Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.966378	10.51924	0.567187	0.5861
LOG(PPT)	8.212239	10.82170	0.758868	0.4697
(LOG(PPT))^2	0.888664	2.443609	0.363669	0.7255
(LOG(PPT))*(LOG(CIT))	5.469454	3.261916	1.676761	0.1321
(LOG(PPT))*(LOG(VAT))	-3.959508	3.371514	-1.174401	0.2740
(LOG(PPT))*(LOG(TTR))	-4.396704	9.396703	-0.467899	0.6523
LOG(CIT)	7.712162	5.732602	1.345316	0.2154
(LOG(CIT))^2	0.887729	1.004732	0.883548	0.4027
(LOG(CIT))*(LOG(VAT))	-0.145518	1.301177	-0.111836	0.9137
(LOG(CIT))*(LOG(TTR))	-7.492552	5.326207	-1.406733	0.1971
LOG(VAT)	-6.417114	5.951838	-1.078173	0.3124
(LOG(VAT))^2	-1.833757	1.057202	-1.734537	0.1210
(LOG(VAT))*(LOG(TTR))	7.259320	6.175036	1.175592	0.2736
LOG(TTR)	-10.86413	19.29906	-0.562936	0.5889
(LOG(TTR))^2	3.259363	8.738638	0.372983	0.7188

R-squared	0.722835	Mean dependent var		0.040627
Adjusted R-squared	0.237797	S.D. dependent var		0.073357
S.E. of regression	0.064044	Akaike info criterion		-2.410197
Sum squared resid	0.032813	Schwarz criterion		-1.669658
Log likelihood	42.71727	F-statistic		1.490265
Durbin-Watson stat	1.673216	Prob(F-statistic)		0.290682

Heteroskedasticity Test Development Model

White Heteroskedasticity Test:

F-statistic	0.736232	Probability	0.703127
Obs*R-squared	13.27337	Probability	0.505120

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/09/18   Time: 13:56
Sample: 1996 2016
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.500515	1.707958	0.293049	0.7794
LOG(PPT)	0.261700	1.466008	0.178512	0.8642
(LOG(PPT))^2	0.037331	0.345996	0.107893	0.9176
(LOG(PPT))*(LOG(CIT))	-0.011605	0.508904	-0.022804	0.9825
(LOG(PPT))*(LOG(EDT))	0.030778	0.112259	0.274172	0.7931

Variable	Coefficient	Std. Error	t-Statistic	Prob.
(LOG(PPT))*(LOG(TTR))	-0.106811	1.191515	-0.089643	0.9315
LOG(CIT)	0.102441	1.011438	0.101283	0.9226
(LOG(CIT))^2	-0.023512	0.181088	-0.129836	0.9009
(LOG(CIT))*(LOG(EDT))	0.031082	0.064321	0.483231	0.6461
(LOG(CIT))*(LOG(TTR))	0.019366	0.861952	0.022467	0.9828
LOG(EDT)	0.105339	0.275517	0.382332	0.7154
(LOG(EDT))^2	-2.30E-05	0.014685	-0.001564	0.9988
(LOG(EDT))*(LOG(TTR))	-0.065623	0.192798	-0.340372	0.7452
LOG(TTR)	-0.494614	2.547022	-0.194193	0.8524
(LOG(TTR))^2	0.088029	1.024570	0.085918	0.9343

R-squared	0.632065	Mean dependent var		0.002663
Adjusted R-squared	-0.226448	S.D. dependent var		0.003144
S.E. of regression	0.003482	Akaike info criterion		-8.306766
Sum squared resid	7.27E-05	Schwarz criterion		-7.560679
Log likelihood	102.2210	F-statistic		0.736232
Durbin-Watson stat	1.930218	Prob(F-statistic)		0.703127

Heteroskedasticity Test Production Model

White Heteroskedasticity Test:

F-statistic	0.521753	Probability	0.844836
Obs*R-squared	11.87292	Probability	0.616508

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 01/11/18   Time: 22:51
Sample: 1997 2016
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.505314	3.170631	-0.474768	0.6550
LOG(PPT)	-1.091891	2.689300	-0.406013	0.7015
(LOG(PPT))^2	-0.207403	0.573538	-0.361620	0.7324
(LOG(PPT))*(LOG(CIT))	-0.309469	0.794032	-0.389744	0.7128
(LOG(PPT))*(LOG(CONS))	-0.016014	0.068062	-0.235290	0.8233
(LOG(PPT))*(LOG(TTR))	0.770588	2.023895	0.380745	0.7190
LOG(CIT)	-0.802999	1.817084	-0.441916	0.6770
(LOG(CIT))^2	-0.138128	0.273331	-0.505351	0.6348
(LOG(CIT))*(LOG(CONS))	-0.009141	0.047985	-0.190503	0.8564
(LOG(CIT))*(LOG(TTR))	0.607020	1.395999	0.434829	0.6818
LOG(CONS)	-0.037027	0.159840	-0.231653	0.8260
(LOG(CONS))^2	0.003846	0.007286	0.527931	0.6201

(LOG(CONS))*(LOG(TTR))	0.024864	0.115738	0.214832	0.8384
LOG(TTR)	2.039600	4.729147	0.431283	0.6842
(LOG(TTR))^2	-0.728107	1.785500	-0.407789	0.7003

Ramsey Reset Test Growth Model

Ramsey RESET Test:

F-statistic	13.98150	Probability	0.000308
Log likelihood ratio	23.24747	Probability	0.000009

Test Equation:
Dependent Variable: LOG(GDP)
Method: Least Squares
Date: 01/09/18   Time: 13:51
Sample: 1994 2016
Included observations: 23

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	0.337271	0.577876	0.583639	0.5676
LOG(CIT)	6.651705	7.433040	0.894883	0.3841
LOG(VAT)	0.812382	0.267086	3.041653	0.0078
LOG(TTR)	-0.912781	1.542223	-0.591861	0.5622
C	29.43402	19.37425	1.519234	0.1482
FITTED^2	-0.998667	0.825482	-1.209799	0.2439
FITTED^3	0.043001	0.028719	1.497285	0.1538

R-squared	0.990451	Mean dependent var	9.665176
Adjusted R-squared	0.986871	S.D. dependent var	1.272355
S.E. of regression	0.145791	Akaike info criterion	-0.767502
Sum squared resid	0.340078	Schwarz criterion	-0.421917
Log likelihood	15.82627	F-statistic	276.6068
Durbin-Watson stat	1.864129	Prob(F-statistic)	0.000000

Ramsey Reset Test Development Model

Ramsey RESET Test:

F-statistic	0.205161	Probability	0.816922
Log likelihood ratio	0.606636	Probability	0.738364

Test Equation:
Dependent Variable: LOG(HDI)
Method: Least Squares
Date: 01/09/18   Time: 14:01
Sample: 1996 2016
Included observations: 21

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	-2.986837	4.637549	-0.644055	0.5300
LOG(CIT)	-2.105115	3.266779	-0.644401	0.5297
LOG(EDT)	2.163364	3.368464	0.642241	0.5311
LOG(TTR)	5.113317	7.931213	0.644708	0.5295
C	-30.50938	47.11238	-0.647587	0.5277

FITTED^2	40.66724	65.92617	0.616860	0.5472
FITTED^3	16.88508	27.75095	0.608451	0.5526

R-squared	0.767470	Mean dependent var	-0.779987
Adjusted R-squared	0.667814	S.D. dependent var	0.108089
S.E. of regression	0.062297	Akaike info criterion	-2.452589
Sum squared resid	0.054334	Schwarz criterion	-2.104415
Log likelihood	32.75219	F-statistic	7.701204
Durbin-Watson stat	1.333188	Prob(F-statistic)	0.000840

Ramsey Reset Test Production Model

Ramsey RESET Test:

F-statistic	0.212972	Probability	0.810943
Log likelihood ratio	0.644791	Probability	0.724412

Test Equation:
Dependent Variable: LOG(IDP)
Method: Least Squares
Date: 01/09/18   Time: 05:06
Sample: 1997 2016
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	-24.79248	205.7494	-0.120498	0.9059
LOG(CIT)	121.2105	1009.325	0.120091	0.9062
LOG(CONS)	-26.26885	218.6982	-0.120115	0.9062
LOG(TTR)	-55.07795	459.4993	-0.119865	0.9064
C	-2168.834	17878.55	-0.121309	0.9053
FITTED^2	132.8991	1081.406	0.122895	0.9041
FITTED^3	-9.221819	73.51511	-0.125441	0.9021

R-squared	0.582524	Mean dependent var	4.902420
Adjusted R-squared	0.389843	S.D. dependent var	0.102573
S.E. of regression	0.080122	Akaike info criterion	-1.941305
Sum squared resid	0.083455	Schwarz criterion	-1.592799
Log likelihood	26.41305	F-statistic	3.023256
Durbin-Watson stat	1.291096	Prob(F-statistic)	0.044665

APPENDIX 2

OLX RESULT

Dependent Variable: LOG(GDP)
Method: Least Squares
Date: 12/14/17   Time: 06:00
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	0.043656	0.538918	0.081006	0.9363
LOG(CIT)	0.928499	0.309819	2.996908	0.0077
LOG(VAT)	0.016612	0.342628	0.048484	0.9619
LOG(TTR)	-0.155894	0.996691	-0.156411	0.8774
C	5.582388	1.077281	5.181923	0.0001

R-squared	0.973763	Mean dependent var	9.665176
Adjusted R-squared	0.967933	S.D. dependent var	1.272355
S.E. of regression	0.227843	Akaike info criterion	0.069345
Sum squared resid	0.934428	Schwarz criterion	0.316191
Log likelihood	4.202537	F-statistic	167.0166
Durbin-Watson stat	1.102544	Prob(F-statistic)	0.000000

OLX RESULT

Dependent Variable: LOG(HDI)
Method: Least Squares
Date: 12/15/17   Time: 00:51
Sample(adjusted): 1996 2016
Included observations: 21 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	-0.089845	0.159181	-0.564420	0.5803
LOG(CIT)	-0.063475	0.125859	-0.504337	0.6209
LOG(EDT)	0.065051	0.047782	1.361394	0.1923
LOG(TTR)	0.153644	0.281634	0.545545	0.5929
C	-1.168732	0.378769	-3.085610	0.0071

R-squared	0.760655	Mean dependent var	-0.779987
Adjusted R-squared	0.700818	S.D. dependent var	0.108089
S.E. of regression	0.059122	Akaike info criterion	-2.614178
Sum squared resid	0.055926	Schwarz criterion	-2.365482
Log likelihood	32.44887	F-statistic	12.71225
Durbin-Watson stat	1.162534	Prob(F-statistic)	0.000076

OLX RESULT

Dependent Variable: LOG(IDP)
Method: Least Squares
Date: 01/11/18   Time: 22:49
Sample(adjusted): 1997 2016
Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PPT)	0.038785	0.206066	0.188218	0.8532
LOG(CIT)	-0.190389	0.152489	-1.248540	0.2310
LOG(CONS)	0.041248	0.029380	1.403976	0.1807
LOG(TTR)	0.086709	0.365262	0.237388	0.8156
C	5.006108	0.484856	10.32494	0.0000

R-squared	0.568846	Mean dependent var	4.902420
Adjusted R-squared	0.453871	S.D. dependent var	0.102573
S.E. of regression	0.075802	Akaike info criterion	-2.109066
Sum squared resid	0.086189	Schwarz criterion	-1.860132
Log likelihood	26.09066	F-statistic	4.947584
Durbin-Watson stat	1.246092	Prob(F-statistic)	0.009578

GDP@ Level

ADF Test Statistic	2.194416	1% Critical Value*	-3.7343
		5% Critical Value	-2.9907
		10% Critical Value	-2.6348

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP)
Method: Least Squares
Date: 12/28/17   Time: 12:23
Sample(adjusted): 1993 2016
Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GDP(-1)	0.086138	0.039253	2.194416	0.0391
C	1959.470	1560.990	1.255274	0.2225

R-squared	0.179578	Mean dependent var	4190.820
Adjusted R-squared	0.142286	S.D. dependent var	6265.037
S.E. of regression	5802.230	Akaike info criterion	20.24953
Sum squared resid	7.41E+08	Schwarz criterion	20.34770
Log likelihood	-240.9943	F-statistic	4.815461
Durbin-Watson stat	2.013892	Prob(F-statistic)	0.039057

GDP@ 1ST difference

ADF Test Statistic	-3.631240	1% Critical Value*	-3.7497
		5% Critical Value	-2.9969
		10% Critical Value	-2.6381

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(GDP,2)
Method: Least Squares
Date: 12/28/17   Time: 12:31
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-0.768600	0.211663	-3.631240	0.0016
C	3419.817	1573.043	2.174014	0.0413
R-squared	0.385712	Mean dependent var		304.1417
Adjusted R-squared	0.356460	S.D. dependent var		7881.962
S.E. of regression	6322.985	Akaike info criterion		20.42471
Sum squared resid	8.40E+08	Schwarz criterion		20.52345
Log likelihood	-232.8842	F-statistic		13.18590
Durbin-Watson stat	2.131707	Prob(F-statistic)		0.001563

HDI@ Level

ADF Test Statistic	-1.293129	1% Critical Value*	-3.7343
		5% Critical Value	-2.9907
		10% Critical Value	-2.6348

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HDI)
Method: Least Squares
Date: 12/28/17   Time: 12:45
Sample(adjusted): 1993 2016
Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
HDI(-1)	-0.117027	0.090499	-1.293129	0.2094
C	0.059430	0.040443	1.469480	0.1559
R-squared	0.070639	Mean dependent var		0.007500
Adjusted R-squared	0.028395	S.D. dependent var		0.023797
S.E. of regression	0.023457	Akaike info criterion		-4.587626
Sum squared resid	0.012105	Schwarz criterion		-4.489455
Log likelihood	57.05151	F-statistic		1.672183
Durbin-Watson stat	1.791692	Prob(F-statistic)		0.209381

HDI @ 1ST difference

ADF Test Statistic	-4.704553	1% Critical Value*	-3.7497
		5% Critical Value	-2.9969
		10% Critical Value	-2.6381

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(HDI,2)
Method: Least Squares
Date: 12/28/17   Time: 12:50
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(HDI(-1))	-0.984312	0.209225	-4.704553	0.0001
C	0.005964	0.005231	1.140226	0.2670

R-squared	0.513132	Mean dependent var	-0.001739
Adjusted R-squared	0.489948	S.D. dependent var	0.033360
S.E. of regression	0.023825	Akaike info criterion	-4.553243
Sum squared resid	0.011920	Schwarz criterion	-4.454504
Log likelihood	54.36230	F-statistic	22.13282
Durbin-Watson stat	1.871436	Prob(F-statistic)	0.000121

IDP@ Level

ADF Test Statistic	-1.466499	1% Critical Value*	-3.7343
		5% Critical Value	-2.9907
		10% Critical Value	-2.6348

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IDP)
Method: Least Squares
Date: 12/28/17   Time: 12:51
Sample(adjusted): 1993 2016
Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IDP(-1)	-0.253259	0.172697	-1.466499	0.1567
C	33.23457	23.49839	1.414334	0.1713

R-squared	0.089050	Mean dependent var	-1.108333
Adjusted R-squared	0.047643	S.D. dependent var	9.731177
S.E. of regression	9.496534	Akaike info criterion	7.419386
Sum squared resid	1984.052	Schwarz criterion	7.517557
Log likelihood	-87.03263	F-statistic	2.150618
Durbin-Watson stat	1.249000	Prob(F-statistic)	0.156662

IDP @ 1ˢᵀ difference

ADF Test Statistic	-3.385431	1% Critical Value*	-3.7497
		5% Critical Value	-2.9969
		10% Critical Value	-2.6381

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(IDP,2)
Method: Least Squares
Date: 12/28/17   Time: 12:54
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IDP(-1))	-0.725489	0.214297	-3.385431	0.0028
C	-0.770383	2.044888	-0.376736	0.7101

R-squared	0.353073	Mean dependent var		-0.266957
Adjusted R-squared	0.322267	S.D. dependent var		11.88099
S.E. of regression	9.780975	Akaike info criterion		7.481697
Sum squared resid	2009.017	Schwarz criterion		7.580435
Log likelihood	-84.03951	F-statistic		11.46114
Durbin-Watson stat	1.845846	Prob(F-statistic)		0.002792

PPT@ Level

ADF Test Statistic	-1.498601	1% Critical Value*	-3.7343
		5% Critical Value	-2.9907
		10% Critical Value	-2.6348

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(PPT)
Method: Least Squares
Date: 12/28/17   Time: 12:55
Sample(adjusted): 1993 2016
Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PPT(-1)	-0.164828	0.109988	-1.498601	0.1482
C	208.7489	155.6084	1.341501	0.1934

R-squared	0.092627	Mean dependent var		46.09680
Adjusted R-squared	0.051382	S.D. dependent var		560.8726
S.E. of regression	546.2732	Akaike info criterion		15.52377
Sum squared resid	6565116.	Schwarz criterion		15.62194
Log likelihood	-184.2852	F-statistic		2.245805
Durbin-Watson stat	1.897088	Prob(F-statistic)		0.148190

PPT @ 1ST difference

ADF Test Statistic	-4.648078	1% Critical Value*	-3.7497
		5% Critical Value	-2.9969
		10% Critical Value	-2.6381

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(PPT,2)
Method: Least Squares
Date: 12/28/17   Time: 13:02
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PPT(-1))	-1.016383	0.218667	-4.648078	0.0001
C	48.64710	122.9283	0.395735	0.6963
R-squared	0.507096	Mean dependent var		-6.083952
Adjusted R-squared	0.483624	S.D. dependent var		816.6415
S.E. of regression	586.8328	Akaike info criterion		15.67030
Sum squared resid	7231827.	Schwarz criterion		15.76904
Log likelihood	-178.2084	F-statistic		21.60463
Durbin-Watson stat	2.001148	Prob(F-statistic)		0.000138

CIT@ Level

ADF Test Statistic	0.575392	1% Critical Value*	-3.7343
		5% Critical Value	-2.9907
		10% Critical Value	-2.6348

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CIT)
Method: Least Squares
Date: 12/28/17   Time: 13:12
Sample(adjusted): 1993 2016
Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CIT(-1)	0.028700	0.049878	0.575392	0.5709
C	36.86348	26.49235	1.391477	0.1780
R-squared	0.014826	Mean dependent var		46.63678
Adjusted R-squared	-0.029955	S.D. dependent var		98.14079
S.E. of regression	99.59984	Akaike info criterion		12.11985
Sum squared resid	218242.8	Schwarz criterion		12.21802
Log likelihood	-143.4382	F-statistic		0.331076
Durbin-Watson stat	1.297417	Prob(F-statistic)		0.570865

CIT @ 1ST difference

ADF Test Statistic	-2.447648	1% Critical Value*	-3.7497
		5% Critical Value	-2.9969
		10% Critical Value	-2.6381

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CIT,2)
Method: Least Squares
Date: 12/28/17 Time: 13:13
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CIT(-1))	-0.751245	0.306925	-2.447648	0.0233
C	33.31071	28.13315	1.184038	0.2496
R-squared	0.221962	Mean dependent var		-12.51465
Adjusted R-squared	0.184913	S.D. dependent var		111.5471
S.E. of regression	100.7071	Akaike info criterion		12.14525
Sum squared resid	212980.4	Schwarz criterion		12.24399
Log likelihood	-137.6704	F-statistic		5.990979
Durbin-Watson stat	1.300495	Prob(F-statistic)		0.023257

VAT@ Level

ADF Test Statistic	1.361704	1% Critical Value*	-3.7667
		5% Critical Value	-3.0038
		10% Critical Value	-2.6417

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VAT)
Method: Least Squares
Date: 12/28/17 Time: 13:14
Sample(adjusted): 1995 2016
Included observations: 22 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
VAT(-1)	0.036565	0.026852	1.361704	0.1884
C	26.23293	11.15099	2.352521	0.0290
R-squared	0.084846	Mean dependent var		37.31542
Adjusted R-squared	0.039088	S.D. dependent var		36.47380
S.E. of regression	35.75385	Akaike info criterion		10.07770
Sum squared resid	25566.76	Schwarz criterion		10.17689
Log likelihood	-108.8547	F-statistic		1.854237
Durbin-Watson stat	1.038421	Prob(F-statistic)		0.188435

VAT @ 2ⁿᵈ difference

ADF Test Statistic	-4.798429	1% Critical Value*	-3.8067
		5% Critical Value	-3.0199
		10% Critical Value	-2.6502

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(VAT,3)
Method: Least Squares
Date: 12/28/17   Time: 13:16
Sample(adjusted): 1997 2016
Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(VAT(-1),2)	-1.359935	0.283412	-4.798429	0.0001
C	1.572607	8.099504	0.194161	0.8482
R-squared	0.561242	Mean dependent var		4.918060
Adjusted R-squared	0.536867	S.D. dependent var		53.02804
S.E. of regression	36.08764	Akaike info criterion		10.10442
Sum squared resid	23441.72	Schwarz criterion		10.20399
Log likelihood	-99.04417	F-statistic		23.02492
Durbin-Watson stat	1.920266	Prob(F-statistic)		0.000144

CONS@ Level

ADF Test Statistic	0.253340	1% Critical Value*	-3.8304
		5% Critical Value	-3.0294
		10% Critical Value	-2.6552

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CONS)
Method: Least Squares
Date: 12/28/17   Time: 13:45
Sample(adjusted): 1998 2016
Included observations: 19 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CONS(-1)	0.037964	0.149854	0.253340	0.8030
C	2.743477	2.820889	0.972558	0.3444
R-squared	0.003761	Mean dependent var		3.126316
Adjusted R-squared	-0.054841	S.D. dependent var		10.10928
S.E. of regression	10.38279	Akaike info criterion		7.617476
Sum squared resid	1832.638	Schwarz criterion		7.716891
Log likelihood	-70.36602	F-statistic		0.064181
Durbin-Watson stat	2.103406	Prob(F-statistic)		0.803044

CONS @ 1ˢᵀ difference

ADF Test Statistic	-4.054674	1% Critical Value*	-3.8572
		5% Critical Value	-3.0400
		10% Critical Value	-2.6608

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(CONS,2)
Method: Least Squares
Date: 12/28/17   Time: 13:45
Sample(adjusted): 1999 2016
Included observations: 18 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CONS(-1))	-1.011359	0.249430	-4.054674	0.0009
C	3.324984	2.642614	1.258218	0.2264
R-squared	0.506788	Mean dependent var		0.111111
Adjusted R-squared	0.475962	S.D. dependent var		14.77466
S.E. of regression	10.69544	Akaike info criterion		7.681952
Sum squared resid	1830.281	Schwarz criterion		7.780882
Log likelihood	-67.13757	F-statistic		16.44038
Durbin-Watson stat	2.004964	Prob(F-statistic)		0.000920

EDT@ Level

ADF Test Statistic	-1.222243	1% Critical Value*	-3.8067
		5% Critical Value	-3.0199
		10% Critical Value	-2.6502

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EDT)
Method: Least Squares
Date: 12/28/17   Time: 13:47
Sample(adjusted): 1997 2016
Included observations: 20 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EDT(-1)	-0.143507	0.117413	-1.222243	0.2374
C	16.88418	13.02095	1.296694	0.2111
R-squared	0.076633	Mean dependent var		6.340000
Adjusted R-squared	0.025335	S.D. dependent var		44.18010
S.E. of regression	43.61686	Akaike info criterion		10.48340
Sum squared resid	34243.75	Schwarz criterion		10.58298
Log likelihood	-102.8340	F-statistic		1.493878
Durbin-Watson stat	2.261432	Prob(F-statistic)		0.237380

EDT @ 1ST difference

ADF Test Statistic	-5.311950	1% Critical Value*	-3.8304
		5% Critical Value	-3.0294
		10% Critical Value	-2.6552

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EDT,2)
Method: Least Squares
Date: 12/28/17   Time: 13:52
Sample(adjusted): 1998 2016
Included observations: 19 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EDT(-1))	-1.356618	0.255390	-5.311950	0.0001
C	10.49929	10.50206	0.999736	0.3315

R-squared	0.624034	Mean dependent var	-3.973684
Adjusted R-squared	0.601918	S.D. dependent var	70.07035
S.E. of regression	44.21000	Akaike info criterion	10.51508
Sum squared resid	33226.92	Schwarz criterion	10.61449
Log likelihood	-97.89326	F-statistic	28.21682
Durbin-Watson stat	1.697299	Prob(F-statistic)	0.000057

TTR@ Level

ADF Test Statistic	-0.799682	1% Critical Value*	-3.7343
		5% Critical Value	-2.9907
		10% Critical Value	-2.6348

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TTR)
Method: Least Squares
Date: 12/28/17   Time: 13:53
Sample(adjusted): 1993 2016
Included observations: 24 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TTR(-1)	-0.052934	0.066194	-0.799682	0.4324
C	224.7966	159.9943	1.405029	0.1740

R-squared	0.028247	Mean dependent var	135.4378
Adjusted R-squared	-0.015924	S.D. dependent var	556.5504
S.E. of regression	560.9641	Akaike info criterion	15.57685
Sum squared resid	6922977.	Schwarz criterion	15.67502
Log likelihood	-184.9222	F-statistic	0.639492
Durbin-Watson stat	1.678139	Prob(F-statistic)	0.432445

TTR @ 1ST difference

ADF Test Statistic	-3.955736	1% Critical Value*	-3.7497
		5% Critical Value	-2.9969
		10% Critical Value	-2.6381

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(TTR,2)
Method: Least Squares
Date: 12/28/17   Time: 13:54
Sample(adjusted): 1994 2016
Included observations: 23 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(TTR(-1))	-0.877105	0.221730	-3.955736	0.0007
C	121.1221	125.5650	0.964616	0.3457

R-squared	0.426979	Mean dependent var	-19.39425
Adjusted R-squared	0.399692	S.D. dependent var	745.4731
S.E. of regression	577.5892	Akaike info criterion	15.63854
Sum squared resid	7005796.	Schwarz criterion	15.73728
Log likelihood	-177.8433	F-statistic	15.64785
Durbin-Watson stat	1.939744	Prob(F-statistic)	0.000722

APPENDIX 3

Co-Integration Test Growth Model

Date: 01/28/18   Time: 09:58
Sample: 1992 2016
Included observations: 21
Test assumption: Linear deterministic trend in the data
Series: GDP PPT CIT VAT TTR
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.974036	171.4115	68.52	76.07	None **
0.900270	94.73985	47.21	54.46	At most 1 **
0.742600	46.32887	29.68	35.65	At most 2 **
0.555482	17.82929	15.41	20.04	At most 3 *
0.037527	0.803234	3.76	6.65	At most 4

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 4 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

GDP	PPT	CIT	VAT	TTR
-9.04E-07	-0.008151	-0.010151	-0.008944	0.008292
2.44E-05	-0.003242	-0.001052	-0.007075	0.002905
-4.44E-05	-0.003089	0.005156	-0.018928	0.004792
-0.000125	-0.015065	-0.006950	-0.021543	0.015950
-0.000140	0.001132	0.007467	0.008125	0.000342

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

GDP	PPT	CIT	VAT	TTR	C
1.000000	9012.368	11223.29	9888.712	-9167.814	-12150.99
	(68708.4)	(86099.8)	(75342.1)	(69818.3)	

Log likelihood	-612.3537				

Normalized
Cointegrating
Coefficients: 2
Cointegrating
Equation(s)

GDP	PPT	CIT	VAT	TTR	C
1.000000	0.000000	120.4534	-141.9882	-15.84191	-683.0264
		(113.447)	(101.377)	(5.34405)	
0.000000	1.000000	1.231956	1.112993	-1.015490	-1.272470
		(0.16408)	(0.14663)	(0.00773)	

Log likelihood	-588.1483				

Normalized
Cointegrating
Coefficients: 3
Cointegrating
Equation(s)

GDP	PPT	CIT	VAT	TTR	C
1.000000	0.000000	0.000000	41.47057	-23.86050	3248.556
			(61.1792)	(8.25842)	
0.000000	1.000000	0.000000	2.989347	-1.097502	38.93840
			(0.45324)	(0.06118)	
0.000000	0.000000	1.000000	-1.523069	0.066570	-32.63987
			(0.36993)	(0.04994)	

Log likelihood	-573.8985				

Normalized
Cointegrating
Coefficients: 4
Cointegrating
Equation(s)

GDP	PPT	CIT	VAT	TTR	C
1.000000	0.000000	0.000000	0.000000	-16.74847	2744.749
				(2.57993)	
0.000000	1.000000	0.000000	0.000000	-0.584841	2.622219
				(0.08132)	
0.000000	0.000000	1.000000	0.000000	-0.194630	-14.13681
				(0.04325)	
0.000000	0.000000	0.000000	1.000000	-0.171496	12.14854
				(0.02805)	

Log likelihood	-565.3854				

Co-Integration Test Development Model

Date: 12/28/17   Time: 14:09
Sample: 1992 2016
Included observations: 19
Test assumption:
Linear deterministic trend in the data
Series: HDI PPT CIT EDT TTR
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.987180	171.1235	68.52	76.07	None **
0.894927	88.34473	47.21	54.46	At most 1 **
0.809200	45.53577	29.68	35.65	At most 2 **
0.514924	14.06169	15.41	20.04	At most 3
0.016501	0.316134	3.76	6.65	At most 4

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 3 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

HDI	PPT	CIT	EDT	TTR
0.323364	0.002794	0.001298	0.011791	-0.002454
6.065879	0.002418	0.003220	-0.008849	-0.001702
-0.790537	0.011741	0.016708	0.025636	-0.011513
9.334514	-0.000647	-0.001311	0.004152	0.000398
7.703910	-0.007712	-0.011079	-0.008557	0.006497

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

HDI	PPT	CIT	EDT	TTR	C
1.000000	0.008639	0.004014	0.036464	-0.007588	0.384468
	(0.00989)	(0.00518)	(0.04064)	(0.00869)	

Log likelihood	-327.2607

Normalized Cointegrating Coefficients: 2 Cointegrating Equation(s)

HDI	PPT	CIT	EDT	TTR	C
1.000000	0.000000	0.000362	-0.003293	7.28E-05	-0.515780
		(0.00024)	(0.00101)	(2.3E-05)	
0.000000	1.000000	0.422653	4.602127	-0.886774	104.2080
		(0.16535)	(0.71176)	(0.01614)	

Log likelihood	-305.8563

Normalized Cointegrating Coefficients: 3 Cointegrating Equation(s)

HDI	PPT	CIT	EDT	TTR	C
1.000000	0.000000	0.000000	-0.002359	0.000104	-0.499733
			(0.00048)	(2.9E-05)	
0.000000	1.000000	0.000000	5.690999	-0.850105	122.9228
			(0.53632)	(0.03249)	
0.000000	0.000000	1.000000	-2.576275	-0.086759	-44.27919
			(0.49938)	(0.03025)	

Log likelihood	-290.1192

Normalized Cointegrating Coefficients: 4 Cointegrating Equation(s)

HDI	PPT	CIT	EDT	TTR	C
1.000000	0.000000	0.000000	0.000000	-6.14E-06	-0.448611
				(1.3E-05)	
0.000000	1.000000	0.000000	0.000000	-0.583827	-0.386944
				(0.03684)	
0.000000	0.000000	1.000000	0.000000	-0.207301	11.54224
				(0.01880)	
0.000000	0.000000	0.000000	1.000000	-0.046789	21.66750
				(0.00631)	

Log likelihood	-283.2464

Co-Integration Test Production Model

Date: 12/28/17   Time: 14:10
Sample: 1992 2016
Included observations: 18
Test assumption: Linear deterministic trend in the data
Series: IDP PPT CIT CONS TTR
Lags interval: 1 to 1

Eigenvalue	Likelihood Ratio	5 Percent Critical Value	1 Percent Critical Value	Hypothesized No. of CE(s)
0.993734	201.1227	68.52	76.07	None **
0.940988	109.8157	47.21	54.46	At most 1 **
0.896853	58.87558	29.68	35.65	At most 2 **
0.489854	17.98679	15.41	20.04	At most 3 *
0.278344	5.871726	3.76	6.65	At most 4 *

*(**) denotes rejection of the hypothesis at 5%(1%) significance level
L.R. test indicates 5 cointegrating equation(s) at 5% significance level

Unnormalized Cointegrating Coefficients:

IDP	PPT	CIT	CONS	TTR
-0.020149	-0.007166	-0.016710	0.051457	0.007346
0.035923	0.012150	0.026649	-0.145237	-0.012047
-0.018042	0.005154	0.005598	0.029128	-0.004346
0.019143	-0.011239	-0.018920	0.063067	0.009688
0.006574	-0.009213	-0.019475	0.093756	0.009061

Normalized Cointegrating Coefficients: 1 Cointegrating Equation(s)

IDP	PPT	CIT	CONS	TTR	C
1.000000	0.355627	0.829286	-2.553760	-0.364595	-132.7579
	(0.02263)	(0.04420)	(0.15516)	(0.02137)	

Log likelihood	-397.0598

Normalized
Cointegrating
Coefficients: 2
Cointegrating
Equation(s)

IDP	PPT	CIT	CONS	TTR	C
1.000000	0.000000	-0.956440	-32.97016	0.232425	126.0230
		(2.85610)	(84.8583)	(0.68257)	
0.000000	1.000000	5.021349	85.52901	-1.678782	-727.6757
		(8.12573)	(241.425)	(1.94195)	

Log likelihood	-371.5897				

Normalized
Cointegrating
Coefficients: 3
Cointegrating
Equation(s)

IDP	PPT	CIT	CONS	TTR	C
1.000000	0.000000	0.000000	-7.323936	0.015863	-93.91581
			(1.76643)	(0.00725)	
0.000000	1.000000	0.000000	-49.11477	-0.541827	427.0126
			(15.6769)	(0.06432)	
0.000000	0.000000	1.000000	26.81427	-0.226424	-229.9558
			(8.79706)	(0.03609)	

Log likelihood	-351.1453				

Normalized
Cointegrating
Coefficients: 4
Cointegrating
Equation(s)

IDP	PPT	CIT	CONS	TTR	C
1.000000	0.000000	0.000000	0.000000	-0.029831	-70.11749
				(0.01035)	
0.000000	1.000000	0.000000	0.000000	-0.848258	586.6057
				(0.08147)	
0.000000	0.000000	1.000000	0.000000	-0.059128	-317.0858
				(0.04329)	
0.000000	0.000000	0.000000	1.000000	-0.006239	3.249391
				(0.00157)	

Log likelihood	-345.0878				

APPENDIX 4

Granger Causality Test Growth Model

Pairwise Granger Causality Tests
Date: 11/18/17   Time: 14:28
Sample: 1992 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
PPT does not Granger Cause GDP	23	5.20772	0.01642
GDP does not Granger Cause PPT		6.57136	0.00720
CIT does not Granger Cause GDP	23	4.71182	0.02261
GDP does not Granger Cause CIT		9.58942	0.00146
VAT does not Granger Cause GDP	21	12.2942	0.00058
GDP does not Granger Cause VAT		1.64105	0.22476
TTR does not Granger Cause GDP	23	6.73910	0.00654
GDP does not Granger Cause TTR		8.17915	0.00297
CIT does not Granger Cause PPT	23	0.95810	0.40234
PPT does not Granger Cause CIT		21.3644	1.8E-05
VAT does not Granger Cause PPT	21	6.13413	0.01053
PPT does not Granger Cause VAT		0.10918	0.89723
TTR does not Granger Cause PPT	23	2.39541	0.11957
PPT does not Granger Cause TTR		2.20661	0.13897
VAT does not Granger Cause CIT	21	29.3837	4.4E-06
CIT does not Granger Cause VAT		0.78307	0.47375
TTR does not Granger Cause CIT	23	25.1472	6.1E-06
CIT does not Granger Cause TTR		0.36213	0.70115
TTR does not Granger Cause VAT	21	0.07932	0.92410
VAT does not Granger Cause TTR		8.22684	0.00349

Granger Causality Test Development Model

Pairwise Granger Causality Tests
Date: 11/18/17   Time: 15:52
Sample: 1992 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
PPT does not Granger Cause HDI	23	1.80249	0.19340
HDI does not Granger Cause PPT		0.67517	0.52150
CIT does not Granger Cause HDI	23	2.00774	0.16327
HDI does not Granger Cause CIT		1.30652	0.29524
EDT does not Granger Cause HDI	19	5.22002	0.02024
HDI does not Granger Cause EDT		0.61793	0.55313
TTR does not Granger Cause HDI	23	2.40369	0.11879
HDI does not Granger Cause TTR		0.44399	0.64831
CIT does not Granger Cause PPT	23	0.95810	0.40234

Null Hypothesis:	Obs	F-Statistic	Probability
PPT does not Granger Cause CIT		21.3644	1.8E-05
EDT does not Granger Cause PPT	19	0.61930	0.55243
PPT does not Granger Cause EDT		21.1905	5.8E-05
TTR does not Granger Cause PPT	23	2.39541	0.11957
PPT does not Granger Cause TTR		2.20661	0.13897
EDT does not Granger Cause CIT	19	7.78411	0.00533
CIT does not Granger Cause EDT		0.27043	0.76695
TTR does not Granger Cause CIT	23	25.1472	6.1E-06
CIT does not Granger Cause TTR		0.36213	0.70115
TTR does not Granger Cause EDT	19	19.9837	7.9E-05
EDT does not Granger Cause TTR		0.25053	0.78180

Granger Causality Test Production Model

Pairwise Granger Causality Tests
Date: 01/09/18   Time: 14:33
Sample: 1992 2016
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Probability
PPT does not Granger Cause IDP	23	1.77468	0.19794
IDP does not Granger Cause PPT		0.33633	0.71878
CIT does not Granger Cause IDP	23	3.65263	0.04662
IDP does not Granger Cause CIT		1.39612	0.27311
CONS does not Granger Cause IDP	18	2.52169	0.11873
IDP does not Granger Cause CONS		0.44145	0.65239
TTR does not Granger Cause IDP	23	1.95688	0.17022
IDP does not Granger Cause TTR		0.41661	0.66547
CIT does not Granger Cause PPT	23	0.95810	0.40234
PPT does not Granger Cause CIT		21.3644	1.8E-05
CONS does not Granger Cause PPT	18	0.56787	0.58018
PPT does not Granger Cause CONS		2.92902	0.08911
TTR does not Granger Cause PPT	23	2.39541	0.11957
PPT does not Granger Cause TTR		2.20661	0.13897
CONS does not Granger Cause CIT	18	19.5619	0.00012
CIT does not Granger Cause CONS		2.74431	0.10133
TTR does not Granger Cause CIT	23	25.1472	6.1E-06
CIT does not Granger Cause TTR		0.36213	0.70115
TTR does not Granger Cause CONS	18	3.63433	0.05575
CONS does not Granger Cause TTR		0.82230	0.46103