Company Income Tax and Economic Development Nexus: ARDL Approach

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ABSTRACT

This study examined the long-run relationship and dynamic interactions between company income tax and economic development in Nigeria for the period 2000-2020. Secondary data were collected from the Central Bank of Nigeria Statistical Bulletin, Federal Inland Revenue Service, and World Bank Development Indicators. Company income tax (CIT) and value-added tax (VAT) are the independent variables while Economic development (HDI) was the dependent variable. The Autoregressive Distributed Lag (ARDL) bound test as proposed by Pesaran and Pesaran (1997), and Pesaran et. al. (2001) was employed to empirically analyze the relationship between company income tax and economic development. From the results, it is evident that there is the existence of a long-run relationship between company income tax and economic development. The short-run dynamic model also uncovers that the speed of convergence to equilibrium is high suggesting that there is a short-run relationship between company income tax and economic development. The significant negative relationship between company income tax and economic development necessitates that tax authorities should further be braced up and strengthened to implement compliance by taxpayers for income to be properly redistributed within the economy.

Keywords: *Companies Income Tax (CIT), Value Added Tax (VAT); Economic Development; Human Development Index*

1. Introduction

Taxation is an imperative and challenging issue for policy-makers, scholastics, practitioners, professionals, and analysts, etc. The current globalized society is characterized by the necessity of the presence of redistribution forms due to the fulfillment of the elementary state's capacities. At the same time, the government spending as the essential tool of economic policy is conditioned by the need for her financing, where the tax revenues usually represent the foremost significant portion of state budget income. The economic history of both developed and developing nations reveals that tax is an indispensable instrument in the hand of government; not only as a revenue source but moreover as a fiscal policy tool for economic stabilization. A fundamental function of any government especially in developing countries such as Nigeria is the provision of infrastructural services, and as well as ensuring an increase in per capita income, poverty alleviation to mention a few. The serious drop in the price of oil for a long time has led to a decrease in the reserves available for distribution to the diverse levels of Government and execution of capital projects for development purposes. The need for government to create satisfactory internal sources of income has, hence, become a matter of criticalness and significance. This need explains the energy on the part of the government to seek new sources of revenue or to become innovative in the mode of collecting revenue from existing sources (Jimoh, Adegoriola, & Adeyemo, 2020).

Economic development refers to the cycle by which the gross national product (GNP) per capita of a nation increases subjectively and quantitatively over an extremely significant stretch of time (Harelimana, 2018). As stated by Jakir (2011), tax can be used as an imperative instrument in the following way: firstly, optimum allocation of available resources; furthermore, Lessening of disparities in income and wealth; thirdly, acceleration of economic development and price stability; fourthly, control mechanism. Aside from the basic role of tax as a tool for public revenue generation, it influences the income level of a consumer, consumption and consumption pattern, production and distribution pattern. Consequently, the paradigm change suggests that tax can serve as an instrument in apportioning available resources, raising government revenue, encouraging savings and investment, quickening economic development, price stability, and control mechanism (Emran & Stiglitz, 2005). Tax revenue mobilization as a source for financing development exercises in Nigeria has been a troublesome issue fundamentally since of different forms of resistance, such as evasion and other corrupt practices. These exercises are considered as subverting the economy and are promptly presented as reasons for the underdevelopment of the nation. the government has continuously enacted various tax laws and reformed existing ones to ensure adherence to tax payment and discourage tax evasion and avoidance; they include Income Tax Management Act (ITMA), Companies Income Tax Decree (CIID), Joint Tax Board (JIB), etc.

Tax is an obligatory levy imposed on a subject or upon his property by the government to provide security, social amenities and to make conditions for the economic prosperity of the society (Appah & Oyandonghan, 2011). Chartered Accountants of Nigeria (2006) and the Chartered Institute of Taxation of Nigeria (2002) see tax as an enforced contribution of money, enacted under legislative authority. Tax is assessed following some reasonable rule of allocation on persons or property within tax purview. Company income tax is a structure among the different tax structures in the Nigerian economy; other tax structures include value-added tax and personal income tax. Companies income tax act, 1990 is the current empowering law that oversees the collection of taxes on profits made by companies working in Nigeria barring companies engaged in Petroleum exploration exercises. According to section 8 (1) of the companies income tax act 1990, taxes are payable as specified upon profits of any company accruing in, derived from, brought into, or received in Nigeria amongst others, any trade or business for the period the trade or business may have been carried out.

The current rate of companies' income tax is 30% of assessable income (Akpotoboro, 2009). In any case, as foreign companies obligated to such tax do not customarily work in Nigeria, and in this way, account to the Federal Board of Inland Revenue (FBIR) with full accounts, the law licenses FBIR to regard a position of the foreign company's turnover or net income as profit. Hence the deemed income of the company will be 20% of the turnover. In Nigeria, the contribution of tax revenue particularly revenue generated from company income tax has not met the desires of the government. The government has similarly communicated this dissatisfaction and has appropriately promised to grow the non-oil tax income.

The main objective of this study is to recognize the economic contribution of company income tax to the improvement of the national economy. The more citizens lack information or education about taxation within the nation, the more prominent the desire and the opportunities for tax avoidance, evasion, and non-compliance with pertinent tax laws. The first segment of the paper is the introductory part, section two reviews the literature on the

existing study. Section three talks about the research methodology. Section four presents the Results & Discussion of Findings. Section five conclusion and suggestions of the paper.

2. Literature Review

This study is rooted in the economic principle and revenue productivity theory. Adam Smith contends that it makes small sense to establish a tax system for which the cost of collection is higher than the realized charge income. This hypothesis emphasizes having an expansive tax base to cover the minimum cost through proficient tax administration by providing direction towards more beneficial endeavors through bringing down the tax rates, eliminating tax aversion, and broadening the base to enforce compliance. A compelling company income tax system will empower an efficient economy and provide an environment conducive for commerce, subsequently reducing the costs. When taxes finance the fundamental 'public goods' like public security and the 'rule of law' on which company income depends. It promotes revenue efficiency

A few studies have inspected taxation as an instrument of economic development in different nations with diverse techniques. The result of the examinations, however, shows a degree of relatedness within the results. Literature has it that there is a relationship between tax revenue and economic development because the revenue gotten from administering taxes is a result of complex interactions between economic, political, and institutional variables.

In Nigeria, revenue generated from income taxes has been downplayed due to improper tax administration, appraisal, and collection (Okafor, 2012; Ogwuche, Abdullahi, & Oyedokun, 2019; Adegbie and Fakile, 2011). Individuals and companies are known to routinely evade and dodge taxes due to corrupt practices and the presence of different loopholes within the tax laws. In Nigeria, Ayodele (2006) laid out a few of the national problems of taxation to incorporate low yield of revenue, neglect for the genuine principle of federalism, endemic institutional and administration concerns at subnational levels, weak tax appraisal, corrupt processes, and the predominance of the multiplicity of taxes. Interestingly, he recorded that as an economic development instrument, taxation gives the financial base for providing and maintaining, among others, infrastructures such as roads, power, telecommunications, and water that have a direct impact on living conditions.

Wambai & Hanga (2013) studied the nexus between taxation and social development in Nigeria, they recommended a change in the attitude of the government and a change in the tax system to a system that concentrates on setting up effortlessness, consistency, and neutrality. Fakile & Adegbie (2011) researched to explore the relationship between company income tax in Nigeria and the economic development of the nation using Chi-square and Multiple Linear Regression analysis. They used the GDP to capture the Nigerian economy which was measured against total annual revenue from company income tax for the period 1981 to 2007. The findings reveal that there is a significant relationship between company income tax and Nigerian economic development. Tax evasion and avoidance are major hindrances to revenue generation, on-compliance with tax laws on the part of the taxpayers is a hindrance, and ineffective tax administration has given enough loopholes to the poor generation of this major source of income (Fakile & Adegbie, 2011).

Olaoye, Ogundipe, & Oluwadare(2019) studied taxation and economic development of Nigeria from 2003 to 2017 with the Vector Error Correction Model (VECM) methodology, Augmented Dickey-Fuller (ADF) unit root test, Autoregressive Distributed Lag (ARDL) bounds test, Jarque-Bera Normality Test and Eigenvalue stability condition. The findings of the study reveal that company income tax has a negative significant relationship with economic development while the value-added tax has a positive significant long-run impact on the economic development of Nigeria. The study further suggested that the government ought to not increase the company income tax rate since it is detrimental to the economic development of the nation, in the long run, instead the government ought to increase the value-added tax since it can lead to the economic development of Nigeria. In a study by (Okafor, 2012) on income tax revenue and economic growth of Nigeria as proxied by the gross domestic product (GDP) using ordinary least square (OLS) regression analysis, the findings indicate a very positive and significant relationship. The study recorded a decline in actual tax revenue generated in most years which is attributed to dysfunctionalities in the income tax system, loopholes in tax laws, and inefficient tax administration. These findings are in line with the study by (Ogwuche, Abdullahi, & Oyedokun, 2019) that examined the impact of company income tax on economic growth in Nigeria from 2001 to -2017 using multiple regression analysis techniques. They found that company income tax has a significant influence over economic growth in Nigeria. They suggested that the policies of company income tax ought to be looked into to block the loopholes that empower tax avoidance where most companies capitalize on to dodge tax and, full execution of tax reforms agenda of 2003.

Nwanakwere (2019) investigated the relationship between tax and economic growth using the Auto-Regressive Distributed Lag (ARDL) bound test approach. They decomposed tax into company income tax (CIT), petroleum profit tax (PPT), value-added tax (VAT), and excise and customs duties (ECD) and found that company income tax has a negative relationship with economic growth. They recommended the viable and proficient utilization of tax regulation to moderate the issue of tax avoidance among firms and corporate entities, and improve the contribution of company income tax to economic growth. Adebisi & Ibrahim (2020) explored taxation mechanisms and economic growth in Nigeria, their result found that company income tax, value-added tax, and Personal Income Tax are significantly and positively affect the economic growth in Nigeria. The Nigerian government embraced different tax law reforms to improve tax administration and to increase the tax yield. So also the Company income tax (amendment) act 2007; the federal inland revenue services (establishment) act, 2007 and the personal income tax (amendment) act, 2011, were all aimed at empowering tax compliance and expanding tax yield (Aguolu, 2010)

Hypothesis Development

Tax is a fiscal policy instrument that the government manipulates to achieve macroeconomic objectives. These objectives can be an expansionary one coordinated to reduce the rate of national unemployment; the government through tax incentives can stimulate investment as the tax obligation on investors is decreased and more money becomes available for investment purposes thus, reducing the level of poverty as more unemployed people get to be productively employed. This, beyond any doubt, is a signal for economic development. The objective of this study is to examine the impact of company income tax on Nigerian economic development. Thus, we propose to test the following hypothesis:

1. There is no long-run relationship between company income tax and economic development between 2000 and 2020
2. There is no significant relationship between company income tax and economic development between 2000 and 2020

3. Methodology

Data used for this study were sourced from various issues of the Central Bank of Nigeria (Statistical Bulletin; and Annual Report and Statement of Accounts), Federal Inland Revenue Service, and World Bank Database. The study adopts annual time series secondary data during the period 2000 through 2020. To generate empirical results for the paper, a linear econometric model is formulated based on the previous empirical studies (Nwanakwere, 2019; Fakile & Adegbie, 2011; Olaoye, Ogundipe, & Oluwadare, 2019; Adebisi & Ibrahim, 2020) It captures company income tax, value-added tax and personal income tax as a function of economic development as thus:

EDEV = F(CIT, VAT) …………………………………………… (1)
Where:
EDEV= Economic Development
CIT = Companies Income Tax
VAT = Value Added Tax

To empirically analyze the above functional form, the Auto-Regressive Distributed Lag (ARDL) model bound testing approach. The ARDL approach can be applied to series that are both of the same order and different order of integration i.e. I(0) or I(1) series, or a combination of I(0) and I(1) series; unlike the other techniques (Pesaran, Shin, & Smith, 2001). ARDL bounds testing approach is more reasonable and provides better results for a small sample size, and the short and long-run parameters are estimated simultaneously (Haug, 2002). The Autoregressive Distributed Lag (ARDL) model specifications of the functional relationship between company income tax (CIT) and economic development (HDI) is represented as follows:

$$\Delta lnHDIt = \beta_{01} + \sum_{i=0}^{n} \beta_{11}\Delta lnCTIt\text{-}i + \sum_{i=0}^{n} \beta_{12}\Delta lnVATt\text{-}i + \delta_{11}lnCITt\text{-}1 + \delta_{12}VATt\text{-}1 + +\varepsilon_{t\text{-}1}$$
……………………………….2

Where:
      lnHDI= log of Human development Index (proxy for economic development)
      lnCIT = log of Companies Income Tax
      lnVAT =log of Value Added Tax
      n= lag length for the Unrestricted Error-Correction Model (UECM)
      Δ = first differencing operator

ε = stochastic error term

β_{10} = constant term

β_{11}… β_{12}= represent the short-run coefficients

δ_{11}… δ_{12}= are the long-run coefficients

The existence of long-run relationships among model variables is investigated using the bounds test. The null hypothesis is that there is no cointegration (H0: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$) against the alternative hypothesis of there is cointegration (H1: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$). Appropriately, the computed F-statistic inferred from the Wald test is at that point compared to the non-standard critical bounds values detailed by Pesaran et al. (2001). Once the cointegration relationship is set up, t the long-run coefficients utilizing the ARDL approach and the short-run dynamic parameters are estimated utilizing the error correction model. The error correction model helps to capture the speed of adjustment among the variables. The co-integrating long-run relationship was estimated using the specification below:

$$\Delta lnHDIt = \delta_{11}lnCITt\text{-}1 +\ \delta_{12}lnVATt\text{-}1 + \varepsilon_{t\text{-}1} \quad \text{...}3$$

The short-run dynamic model is specified thus:

$$\Delta lnHDIt\ =\ \beta_{01} +\ \sum_{i=0}^{n} \beta_{11}\Delta lnCTIt\text{-}i\ \ +\sum_{i=0}^{n} \beta_{12}\,\Delta lnVATt\text{-}i\ +\ \alpha ECTt\text{-}1 + \varepsilon_t \text{.....................................}4$$

Where:

$ECT_{t\text{-}1}$ = the error correction term lagged for one period

α=the coefficient for measuring the speed of adjustment

Various preliminary tests such as unit root, descriptive statistics, diagnostic tests (Breusch-Godfrey Serial Correlation LM test, Heteroskedasticity test, Ramey RESET tests were carried out.

4. Discussion of Results

The descriptive statistics for the variables are presented in Table 4.1.

Table 4.1 Descriptive Statistics

	lnHDI	lnCIT	lnVAT
Mean	-0.723889	9.138782	5.296772
Median	-0.736993	7.994249	5.618858
Maximum	-0.618040	12.52562	6.550180
Minimum	-0.867501	6.483792	3.422430
Std. Dev.	0.076448	2.297959	0.927597
Skewness	-0.084500	0.219977	-0.555343
Kurtosis	1.948815	1.266709	2.051252
Observations	21	21	21

Source: Authors' computation

The table presents the results of the mean, median, standard deviation, skewness, kurtosis of the variables. The descriptive statistics of the variables has the number of observations as 21. From the table, it can be seen that the variables did not veer off much from their means as shown by the low value of their standard deviations.

The variables human development index (HDI) company income tax (CIT), value-added tax (VAT) were tested for stationarity before running the cointegration test. For this purpose, the study uses The Augmented Dickey-Fuller (ADF) test. The results are presented in Table 4.2. The results on the table show that all the variables are stationary at first difference.

Table 4.2 Stationarity Test

VARIABLES	ADF STAT AT LEVELS	5% CRITICAL VALUE	ADF STAT AT FIRST DIFFERENCE	5% CRITICAL VALUE	ORDER OF INTEGRATION
lnhdi	-1.484831	-3.020686	**-3.401271**	**-3.029970**	**I(1)**
lnvat	-2.711923	-3.020686	-4.267478	-3.029970	**I(1)**
lncit	-1.472315	-3.020686	**-3.471940**	**-3.029970**	**I(1)**

Source: Authors' computation
The test was conducted with the assumption of intercept and no trend

The ARDL bounds testing procedure is used in this study to estimate the long-run relationship between the variables. The result of the bound test for equation (2) is presented in Table 4.3.

Table 4.3 Bounds test

	n=3 (lag length)
Computed F-Statistic:	9.496032
5% critical bound value	
Lower:	3.79
Upper:	4.85
10% critical bound value Lower	
Upper	3.17
	4.14

Source: Authors' computation

The results suggest that the computed F-statistic of 9.496032 is greater than the upper bound critical value of 4.85 at 5% significance level and 4.14 for the upper bounds critical value at 5% significance level. The study rejects the null hypothesis of no co-integration. This implies that company income tax (CIT) and economic development (HDI) are co-integrated, that is, there is a long-run relationship between company income tax and economic development. Therefore, equation (3) was estimated to show the long-run relationship between income tax (CIT) and economic development (HDI).

Table 4.4 Results of Long-Run Relationship

Variable	Coefficient	Std. Error	t-Statistic	Prob.
lnCIT	-0.003324**	0.004327	-0.768131	0.0475
lnVAT	0.078680**	0.013128	5.993271	0.0005
C	-1.095387	0.111540	-9.820601	0.0000

Source: Authors' computation
Notes: (*) and (**) indicates 1% and 5% significance level respectively. R-squared: 0.99, Adjusted R-squared: 0.98, Durbin Watson Statistics: 1.98 and Prob (F-Statistic): 0.001.

From our above long-run result presented in table 4.4, the coefficient of determination (R-Squared) of 0.99 obtained, means that changes in the dependent variable (HDI) is explained by the explanatory variables (CIT and VAT) to about 99 percent, this shows that the estimated long-run model has a good fit for prediction and policy purposes, while the highly significant F- statistic shows the overall significance of the model.

From the highlights in our results, it can be concluded that Human Development Index (HDI), which is a proxy to economic development showed a negative trend as indicated by the intercept term. The coefficient for company income tax is -0.003 and is statistically significant at 5%. Holding other variables constant, a percentage increase in company income tax will lead to a 0.03% decrease in economic development in the long run. Value-added tax has a positive relationship with economic growth. Based on the magnitude of the coefficients, it is observed that value-

added tax has a relatively higher contribution to economic growth in Nigeria. However, the result shows that a negative relationship exists between company income tax (CIT) and the level of economic development proxied by the Human Development Index (HDI), this implies that there have been rising levels of economic development that is not associated with company income tax. This finding is different from this study by Adegbie and Fakile (2011) following the fact they found a positive relationship between company income tax and economic development, unlike this study. This negative relationship points to the fact that levies on the income of companies and enterprises may reduce income and profits generated from the business. Companies and enterprises, therefore, struggle to break even to keep up with tax payment thus; tax evasion becomes inevitable (Nwanakwere, 2019).

Table 4.5 Results of Error Correction Models

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(lnHDI(-1))	0.218983	0.215328	1.016975	0.3430
D(lnCIT)	0.013989**	0.007085	1.974399	0.0889
D(lnCIT(-1))	-0.003912	0.010824	-0.361456	0.7284
D(lnCIT(-2))	-0.005936	0.008593	-0.690828	0.5119
D(lnCIT(-3))	0.017324*	0.006315	2.743092	0.0288
D(lnVAT)	0.025998	0.024425	1.064384	0.3225
ECT	-0.956693*	0.182892	-5.230929	0.0012

Source: Authors' computation
Note: *(*) and (**) indicates 5% and 10% significance level respectively*

The above result indicates that the error correction coefficient estimated at -0.956693 (0.00012) is statistically significant, has a negative sign, and suggests a high speed of convergence to equilibrium.

The result also shows that at both 5% and 10% levels of significance, a change in three periods lagged value of the log of company income tax D(lnCIT(-3)) has a positive effect on changes in economic development. This means that the company income tax value of three previous years has a positive and significant influence on the changes noticed in economic development in the current year.

The diagnostic tests examined serial correlation, heteroscedasticity, and normality in the model. The table below shows the results of the diagnostic tests.

Table 4.6 Results of Diagnostic Tests

Jarque-Bera Statistic	0.247604 (0.88355)
Breusch-Godfrey autocorrelation	10.45385 (0.7744)
Heteroskedasticity Test - Breusch-Pagan-Godfrey	9.531131 (0.3898)

Source: Authors' Computation

The results of the diagnostic tests show no evidence of serial correlation and heteroscedasticity in the Autoregressive Distributed Lag (ARDL-Bounds) model specified. It also reveals that the residual is normally distributed as the p-value of the Jarque-Bera statistic is 0.88355 is greater than 0.05.

Furthermore, the coefficient stability of the ARDL model was accessed via the cumulative sum of recursive residuals (CUSUM) and the Cumulative Sum of Squares of Recursive Residuals (CUSUMSQ) test. The estimated coefficients of the model are deemed to be stable over the study period as the plots are within the 5% critical interval from 2000 to 2020. We conclude that all the long-run, as well as short-run coefficients in the error correction model, are quite stable over the sampled period.
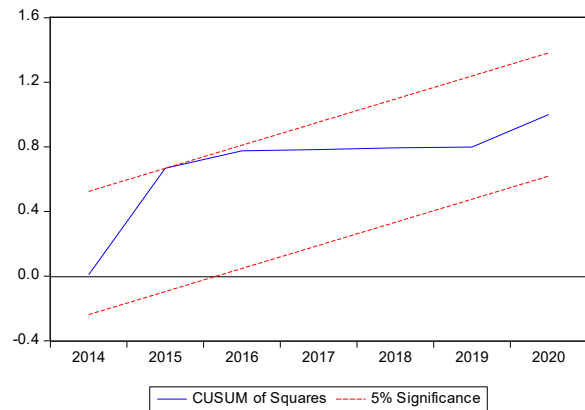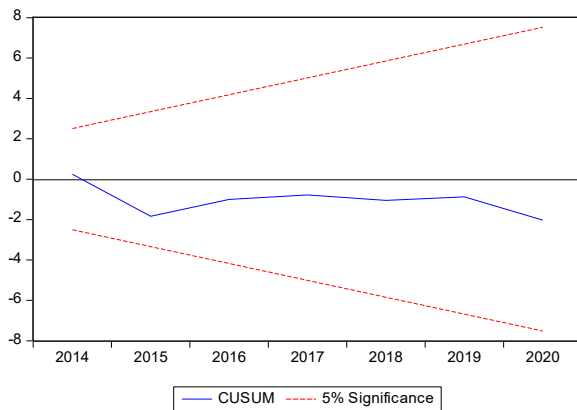
Fig 1 and 2: CUSUM CUSUMSQ

5. Conclusion

Nigeria is part of the global community and should mirror policies that have benefited other nations of the world. Company income tax is an indispensable tool that can be utilized to boost the development of Nigeria's economy. The empirical studies on the impact of company income tax on economic development have expanded but with mixed findings. The study examined the relationship between company income tax and economic development (human development index) using annual time series data spanning 2000 through 2021. The empirical results offer evidence that taxation is an instrument of economic development in Nigeria. the study shows that company income tax has a negative relationship with economic development; however, the impact is not substantial. This conclusion points to the need to reduce the level of tax evasion in Nigeria by the means of an efficient and effective tax administration to ensure that citizens do not dodge and avoid tax so that income can be properly redistributed within the economy. From these findings, we make the following recommendations:

1. Government should screen and direct company income tax to encourage domestic investors and foreign investors into the nation which would lead to company income tax contributing to economic development in the nation.

2. There should be accountability and straightforwardness from government authorities on the management of income inferred from taxation conjointly citizens ought to be able to benefit from the payment of tax.

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