Tax Revenue's Impact On Nigeria's Economic Expansion

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Abstract:

The study assesses how tax revenue affects Nigeria's economic expansion. Nigeria, one of the world's poorest nations, has seen an increase in tax revenue over the years, but this has not resulted in any significant growth or development. The study's specific goal is to determine how Nigeria's real gross domestic product is impacted by the petroleum profit tax. The research used an ex post facto design. The Central Bank of Nigeria (CBN) Statistical Bulletin provided secondary data for the study for a number of different years. For this investigation, the Autoregressive Distributive Lag (ARDL) Model and estimate method were used. According to the results of the Philip Peron test, every variable—aside from the real interest rate—was non-stationary because only at the first difference did their Philip Peron test statistic's absolute value surpass the crucial value. The results of the ARDL bound test showed that the variables had a long-term association. According to the results of the ARDL estimation, the petroleum profit tax has a positive and considerable long-term impact on real gross domestic product. In conclusion, a rise in petroleum profit tax collection has the potential to support Nigeria's economic expansion. Therefore, the study suggests that in order to sustain Nigeria's economic progress, the petroleum profit tax be raised and closely watched at all times.

Keywords: Taxation, petroleum profit tax, gross domestic product, economic growth,

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Introduction

The provision of suitable public goods and essential infrastructure to raise the standard of living for its citizens is the main duty of any responsible and capable government. Like many other nations, Nigeria depends on revenue generation to meet the infrastructure and fundamental needs of its people. One way to raise money to provide basic services to the vast majority of people in a country is through taxes (Olufemi, Jayeola, Oladele, & Naimot, 2018). When a taxing body, typically a government, imposes a monetary duty on its inhabitants or residents, it is referred to as taxation (Schenk, 2021).

In practically every nation in the world, taxes are mandatory levies imposed on people or organizations by governments. Their main function is to generate money for government spending, though they can also be used for other reasons (Britannica, 2021). According to Adedeji and Oboh (2014), taxes are the primary source of state funding in contemporary economies. Governments utilize taxes as a tool for fiscal policy, primarily to accomplish two goals: generating income and controlling the economy (Samuel & Tyokoso, 2014). Taxes are seen to be a significant source of funding for the governments of the majority of nations. One of the ways the Nigerian government collects taxes is through the petroleum profit tax. Because of the unique role that petroleum plays in the Nigerian economy, petroleum profit tax is a significant source of funding for the government. Nigerian oil companies' profits are subject to this tax, which is governed by the Petroleum Profit Tax Act (1959) as amended, in order to generate money for the government. In addition to other kinds of income, it provides the government with the chance to raise extra money, which is necessary to meet its urgent responsibilities.

In short, the primary goal of the petroleum profit tax is to raise money for the benefit of the populace, with an emphasis on fostering economic development and growth by providing essential facilities for better public services through appropriate administrative frameworks and systems (Inimino, Otubu & Akpan, 2020). The government must work to achieve economic growth in both developed and developing countries (Edame & Okoi, 2014). According to Rai and Sharma (2018), a number of economists believe that tax income is a crucial factor that affects a nation's economic health. Additionally, tax income has given emerging nations a stable and predictable fiscal framework in which to spur economic growth and finance their physical and social infrastructure requirements. These support the finding made by Akwe (2014) that the primary determinant of other macroeconomic indicators is a country's tax structure. According to this theory, fiscal policy is a vital instrument that the government uses to maintain economic expansion. Economic growth has generally been defined as an increase in the quantity of goods and services produced in an economy at a specific point in time. One of the best metrics for evaluating economic growth is the gross domestic product (GDP), which examines the entire output of the country's economy. It includes all products and services that domestic companies produce for the market, regardless of whether they are sold

domestically or elsewhere. Positive, zero, or negative economic growth are all possible (Eneje, 2018).

The Nigerian state has had trouble growing its economy since gaining independence, and a number of measures meant to boost it haven't worked. Nigeria is still beset by issues including high unemployment, a high death rate from a subpar healthcare system, brain drain from inadequate funding for education, a lack of necessary infrastructure, high inflation, insecurity, and more. Examining the impact of tax revenue on economic growth is necessary in light of all of these pressing issues as well as the recent decline in crude oil prices on the international market (Ewa, Adesola, & Essien, 2020). This study's empirical evaluation revealed that earlier researchers like (Abomaye-Nimenibo et al., 2018; Mohammed, Karimu, Fiador & Abor, 2020; Yahaya & Yusuf, 2019) have worked hard on the body of research on economic growth and non-oil tax income. In order to fill the information gap, this study uses trade openness, labor supply, and interest rates as control variables to investigate the relationship between oil tax income (Petroleum Profit Tax) and economic growth (Real Gross Domestic Product) in Nigeria. In light of this, the purpose of this study is to investigate how tax income affects Nigeria's economic expansion. The study's specific goal is to investigate how Nigeria's real gross domestic product is impacted by the petroleum profit tax.

ince achieving independence, the Nigerian state has struggled to expand its economy, and several attempts to do so have failed. High unemployment, a high death rate from a poor healthcare system, brain drain from underfunded education, a lack of essential infrastructure, high inflation, insecurity, and more continue to plague Nigeria. Given all of these urgent concerns and the recent drop in crude oil prices on the global market, it is imperative to investigate how tax revenue affects economic growth (Ewa, Adesola, & Essien, 2020). The empirical assessment of this study showed that previous studies such as (Abomaye-Nimenibo et al., 2018).

LITERATURE REVIEW

Taxation

Otekunrin, Fakile, Eluyela, Onabote, John, & Ifeanyichukwu (2023) reference Lewis, Short, Andrews, & Freund (1975) as saying that the word "tax" comes from the Latin word "taxo," which means to estimate or compute the value. According to Agunbiade and Idebi (2020), taxation is therefore defined as a regular and mandatory payment made by citizens to the government in exchange for the usage of government services. According to Onwuchekwa and Aruwa (2014), taxes are mandatory payments made by all parties to the government of a nation that provides necessary services, without necessarily providing an explanation of how the funds were used or comparing the services to the money collected. Taxes are a forced transfer of money from the rest of the economy to the government, according to the World Bank (2000).

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For the administration and development of society, taxation is the process of requiring communities or groups of individuals to make contributions in a specific amount and manner (Ogundele, 1999 as referenced in Otekunrin, Fakile, Eluyela, Onabote, John, & Ifeanyichukwu, 2023). According to Ojong, Anthony, and Arikpo (2016), taxes are a non-punitive levy that the government imposes on the earnings, income, or consumption of its residents through its agents.

The government uses taxes as one tool to raise money for the general population (Anyaduba, 2004). According to Arowoshegbe, Uniamikogbo, and Aigienohuwa (2017), tax income is the money received from citizens' mandatory payment of taxes that are not paid directly but are instead applied to certain government-provided products or services. Since taxes serve as a major forum for political discussions among the nation's stakeholders, Moore (2008) saw them as one of the few objective indicators of the legitimacy and authority of the state. This suggests that the money collected through tax administration is dependent on the intricate relationships between institutional, political, and economic issues (Besley & Persson, 2013; Kaminsky, Reinhart, & Végh, 2004).

Petroleum Profit Tax

According to Odusola (2006), the Petroleum Profit Tax (PPT) is a tax that is exclusive to upstream activities in the oil industry. PPT is applicable to leases for oil mining, prospecting, and exploration as well as rentals, royalties, margins, and profit-sharing. According to Ogbonna (quoted in Onoja & Ibrahim, 2020), the petroleum sector plays a crucial and strategic role in Nigeria's economic growth by giving the government the money it needs. When a business disposes of chargeable oil and gas, petroleum profit tax is a responsibility, according to the Petroleum Profit Tax Act of 1959 as amended. Delivery of charged oil to refineries is included in disposal; under Nigeria's PPTA, taxes are levied on the company's petroleum-related profits. According to the statute, a petroleum operation basically consists of the discovery, development, production, and sale of crude oil. According to Section 8 of the Petroleum Profit Tax Act (PPTA), all businesses involved in petroleum operations must submit returns, along with appropriately yearly audited accounts and calculations, within a certain amount of time following the conclusion of the accounting period.

According to Fasoranti (2013), PPT entails taxation of earnings derived from petroleum operations. He pointed out that because of the significance of petroleum to Nigeria's economy, many regulations governing the taxes of earnings from petroleum operations have been passed. When it comes to rent, royalties, oil mining prospecting, and exploration leases, the petroleum profit tax is a tax that applies to upstream operations in the oil business. Given that it accounts for 95% of foreign exchange gains and more than 70% of government revenue, it is a significant tax in Nigeria in terms of overall revenue (Kiabel, 2009). According to Ilaboya and Ofiafor (2014), the real profit for the accounting period serves as the base period for Petroleum Profit Tax (PPT). This suggests that the company's accounting period and the basis period for any given assessment year are the same.

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Gross Domestic Product (GDP)

Using the output, expenditure, and income approaches, GDP is a comprehensive indicator of overall economic activity (Marone, 2011). This tool gives the government a ballpark figure for how much money could be spent and how much revenue may rise without causing inflation. GDP is evaluated at market values and include both market and some non-market production. In addition, GDP calculates current output, which is equivalent to the final consumer's value of products and services. It records the amount of production produced and is a gross measure. There are three methods by which GDP can be quantified:

Initially, it is used to identify the final goods and services that individuals, companies, governments, and foreigners have purchased by adding up the expenditures or purchases made by end users. Second, the purchasing power of families and the financial health of corporate revenues are examined using GDP. Third, GDP can also be calculated as the sum of the value added at each stage of the production process or as total revenue less the value of intermediate inputs (Bureau of Economic Analysis of U.S. Department of Commerce, 2015). The market value of all legally recognized finished goods and services produced in a nation over a specific time period is known as the gross domestic product (Goossens, Mäkipää, Schepelmann, Van de Sand, Kuhndt & Herrndorf, 2007). It encompasses all public and private consumption, government spending, investments, and exports—less imports—that take place inside a certain geographic area. GDP is frequently used to measure a nation's level of living and to assess its economic health (Investopedia, 2009 as quoted in Feng and Eko 2014). The monetary worth of finished products and services, or those purchased by the end user and produced in a nation within a specific time frame (such as a quarter or a year), is measured by GDP. It includes all output produced inside a nation's boundaries. GDP is made up of both market-sold commodities and services as well as some nonmarket production. such as government-funded defense or educational services. A different idea, gross national product, or GNP, accounts for all of a nation's citizens' production (Callen, 2008).

Theoretical Review

The Benefit Received Theory

The advantage obtained Two economists from the Stockholm School, Erik Lindahl (1919) and Knut Wicksell (1896), created the theory of taxation, which holds that individuals should be taxed based on the advantages they got from initiatives funded by taxes. In particular, it operates under the presumption that the taxpayers and the state have a contractual or exchange relationship. Members of the public contribute to the cost of the products and services that the state delivers in proportion to the benefits they receive. The benefits can be valued based on the value of the service to the buyer, the cost to the government of delivering the service, or a combination of these factors.

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This line of reasoning makes it abundantly evident that, depending on the benefits provided to the company, the state (government) ought to impose taxes on any resident or occupant corporation, as well as any individual in control of a non-resident company that is exploring or producing petroleum. In other words, the government ought to tax oil-producing businesses in proportion to the benefit or benefits it provides.

Ability to Pay Theory

Adams Smith introduced the ability to pay theory of taxation in 1776. The theory is regarded as one of the most well-known and widely accepted theories of taxation, having been popularized and expanded by author Cicil Pigou in his book "The Wealth of a Nation" in 1877. It permits citizens to pay taxes to the government based on their individual financial capabilities (Otu & Theophilus, 2012 as cited in Adegbie, Nwaobia, and Osinowo, 2020). Jones and Rhoades (2011) claim that the thesis was developed by the Swiss philosopher Jean Jacques Rousseau between 1712 and 1778 in the 16th century, and that several academics later expanded it scientifically. Ever since the theory was first proposed, it has dominated a number of literary works that aim to explain the foundation of a sound tax system (Lawrence, 2015). The most well recognized and widely used equity or justice principle in taxation is that a nation's residents should pay taxes to the government based on their financial capacity. The "ability-to-pay principle" typically predominates in contemporary equity talks rather than the benefits premise. According to this view, taxes need to be progressively imposed on taxpayers' incomes, meaning that those with higher incomes should pay more in taxes than those with lower incomes. Because it considers the differences in income between different tax payers, the ability to pay theory of taxation is regarded as the most logical and equitable theory of taxation (Jones & Rhoades, 2011). It appears that justice can be served if taxes are imposed in accordance with the previously mentioned premise.

Empirical Review

With a focus on Companies Income Tax, Value Added Tax, and Petroleum Profits Tax, Abomaye-Nimenibo, Michael, and Friday (2018) investigated the relationship between tax revenue and economic growth in Nigeria from 1980 to 2015, using data from the Federal Inland Revenue Service (FIRS) and the National Bureau of Statistics (NBS). The study used the Vector Error Correction Model (VECM) to determine the nature and strength of the relationship between taxation and economic growth. The Granger causality test revealed a causal relationship between Real GDP and the various tax components, and the Johansen test of cointegration indicates that there is at least one cointegrating equation in the long-run between the variables.

Variance decomposition analysis and impulse response functions support the conclusions that the shock's effects on GDP growth from direct taxes (CIT and PPT) and indirect taxes (VAT) do not diminish throughout the given time frame. According to variance decomposition research, the impact of direct tax shocks (CIT and PPT) on GDP growth is typically minimal,

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but the impact of indirect tax shocks (VAT) on GDP growth is typically substantial and tends to rise over time. Thus, this study suggested a broad base tax approach that focuses on all important aspects of the tax system with quantifiable results in order to increase tax revenue. The tax system should be made simpler and easier to apply, with a focus on low-hanging fruit and rapid wins. More difficult components should be put off until successful outcomes are being observed. Among other things, it is suggested that the regulatory bodies tasked with tax collection be significantly reinforced to ensure that taxpayers comply.

Adefolake and Omodero (2022) used time series data from 2000 to 2021 to evaluate the impact of tax revenue on Nigeria's economic growth. The specific objective of the study is to assess how Nigeria's economic growth is impacted by the value added tax, corporation income tax, and hydrocarbon tax. The analysis uses secondary data from the published Federal Inland Revenue Statement and the CBN statistical bulletin. For this study, an ex-post facto research design is employed. The Augmented Dickey Fuller method is used to assess and test the acquired data for unit root. At first difference, the study variables—which include GDP, PPT, CIT, and VAT—are determined to be stationary. As a result, a long-term association is shown by a Johansen co-integration test. In order to assess the impact of PPT, CIT, and VAT on GDP, the study makes use of the Vector Error Correction Model. The results show that VAT and PPT significantly and favorably affect GDP. It also shows that CIT significantly and negatively affects GDP. Based on these results, the investigation recommends that government tax authorities hold workshops and trainings to educate Nigerian businesses and the general people about the value of tax revenue to the country's economy. As part of the government's social responsibility, the tax authorities should also work to incentivize businesses to pay taxes in order to boost economic growth, which businesses are supposed to benefit from. Etim, Nweze, Nsima, and Asogwa (2020) investigated the connection between Nigeria's economic growth between 1989 and 2018 and the components of tax revenue.

The growing emphasis on increasing tax collections relative to GDP and diversifying a country's economic revenue sources served as the impetus for the study. The Central Bank of Nigeria's (CBN) statistical bulletin and the Federal Inland Revenue Service's (FIRS) annual reports were the sources of the GDP and tax revenue data. Descriptive and inferential statistics, including correlational statistics, Granger Causality tests, Error Correction Mechanism (ECM), and Augmented-Dickey Fuller (ADA) stationary unit root test, were used to analyze the data. The ECM was used to balance the differences between the explanatory variables' short- and long-term effects. The ECM coefficient shows that the explanatory factors' short- and long-term impacts change at a very slow rate.

Economic growth (GDP) was found to be positively and significantly correlated with Personal Income Tax (PIT) (3.7045), Petroleum Profit Tax (PPT) (2.76295), and Company Income Tax (CIT) (3.64429). However, at the 0.05 level of significance, Education Tax (EDT) (1.38507) and Customs and Excise Duties (CED) (1.91470) were not statistically significant. The Granger Causality Test results indicate that economic growth is caused by EDT, CIT, PIT, PIT

PPT, and VAT, and that economic growth is caused by EDT, CED, and PPT. It was determined that tax revenue components are essential to Nigeria's economic growth and suggested that government policies regarding taxation be managed delicately to promote interventionary measures that accelerate economic expansion.

Jimoh, Adegoriola, and Adeyemo (2020) looked into how tax revenue affected Nigeria's economic growth between 1990 and 2016. The Federal Ministry of Finance, Federal Inland Revenue Service, Central Bank of Nigeria, and National Bureau of Statistics were the sources of the annual time series data. The Augmented Dickey Fuller (ADF) test was used to check for stationarity in the data, and Johansen's test was used to perform the co-integration. The Error Correction Model (ECM) was the estimating method used for the time series data. The findings indicate that the main variables have a long-term equilibrium connection. ECM has the anticipated negative sign. This demonstrates that short-term disequilibrium can eventually be restored.

The findings demonstrated that the value added tax, company income tax, and petroleum profit tax all significantly and favorably affect GDP. The GDP is negatively and negligibly impacted by personal income tax. The Gross Domestic Product is significantly impacted negatively by tax elasticity. Because petroleum profit tax, corporate income tax, and personal income tax boost economic growth in Nigeria, the report advises the government to double its efforts in generating more revenue from taxes rather than depending on foreign exchange from crude oil. In order to increase tax compliance and motivate Nigerians to pay taxes, the government should work to provide infrastructure facilities throughout the nation.

Kujore, Dada, and Adegbie (2021) looked at the economic growth and tax income of Nigeria's telecommunications subsector. The study's goal was to investigate the relationship between tax income, as measured by Value Added Tax (VAT), and economic growth, as measured by the telecommunications subsector's Real GDP. The annual time series data, which spanned 18 years (2001 to 2018), were used in the study. The primary estimation method used is the Autoregressive Distributed Lag (ARDL) approach, which was developed by Pesaran and Shin (1999) and was mostly derived from the Central Bank of Nigeria's (CBN) Annual Reports and Statistical Bulletin, Federal Inland Revenue Service (FIRS) Annual Report, Companies Audited Financial Statements, and National Bureau of Statistics (NBS) Database 2018. Unit root test, co-integration test, and short- and long-term estimations (Shi & Smith, 2001). The Economic Growth indicator is regressed on both the chosen tax indicator and its own lag in the ARDL regression analysis. Value added tax was found to be significant, with an Adjusted R^2 of 0.515 and an F-Statistic [Prob.(F-Stat)] of 6.66 [0.006]. During the study period, VAT had a major impact on the economic growth of Nigeria's telecommunications subsector. As a result, the study came to the conclusion that tax revenue positively influences the economic expansion of Nigeria's telecommunications subsector. Therefore, among other things, it was suggested that the government create more practical guidelines for using tax money and that businesses in the GSM telecommunications subsector adopt voluntary tax compliance; The

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principle of tax justice should be upheld by policymakers from the viewpoints of the government and taxpayers.

Okwara and Amori (2017) investigated how tax income affected Nigeria's economic growth between 1994 and 2015. Journals, textbooks, and the Central Bank of Nigeria's (CBN) statistical bulletin were the sources of secondary data. Value Added Tax (VAT), non-oil income (tax), and GDP (gross domestic product) as a stand-in for economic growth are the variables taken into consideration. Value added tax and non-oil income were tested for their substantial effects on GDP using Ordinary Least Square (OLS) and the Statistical Package for Social Sciences (SPSS) to prevent erroneous results.

The findings showed that while value added tax has a negative association and is statistically insignificant for the period under examination, non-oil income has a considerable impact on the gross domestic product. The study comes to the conclusion that tax income significantly affects the growth of the Nigerian economy. Therefore, in order to attract both direct and indirect taxes, the report suggests that the government diversify its primary revenue source from crude oil to other economic sectors including agricultural and extractive industries.

METHODOLOGY

Research Design

The research used an ex post facto design. The reason for this is that the study used historical data that was taken from the Central Bank of Nigeria statistical bulletin for different years, over which the researcher had no control.

Sampling Technique and Sample Size

Non-probability purposive sampling was the method used for this investigation. It comprises choosing those aspects that are available to the researcher and have specific characteristics that pique his attention (Eboh, 2009). Value-added tax, petroleum profit tax, and corporation income tax make up the sample size.

Sources of Data

This study will make use of secondary data. Time series data from 1999 to 2023 will be used in the study. The Central Bank of Nigeria's statistical bulletin for different years provided all of the data used in the analysis.

Description of Research Variables

Three variables were chosen for the study based on the research issue, which is how tax revenue affects economic growth in Nigeria. They consist of the dependent variable, economic

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growth (real gross domestic product), the independent variable, petroleum profit tax, and the control variables, labor supply, trade openness, and real interest rate.

Model Specification
This study used the Shuaib, Ahmed, and Kadiri (2015) model, which allows for the analysis of how government spending affects the growth of the Nigerian economy. Below is the model's design:RGDP = f(PPTR, LAB, RIR OPEN)..(3.1)

Where:
RGDP   = Real Gross Domestic Product
PPTR   = Petroleum Profit Tax Revenue
LAB   = Labour supply
RIR   = Real Interest Rate
OPEN   = Index of Trade Openness
Accordingly, the econometric form of the model is specified as

$$RGDP = \beta_0 + \beta_1 PPTR + \beta_2 LAB + \beta_3 RIR + \beta_4 OPEN + \varepsilon_t \quad .....(3.2)$$

Where β0 and β1 are the parameters that characterize the equation and their specification is the objective of the regression exercise. ε_t = Error term.

Estimation Technique
For this investigation, the Autoregressive Distributive Lag (ARDL) Model and estimate technique are used. A least squares regression with dependent and explanatory variable lags is called an ARDL. The notation ARDL(p,q_1....,q_k) is commonly used to represent ARDLs. In this notation, "p" represents the number of lags of the dependent variable, "q_1" for the first explanatory variable, and "q_kis" for the k-th explanatory variable. (Eviews 9) The goal of this study was measured using the ARDL model, which was created by Pesaran and Pesaran (1997) and utilized by Owusu (2012), Orji (2014), Saibu (2014), Nwodo and Asogwa (2017), and others. The anticipated endogeneity issue in the model makes ARDL the most suitable for the investigation. and the fact that ARDL can be used to small samples regardless of the order in which the variables are integrated (Orji, 2014). This led to the following estimation of equation 3.6.

$$\Delta RGDP_t = \alpha_0 + \sum_{i=1}^{p} \Psi_n \Delta RGDP_{t-1} + \sum_{i=1}^{p} \beta_k \Delta PPTR_{t-k} + + \sum_{i=1}^{p} \epsilon_F \Delta LAB_{t-k} + \sum_{i=1}^{p} \gamma_l \Delta RIR_{t-l}$$
$$+ \sum_{i=1}^{p} \varphi_m \Delta OPEN_{t-m} + \lambda_1 RGDP_{t-1} + +\lambda_3 PPTR_{t-1} + +\lambda_5 LAB_{t-1} + \lambda_6 RIF_{t-1}$$
$$+ \lambda_7 OPEN_{t-1} + \mu_t - - - - 3.3$$

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Results
Table 1: description of the variables

	REGDP	PPT	LAB	RIR	OPEN
Mean	770.1584	588064.4	39747947	5.114954	0.143007
Median	805.3589	76591.09	41608079	6.883106	0.150333
Maximum	1015.188	2077509.	58825502	29.75247	0.240816
Minimum	85.9474	-190066.9	10731801	-46.99138	0.017289
Std. Dev.	227.2073	721749.4	11428440	13.32295	0.059380
Skewness	-0.307871	0.750526	-0.784180	-1.868965	-0.411015
Kurtosis	1.547059	2.026398	3.006621	8.557333	2.169789
Jarque-Bera	9.130649	11.73722	9.019254	164.4723	5.004945
Probability	0.010407	0.002827	0.011003	0.000000	0.081882
Sum	67773.94	51749671	3.50E+09	450.1160	12.58460
Sum Sq. Dev.	4491215.	4.53E+13	1.14E+16	15442.60	0.306756
Observations	88	88	88	88	88

Source:CBN,2023

All of the variables in the series, with the exception of trade openness, are non-normally distributed, as shown by the Jarque Bera values in Table 1. For all other variables, the null hypothesis of a normal distribution is rejected at the 1% level; for the remaining variables in the series, it is rejected at the 5% level. All of the variables have positive means and medians that are both well over 100%. This implies that every variable was substantially favorable, particularly at the start of each fiscal quarter. With the exception of RGDP, PPT, and OPEN, which have kurtosis values above 3, some of the variables in the table also exhibit signs of fat tails. However, in certain variables, there is minimal indication of negative skewness.

Unit Root Tests

Table 2: Summary of Philip Peron Unit root test result of the series

Variables	Test Critical Values (5% Level)	Philip Peron test stat	Order of integration
RGDP	-3.460516	-5.275800	I(1)
PPT	-3.464198	-4.161365	I(1)
LAB	-3.460516	-5.346227	I(1)
RIR	-1.944404	-4.036853	I(0)
OPEN	-1.944445	-5.499082	I(1)

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The summary of the unit root test results for the levels and first difference series is shown in Table 2. Since the absolute value of the Philip Peron test statistic only surpassed the critical value at the first difference, the application of the test revealed that all of the variables (real interest rate) were non-stationary. Since none of the variables is I(2) and the majority of the variables become stationary at first difference, we use the ARDL bound test approach to look for long-term relationships in the model. The bound test's result is displayed below.

ARDL bound test results

Because the chosen lag duration affects the ARDL Bound testing's critical value, the Hannan Quinn Criterion (HQC) was used to empirically establish the ideal lag (p). Equal adoption is made of the key values listed in Pesaran et al. (2001).

Tables 3 reports the result of the ARDL approach to co-integration for the model

Table 3: the ARDL bound test for model one
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	24.49129	6

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

It is evident from the results in table 3 above that, at the 5% level of significance, the bound test F-statistic of 24.49129 is higher than the upper bound critical value of 3.61. This suggests that the variables have a long-term relationship. And these outcomes enabled us to proceed with the ARDL model estimation.

Estimation Results for model one

Table 4: Estimated Long-run Coefficients Based on ARDL(5, 5, 4, 5, 5, 5, 5)

Regressor	Coefficient	Standard Error	t-Statistics	p-Value

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Dependent Variable: RGDP				
PPT	0.000000	0.000000	3.663958	0.0010
LAB	0.000000	0.000000	5.448315	0.0000
RIR	0.009299	0.004178	2.226017	0.0342
OPEN	-1.813448	2.503622	-0.724330	0.4749
C	20.105411	0.673071	29.871174	0.0000

Notes: R^2 =0.977757
Adjusted R^2 = 0.945982
S.E of regression = 0.053858
F-statistics = 30.77072
Prob(F-statistics) = 0.0000
Durbin Watson = 2.324713

(*) denotes Heteroscedasticity and Autocorrelation (HAC) consistent standard errors
** Denote significant at 5% level
Source: Authors computation using Eviews 9.0

As anticipated, table 4 shows that tax revenue has a major long-term impact on Nigeria's economic growth. The long-term outcome showed that the petroleum profit tax had a favorable and noteworthy effect on Nigeria's economic expansion. To put it another way, a unit rise in petroleum profit tax raises Nigeria's GDP by 0.000 units; statistically, this is significant even though the coefficients are zero. The fitted regression line's goodness of fit to a set of data is gauged by the coefficient of determination (R2).

The model's R2 score of 0.977757 indicates that changes in the independent variables account for around 97% of the variations in the dependent variable. This is acceptable because it is higher than 50%. Similarly, the independent variables are jointly statistically significant and, so, dependable, as indicated by the F statistics of 30.77072 and its probability of 0.000000. However, the regression is not erroneous, as indicated by the Durbin Watson value of 2.324713.
Analyzing the model's short-term dynamics is the next stage. Table 4.6 below shows the results of using the error correction model to derive the short-run dynamics of the equilibrium relationship.

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The rate at which the endogenous variable adapts to changes in the explanatory variables before reaching its equilibrium level is measured by the error correction term.

**Table 5: Short run Results and Diagnostics Tests results**

Dependent Variable: GDPGR				
Regressor	Coefficient	Standard Error	t-Statistics	p-Value
D(RGDP(-1))	1.222263	0.206247	5.926197	0.0000
D(RGDP(-2))	1.110897	0.193253	5.748398	0.0000
D(RGDP(-3))	0.926300	0.153488	6.035019	0.0000
D(RGDP(-4))	1.474127	0.162658	9.062738	0.0000
D(PPT)	-0.000001	0.000000	-3.221598	0.0032
D(PPT(-1))	0.000000	0.000000	0.008408	0.9934
D(PPT(-2))	-0.000000	0.000000	-0.055913	0.9558
D(PPT(-3))	0.000000	0.000000	1.754471	0.0903
D(LAB)	-0.000000	0.000000	-4.340801	0.0002
D(LAB(-1))	0.000000	0.000000	0.581224	0.5657
D(LAB(-2))	0.000000	0.000000	1.435176	0.1623
D(LAB(-3))	0.000000	0.000000	3.961903	0.0005
D(LAB(-4))	-0.000000	0.000000	-7.343738	0.0000
D(RIR)	0.003392	0.001763	1.924309	0.0645
D(RIR(-1))	-0.001473	0.002245	-0.656268	0.5170
D(RIR(-2))	-0.001931	0.002255	-0.856340	0.3991
D(RIR(-3))	0.008899	0.003237	2.748877	0.0104
D(RIR(-4))	-0.010468	0.002677	-3.909708	0.0005
D(OPEN)	8.812669	1.580813	5.574770	0.0000
D(OPEN(-1))	-2.177873	1.869665	-1.164847	0.2539
D(OPEN(-2))	-2.840860	1.859511	-1.527746	0.1378
D(OPEN(-3))	12.930780	2.225454	5.810401	0.0000
D(OPEN(-4))	-10.573880	1.439370	-7.346188	0.0000
CointEq(-1)	-0.723259	0.226569	-3.192217	0.0035
Diagnostic Tests				
Test	F-statistics	Prob. Value		
χ^2 SERIAL	3.484647	0.0456		
χ^2 Heteroskedasticity Test: Breusch-Pagan-Godfrey	1.752416	0.0615		

χ^2 REMSAY	25.45830	0.0000

The outcome of the model's brief dynamics is shown in Table 5 above. The established long-term link between the model's variables is validated by the negative statistically significant estimate of CointEq(-1). At the five percent level, the results likewise show that the estimate of CointEq(-1) is -0.723259 and statistically significant. This suggests that in the upcoming quarter, roughly 0.72% of the long-term equilibrium deviations will be adjusted for. Since the serial correlation null hypothesis is rejected and there is no mis-specification error, the diagnostic test on the table also shows that there is no issue with serial correlations. However, there is a problem of heteroskedasticity in the model which was rectified by showing Heteroscedasticity and Autocorrelation (HAC) consistent standard errors dasticity test in all the result.

Stability Tests

The short-run dynamics test the stability of the long-run coefficient. The parameter stability is evaluated using the cumulative sum of recursive residuals (CUSUM) tests after the ECM models have been computed (Pesaran and Pesaran, 1997). The results of the CUSUM and CUSUM square tests are shown in the graph below. Because the plots of the CUSUM statistic lie under the essential bands of the 5% confidence interval of parameter stability, the results show that there is no instability of the coefficients.
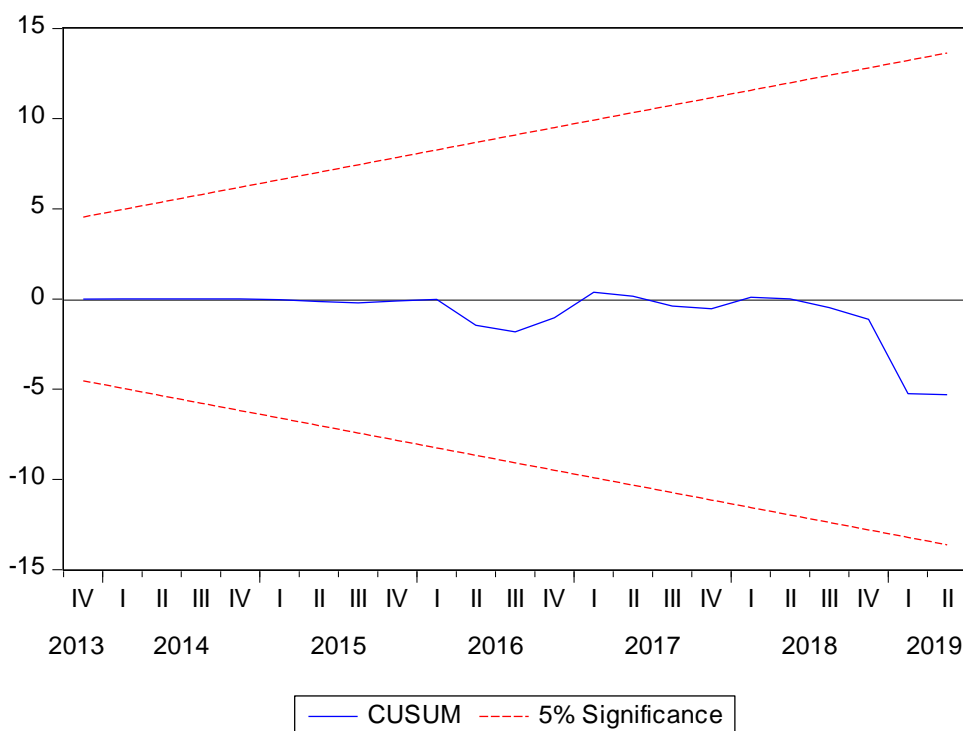
Test of Research Hypothesis

Hypothesis (H$_0$1): There is no significant effect of petroleum profit tax on real gross domestic product in Nigeria

Decision Rule: Reject H$_0$ if P-value is less than 0.05, accept H$_0$ if otherwise.

Conclusion:

Given that the P-value of the PPT coefficient is 0.0010, which is less than 0.05, the results presented in section 4 (tables 4) indicate that the petroleum profit tax has a significant impact on Nigeria's real gross domestic product. The null hypothesis, according to which the petroleum profit tax has no discernible effect on Nigeria's actual gross domestic product, is thus rejected.

Discussion of Findings

The study looked at how tax revenue affected Nigeria's economic expansion. Petroleum profit tax (PPT) was used to symbolize tax income. At the same time, the real gross domestic product was used to measure economic growth. The precise goal and hypothesis were developed   and   put   to   the   test. According to the results, the petroleum profit tax has a considerable impact on Nigeria's economic growth. The P-value of the PPT coefficient is 0.0010, which is less than 0.05, respectively. This outcome is consistent with research on the relationship between tax revenue and economic growth in Nigeria conducted by Adefolake and Omodero (2022); Ofoegbu, Akwu, and Oliver (2016); and Olaoye, Ogundipe, and Oluwadare (2019).

Nevertheless, the results do not align with the research conducted by Friday, Michael, and Abomaye-Nimenibo (2018). The labor supply variables' sign is consistent with their a priori predictions, and labor plays a particularly important role in explaining Nigeria's economic growth.Similarly, even if their coefficients are not statistically significant, the interest rate sign and trade openness sign both match apriori assumptions, which raises many concerns about the data production method.

Conclusion

The study is on the effect of tax income on economic growth in Nigeria, covering a period of twenty-four years, from 1999-2022. The data collected was evaluated using the Autoregressive Distributive Lag (ARDL) Model and estimation approach. Based on the analysis's findings, it was determined that tax income had an impact on Nigeria's economic growth throughout the reviewed period. This led to the conclusion that one of the main factors influencing Nigeria's economic growth is tax income. The study also comes to the conclusion that raising tax income can help Nigeria's economy flourish.

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Recommendation

The report suggested that in order to boost Nigeria's economic growth, petroleum profit tax collection should be raised and closely watched at all times.

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