

Effect of Tax Revenue on Investment in Nigeria

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ABSTRACT

The linkage between tax and net investment has received persistent attention in both the academic literature and policy debates. One of the main drivers of economic growth is investment, and how taxes affect the investment behavior of firms is, indeed, a question of great importance. Therefore, this paper evaluated the impact of tax revenue on investments in Nigeria with a data set ranging from 1986 to 2022. The paper adopted auto-redistributed lag model (ARDL) estimation. Findings from the study revealed that in the long run, company income tax, value added tax, petroleum profit tax exerted significant positive effect on investment as against the negatively induced impact exerted by stamp duty tax. It was also found out that unidirectional causal relationship exists between tax revenue and investment in the period under investigation. Given the findings, it was recommended that government should ensure that fiscal policies related to profit petroleum tax remain stable and predictable because Investors appreciate consistency, as it allows them to make informed decisions and plan for the long term as frequent changes in tax policies can deter investment. Secondly, the government should consider offering targeted lower tax incentives for industries that align with national development goals or have the potential to contribute significantly to economic growth in the country.

Keywords: Tax Revenue, Investment, fiscal policy petroleum tax and Value added Tax

JEL: H2, H20, G20

INTRODUCTION

The role of taxation in a nation quest for development has engenders considerable amount of attentions from scholars and practitioners and there are no shortages of theoretical justification in literature. Taxation is an important part of fiscal policy that have been used for development prospects as it plays a vital role in economic development of transitional economics which include resource mobilization, reduction in inequalities of income, improvement in social welfare, foreign exchange, regional development and control of inflation (Uchime & Anichebe, 2019). However, some authors are of the opinion that taxes as means of raising revenue by the government and are inimical to investment through such taxes as corporate income tax, personal income tax, value-added tax and tertiary education tax (Effiong & Attah, 2016; Babu,

Pantaleo, & Ndanshau, 2020).

According to National Bureau of Statistics (2021), the average growth of company income tax stood at 13.8% in the period, 2011-2013 but declined to 1.2% between 2014 and 2016 before rising further to average of 10.0% during the period, 2017-2019. It recorded a negative growth of -20.5% in 2020 probably due to the emergence of corona virus disease before increasing to 15.8% in 2021. Similarly, value added tax averaged 8.8% in 2011-2014 and rose to all time high of 17.0% in the period, 2015-2019 but recorded a negative growth of -77.6% in 2021. The situation is even worse with revenue from petroleum profit tax that accounted for negative growth of -13.1% in the period, 2011-2015 before oscillating to average of 8.2% during 2016- 2020 periods such that by 2021 the growth performance of petroleum profit tax declined marginally to 7.9%.

In the same vein, the structures of tertiary education tax and stamp duty tax also witnessed fluctuations as they rise and fall in the period under review. For instance, the statistics from the Federal Inland Revenue Service (2021) revealed that tertiary education tax which recorded a growth of 9.5% in 2010 declined to -1.9% before rising to all-time high of 48.3% in 2013. In 2016, tertiary education tax revenue declined to -36.8% before rising to 8.8% in 2019 and further to 24.5% in 2021. Likewise, a review of the statistics indicates that significant amount of revenue accrues to the government from stamp duty tax though not without fluctuations. Thus, stamp duty amounted to ₦211, 900 billion or 19.8% in 2013 but declined to ₦87, 130 billion or 3.0% in 2015. It increased to ₦446, 126 billion or 163.0% in 2018 before declining to -2.5% in 2019 and further -99.9% in 2021.

The structure and changes in taxation as a source of government finances is critical in achieving growth/development through the investment channel. This is because investment is an important macroeconomic variable that affect the performance of the economy through increase in productivity, employment and reduction in poverty most especially in emerging economies like Nigeria (Camara, 2019; Dash, 2020; Halim& Rahman, 2021). Many of the emerging and developed economies would not have attained their present state of development if sufficient investment has not taken place which can be regarded as a means of raising productivity through new production techniques, technology transfer as well as breakthrough in innovative research leading to employment generation (Ahuja & Chand, 2007; Nguyen & Darsono, 2022). Since Adam Smith pioneering work which reflected the nature of the economy as encapsulated in -The Wealth of Nations, it has become unequivocally clear that investment is fundamental for economic development (Alves, 2019; Neog & Gaur, 2020; Halim & Rahman, 2021).

Investing on the other hand is putting your money into assets, such as stocks or bonds, with the expectation that your money will grow. When investment is done in the right way, it grows in value and provides returns. Investments can be used to fulfill financial goals such as buying a house, achieve education, and more. Investment through capital formation is not only essential but serves a vital component of growth accelerator and development of every sector of the economy as it provides domestic resources that stimulate investment efforts of an economy.

Prior studies in the extant literature mainly focused on the relationship between tax revenue and economic growth (Gale & Samwick, 2014; Oladipo, Iyoha, Fakile, Asaley& Eluyela,2019; Neog & Gaur, 2020; Halim & Rahman, 2021; Hakim, et al., 2022). Accordingly, only a handful of studies attempted to x-ray the impact of disaggregated tax revenue on investment (Babu, et al., 2020; Nguyen & Darsono, 2022). Even at that many of these studies were not conducted in Nigeria so that empirical investigation of the relationship between tax revenue and investment using data from Nigeria has been scarcely pursued. Also, the study examined the extent at which tax revenue affects the level of monetary policy in Nigeria using broad money supply as a proxy. To the best of our knowledge, studies that investigated the relationship between tax revenue and monetary policy using broad money supply are rare in the literature more especially in the case of Nigeria. Likewise, the causal relationship between investment and tax revenue is explored as against the

causal relationship between tax revenue and economic growth using the M2/GDP as a proxy. It is also good to mention here that this work focused on *Petroleum Profit tax, Value added tax, stamp duty tax, Tertiary education tax and company income tax* as variables for measuring tax revenue.

Over the years, Nigerian government has consistently seen investment as a means of consolidating its political and economic power in the country. As a result, a robust legal system and a friendly business environment have been recognized as key factors luring investment, even in the face of a thriving capital market. Many governments throughout the world have acknowledged the value of investment as a means of promoting economic development. A successive Nigerian government has introduced several policies and programmes to address directly or indirectly on how to attract investors to invest in the economy through several means. Notably among these policies are Nigeria Enterprise Promotion Decree (NEPD) and Structural Adjustment Programme (SAP) among others. Despite these laudable policies, The Nigerian economy still experience decline in investment and therefore, slowed down growth in all sectors of the economy including the capital market and money market. Notably, the attempt to improve investment into Nigeria may also have been limited by the infancy of Nigerian capital and money market. Although the markets have undergone considerable growth and development in recent years, they are not yet as huge, vibrant and sophisticated as their counterpart in the industrialized nations and as such, cannot compete favorably with them for investment funds. The advent of technology and globalization have overcome boundary barrier to global investment and as such, the well developed capital and money markets in the world are attracting more investment than the emerging markets. This has been one of the arguments against globalization.

The relationship between tax and net investment has produced mixed, inconsistent results, providing no conclusive evidence whether the relationship is positive (Fazzari & Cynamon 2016); Oliveira & Fortunato, 2016), negative (Bond et al., 2014; Chirinko, 2015, thereby constituting a sectoral gap. In order to fill the observed gaps in the literature, this study considered tax (proxied by PPT, CIT, VAT, SDT and TET) as opposed to prior studies that considered only company tax in order to close the variable gap, while the sectoral gap was resolved by concentrating on the various sectors as the majority of the study on this theme focused on deposit money banks rather than investment to the best knowledge of the researcher. Hence, there is a need to ascertain the effect of tax revenue on investment in Nigeria from 1980 to 2022. It is on the basis of the above problems that this study sets out to find the assess effect of tax revenue on investment in Nigeria in other to proffer solution.

REVIEW OF RELATED LITERATURE

In Tunisia, Mkadmi, et al., (2021) ascertain the extent to which domestic investment and tax revenues tend to affect economic and social well-being using data covering 1976-2018. The study utilized the Johansen co-integration approach and vector error correction technique for the purpose of long run and short run analysis. First, the study found that the variables had long run relationship. Secondly, it was observed by the study that during the long run period domestic investment exerted negative effect on growth whilst influence from tax revenue is positive. However, in the short run relationship between domestic investment and tax revenue is undeniably negative. On this line of reasoning, the study submitted that the policy of tax structure does not stimulate investment in Tunisia and advocated for more proactive approach.

Halim and Rahman (2021) employing data from Brazil, Russia, India and China referred to as BRIC as well as the countries of CIVETS comprising of Colombia, Indonesia, Vietnam, Egypt, Turkey and South Africa assessed the relationship between corporate tax rate and sustainable development for the period, 2000–2021. Accordingly, a panel regression technique in the context of fully modified OLS and dynamic OLS was employed for the study. Observably, the study found the presence of positive and significant impact of corporate tax rate on sustainable development. The study averred that although, higher tax rate has the

potentials to stimulate sustainable development, but the reverse is the case in the emerging economies of Africa and Asia as against what is obtained in developed countries. The study further submitted that the success of sustainable development goals in emerging economies is hinged on the policy of taxation rate adopted by individual countries.

Dike and Leyira (2019) studied the relationship between foreign direct investment and tax revenue in Nigeria between the periods 2000 to 2017. The error correction technique was applied and in addition with the pair wise Granger causality test. The variables employed in the study were petroleum profit tax, company income tax and FDI. The result revealed that PPT has significant relationship with FDI while CIT has negative relationship with FDI. It is recommended that Nigerian government should ensure policy consistencies in her tax revenue drive. More so, investment and political stability are pertinent in attracting foreign direct investment into Nigeria.

Anichebe (2019) examined the impact of tax revenue on foreign direct investment in Nigeria, using time series data from 1981 to 2017. The OLS technique were utilized and the variables used are real GDP, real exchange rate, value added tax, personal income tax; company income tax, customs and excise duty. The results show that company income tax and personal income tax have negative impact on foreign direct investment in the long-run, while value added tax and custom and excise duty have positive relationship with foreign direct investment in the long-run. The study recommended the provision of infrastructure by the government, elimination of multiple taxes as well as simplifying tax laws adjusting taxes to encouragement investments.

Kumai (2020) examined the effects of capital gains tax on total tax revenue and economic growth in Nigeria using the simple regression technique from the period 2005 to 2018. The variables utilized are gross domestic product; capital gain tax; inflation rate and interest rate. Findings indicate an insignificant positive relationship between capital gains tax and total tax revenue/economic growth in Nigeria. The study concludes that capital gain tax has not contributed significantly contributed to total tax revenue and economic growth in Nigeria. The study concluded that there should be a comprehensive review of the capital gains tax Act to ensure conformity with global best practices and to keep the Act in pace with current economic realities.

Makwe and Oladele (2020) examined the effect of foreign direct investment and revenue generation in Nigeria for the period 1970 to 2018 using the autoregressive distributed lag (ARDL)/bound testing approach developed by Peseran *et al* (2001). The variables used are foreign direct investment in agriculture, foreign direct investment in manufacturing processing, foreign direct investment in mining and quarrying, company income tax and petroleum profit tax. The result revealed that foreign direct investments to agriculture does not enhance the generation of company income tax and petroleum profit tax in Nigeria in the long-run as its coefficient turned negative and insignificant whereas the coefficient of manufacturing and processing was positive but not significant in relations with company income tax, but negative and non-significant with respect to petroleum profit tax. The study recommended that Government can by the use of moral suasion, appeal to foreign investors to plough back about 70% of their earnings so as to expand their output as such expansion will invariably increase the company income tax and petroleum profit tax revenues of the government.

Oboh (2021) studied direct tax and foreign direct investment data from 1981 to 2019 using the Ordinal Least Square (OLS). The data used include foreign direct investment, company income tax, petroleum profit tax, personal income tax and education tax. The study revealed a positive relationship between petroleum profit tax, company income tax and personal income tax on foreign direct investment to gross domestic product ratio (FDI-GDP). Education tax had a negative relationship with FDI-GDP. The study recommended that tax policy on direct tax components of petroleum profit tax, company income tax and personal income tax be improved to increase foreign direct investment in Nigeria. The study also suggested that additional

research be conducted to determine whether increasing education tax revenue investment in the educational system will eliminate the negative relationship between education tax and foreign direct investment.

Oladipo et al., (2021) examined foreign direct investment and its impact on revenue generation in Nigeria, with emphases on the role of company income tax from 1990-2020. The variables used are foreign direct investment, company income tax, petroleum profit tax and corporate tax. The results show that FDI has positive impact on revenue generation in Nigeria. In conclusion, foreign direct investment increases revenue generation which through company income tax generated to boost economic growth in Nigeria. Therefore, in other to boost government revenue which will promote growth and development in the economy, government should give priority or pay more attention to policies that could promote FDI inflow into the country and use this revenue to generate more tax to enhance infrastructural development.

Ibrahim, et al., (2022) examined the impact of tax incentives on foreign direct investment flow in Nigeria over the period 2008-2018 using the Drisoll-Kraay standard errors regression analysis. The study revealed that tax incentive has a positive and significant impact on foreign direct investment inflow. Tax holiday has positive effect on FDI at 5% level of significance ($\beta = 0.1578$; $t = 3.99$; $P < 0.05$) while custom duties exemption reported significant positive effect on FDI at 1% level of significance ($\beta = 0.2436$; $t = 5.61$; $P < 0.01$). It is recommended that the government maintains and strengthens its policies on tax holidays and customs duties exemption to improve foreign direct investment inflow, thereby developing the national economy.

The study is justified in terms of empirical literature in that mixed findings have been uncovered in the relationship between taxation and investment. Some of the studies disaggregated tax structure into oil and non-oil, others into two or three components of tax variables in which both positive and negative relationships were observed and some were statistically significant while others were not. The current study disaggregated tax structure into five tax variables namely, petroleum profit tax, company income tax, value added tax, tertiary education tax and stamp duty tax. Accordingly, the empirical findings of this study led credence to some of the prior studies but yet invalidated some others.

METHODS AND PROCEDURES

This section outlines the theoretical framework and estimation techniques utilized by the study.

Theoretical Framework

This study is anchored on the variant of neoclassical model developed by Jorgensen (1963) and expanded by Hall and Jorgenson (1967). At its heart, the Jorgenson's investment model bases on the idea that there exists an optimal capital stock in which economic actors like firms invest and disinvest in order to reach the optimal capital stock. In this regards, investment can be separated into replacement and net-investment. While replacement investment serves the purpose to replace depreciated capital, net-investment actually reflects changes to the capital stock. The interest in the Jorgenson model is the aspect that links it with taxation through economic agents' decision, which is influenced by the changes in tax (Myles, 2009).

Taxation generates revenue for the government, controls economic activity, and promotes economic growth through investment channel (Minh-Ha, et al., 2022). However, the higher tax will limit individual taxpayers' contribution to economic growth. The same applies to corporate taxpayers as higher taxes might restrict their ability to produce more products in the market. From the government's perspective, the higher tax will allow them to invest in education, health, basic infrastructure, or even infrastructural improvements. These investments will increase the productive level of the economy in the future.

To this end, long-term growth is driven by exogenous factors, whereas government policy can have only a

transitory effect on investment. With modification in the Jorgenson model, the economic model is extended to accommodate the influence of tax structure on investment where the tax effect depends on whether the tax proceeds are directly consumed or involve investment. Accordingly, the Jorgenson model is modified to include relevant variables to address the objectives of the study as follows.

$$PI_t = \delta X_t + \lambda Z_t + \delta PI_{t-1} + \epsilon_t \quad (3.1)$$

Equation (3.1) is similar to that used in prior studies as for instance, Ndikumana (2000) in a study on SSA countries. Intuitively therefore, PI denotes private investment, X_t is a vector of fiscal policy such as personal income tax, value added tax, corporate tax, petroleum tax etc Whilst Z_t stands for vector of macroeconomic variables which include real growth rate, interest rate, inflation rate and exchange rate that are believed to condition the inflows of investment, PI is a one period lag of private investment. Likewise, δ is a stability coefficient in the range $0 < \delta < 1$ and ϵ_t is a stochastic error term.

Model Specification

The study employs a linear model similar to that developed by Alves, J., (2019), Babu, et al., (2020) and Hakim, et al., (2022) in analyzing the effect of tax structure on gross fixed capital formation.

Effect of Tax Structure on Investment

The model of tax structure-investment nexus is specified as follows:

$$GFCF = f(PPT, CIT, VAT, TET, SDT, M2)$$

In stochastic log form, equation (3.2) is estimated as follows:

$$GFCF = \beta_0 + \beta_1 PPT + \beta_2 CIT + \beta_3 VAT + \beta_4 TET + \beta_5 SDT + \beta_6 M2 + \mu_1$$

Where: GFCF denotes gross fixed capital formation, PPT = petroleum profit tax, VAT – value added tax, TET, tertiary education tax, SDT refers to stamp duty tax while M2 is money supply. All variables are measure in millions. $\alpha_0, \alpha_1 - \alpha_6$ are constant and coefficients to be estimated and t is the time trend while μ is the white noise error term. A positive relationship is expected to exist between investment and tax components.

Causal relationship between investment and tax revenue

In conducting the investigation, total government collected revenue (TGR) is utilized to see if changes in it is caused by changes in GFCF. One of the common problems in economics is how to determine whether changes in one variable are caused by changes in another variable. Accordingly, the Granger pairwise causality is applied to test the relationship. The basic assumption in this study is that a relationship between the investment and tax revenue exists but the causal link could run in either direction. If tax revenue rises, investment may be promoted, but rising or declining investment could also cause tax revenue to rise. A relatively significant negative coefficient of tax revenue on investment may suggest causality running from investment to tax revenue. The Granger causality framework introduced by Granger (1969), provide a valid rally point for this purpose. Accordingly, the basic explanatory model for linear stochastic form is given as:

Following the Granger procedure, the general causal model is specified as a lagged dependent variable form as follows;

$$GFCF_t = \alpha GFCF_{t-1} + \beta TGR_{t-1} + U_t \dots \dots \dots (3.7) ESSUR$$

$$GFCF_t = \alpha GFCF_{t-1} + U_t \dots \dots \dots (3.8) ESSR$$

$$TGR_t = c GFCF_{t-1} + \lambda TGR_{t-1} + V_t \dots \dots \dots (3.9) ESSUR$$

$$TGR_t = \lambda TGR_{t-1} + V_t \dots \dots \dots (3.10) ESSR$$

Note: Equation (3.7)/(3.8); H0: TGRt does not Granger causes GFCFt; i.e $\beta = 0$

H1: TGRt Granger causes GFCFt;

i.e $\beta \neq 0$ Equation (3.9)/(3.10); H0: GFCFt does not Granger causes TGRt; C = 0

H1: GFCFt Granger causes TGRt i.e C $\neq 0$

The F-statistics is used to test the hypothesis. If the results in equation (3.7) are statistically significant but equation (3.8) is not, then there is a unidirectional relationship between GFCFt and TGRt and the line of causation is from TGRt to GFCFt. On the other hand, if equation (3.8) is statistically significant but not equation (3.7), there is still a unidirectional causality between the two variables. Finally, there exists a feedback or bi-directional relationship between TGRt and GFCFt if the parameters in both equations are statistically significant. The line of causation in this case runs in both directions. In the mean, if the p-value exceeds the critical value, we reject H1 and if the p-value is less than the critical value we accept H1.

Estimation Technique

The estimation procedures employed in this empirical investigation are based on co-integration analysis and the error correction model. The choice of this technique is informed by the need to determine the time series characteristics of the variables that are used in the study. The first step is to determine and test the stationarity of the data. The second step after testing for stationarity is the establishment of long-run relationships among the variables.

RESULT AND DISCUSSION OF FINDINGS

Summary of Correlation Matrix

Tab. 4.1: Correlation Matrix for Multi-Collinearity Test

VARIABLE	GFCF	PPT	CIT	VAT	TET	SDT	M2
GFCF	1.000000	0.146559	0.758696	0.067336	0.789381	0.103459	0.701339
PPT	0.146559	1.000000	0.340965	0.068431	0.348330	0.049103	0.211553
CIT	0.758696	0.340965	1.000000	0.216998	0.760173	0.381586	0.791986
VAT	0.067336	0.068431	0.216998	1.000000	0.159167	0.427125	0.253557
TET	0.789381	0.348330	0.760173	0.159167	1.000000	0.265404	0.731581
SDT	0.103459	0.049103	0.381586	0.427125	0.265404	1.000000	0.455544
M2	0.701339	0.211553	0.791986	0.253557	0.731581	0.455544	1.000000

Source: Authors' Computation Using Eviews 12

Table 4.1 whose details are shown in appendix 3 contains the correlation matrix which helps to predict the absence or presence of relationship between two or more variables. As a rule, a value of zero is an indication of no correlation or relationship between the dependent and the explanatory variables. And whilst a value of 0.80 and above is a suggestive of high correlation, 0.30 and below is an indication of weak correlation but at the same time suggests absence of multi-collinearity among the independent variables. From Table 4.1 we discovered that the entire pair wise correlation matrix is not in excess of 0.8. We therefore conclude that there is no presence of multi-collinearity among the variables in the model one signifying that each independent variable in the model influences the dependent variable differently.

Summary of Descriptive Statistics

Table 4.2 Descriptive Analysis of the Variables

	GFCF	PPT	CIT	VAT	TET	SDT	M2
Mean	10838.53	1820.792	496.1459	726.2432	108.1541	58684.51	10748.42
Median	4720.000	1520.500	114.8000	571.3000	75.10000	334.2000	2263.600
Maximum	75330.00	6530.600	2028.700	8190.600	387.0000	661380.0	45403.25
Minimum	108.9000	8.100000	1.100000	-4513.800	3.100000	-171900.2	27.40000
Std. Dev.	16662.29	1750.289	218.0383	596.445	96.35149	43516.2	3806.16
Skewness	2.465213	0.975619	0.956506	1.901447	1.113863	2.573583	1.091599
Kurtosis	3.821748	3.170895	2.471241	3.98360	3.581451	2.69563	2.862353
Jarque-Bera	89.72786	5.914653	6.072937	323.7547	8.172146	132.1455	7.377343
Probability	0.000000	0.051958	0.048004	0.000000	0.016805	0.000000	0.025005
Sum	401025.6	67369.30	18357.40	26871.00	4001.700	2171327.	397691.7
Sum Sq. Dev.	9.99E+09	1.10E+08	13750969	91750950	334210.0	7.41E+11	6.86E+09
Observations	37	37	37	37	37	37	37

Source: Authors' Computation Using Eviews 12

In Table 4.2, the summary of the basic statistics is shown for all the variables included in the models. This enables the features of the dataset to be described by way of generating summaries regarding the measurements and the data sample hence it is usually termed summary of data. As the Table indicates each variable has 37 observations which represent data from 1986 to 2022. The variables include gross fixed capital formation, tax structure disaggregated into petroleum profit tax, company income tax, value added tax, tertiary education tax and stamp duty as well as broad money supply. Accordingly, the Table shows that gross fixed capital formation has an average of ₦10838.5 billion and ranges between ₦108.9 billion and ₦75330.0 billion with a standard deviation of ₦16662 billion, an indication of a very high variability. In the case of money supply, it averaged ₦ 10748.4 billion during the period with a minimum of ₦27.4 billion and a maximum of ₦45403.2 billion whilst standard deviation stood at ₦3806.1 billion.

Meanwhile, the average amount for petroleum profit tax during the period under consideration stood at ₦1820.7 billion which hovers between ₦8.1 billion and ₦6553.6 billion whilst the standard deviation stood at ₦1750.2 billion. Similarly, the mean value of company income tax was ₦496.1 billion with a minimum amount of ₦1.10 and a maximum of ₦2028.7 billion and the standard deviation amounted to ₦218.0 billion in the period under review. Likewise, value added tax has a mean amount of ₦726.2 billion and whilst the minimum amount was ₦-4513.8 billion the maximum recorded value stood at ₦8190.6 billion while the standard deviation amounted to ₦596.4 billion. In the same vein, tertiary education tax revenue averaged ₦108.1 billion. It has a minimum amount of ₦3.10 billion and a maximum of ₦387.0 billion with a standard deviation of ₦96.35 billion. In the case of stamp duty tax, it has an average amount of ₦58684.5 billion which ranges from a minimum of ₦-171900.1 billion to a maximum of ₦661380.0 billion with a standard deviation of ₦43516.2 billion. . It was observe that the standard deviation of all the variables were all less than their mean indicating that variables follow normal distribution.

Furthermore, the table also shows that the employment rate data is positively skewed. Skewedness measures the *degree of distortion* from the symmetrical bell curve or the normal distribution. A symmetrical distribution will have a skewness of 0. A positively skewed data set has its tail extended towards the right. It is an indication that both the mean and the median are greater than the mode of the data set. In short it is the

measure of the degree of asymmetry of data round its mean. Kurtosis, in statistics, is a measure of the tailness of the probability distribution of a real-valued random variable. Like skewness, kurtosis describes the shape of a probability distribution and indicates the nature of degree of extremity of the distributions. The kurtosis of any univariate normal distribution is 3. Distributions with kurtosis less than 3 are said to be platykurtic, while distributions with kurtosis greater than 3 are said to be leptokurtic. When the kurtosis of a distribution is approximately 3, the distribution is described as being mesokurtic. As shown on Table 4.2, most of the variables are either mesokurtic or leptokurtic. This implies that the distributions do not have any serious case of large outliers which implies that the variables were normally distributed.

Further giving the hypothesis of the Jarque Bera test which states that: the variables are not normally distributed for H0 and the variables are normally distributed for H1. Decision rule: reject H0 if P-value < 0.05; do not reject H0 if P-value > 0.05. The result obtained indicates that all the variables of interest are normally distributed. However, as stated by central limit theorem that non normality of empirical data does not prohibit empirical research (Koutsoyiannis, 1977).

Stationarity Test

The ADF results comprising of the t- statistics and 5% critical value as originally generated are represented on Table 4.3

Variables	Adf test at level	Adf test at 1st Difference	5% critical values	Order of integration	Remarks
GFCF	9.092507		-3.540328	I(0)	Stationary
PPT	-0.848104	-10.03420	-3.544284	I(1)	Stationary
CIT	-4.410977		-3.540328	I(0)	Stationary
VAT	1.461124	4.256604	-3.595026	I(1)	Stationary
SDT	-5.632304		-3.574244	I(0)	Stationary
TET	-1.207329	-6.085704	-3.544284	I(1)	Stationary
M2	0.704534	-5.523157	-3.548490	I(1)	Stationary
TR	-5.572766		-3.574244	I(0)	Stationary

Table 4.3 Unit root (ADF test)

Source: Authors' Computation Using Eviews 12

Decision Rule: Reject H0 if ADF test value is greater than 5% critical value, otherwise accept. From the above result, at first difference, the ADF test value of GFCF, TR, CIT and SDT are greater than their critical values at 5% respectively. Therefore, we reject H0 of GFCF, TR, CIT and SDT and then conclude that they are stationary at level. Also, the ADF test values of PPT, VAT, TET as well as M2 are greater than their critical values at 5% respectively. Therefore, we reject H0 of PPT, VAT, TET and M2 and then conclude that FDI is stationary at level form. This implies that the variables of the model are integrated of order zeros and one.

Table 4.3.1 Unit root (Philip Peron (PP))

Variables	PP test at level	PP test at 1st Difference	5% critical values	Order of integration	Remarks
GFCF	9.092507		-3.540328	I(0)	Stationary
PPT	-1.742322	-9.270515	-3.544284	I(1)	Stationary
CIT	-4.443365		-3.540328	I(0)	Stationary

VAT	-0.609060	-4.131075	-3.544284	I(1)	Stationary
SDT	-3.985521		-3.540328	I(0)	Stationary
TET	-1.233273	-6.086398	-3.544284	I(1)	Stationary
M2	3.180896	-7.268344	-3.544284	I(1)	Stationary
TR	-3.960678		-3.540328	I(0)	Stationary

Source: Authors’ Computation Using Eviews 12

Similarly, the result from Philip Peron result shows that PPT, VAT, TET and M2 were stationary at first difference as their PP test statistic are greater than 5% critical value while GFCF, CIT, SDT, and TR were stationary at level form difference as their PP test statistic are greater than 5% critical value. The results are shown in appendix index.

Test for Co-integration

Given that the series are integrated of order zero and one that is I(0) and I(1), auto redistributed lag Bound cointegration approach is found worthy in ascertaining if there is a long run relationship exist between the variables of the model.

ARDL Bound Cointegration Test

ARDL approach was developed by Pesaran et al (2001) to estimate the link among the variables. The logics behind the use of this approach are: first ARDL can be applied regardless of whether the series are stationary at level value I (0) or after first difference I (1) or combination of two mutually.

Null hypothesis (H0): there is no cointegration among the variables. Alternative hypothesis (H1): there is cointegration among the variables

The result verifies that there is an evidence of cointegration among the variables. This is due to the fact that the F-Statistics value 87.56 is less than the lower and upper critical bounds for all the significant levels. This led to the acceptance of null hypothesis of no co-integration. The result is summarized and presented in Table 4.4

Table 4.4: ARDL Bounds Test		
F-Statistics = 87.56951		
Critical Value Bounds		
Significance levels	I(0) Bounds	I(1) Bounds
10%	2.12	3.23
5%	2.45	3.61

Source: Authors’ Computation Using Eviews 12

Since the bounds test indicated the presence of short run relations among the variables, we then go further to estimate the ARDL long run model to ascertain the long run coefficients of the variables of the model.

Evaluation of Estimates

The satisfactory results obtained from the unit root and co integration tests motivated the estimation. The ARDL long run regression result of this study is presented below

Table 4.5 ARDL Long Run Model Result

Dependent Variable: GFCF				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(PPT)	0.519538	0.112299	4.626369	0.0003
D(PPT(-1))	-0.941331	0.413750	-2.275120	0.0380
D(CIT)	-6.502871	1.283667	-5.065855	0.0001
D(CIT(-1))	2.624079	0.675237	3.886160	0.0015
D(VAT)	0.350621	0.283577	1.236424	0.2353
D(VAT(-1))	-4.348051	0.663817	-6.550077	0.0000
D(SDT)	-0.006701	0.003939	-1.700987	0.1096
D(SDT(-1))	0.026964	0.003265	8.258149	0.0000
D(TET)	24.059244	5.763958	4.174084	0.0008
D(TET(-1))	67.273027	5.146217	13.072326	0.0000
D(M2)	-0.334297	0.379685	-0.880460	0.3925
D(M2(-1))	-3.545376	0.395796	-8.957586	0.0000
CointEq(-1)	-0.731308	0.132851	-5.504742	0.0001
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
PPT	1.879013	0.493228	3.809620	0.0017
CIT	16.208006	3.407877	4.756043	0.0003
VAT	7.583771	0.601985	12.597932	0.0000
SDT	-0.033683	0.004688	-7.184509	0.0000
TET	67.311736	12.138882	5.545135	0.0001
M2	2.433171	0.323975	7.510362	0.0000
C	0.633424	304.956752	0.002077	0.9984
R2	0.996			
F-stat	235.67	Prob(f-stat)	0.000	D.W = 1.87

Source: Authors' Computation Using Eviews 12

The coefficient of the constant implies that if petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT), stamp duty tax (SDT), tertiary education tax (TET), as well as money supply (M2) are set equals to zero, gross fixed capital formation (GFCF) will increase by about 0.633 percent point. The long run coefficient of petroleum profit tax (PPT) is 1.87, which implies that with the influence of all other variables held constant, an increase in the PPT by one percent on the average, will lead to an increase in gross fixed capital formation (GFCF) by about

1.87 Percent point. The coefficient company income tax (CIT) is 16.2, this suggest that all things being equal, as CIT increases by one percent on the average, gross fixed capital formation (GFCF) will increase by about 16.2 percent point.

The long run coefficient of value added tax (VAT) is 7.58, which implies that with the influence of all other variables held constant, an increase in the VAT increases by one percent on the average will leads to an

increase in gross fixed capital formation (GFCF) by about 7.58 Percent point. The long run coefficient of stamp duty tax (SDT) is -0.03, this suggest that all things being equal, as SDT increases by one percent on the average, gross fixed capital formation (GFCF) in Nigeria decreases by about 0.03 percent point. More so, the long run coefficient of tertiary education tax (TET) is 67.3, which implies that with the influence of all other variables held constant, an increase in the TET increases by one percent on the average will leads to an increase in gross fixed capital formation (GFCF) by about 67.3 Percent point. The long run coefficient of money supply (M2) is 2.43, this suggest that all things being equal, as M2 increases by one percent on the average, gross fixed capital formation (GFCF) in Nigeria decreases by about 2.43 percent point

Error Correction Term (CointEq(-1))

The coefficient of ECT (-0.713) in Table 4.5 which measures the speed of adjustment towards long-run equilibrium carries the expected negative sign and significant at 5 percent level. The coefficient of the ECT indicates a feedback of 71.3% of the previous year's disequilibrium. This also implies the speed with which gross fixed capital formation (GFCF) adjust from short-run disequilibrium to change in petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT), stamp duty tax (SDT), tertiary education tax (TET), as well as money supply (M2) in order to attain long-run equilibrium of 71/3% within one year.

Summary of Statistics

R² and Adjusted R² From the regression table, it can be observed that multiple coefficient of determination (R²) is given as 0.996 or 99.6%. This means that about 99.6% of the variation in gross fixed capital formation (GFCF) is explained by changes in petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT), stamp duty tax (SDT), tertiary education tax (TET), as well as money supply (M2). The adjusted R² is reported as the multiple coefficient of determination adjusted to take into account the degrees of freedom associated with the sum of squares. The Adjusted R² is given as 0.992 or 99.2%. This implies that about 99.2% of the fluctuations in the dependent variable are jointly explained by the fluctuations in the explanatory variables.

Test for Autocorrelation: Empirical result from Durbin-Watson (D-W) test shows that computed D-W for all model is 1.87. While the result from Durbin-Watson (D-W) tabulated lower case (dL) is equals to 1.160 and 1.222, Durbin-Watson (D-W) tabulated upper case (du) is equals to 1.803 and 1.726 respectively. Given the Durbin-Watson decision rule below;

If $0 < d < dL$, reject H₀ of no positive autocorrelation

If $4 - d < d < du$, take no decision on H₀ of no positive autocorrelation. If $4 - dL < d < 4$, Reject H₀ of no negative autocorrelation

If $4 - du < d < (4 - dL)$, take no decision on H₀

If $du < d < 4 - d$, do not reject H₀ of no autocorrelation, positive or negative.

We take no decision on the models and conclude that there is no evidence of autocorrelation or no autocorrelation with a first order scheme in the specified models.

F-Statistic Test

Table 4.6 summarizes the significance of the overall regression

Table 4.6 Summary of the F-Statistics Test

F-statistics	F0.05(5,40)	Decision Rule	Conclusion
235.67	5.5	$F_{cal} > F_{tab}$. Reject H0	Statistically Significant

Source: Authors’ Computation Using Eviews 12

Since $F_{cal} = 235.67$ is greater than the $F_{0.05}(5, 40) = 5.75$, we reject H0. Thus, we conclude that the slope coefficients are not simultaneously equal to zero; hence, there is a joint significance of the variables used in the model, which implies that there is a strong relationship between the regressand (GFCF) and the regressors petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT), stamp duty tax (SDT), tertiary education tax (TET), as well as money supply (M2).

Evaluation Based on Economic a Priori Criteria

Table 4.7 Summary of Economic a Priori Criteria Dependent Variable GFCF

Variables	Expected Signs	Observed Sign
PPT	Positive	Positive
CIT	Positive	Positive
VAT	Positive	Positive
SDT	Positive	Negative
TET	Positive	Positive
M2	Positive	Positive

Source: Researchers’ computation (2023)

From result presented on the table above, it revealed that all the variables such as petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT), tertiary education tax (TET), as well as money supply (M2) conformed to Apriori expectation while stamp duty tax (SDT) does not conformed to Apriori expectation.

Evaluation Based on Statistical Criteria/Evaluation of Research Hypothesis

Student t-statistic Test

The table below summarizes the statistical significance of the variables at 5% level.

Table 4.8 Summary of the t-test

Variable(s)	t-statistic	Critical-Value	Decision Rule	Conclusion
PPT	3.80	2.04	Reject H0	Statistically significant
CIT	4.75	2.04	Reject H0	Statistically significant
VAT	12.59	2.04	Reject H0	Statistically significant
SDT	-7.18	2.04	Reject H0	Statistically significant
TET	5.54	2.04	Reject H0	Statistically significant
M2	7.51	2.04	Reject H0	Statistically significant

Source: Authors’ Computation Using Eviews 12

From the results displayed above, we conclude that on the individual significance of the variables included in the model, petroleum profit tax (PPT), company income tax (CIT), value added tax (VAT), stamp duty tax (SDT), tertiary education tax (TET), as well as money supply (M2) were statistically significant at 5% level of significance in explaining changes in GFCF.

Evaluation Based on Econometric Criteria Heteroscedasticity Test

Table 4.10 Heteroscedasticity Test:

F- Statistics	2.55	Prob f (9,15)	0.0353
Obs* R-squared	26.73	Prob. Chi-square (19)	0.1109

Source: Authors’ Computation Using Eviews 12

According to Gujaratti (2013), Heteroscedasticity means unequal measures of an observed value of the dependent variable around the regression line

H0: there is no Heteroscedasticity H1: there is Hemoscedasticity

Decision rule: Reject H0 if Obs* R-squared of probability chi-square is less than 5%. From the result above, since the Obs* R square of probability chi-square is greater than 0.05 i.e. 0.1109, we therefore reject H0 and conclude that errors in the regression has constant variance. The result is shown in appendix page.

Granger Causality Test Result

The results of co-integration reveal the existence of long-term relation between the variables; but they do not imply anything about the direction of the relation. The direction of the relationship between the variables will be determined with the help of Granger causality test (Granger, 1969). These are important findings for the policy- makers to know the existence and direction of the long term relationship between the variables based on the results of Granger causality test. In order to analyze cause and effect of relationships between the series; applied Granger causality test results are shown in Table 4.11.

Table 4.11: Granger Causality Test Results

Null Hypothesis (H0)	Probability	F-statistics	Result
ΔTR does not Granger Cause ΔGFCF	0.9839	0.01627	
ΔGFCF does not Granger Cause ΔTR	0.0129	5.04404	ΔFDI→ ΔEMPR

Source: Researchers’ compilation (2021)

According to the results of causality; it is seen that there is a unidirectional relationship between GFCF and total revenue through tax (TR). According to these results, it can be said that changes in investment for the period under investigation causes change in total revenue through tax while changes in TR causes no change in investment. This finding is contrary to that earlier reached by Dike and Leyira (2019).

Discussion of Findings

The study conducted in-depth investigations to ascertain the effect of tax structure on the level of investment in Nigeria. In what follows, the impact of tax revenue on monetary policy was investigated. Likewise,

causality between investment and tax revenue was examined. This forms the reasons for the three models employed for the study. Assessing the impact of tax structure disaggregated into petroleum profit tax, company income tax and value added tax, tertiary education tax and stamp duty tax reveals a lot of insights. Prior studies have tended to lay more emphasis on the role of petroleum profit tax to the neglect of a number of other tax variables among whom is stamp duty tax. Therefore, brief discussions are as follows.

The first objective of the study made gross fixed capital formation as a proxy for investment where it was discovered that company income tax, value added tax and gross domestic product are veritable sources of stimulating investment in Nigeria most especially in the long run as against stamp duty tax that exerted deleterious effect on investment. It must be noted that stamp duty tax is one of the sources that has wider revenue coverage as no contract becomes valid without the federal government stamp. Its negative impact on investment is therefore worrisome as the expectation should be to lead increase in investment and growth. Thus, the combined effect of robust tax structure and money supply will stimulate reasonable growth in the level of investment in Nigeria.

Stemming from the second objective of the study, Higher PPT rates contribute to increased government revenue, which can be used for infrastructure development and public services. Investors may see this as a positive factor, as improved infrastructure can enhance the overall business environment and reduce operating costs. A stable and predictable fiscal regime, even if it involves higher PPT rates, can be attractive to investors. Certainty in taxation policies allows companies to plan their investments and operations more effectively, providing a conducive environment for long-term commitments. These findings in tandem with the findings of Onaolapo, *et al*, 2013 who found out that petroleum profit tax, inflation, and exchange rate were all found to have significant effects on the investment as well as economics growth to the Nigerian economy. It is expected that the more effectively and efficiently revenue is utilized by Government to create growth, employment opportunities and wealth in the economy, the more willing taxpayers would be to meet their obligations to the Government and discharge their duties in the overriding goal of achieving National Development. In the Nigerian oil and gas sector, investment often takes the form of joint ventures or production-sharing contracts between the government and international oil companies. These agreements typically involve profit-sharing mechanisms; including PPT. Investors may be willing to accept higher PPT rates if they are part of a mutually beneficial arrangement. The global oil price environment significantly influences the attractiveness of oil and gas investments. When oil prices are high, investors may be more willing to accept higher PPT rates, as the overall profitability of the investment remains favorable. The Nigerian government has, at times, provided incentives to attract investment in the oil and gas sector. Negotiations between the government and investors can lead to tailored fiscal terms that balance the need for government revenue with the attractiveness of the investment.

Company income tax is a significant source of revenue for the Nigerian government. The funds generated from corporate taxes contribute to financing public infrastructure, education, healthcare, and other essential services. The revenue generated from company income tax can be channeled into infrastructure development projects. This includes roads, bridges, ports, and other facilities that are vital for the growth of businesses and the overall economy. Company income tax helps in funding social welfare programs. These programs aim to alleviate poverty, provide healthcare services, and improve the overall standard of living for the Nigerian population. A stable source of revenue from company income tax contributes to economic stability. It allows the government to implement fiscal policies that can help regulate the economy, control inflation, and ensure sustainable growth. A transparent and effective taxation system can boost confidence among foreign investors. When companies, both domestic and international, see a fair and consistent tax environment, they are more likely to invest in Nigeria, bringing in capital, technology, and expertise. This finding is in line with the findings of (Olaleye, Riro, George Kamau & Florence, 2016) who found a strong positive linear relationship between reduced company income tax incentives and foreign direct investment.

Value Added Tax (VAT) and investment play crucial roles in the economic development of any country,

including Nigeria. The results revealed that VAT serves as a significant source of government revenue. The funds generated from VAT can be used to finance public infrastructure projects, education, healthcare, and other essential services. This revenue can help the government reduce budget deficits and meet its financial obligations. Investment, both domestic and foreign, can stimulate economic growth by injecting capital into the economy. This capital can be used for expanding businesses, creating job opportunities, and fostering innovation.

Relying on a single source of revenue, such as oil, makes a country vulnerable to fluctuations in commodity prices. VAT and diversified investments contribute to a more stable and sustainable revenue base, reducing dependence on a particular sector. The revenue generated from VAT and investments can be channeled into infrastructure development. Improved infrastructure, including roads, ports, and energy facilities, can enhance the overall business environment, attract more investments, and facilitate economic activities.

The positive relationship between tertiary educational tax and investment in Nigeria can be seen as positive when analyzed from various perspectives. However, Tertiary education plays a crucial role in developing a skilled and knowledgeable workforce. By levying taxes specifically for tertiary education, the government can invest in improving the quality of education, ensuring that graduates possess the necessary skills and knowledge demanded by industries. A well-educated workforce is more likely to attract foreign direct investment (FDI) and stimulate domestic investment. Tertiary institutions are hubs for research and innovation. Taxes directed towards tertiary education can be used to fund research initiatives, technology transfer programs, and the establishment of research and development centers. This promotes innovation, which is a key driver of economic growth. Companies are more likely to invest in a country that fosters a culture of innovation and research. Tertiary educational tax can contribute to the improvement of infrastructure within educational institutions. Modern and well-equipped facilities attract students and faculty, enhancing the overall quality of education. Additionally, a country with quality infrastructure is more likely to be seen as an attractive destination for investors who require a reliable and efficient environment for their operations. Investment often depends on the availability of a skilled labor force. Tertiary education taxes can be used to fund programs that enhance the employability of graduates, aligning their skills with the needs of the job market. This, in turn, attracts investors who seek a workforce that can contribute effectively to their operations.

Global Competitiveness: A well-funded tertiary education system can contribute to a country's global competitiveness. As the workforce becomes more skilled and the overall educational system improves, the country is likely to attract investment from multinational corporations looking for stable and competitive locations for their business operations.

Observably, the study could not find evidence to support causal relationship between tax revenue and investment in the period under review. One reason for this may be that the Nigerian economy revolves around the oil and gas sector making the country to be a monoculture economy. The quick money usually realized from the sales of crude oil by the government led to abandonment of other critical sectors such as agriculture, mining, manufacturing among others. This is despite the general belief that the revenue from the sales of output from these sectors are more stable than crude oil whose prices are determined at the international market. The result is that a number of projects captured in the country annual budgets are usually abandoned due to severe revenue shortfalls occasioned by volatile crude oil price at the global market. Another possible reason for the non-causal relationship may not be unconnected with massive corruption by officials of the government because of the belief that the black gold money is a national cake. The implication is that a large quantum of revenue from crude oil sales ends up in private pockets of politicians and government appointees rather than being deployed to translate the economy. It is therefore not surprising that tax revenue could not cause investment and vice versa.

CONCLUSION

The purpose of the paper is to ascertain the impact of tax revenue on investment in Nigeria. In order to achieve the objectives of the study, the effect of selected tax revenue on investment was assessed. At different times, money supply was added to the explanatory variables as control variables mainly for the purpose of robust findings. A major finding of the study is that selected tax variables which assessed the effect of selected tax variables on gross fixed capital formation, revealed that they posit a positive and significant effect on investment for the period under review. However, taxation can explore investment decisions in that as the government levies taxes on the private side of the economy, both private consumption and investment will tend to increase. Therefore, the major conclusion that can be drawn from the study is that the Nigeria's government while trying to use tax as source of revenue generation should endeavor to maintain a balance by bearing in mind sustainable tax rate and consumption demand most especially private sector demand.

Arising from the findings, the following recommendations are proffered. They aimed at tackling issues relating to gross fixed capital formation, stable monetary policy and sustainable economic growth/development.

RECOMMENDATION

1. The positive relationship between profit petroleum tax and investment in Nigeria suggests that there may be favorable conditions for investors in the petroleum sector. Government should ensure that fiscal policies related to profit petroleum tax remain stable and predictable. Investors appreciate consistency, as it allows them to make informed decisions and plan for the long term. Frequent changes in tax policies can deter investment. Maintain a transparent and efficient regulatory framework. Investors are more likely to commit capital when they understand the rules and regulations governing the petroleum sector. Clarity in licensing, production-sharing agreements, and other regulatory aspects is crucial.
2. The long run positive relationship between company income tax and investment as revealed from the study suggest that Nigerian government should maintain competitive and reasonable corporate income tax rates to attract foreign direct investment (FDI) and encourage domestic businesses. High tax rates can discourage investment, so it's essential to strike a balance that generates revenue for the government while not stifling economic growth. Consider offering targeted tax incentives for industries that align with national development goals or have the potential to contribute significantly to economic growth. This could include sectors such as technology, renewable energy, and manufacturing.
3. While the relationship between value-added tax (VAT) and investment is complex and can be influenced by various factors, there are some potential recommendations based on the positive aspects of this relationship in the context of Nigeria. Government should consider periodically reviewing and optimizing VAT rates to ensure they are competitive and attractive to investors. A moderate and stable VAT rate can encourage businesses to invest in the country. Provide clear and transparent VAT regulations to reduce uncertainty for investors. A well-defined regulatory framework can make it easier for businesses to understand their tax obligations, fostering a positive investment climate.
4. A negative relationship between stamp duty tax and investment according to the study suggested a thorough review of the current stamp duty tax rates and consider reducing them to more reasonable levels. Lower stamp duty rates can incentivize investors to engage in various transactions without facing excessive financial burdens. Explore the possibility of exempting certain types of investments from stamp duty taxes. This could include exemptions for long-term investments, socially beneficial projects, or investments in specific sectors that are crucial for economic development.

5. Given the positive relationship between tertiary education tax and investment, government should ensure transparency in the allocation and utilization of funds generated from tertiary education taxes. Establish mechanisms for accountability to ensure that the funds are directed towards improving the quality of tertiary education and allocate a significant portion of the funds to improve infrastructure in educational institutions. Upgrading facilities, providing modern equipment, and create a conducive learning environment can attract both domestic and international students, contributing to the overall development of human capital.

REFERENCES

1. Adama, J. A., Ohwofasa, B., & Onabote, A., (2022). Empirical assessment of the impact of external reserves on economic growth in Nigeria. *Investment Management and Financial Innovations*, 19(2), 295-305. doi:10.21511/imfi.19(2).2022.26.
2. Akinwumni, A.J., Olotu, A.E. & Adegbite, F.F. (2017). Multiplicity of taxes and foreign direct investment: A relational analysis of Nigeria tax environment. *Social Sciences*, 6(4): 91-101.
3. Alves, J., (2019). Impact of tax structure on investment: An empirical assessment for OECD countries. *Public Sector Economics*, 43(3), 291-309.
4. Anichebe, A.S. (2019). Impact of tax revenue on foreign direct investment, *IOSR Journal of Business and Management*, 21(7): 50-56.
5. Azolibe, C.B., Jisike, J. O. & Adigwe, P.K. (2020). Government infrastructure expenditure and investment drive in an emerging market economy: Evidence from Nigeria, *Emerging Economy Studies* 6(1): 61-85. Doi:10.1177/2394901520907722.
6. Babu, W.A., Pantaleo, I. M., & Ndanshau, M.O.A., (2020). Econometric analysis of the impact of taxes on private investment in sub-Sahara Africa. *African Journal of Economic Review*, 8(1), 176-197.
7. Brown, R. L., Durbin, J. & Evans, J.M. (1975). Techniques for testing the constancy of regression relations over time. *Journal of the Royal Statistical Society*, 37, 149-192.
8. Camara, A. (2019). Long run effects of foreign direct investment on tax revenue in developing countries University Clermont Auvergne, CNRS, IRD, CERDI.
9. CBN (2008). Central Bank of Nigeria (CBN), Monetary Policy Department Series 1, CBN/MPD/Series/01/2008. www.cbn.gov.ng.
10. CBN (2021). Central Bank of Nigeria Statistical Bulletin.
11. Cynamon, B. Z., & Fazzari, S. M. (2016). Inequality, the Great Recession and slow recovery. *Cambridge journal of economics*, 40(2), 373-399.
12. Dash, R.K. (2020). Impact of remittances on domestic investment: A panel study of six South African Countries, *South Asia Economic Journal*, 21(1): 9-30. Doi:10.1177/1391561420903199.
13. Dike, C.U. & Leyira, C.M. (2019). Foreign direct investment and tax revenue in Nigeria, *International Journal of Business and Law Research* 7(2): 16-34.
14. Engle, R. F. & Granger, C.W.J. (1987). Co-integration and error correction: representation, estimation and testing. *Econometrics*, 55: 251-76.
15. Fama, E. F., & French, K. R. (2015). A five-factor asset pricing model. *Journal of financial economics* , 116(1), 1-22.
16. Feldman, M., Hadjimichael, T., Kemeny, T., & Lanahan, L. (2016). The logic of economic development: A definition and model for investment. *Environment and Planning C: Government and Policy*, 34(1), 05-21. DOI: 10.1177/0263774X15614653. Retrieved from: <https://www.researchgate.net/publication/269856684>.
17. Firmansyah, A., Arham, A., Qadri, R.A., Wibowo, P., Irawan, F., Kustiani, N.A., Wijaya, S., Andriani, A.F., Arfiansyah, Z., Kurniawati, L., Azas Maburur, A., Dinarjito, A., Kusumawati, R., Mahrus, M.L., (2022). Political connections, investment opportunity sets, tax avoidance: Does corporate social responsibility disclosure in Indonesia have a role? *Heliyon*, 6, e10155. Available

- at” Science Direct.
18. FIRS (2022). *Tax statistics/reports*. Available at Federal Inland Revenue Service, Nigeria.
 19. Gale, W.G., & Samwick, A.A., (2014). *Effects of income tax changes on economic growth*. Economics Studies at the Brooking Institute and Tax Policy Center.
 20. Hakim, T.A., Karia, A.A., David, J., Ginsad, R., Lokman, N., & Zolkafli, S., (2022). Impact of direct and indirect taxes on economic development: A comparison between developed and developing countries, *Cogent Economics & Finance*, 10, 1, 2141423. DOI: 10.1080/23322039.2022.2141423.
 21. Halim, A., & Rahman, M., (2021). The effect of taxation on sustainable development goals: Evidence from emerging countries. *Heliyon*, 6, e10512. Available at: Science Direct.
 22. Hall, R.E., & Jorgenson, D.W., (1967). Tax policy and investment behavior. *The American Economic Review*, 57(3), 391-414.
 23. Jorgenson, D.W., (1963). Capital theory and investment behavior. *The American Economic Review Papers and Proceedings*, 53(2), 247-259.
 24. Kumai, N.S. (2020). Effects of capital gain tax on total tax revenue and economic growth in Nigeria. *International Journal of Advanced Academic Research, Social and Management Sciences* 6(4): 107-121.
 25. Kuznets, S., (1934). Gross capital formation. NBER, Bulletin, 52, 01-20.
 26. Makwe, U.E. & Oladele, A.O. (2020). Foreign direct investment and revenue generation in Nigeria, *International Journal of Development and Economic Sustainability* 8(2): 10-37.
 27. Meyer, D.F. & Sanusi, K.A. (2019). A causality analysis of the relationship between gross fixed capital formation, economic growth and employment in South Africa, *Studia Universitatis Babeş-Bolyai Oeconomica* 64(1) 33-44. Doi.10.2478/subbocc-2019-0003.
 28. Minh-Ha, N., Minh, P.T., Binh, Q.M.Q., & Ercolano, S., (2022). The determinants of tax revenue: A study of Southeast Asia. *Cogent Economics & Finance*, 10(1). Available at: <https://doi.org/10.1080/23322039.2022.2026660>.
 29. Mkadmi, J.E., Bakari, S., & Othmani, A., (2021). The impact of tax revenues and domestic investments on economic growth in Tunisia. MPRA No 108387. Available at: <https://mpra.ub.uni-muenchen.de/108387>.
 30. Myint, H. & Krueger, A.O. (2016). Economic development. Available at: <https://www.britannica.com/topic/economic-development>.
 31. Neog, Y., & Gaur, A.K., (2020). Tax structure and economic growth: a study of selected Indian States. *Journal of Economic Structures*, 9(38). 01-12. Available at: <https://doi.org/10.1186/s40008-020-00215-3>. Springer link.
 32. Nguyen, H.T., & Darsono, S.N.A.C., (2022). Impact of tax revenue and investment on the economic growth in Southeast Asian countries. *Journal of Accounting and Investment*, 23(1), 128-146.
 33. Nwokoye, G.A. & Rollie, R.A. (2015). Tax reforms and investment in Nigeria: *An empirical examination*, 10:39-51.
 34. Oboh, T. (2021). Direct tax and foreign direct investment. *International Accounting and Taxation Research Group*, Faculty of Management Sciences, 5(1): 2-14.
 35. Oladipo, O., Efuntade, O.O., Efuntade, A.O. & Taiwo, C.D. (2020). Impact of foreign direct investment on revenue generation in Nigeria: *Mediating on the role of company tax Acta Universitatis Danubius*, 16(6): 204-223.
 36. Oladipo, O.A., Iyoha, F., Fakile, A., Asaleye, A.J., & Eluyela, D.F., (2019). Tax revenue and agricultural performance: Evidence from Nigeria. *Problems and Perspectives in Management*, 17(3), 342- 349. doi:10.21511/ppm.17(3).2019.27.
 37. Olufemi, A.T., Jayeola, Oladele, S.A. & Naimot, A.O. (2018). Tax revenue and economic growth in Nigeria. *Scholedge International Journal of Management and Development* 05 (07): 72-85.
 38. Olujobi, O. J., Olarinde, E. S., & Yebisi, T. E. (2022). The Conundrums of Illicit Crude Oil Refineries in Nigeria and Its Debilitating Effects on Nigeria’s Economy: A Legal Approach. *Energies*, 15(17), 6197.
 39. Orji, A., Ogbuabor, J. E., Okeke, C., & Anthony-Orji, O. I. (2018). Another side of the coin:

- Exchange rate movements and the manufacturing sector in Nigeria. *Journal of Infrastructure Development*, 10(1-2), 63-79.
40. Oyedokun, G.E. & Ajose, K. (2018). Domestic investment and economic growth in Nigeria. *International Journal of Business and Social Science*, 9(2): 130-138.
 41. Peter, G.T. & Kiabel, B.D. (2015). Tax incentives and foreign direct investment in Nigeria. *IOSR Journal of Economics and Finance*, 6(5): 10-20.
 42. Prabha, P. (2020). Economic development: Definition, scope and measurement. DOI:10.1007/978-3-319-69625-6_38-1. Available at: <https://www.researchgate.net/publication/346379002>.
 43. Sakib, B.A., Khan, F., Farhana, S. & Maayesha, T.C. (2018). Tax revenue and foreign direct investment in Bangladesh: An empirical analysis, *World Review of Business Research*, 8(3): 61-69.
 44. Solow, R.M., (1956). A contribution to the theory of economic growth. *Quarterly Journal of Economics*, 70(1): 65-94.
 45. Todaro, P. (1977). *Economic for a developing world*. London, Longman Group Ltd.
 46. Uchime, H.N. & Anichebe, A.S. (2019). Effects of taxation on domestic investment in Nigeria. *International Journal of Economics, Business and Management Studies*, 6(1): 96-104. Doi:10.20448/802.61.96.104,
 47. Umeokwobi, R. & Nkoro, E. (2019). Tax revenue and private domestic investment: Evidence from Nigeria, *Bussecon Review of Finance and Banking* 1(2): 25-32.
 48. Wikipedia (2022). Gross fixed capital formation.
 49. World Bank (2022). World Bank national accounts data, and OECD national accounts data files. Available at: www.databank.worldbank.org.
 50. Zhao, A., Wang, J., Sun, Z., & Guan, H. (2022). Environmental taxes, technology innovation quality and firm performance in China—A test of effects based on the Porter hypothesis. *Economic Analysis and Policy*, 74, 309-325.