TAX REVENUE, INFRASTRUCTURAL DEVELOPMENT AND ECONOMIC GROWTH IN NIGERIA

ABSTRACT

This study seeks to establish the impact of tax revenue and infrastructural development (through investment) on economic growth in Nigeria. It is expected that tax revenue should serve as an incentive for infrastructural development to strive and yield economic growth. The motivation for this study is to establish how tax income to the government accounts for infrastructure development and both affecting economic growth in Nigeria. The data used in the study was obtained majorly from World Development Indicator (WDI) Database 2022. Tax revenue was proxied as the actual total tax revenue collected from VAT, and CIT, and PPT. This formed the independent variables as well as Gross Capital formation (GCF) to represent infrastructural development. While the dependent variable is RGDP. The ARDL model was employed after variables were stationary at both levels and at first difference. The study found a significant long-run relationship among the variables. Specifically, PPT was found to be a strong contributor to economic growth in Nigeria. VAT was only positively significant at 15% accounting for economic growth. GCF and CIT were not significant in the study. The research employs a quantitative method of data analysis. These findings connote that GCF, VAT and CIT are yet to fully be additive components in the Nigerian economy. Government economic policy and financing henceforth should reflect good economic policy direction that will open up these components for economic growth in the country.

KEYWORDS: Central Bank of Nigeria (CBN), Federal Inland Revenue Service. (FIRS) Gross Fixed Capital Formation (GFCF).

Introduction

Taxes are the lifeblood of a government functioning for economy prosperity. The government needs finance to perform its functions which include amongst others; the provision of social securities, amenities, safety and justice for all and it is only reasonable that the citizens should contribute for the communal welfare.

There are different definitions of what Tax. The Oxford Advanced Learner's Dictionary (2006) defined Tax as money that you have to pay to the government so that it can pay for public services. According to Abdulrazaq, taxes are imposed under the authority of the

legislature for public purposes. Akanle, sees Tax as a compulsory levy imposed on a subject or his property by the government having authority over him. RamanathaAiyar's Concise Law Dictionary (2009) sees Tax as compulsory extraction of money by the Public authority for public purposes enforceable by law and is not payment for services rendered.

Tax is a compulsory levy imposed by a public authority (government) of a territory either Federal, State or Local Government on the income or gains accruing to individuals and companies from production, distribution and consumption of goods and services as well

as disposal of chargeable assets for the common good of all. Taxes are creation of laws enacted from time to time by Acts of The National Assembly in Nigeria. Taxes paid are not for the direct exchange of goods or services but a transfer of resources to various economic agents to the government to achieve economic and social objectives (Ewoma, 2012). Nigeria as one of the countries in the world has the vision of becoming one of the largest economies of the world, this obviously the reason behind all attempts and efforts of the various past and present governments at directing attention to infrastructural development and economic growth. The growth of any economy is grossly affected by various macroeconomics variables and policies like taxation, investment, government expenditure, exchange rate, interest rate and full employment. Every nation attempts to increase its revenue base to improve its infrastructural development (Saibu, 2015).

Taxation being a microeconomic and fiscal instrument, it transfers resources from the private to the public sector for the accomplishment of economic and social goals.

The government of Nigeria use tax as instrument to measure, access and control the informal sector that dominate most developed countries of the world. (Wambaiand & Hanga, 2013). All levels of government in Nigeria are no longer effective to their respective statutory obligations and responsibilities due largely to the financial crisis being experienced from Internally Generated Revenue (IGR). The financial position is so bad due to the hyper-inflation as depicted by the statistical agencies, this has affected the provisions of essential social services to the people. Okafor (2012) and Sanni (2007) advocated the use of Tax as an instrument of social engineering, to stimulate general and/or sectoral economic growth. Taxation could have a positive or negative effect on both the individual and the government. In Nigeria, tax revenue has accounted for a very small proportion of total government revenue over the years, this is because the bulk of the revenue needed for development purpose are derivable from oil. The revenue from the Crude Oil export over the years is about

80% of the total government revenue with the remaining balance of 20% from the Non Oil Sector (Odusola, 2006).

The Nigeria government should formulate tax policies that will stimulate investment and revenue from taxes which should be sufficient enough to meet with the increasingly infrastructural development and yearnings of her citizenry.

A high tax rate can increase the cost of production and reduce the incentive to invest in an economy, while a low tax rate in form of various incentives can stimulate investment and production that will lead to economic growth and infrastructural developments. Taxation also affects the decisions of household to consume, save and work. Workers can substitute activities taxed at high rates, for activities taxed at relatively low rates (Khumbuzile & Khobai, 2018). High tax rate can make workers reduce their working hours, engage in lower productive economic activities which can therefore have adverse effect on the economic growth and development, government should therefore adopt policies that will ensure increased participation of individual and corporations to invest in the economy (Lapatians, et al, 2018)

The objective of the study is to examine the impact of tax revenue and investment on economic growth in Nigeria with specific crux on how Petroleum Profit tax (PPT), Company Income Tax (CIT), Value Added Tax (VAT) with GCF affect economic growth in Nigeria.

Tax revenue are major sources of revenue to the government. This can be used to achieved economic growth, maintain equilibrium in the economy by combating elements of depression, inflation or deflation, achieve equity in income and wealth distribution and address issues of poverty and promote socioeconomic development, hence the need to find out the extent tax revenue impacts on Nigeria's infrastructural development. The research findings would be of importance to policy makers at national level as they designed policies aimed at enhancing economic and development through a better tax revenue system. Policymakers, especially Federal Inland Revenue Service (FIRS) will use the outcome of the study to gauge its performance and determine the level of input it would have to make impact positively to the Nigeria economy.

The scope of the study covered the assessment of non-tax and tax revenue on infrastructural development in Nigeria over a period of twenty five years (1996-2021). The trend of petroleum profit tax, company income tax, and value added tax were examined for the period

to determine their correlation with infrastructural development in Nigeria. The focus would be based on the data obtained at the Federal Inland Revenue Service (FIRS).
Under this study, we examined the federal taxes collected by the government and its contribution to infrastructural development in the Nigerian economy.

This study shall contribute to the existing literature on how tax revenue can be a catalyst to economic growth and infrastructural development. This study would therefore be one of very few studies that, investigated the significant difference between the effects of oil and non-oil tax revenue on economic growth in Nigeria. It will therefore add to the body of knowledge in academic literature.

LITERATURE REVIEW

Conceptual Review

Tax is an instrument employed by the government for generating public funds (Ofoegbu *et al* (2016) & 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 which involves the application of tax rate to a tax base (Ofoegbu *et al* 2016 &Piana 2003).

According to Okafor (2012) and Brautigam (2008), a well-designed tax system can help governments in developing countries prioritize their spending, build stable institutions, and improve democratic accountability. The main purpose of a tax is to enable public sector finance its activities so as to achieve some nation's economic and social goals. It can also be for the purpose of redistribution of wealth to ensure social justice (Ayuba, 2014 and Ola, 2001). Taxes, therefore, can be used as an instrument for achieving both micro and macroeconomic objectives especially, in developing countries such as Nigeria.

Macek (2014) and Musgrave and Musgrave (2004) commented that, the dwindling level of tax revenue generation in the developing countries makes it difficult to use tax as an instrument of fiscal policy for the achievement of economic development.

Federal Government Collectible Taxes in Nigeria

Buba (2007) accentuate the fact that the development of the private sector which is the main engine for national development, growth and wealth creation requires large investment in areas like infrastructure, energy, and power. Investment of this level can only come from

government. In order to enhance the level of income of the poor sections of the society, sufficient and adequate investment is also required in sectors like education, health, and other sectors that can generate employment. The government can successfully carry out these projects if only it can adequately raise funds. According to Olawunmi and Ayinla (2007), policy guidance represents the objective of the economy policy. The main fiscal policy instruments are tax revenue and public expenditure. It is with this in mind that some forms of government generated taxes and their function are discussed below:

Petroleum Profits Tax

Petroleum profit tax involves the charging of tax on the income accruing from petroleum operations. It is a tax applicable to upstream operations in the oil industry Odusola (2006). The importance of petroleum to the Nigeria economy gives rise to the enactment of the different law regulating the taxation of incomes from petroleum operation. According to Buba (2007), Nigerian law by virtue of the Petroleum Profits Tax Act 1990 requires all companies engaged in the extraction and transportation of petroleum to pay tax. Adegbie (2011) further stated that the taxable income of a petroleum company comprises proceeds from the sale of oil and related substances used by the company is subject to tax at 85%, but this percentage is lowered to 65.75% during the first 5 years of operation but where oil companies operate under production sharing contracts they will be liable to tax rate of 50%.

Companies Income Tax

Company's income tax Act, 1990 is the current enabling law that governs the collection of taxes on profits made by companies operating in Nigeria excluding companies engaged in Petroleum exploration activities. This tax is payable for each year of assessment of the profits of any company at a rate of 30% (Adereti 2011). Company income tax (CIT) was introduced in Nigeria in 1961. This law has been amended many times and is currently called the Company Income Tax Act 1990 (CITA). The Federal Inland Revenue Services (FIRS) of the Federal Board of Inland Revenue is empowered to administer this tax.

Value Added Tax

VAT is a tax levied on the value added that results from each exchange. It is an indirect tax collected from someone other than the person who actually bears the cost of the tax. Valued-

added tax (VAT) was introduced in Nigeria in January 1993 through the VAT Act No. 102 of 1993, but its implementation began in January 1994.

VAT is a consumption tax that is relatively easy to administer and difficult to evade and it has been embraced by many countries world-wide (Federal Inland Revenue Service, 1993). Value added tax Act, 1993 is the law that regulates the collection of tax due on "vatable" goods or services. (Adereti 2011). It was introduced to replace the old sales tax. It is a consumption tax levied at each stage of the consumption chain, and is borne on the final consumer. It requires a taxable person upon registering with the Federal Board of Inland Revenue to charge and collect VAT at a flat rate of 5% of all invoiced amounts of taxable goods and service. (Ariyo, 1998). The current rate is 7.5% raised from 5% on 1st February, 2020.

Infrastructural Development

Infrastructure is normally seen as those basic and essential services that should be in place if development must occur. Waziri, Ali and Nuru (2014) opines that the physical structures required for the functioning of society can also be referred to as infrastructure. Infrastructure is the elementary physical and organizational structures needed for the operation of a society like industries, buildings, roads, bridges, health services, governance and so on (Oyedele 2012).

The components or elements of infrastructure are electricity, telecommunication, transport (road, rail, ocean, air, pipeline) etc (Ajakaiye, 2002). Aigbokhan (1999) explains infrastructure as a term which encompasses activities referred to as "social overhead capital" with two principal characteristics being that they have economics of scale in production and spillover from users to non – users.

It is the enterprise or the products, services and amenities required for an economy to function (Sulivan and Sheffrin 2003). The term typically refers to the technical structures that support a society, such as roads, water supply, sewers, electric national grids, telecommunications, and so forth, and can be defined as "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions" (Fulmer 2009). Infrastructural development holistically can be seen as sustained rates of growth of income per capita. Todaro and Smith (2011) is of the view that infrastructural development can be facilitated and accelerated by the presence of physical, social and economic infrastructures. If these facilities and services are not in place, development will be a near impossibility (Migap 2014).

Petroleum Profit Tax and Infrastructural Development in Nigeria

Between 50% and 85% of petroleum profit tax is imposed on the profits of all corporate entities registered in Nigeria as well as those whose income originate from oil and gas operations in Nigeria (Dike, 2014). The Petroleum Profit Tax is regulated by the Petroleum Profit Tax Act of 2007 as amended.in 2009, petroleum profit tax attracted 85% tax rate on export and 65.75% on oil & gas domestic sale (Ogbonna&Appah 2012). The petroleum industry is perceived as the largest and main generator of GDP (gross domestic product) in Nigeria, which is the most populous among African nations (Onaolapo, Fasina, &Adegbite, 2013). The contribution of the petroleum industry can be gauged in terms of its share of revenue generation in the Nigerian economy.

The petroleum industry has imputed tremendous contributions in both foreign exchange reserves and government revenues (Onyemaechi 2012). It is proven that the PPT is the largest contributor to the tax revenue of Nigeria; therefore, it might be safe to conclude that it is also one of the main contributors to the development of infrastructural facilities in the country. Azaiki and Shagari (2007) observe that countries that have sufficient petroleum, can base their development on this resource. They also point to the prospective benefits of improved economic growth and the creation of jobs, increased government revenues to finance poverty alleviation, the transfer of technology, the development of infrastructure and the encouragement of related industries.

Company Income Tax and Infrastructural Development in Nigeria

According to Dike (2014), CIT is a corporation tax. It is claimable at the rate of 30% on the profits of all registered corporate entities excluding those involved in petroleum operations. Corporate taxation is rather straightforward in a closed economy, but it becomes more complicated when companies operate in different countries (Zucman, 2014). Although, company income tax is not the largest contributor of tax revenue in Nigeria, it is one of the major taxes collected by the federal government and it provides revenue for the development of some key sectors in Nigeria. By paying their taxes, companies get to enjoy some essential services from the government like the construction of better road networks, effective and efficient telecommunication, electricity and water supply.

Value Added Tax and Infrastructural Development in Nigeria

Value added tax (VAT) is a consumption tax. It is imposed at each stage of the consumption chain and borne by the final consumer of the product or service (Onwuchekwa, &Aruwa, 2014). Value Added Tax can be seen as the incremental value, which a producer, using labour, contributes to his raw materials of purchases before the sales of the processed goods or services (Okoli, &Afolayan, 2015).

In Africa, VAT has been acquainted with in countries such as Benin- Republic, Cote d'Ivore, Kenya, Madagascar, Mauritius, Senegal, Togo, and Nigeria. In these countries, it is observed that VAT has become a major contributor to government revenue (Ajakaiye, 2000; Shalizi& Squire, 1988; Adereti, Sanni & Adesina, 2011). In Nigeria, VAT was introduced in 1993; though implementation began in 1994 on a full scale (Onwuchekwa & Aruwa, 2014). It is claimable by the government at a rate of 5% of the value of goods and services, which is the lowest despite the series of amendment to the Act (Abiola, 2014). However it was increased to 7.5% on 1st February, 2020. Onoh (2013) asserts that Value added tax (VAT) is an ideal form of taxation and has contributed enormously to infrastructural development in Nigeria.

Theoretical Review

The following theories of taxation were discussed in this study.

Socio political theory of taxation

Ogbonna and Appah (2012) affirmed this reasoning justifies the imposition of taxes for financing state activities and for the provision of a basis for apportioning the tax burden between members of the society. They advocated that, advocates for a tax system which is not designed to serve individuals but one that cures the ills of the society as a whole. The society is made up of individuals but is more than the sum total of its individual members; consequently, the tax system should be directed towards the health of the society as a whole, since individuals are integral part of the broader society (Chigbu, Akujuobi and Appah, 2012).

Expectancy theory

Ayuba (2014) and Bhartia (2009) asserts that, the taxation is such that every tax proposal passes the test of practicality and must be the sole consideration before the tax authorities in a bid for tax proposal. It strongly emphasises that, the economic and social objective of the state is considered irrelevant since it is meaningless to have a tax that cannot be levied and effectively collected.

Benefits-received theory

This assumes an exchange or contractual relationship between the state and the tax-payers, certain goods and services are provided by the state and the cost of such goods and services are contributed in the proportion of the received benefits, thus, the benefits received present the basis for distributing the tax burden in specific manner. This theory overlooks the possible use of the tax policy for bringing about economic growth or stabilization. Chigbu, *et.a*l, (2012) see the cost of service theory as very similar to the benefits-received theory. The theory emphasize on semi commercial relationships between the state and the citizens to a greater extent. The implication according to Chigbu, *et.a*l, (2012) was that, the citizens are not entitled to any benefits from the state and if they do, they must pay the cost thereof. In this theory, the costs of services are scrupulously recovered unlike the benefits-received theory where a balanced budget is implied.

Ability to pay theory

This theory of taxation upholds that, taxes imposed on tax-payers should be based on the progressive tax approach which maintains that taxes should be levied according to a tax-payer's ability to pay. This system of taxation requires that higher earning persons pay taxes higher than those with lower income. The basic tenet of this theory is that, the burden of taxation should be shared by the members of the society on the principle of equity and justice and that this principle necessitates that tax burden is apportioned according to their relative ability to pay. Adam Smith is the brain behind the principle of equity and justice. He advocates that, the amount of tax payable should be equal, this by implication. Tax payable is in proportion to earned income. Equity and justice is assumed only when the tax system is based on the ability of the tax payer to pay the amount levied as tax liability.

The Sacrifice Theory

The sacrifice theory by Makinya (2000) attempts to determine the burden that rests upon an individual in virtue of his payment of taxes and how much of his or her income remains for purpose of his own sustenance. According to this theory payment of tax is a sacrifice that an individual makes towards the support of the government.

Theoretical Framework

The theory adopted in the study is the Ability – to - Pay Theory. The understanding and the basic belief of the theory is that, burden of taxation should be shared by all the members of the public and society on fair justice and equity, this infers that the tax burden should be shared according to relativity and ability to pay. Adam Smith, in the book "The Wealth of the Nations" advocated that the amount of tax paid or payable should be equal to the proportion of the earned income. Equity and justice can only be effective when the tax system

is based on the ability of the tax payer to be able to pay comfortably the amount of tax levied as tax liability.

Empirical Review

Many studies have investigated on the impacts of tax revenue on economic growth in Nigeria, and in different part of the countries of the world with diverse techniques and opinions. The outcomes of the investigations however, have shown that, tax revenue has a significant relationship with economic variables.

Lyndon & Paymaster (2016) examined the impact of companies' income tax, value-added tax on economic growth (proxy by gross domestic product) in Nigeria, using secondary time series panel data covered the period 2005 to 2014. Their results of the analysis showed that, both company income tax and value-added tax have positive impact on economic growth.

Macek (2014) similarly, investigated the impact of taxation revenue on economic growth in OECD countries, using time series secondary data for the period 2000 – 2011. He adopted a mathematical multiple regression model to capture the linearity correlation between the variables of the study.

Stoilova & Patonov (2012) also examined the impact of taxation on economic growth in 27 European Union countries, using data for the period 1995 – 2010. They discovered that, direct tax revenue made more efficient impact on economic growth in EU countries than indirect taxes

Ogbonna & Appah (2012) observed the impact of tax reforms on economic growth in Nigeria using data collected from the Statistical Bulletin of the Central Bank of Nigeria (CBN) for the period 1994 - 2009.They found that, tax reform variables such as petroleum profit tax, companies' income tax, value-added tax, education tax, personal income tax, and custom and excise duties had significantly impact on economic growth in Nigeria. They concluded that, tax reforms improved government revenue.

In a related study, Umoru & Anyiwe (2013) investigated the correlation between the New National Tax Policy and economic growth in Nigeria using co-integration technique and error correction model to analyze data. The results of their analysis revealed that, direct taxation revenue had significant positive relationship with economic growth, while indirect tax revenue had insignificant but negative impact on economic growth in Nigeria. They concluded that, Nigeria's tax policy towards indirect taxation lack justification, rather the country should strengthen the structures of direct taxation.

Ihenyen & Mieseigha (2014) viewed taxation as a financial instrument for economic growth in using data obtained from the Central Bank of Nigeria for the period 1980 – 2013. They employed Ordinary Least Squares technique (OLS). The results revealed that, corporate income tax and value-added tax impacted positively on gross domestic product. They concluded that, taxation is an instrument of economic growth in Nigeria.

Chude & Chude (2015) also investigated the impact of company income tax on the profitability of brewery companies in Nigeria. Their work revealed that, there was a positive correlation between taxation and profitability.

Ofoegbu *et. al*. (2016) studied empirical analysis of effects of tax revenue on economic development of Nigeria using annual time series data for the period 2005 - 2014.They discovered that, there was a significant relationship between tax revenue and economic development. The results also revealed that, measuring the effects of tax revenue on economic development using HDI gave lower relationship than measuring the relationship with GDP gives a painted picture of the relationship between tax revenue and economic development in Nigeria.

Cornelius, Ogar & Oka (2016) examined the impact of tax revenue on the Nigerian economy. The study covered the period from 1986 to 2010 using CIT, PPT and NOR as independent variable against GDP. Their findings revealed that, there was a significant relationship between petroleum profit tax and the growth of the Nigeria economy. It also showed that, there was a significant relationship between non oil revenue and the growth of the Nigeria economy. They found that, there was no significant relationship between company income tax and the growth of the Nigeria economy.

Okafor (2012) studied tax revenue generation and Nigerian economic development cover the period 1981-2007. A simple hypothesis was formulated in the null form which states that there is no significant relationship between federal collected tax revenue and the GDP in Nigeria. The regression result indicated a very positive and significant relationship.

Abata (2014) wrote on the impact of tax revenue on Nigeria economy using descriptive survey design and simple random sampling technique. His findings revealed that, tax revenue has a significant impact on Federal Government Budget implementation and revenue generated in Nigeria.

In a related study, Otu & Theophilus (2013) examined the effects of tax revenue on economic growth in Nigeria, utilizing time series data for the period spanning from 1970 to 2011. Their results shown that, domestic investment, labour force and foreign direct investment have positive and significant effects on economic growth in Nigeria.

Ogbonna & Appah (2016) investigated the effects of tax administration and revenue on economic growth of Nigeria. Data collected from the questionnaires and secondary data were analyzed using relevant regression analysis. Their results revealed that, there was a significant relationship between the following: Personal income tax revenue (PITR) and per capita income; Company Income Tax Revenue and Gross Domestic product of Nigeria; VAT revenue and PCI of Nigeria, Petroleum Profit Tax revenue and GDP of Nigeria.

Ihendinihu, *et al* (2014) investigated long-run equilibrium relationships between tax revenue and economic growth in Nigerian between 1986 and 2012. Their results indicated that, total tax revenue has a significant effect on economic growth; explaining about73.4% of the total variation in RGDP. CIT, EDT and OTR were discovered to have significant effects on economic growth; sustaining long-run equilibrium relationships with RGDP.

Muriithi (2013) examined the relationship between government revenue and economic growth in Kenya. His European Journal of Accounting, Auditing and Finance Research studied showed that, there is a direct relationship between income tax and economic growth. He further concluded that, increase in VAT leads to positive effects on the rate of economic growth.

In addition, Ude & Agodi (2014) investigated the time series roles of non-oil revenue variables on economic growth in Nigeria for period of 1980-2013. They discovered that, nonoil revenue variables analysed are: agricultural revenue and manufacturing revenue and interest rate have significant impact on economic growth in Nigeria.

Meanwhile, Medee & Nenbee (2011) studied the econometric analysis of the impact of fiscal policy variables on Nigeria's economic growth (1970-2009) using Vector Auto-regression and Error correction mechanism techniques and claimed that, tax revenue have effects on the gross domestic product both at the short and long run, meaning that tax revenue has positive impact on the economic growth in Nigeria.

Gacanja (2012) did an empirical case study in Kenya on tax revenue and economic growth. His results revealed a positive relationship between economic growth and tax revenues.

Akinwale (2010) investigated the inadequacy of infrastructure in Nigeria. The data utilized was gathered from archival source and found based on the analysis that despite the efforts aimed at improving the state of infrastructure in Nigeria, the problem of inadequacy in

infrastructure still persists. Akinwale is of the opinion that the problem is not inadequate fund but negligence and corruption.

CBC (2013) affirms that the Africa is faced with an enormous problem of infrastructure and this has grossly destabilized its integration and development potentials. Without mincing words, they advocate that development and growth as well as actualization of developmental plans and visions can only be addressed if the problem of deficit infrastructure is solved. They are of the opinion that effective taxation is a means through which this can be achieved.

Adefila & Bulus (2014) suggest that there are spatial variations in infrastructural development in Plateau State, Nigeria. Methodology adopted was the survey research design, and structured questionnaire distributed to one thousand and twenty (1,020) randomly sampled Nigerian citizens. The study employed standardized score (Z-score) analytical technique. The result showed substantial inter-local government inequalities in overall levels of infrastructural development in the study area and an uneven spatial pattern of infrastructural development. Basically, infrastructural development was lopsided across the state and this may be based on the managerial pattern of the local government's usage of fund.

Okoli & Afolayan (2015) in their study opine that Value Added Tax (VAT) contributes substantially to revenue of Nigeria. Error Correction Model (ECM) was used for the analysis of the data gathered for the period 1994 -2012. From the study, they discovered that VAT is the second long-term source of the total federally collected revenue.

Ejiofor & Ekwe (2016) in their study titled 'Appraisal of Contributions of the various sources of local governments' revenue to the economic development of Nigeria (1993-2013). Findings indicate that the prevalent crash in crude oil prices will adversely affect federal rigorous efforttowards effectively connecting and strategically expanding the internal generated revenue sources.

Abdul-Rahamoh, Taiwo & Adejare (2013) evaluated the effect of petroleum profit tax (PPT) on Nigeria Economy. The study covered a forty-year period (1970 -2010). Multiple regression was used for analysis, regression analysis using SPSS version 17 was employed by the researchers in testing specific objectives statements. The study revealed that taxation has a significant contribution on Gross Domestic Product (GDP). The study indicates· that petroleum profit tax had significant impact on Nigerian economy.

Olatunji &Adegbite, (2014), studied the effect of petroleum profit tax interest Rate and Money Supply on Nigeria Economy from 1970 to 2010; multiple regression was employed to analyze the relationship among the variables. The analysis revealed that short run effect of petroleum profit tax was positive while that of interest rate was positive on economic growth. The study indicate that petroleum contribute positively to income.

Eyisi, Oleka and Bassey, (2015) studied the effect of taxation on macro-economic performances in Nigeria from 2002 to 2011 using ordinary least square regression method. Result obtained showedthat government earnings from taxation has positive and significant effect on real GDP in Nigeria. Government revenue from taxation has negative significant influence on unemployment rate in Nigeria.

Ezu &Okoh (2016) appraised the effect of Tax revenue on selected macro-economic variables in Nigeria(2000-2015). They made use of secondary data in this study, total tax revenue from Personal Income Tax, Company Income Tax and Consumption Tax had negative but insignificant effect on inflation. Exchange rate, money supply and interest rate had positive effect on inflation.

Oziengbe (2013) discovered the relative effects of federal capital and recurrent expenditures on Nigeria's economy within the period 1980-2011. The empirical analysis begins with a study of the effect of total government expenditure on gross domestic product (GDP) using multiple linear regression analysis. The variance decomposition results indicate that the proportion of forecast error variance of GDP explained by innovations in RECEXP dominates the proportion explained by innovations in CAPEXP in all the periods.

Nwofor & Gordon (2013) studied tax revenue and government expenditure. They discovered how revenue generated from taxation affects Nigeria’s expenditure. Secondary data was used for data collection and hypotheses tested using Pearson moments collation coefficient. The study revealed that the volume of expenditure incurred by government can negatively affect total tax revenue especially when those expenditures are mainly a recurrent expenditure.

Ezu & Okoh (2016) wrote on the effect of tax revenue on selected macro-economic variables in Nigeria (2000-20I5). Findings showed that total tax revenue and consumption and property tax had positive but insignificant effect on GDP. Company Income Tax has positive and significant effect on GDP. Personal Income Tax has insignificant negative effect on GDP. Total tax revenue has no significant effect on GDP. Total tax revenue from Personal Income

Tax, Company Income Tax and Consumption Tax had negative but insignificant effect on inflation. Exchange rate, money supply and interest rate have positive effect on inflation.

GAPS IN LITERATURE

Many of the empirical studies reviewed dealt largely on effect of tax revenue on economic growth, very few studies reviewed the impact of tax revenue on infrastructural development. None of the studies included Custom and Excise Duties in the types of tax revenue that were reviewed.

METHODOLOGY

The theoretical guide into this study is the ability to pay theory. This theory of taxation upholds that, taxes imposed on tax-payers should be based on the progressive tax approach which maintains that taxes should be levied according to a tax-payer's ability to pay. This system of taxation requires that higher earning persons pay taxes higher than those with lower income. The basic tenet of this theory is that, the burden of taxation should be shared by the members of the society on the principle of equity and justice and that this principle necessitates that tax burden is apportioned according to their relative ability to pay. Adam Smith is the brain behind the principle of equity and justice. He advocates that, the amount of tax payable should be equal, this by implication. Tax payable is in proportion to earned income. Equity and justice is assumed only when the tax system is based on the ability of the tax payer to pay the amount levied as tax liability.

The population of the study is Nigeria economic data of tax revenue, gross capital formation and economic output. Since inceptive (1960),

The population sample for tax revenue, gross capital formation and economic output from 1996 to 2021. Tax revenue, gross capital formation and economic output this study is data of this study is the sample size. The Central Bank of Nigeria (CBN) and WDI 2022 are the source of collecting these secondary data. Hence the researcher deemed it fit to draw from the pool of resources of these organizations and believes that any information which comes from these is expected to be effective in achieving the objectives of this study.

Model Specification

In order to examine the impact of tax revenue and investment on economic growth in Nigeria, a multiple linear model is built. The model shows the impact of petroleum profit tax, company income tax, customs and gross capital formation on real economic growth. The purpose of this study is to examine the impact of tax and investment on economic growth in Nigeria.

To achieve this, two variables were identified in the study; these are independent and dependent variables. The independent variables are the Tax revenue generated in Nigeria in the following dimensions as surrogates: Companies Income Tax (CIT), Petroleum Profit Tax (PPT), Cross Capital Formation (GCF), and Value Added Tax (VAT). The dependent variable on the other hand is Real GDP.

Gross fixed capital formation refers to the net increase in physical assets (Investment minus disposals) within the measurement period. GCF is a term used to describe the net capital accumulation during an accounting period for a particular country. The term refers to the capital stocks such as equipment, tools, transportation assets, electricity etc. This variable GCF will be used to capture infrastructural development in this study. This is represented in the following function:

RGDP=f (PPT, GCF, CIT, VAT)

From the above function, the following model is derived

$RGDP = \alpha + \beta_1 PPT_t + \beta_2 CIT_t + \beta_3 VAT_t + \beta_4 GCF + \varepsilon$

Where:

GCF: Gross capital formation

PPT: Petroleum Profit Tax

CIT: Company Income Tax

RGDP: Real GDP

VAT: Value Added Tax

α is constant

$\beta_1, \beta_2, \beta_3, \beta_4$ are the coefficient of the parameter estimate

ε is the error term.

Model Evaluation

The Autoregressive Distributed Lag model (ARDL) models is employed to obtain numerical values of the model coefficient. The value of the F-bounds Test cointegration helped us determine the short run and long run more plausible estimates to interpret.

$$Y_t = \varphi 0_i + \sum_{i=1}^{p} \sigma_i Y_{t-i} + \sum_{i=0}^{q} \beta_i X_{t-i} + \varepsilon_{it}$$

Where Y is the vector of dependent variables while X is the vector of independent variables with different lag length.

A *priori* Expectation

It is expected that the tax revenue generated would have positive impact on economic growth in Nigeria. It would be expected that petroleum profit tax would have a positive significant effect on economic growth in Nigeria. It would be expected that company income tax would have a positive relationship with economic growth in Nigeria. It would be expected that Value Added Tax would have a positive relationship with economic growth in Nigeria. It would be expected that GCF would have a positive relationship with economic growth in Nigeria. Also, it is expected that there is long run relationship in the model. Thus, in summary, it would be expected that $\beta 1 > 0$.

RESULT PRESENTATION

Table 1: Unit root result

s/n	variable	level	First diff	Remark
1	cit	-3.984770(-3.644963)		I(0)
2	ppt		-5.015304(-2.981038)	I(1)
3	rgdp		-3.487769(-2.981038)	I(1)
4	vat	4.950345(-3.012363)		I(0)
5	GCF		-4.327843(-2.981038)	I(1)

Source: E-view 10, 2022

##()

Where ## is test statistics

() is 5% critical value

The unit root result in table 1 shows that CIT, and VAT are stationary at levels while GCF, RGDP and PPT are stationary at first difference. This calls for the use of ARDL model to establish the best coefficients and short-run as well as long-run relationship between the dependent and independent variables in the model.

Table 2: SHORT RUN EFFECT OF GCF AND TAX REVENUES IMPACT ON GROWTH

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDP(-1)	0.460556	0.079551	5.789453	0
VAT	-0.00033	0.069089	-0.00478	0.9963
VAT(-1)	-0.03704	0.185814	-0.19936	0.8447
VAT(-2)	-0.1607	0.101334	-1.5858	0.1336
PPT	0.054757	0.004939	11.08572	0
PPT(-1)	0.003504	0.005573	0.628676	0.539
PPT(-2)	0.046354	0.006039	7.675536	0
GCF	-3.72E-13	1.08E-12	-0.34297	0.7364
GCF(-1)	2.25E-12	1.03E-12	2.182191	0.0454
CIT	0.111442	0.045933	2.426201	0.0283
C	-9.76355	21.44206	-0.45535	0.6554
R-squared	0.997648	Mean dependent var		280.2
Adjusted R-squared	0.996081	S.D. dependent var		170.4677
S.E. of regression	10.67216	Akaike info criterion		7.869262
Sum squared resid	1708.426	Schwarz criterion		8.401534
Log likelihood	-91.3004	Hannan-Quinn criter.		8.022537
F-statistic	636.3507	Durbin-Watson stat		2.263448
Prob(F-statistic)	0			

Source: E-view 10, 2022

Based on the above short-run estimates using Autoregressive Distributed Lag (ARDL), gross capital formation has a t-statistics of -0.34297 with a negative coefficient of -3.72E-13 and a P-value of 0.7364 which is greater than 5% level of significance. This indicates that gross capital formation is not significant in relating with the dependent variable RGDP in Nigeria in the short-run. Value added tax was not significant at 5% level in the model.

Moreover, Petroleum Profit Tax has a t- statistics of 11.08572 with a positive coefficient of 0.054757 and a p-value of 0 which signifies that there is a positive relationship between the petroleum profit tax toward the growth of the economy.

Moreover, the R-squared value of 0.997648 and the Adjusted R-squared value of 0.996081 measured the fitness of the model. There is need to establish possible long-run relationship in the model.

Table 3: F Bount Test

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	29.35955	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.50%	2.88	3.87
		1%	3.29	4.37
Actual Sample Size	26		Finite Sample: n=35	
		10%	2.46	3.46
		5%	2.947	4.088
		1%	4.093	5.532
			Finite Sample: n=30	

Source: E-view 10, 2022

Table 3 established that there is long-run co-integration in the model. This is because the F statistic value at 5% is greater than the lower and upper bound critical values in table 3. This calls for an estimation of the long-run model of ARDL as presented in table 4 below.

Table 4: LONGRUN EFFECT OF GCF AND TAX REVENUES IMPACT ON ECONOMIC GROWTH

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDP(-1)	0.825389	0.097661	8.451579	0

VAT	0.172437	0.114094	1.511364	0.1502
VAT(-1)	-0.28028	0.221459	-1.26559	0.2238
PPT	0.057033	0.008162	6.987921	0
GCF	4.96E-13	1.35E-12	0.367527	0.718
CIT	0.020935	0.070954	0.29505	0.7717
RESID01	0.801336	0.515711	1.553847	0.1398
RESID01(-1)	-1.68909	0.786824	-2.14672	0.0475
C	-3.79976	32.40551	-0.11726	0.9081
R-squared	0.990424	Mean dependent var		289.3648

Source: E-view 10, 2022

Based on the above long run results using Autoregressive Distributed Lag (ARDL), Value added tax (VAT) has a t-statistics of 1.511364 with a positive coefficient of 0.172437 and a P-value of 0.1502 which is less than 5% level of significance. This indicates that Value added tax has significant positive relationship with the dependent variable that is RGDP on Nigeria economy in the long run. Moreover, Petroleum Profit Tax having a value of t-statistic 6.987921 with a positive coefficient of 0.057033, and a P-value of 0 which is less than 5% level of significance. This mean that Petroleum Profit Tax defines the dependent variable in a good way and that there is a positive relationship with the dependent variable that is RGDP in the long run. Gross capital formation was also analysis in the long run in which show in the results that GCF has a t-statistics of 0.367527 with a positive coefficient of 4.96E-13 and a P-value of 0.718 which is greater than 5% level of significance. That indicate that GCF is not significant and did not define the dependent variable in a good way even though there is a positive relationship in the long run. The ARDL long run residual component has the required sign and its significant with about 1.7 percent adjustment back to equilibrium. Other stability tests carried out such as; Breusch-Godfrey Serial Correlation LM Test, Normality test, Heteroskedasticity Test: Breusch-Pagan-Godfrey, and resursive residual indicate a stable model. Hence, our estimates and findings are reliable.

Correlation Analysis

Table 5 : Breusch-Godfrey Serial Correlation LM Test

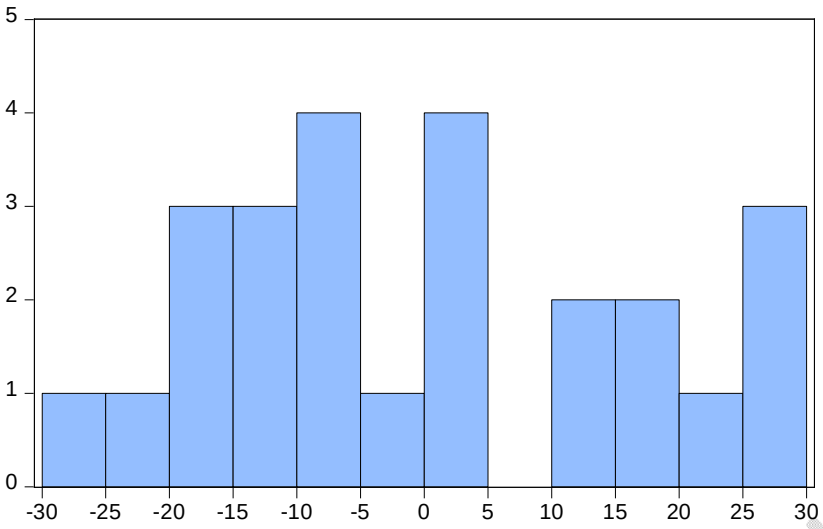
F-statistic	3.121859	Prob. F(5,11)	0.0537
Obs*R-squared	14.66527	Prob. Chi-Square(5)	0.0119

Test Equation:
Dependent Variable: RESID
Method: ARDL
Date: 12/20/22 Time: 22:55
Sample: 1997 2021
Included observations: 25
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RGDP(-1)	0.142551	0.092899	1.534465	0.1532
VAT	0.057233	0.096096	0.595583	0.5635
VAT(-1)	-0.086844	0.195854	-0.443411	0.6661
PPT	-0.004949	0.008191	-0.604141	0.5580
GCF	-8.83E-13	1.16E-12	-0.759888	0.4633
CIT	-0.009453	0.073101	-0.129314	0.8994
RESID01	0.015278	0.419724	0.036399	0.9716
RESID01(-1)	-0.248860	0.658443	-0.377952	0.7127
C	8.208326	26.92468	0.304862	0.7662
RESID(-1)	-0.673794	0.287648	-2.342427	0.0390
RESID(-2)	-1.114615	0.290355	-3.838803	0.0028
RESID(-3)	-0.798535	0.366349	-2.179710	0.0519
RESID(-4)	-0.637366	0.347936	-1.831847	0.0942
RESID(-5)	-0.278993	0.410539	-0.679577	0.5108

R-squared	0.586611	Mean dependent var	1.02E-13
Adjusted R-squared	0.098060	S.D. dependent var	16.37343
S.E. of regression	15.54993	Akaike info criterion	8.625009
Sum squared resid	2659.805	Schwarz criterion	9.307580
Log likelihood	-93.81262	Hannan-Quinn criter.	8.814325
F-statistic	1.200715	Durbin-Watson stat	2.385370
Prob(F-statistic)	0.385165		

Normality test



Series: Residuals	
Sample 1997 2021	
Observations 25	
Mean	1.02e-13
Median	-4.586797
Maximum	28.26269
Minimum	-25.87847
Std. Dev.	16.37343
Skewness	0.378990
Kurtosis	1.987453
Jarque-Bera	1.666442
Probability	0.434647

Fig 1 : Graphical presentation of normality test results

Table 6 : Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.047814	Prob. F(8,16)	0.4429
Obs*R-squared	8.594801	Prob. Chi-Square(8)	0.3776
Scaled explained SS	1.738129	Prob. Chi-Square(8)	0.9880

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 12/20/22 Time: 22:56
Sample: 1997 2021
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	390.3207	418.4783	0.932714	0.3648
RGDP(-1)	0.609221	1.261173	0.483059	0.6356
VAT	-0.076268	1.473383	-0.051764	0.9594
VAT(-1)	-0.374713	2.859880	-0.131024	0.8974
PPT	-0.026629	0.105398	-0.252655	0.8038
GCF	-1.53E-11	1.74E-11	-0.880832	0.3914
CIT	0.633071	0.916281	0.690914	0.4995
RESID01	0.586171	6.659789	0.088017	0.9310
RESID01(-1)	6.426226	10.16089	0.632447	0.5360

R-squared	0.343792	Mean dependent var	257.3656
Adjusted R-squared	0.015688	S.D. dependent var	261.0195
S.E. of regression	258.9640	Akaike info criterion	14.22497
Sum squared resid	1072998.	Schwarz criterion	14.66376
Log likelihood	-168.8121	Hannan-Quinn criter.	14.34667
F-statistic	1.047814	Durbin-Watson stat	2.358671
Prob(F-statistic)	0.442887		

Fig 2 : Graphical presentation showing recursive residuals

Conclusion

The finding of this study provided insight into the effect of tax administration and federal government tax generation on government revenue. It further provided an insight as to the extent to which each of the independent variables affects the dependent variable and also provided an affirmation of the extent to which the variations in the dependent variable are caused by the independent variables covered in the models. The study conclude that there is long-run relationship among tax revenue, investments and economic growth in Nigeria. Petroluem profit tax positively accounts for economic growth in Nigeria both in the short-run and long-run period. Vat was only positively significant at 15% level in the long-run. CIT and GCF were not significant in accounting for economic growth. So more need to be done to make VAT, CIT and GCF positively and significantly account for economic progress in the country.

IMPLIMENTATION OF THE FINDINGS

The findings of this study can be implemented via the outlined ways;

i. The findings that tax and investment have long-run relationship with economic progress, policymakers should focus on policies that would make good use of tax payers' money for sustainable development in Nigeria.

ii. More need to be done in terms of policy with good economic team to monitor tax policy after been equipped with microeconomics and macroeconomic understanding of how tax affects the economy

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APENDIX

REGRESSION OUTPUT FOR MODEL

Dependent Variable: GFCF
Method: Least Squares
Date: 08/12/22 Time: 07:40
Sample: 1994 2017
Included observations: 24

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-267.7049	235.8875	-1.134884	0.2705
PPT	-0.550031	0.198792	-2.766863	0.0123
CIT	2.931463	1.304773	2.246723	0.0367
CED	-1.201944	2.386212	-0.503704	0.6203
VAT	15.31367	2.144139	7.142109	0.0000

R-squared	0.992362	Mean dependent var	5337.672
Adjusted R-squared	0.990754	S.D. dependent var	5753.407
S.E. of regression	553.2180	Akaike info criterion	15.65243
Sum squared resid	5814953.	Schwarz criterion	15.89786

Log likelihood	-182.8292	Hannan-Quinn criter.	15.71755
F-statistic	617.1570	Durbin-Watson stat	1.459949
Prob(F-statistic)	0.000000		