



Effect of Taxation on Poverty in Nigeria

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Abstract

This study examined the effectiveness of taxation as a tool for poverty reduction in Nigeria from 1990 to 2019. Using Auto-Regressive Distributed Lag Model for estimating the parameters, Poverty Level (POV) was regressed against Petroleum Profit Tax (PPT), Company Income Tax (CIT), Personal Income Tax, Custom/Excise Duty (CED) and Value Added Tax (VAT). The result of the regression shows that PPT, CIT and VAT have positive and significant relationship with poverty level, while CED and PIT have negative and significant relationship, judging from their respective probability values at 5% level of significance in the short run. Analysis of the variables in the long run revealed a positive but insignificant relationship between poverty and PPT, CIT and VAT, while CED and PIT had a negative and insignificant relationship with poverty. Thus, the study concludes that taxation as a source of revenue is not effective for poverty reduction in the country. Based on these finding, the study recommends that the government should lower PPT, CIT and VAT to achieve poverty reduction. This may likely reduce the prices of goods and services in the economy, thereby relieving the economic and financial strain of the poor individuals in the economy.

Keyword: Poverty, Inequality, Taxation, ARDL Approach

JEL Code: H20, I32

Contribution/Originality:

It is obvious that Nigeria is a highly populated economy where revenue from taxation has the potency of playing a significant role in alleviating poverty; however, attention seems to be concentrated more on the impact of taxation on economic growth. Consequently, this study examines how taxation can lead to the redistribution of income and financial resources in order to mitigate poverty in the Nigerian economy. This is achieved by considering both the direct and indirect components of taxation as well as the use of ARDL model

1.0 Introduction

There is no disputing the fact that the survival of any country depends on the measure of resources available for the provision of security, basic infrastructures and to meet her recurrent and capital expenditures. Hence, revenue and revenue sources to a country are paramount issues that can never be over flogged. Furthermore, it will suffice to posit that the Nigerian economy is overly dependent on revenue from petroleum products, with oil representing more than 70% of the aggregate government total revenue (Yusuf, 2012). In this regard and in the face of the dwindling global price of crude oil, it becomes imperative for Nigeria to seek and maintain an alternative and reliable source of revenue. To this end, the importance of tax revenue both as a substitute and a complementary source of government revenue cannot be overemphasized. This last assertion thus corroborates that when tax revenues are spent on the real sector of the Nigerian economy, the poverty situations of the populace will be positively impacted.

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Tax as indicated by Eiya (2012), is a levy compulsorily imposed on the income, profit and capital gains of individuals, organizations or other legitimate elements by the government to raise revenue. Consequently, the primary motive for the imposition of taxes is to meet the expenditure of government and to effectively redistribute income which will in-turn convert to economic growth and development of a country.

Taxation as a fiscal tool could be used to enhance a nation's development process and its economic activities, thereby improving the overall level of prosperity and economic well-being of the entire citizenry (Anyaduba, 1999). In other words, the tax system serves as an avenue for government to gather income required in releasing its social commitments. In meeting these social commitments, the Nigerian government has over the years gathered its revenue from various sources. Between 1960 and the mid-1970, income from agricultural items dominated, while income from other sources were not given the most extreme considerations. However, since the oil boom of 1971 to 1977, oil revenue has dominated the Nigeria's income and revenue pool with its share of the government's gathered income ascending from 26.3% in the 1970 to around 70% up to mid-2014 (Anyaduba & Otulugbu, 2019). This shows that conventional taxes and tax revenues have never assumed a significant role fiscal pursuit in the nation's administration. Although, this inference does not imply that the Nigerian governments do not earn income and revenue from taxes, however, tax revenues and income are insignificant when compared to the inflows from the sale of crude oil.

It is pertinent to highlight the fact that tax and tax policies plays prominent role in the improvement of economic performance of the developed and developing economies. Taxation no doubt is the transfer of resources from the private sector to the public sector in order to accomplish some of a nation's economic and social goals. Taxes are levied on individuals based on their personal incomes such as salaries, business profits, interests, dividends and royalties; on corporations; taxes are levied based on company profits, capital gains and capital transfers. In Nigeria and other developing economies, the essence of the formulation of tax policies is to complement expenditure restraint aimed at fine-tuning macroeconomic imbalances (Yusuf, 2012).

Tax policies are not only directed at mobilizing revenue for the government, it is also used to achieve major macroeconomic objectives of full employment, economic growth, income redistribution among others. Musgrave and Musgrave (2004) notes that the economic effects of tax include micro effects on the distribution of income and efficiency of resource use as well as macro effect on the level of capacity output, employment, prices, and growth. In order to achieve these effects, the Nigerian tax system is decomposed into a number of different taxes that constitutes the tax components; some of which are direct and indirect taxes. Direct taxes comprise petroleum profit tax, company income tax, personal income tax, capital gain tax etc which are charged on income, profits or other gains and they are deducted from the source or paid to tax authorities directly. Indirect taxes comprise value added tax, excise duties, custom duties, stamp duties etc which are charged on goods and services, that is, they are added to the prices of goods and services.

It is important to note that despite the huge amount of money generated by Nigerian government through tax revenue, issues of development seem to be a mirage as poverty, low standard of living and poor social infrastructures still remain widespread. Poverty worsened from 43% to 49% between 2004 and 2010 with high dependency ratio skewing towards the poor (Nye, 2011). Furthermore, given the several fiscal measures introduced since 1986, as well as the prominence of taxation in macroeconomic management in Nigeria, growth has not accelerated and poverty remains widespread and pervasive, particularly in the rural areas. Even though taxation is widely recognized as a potent tool for enhancing growth, redistributing income and reducing poverty, the Nigerian experience is



tending to suggest otherwise from existing empirical and factual evidences. This could then lead to the questions on “the role of taxation in inducing growth, redistributing income and reducing poverty in Nigeria” as well as “whether taxation could be designed so as to ensure growth and reduce poverty while maintaining macroeconomic stability” These are crucial questions to ask given the renewed interest of the current democratic administration on poverty alleviation and given that taxation is the arrowhead of the policy package of the current economic policy framework in Nigeria.

In Nigeria, growth performance has not shown any meaningful impact on the standard of living of the people in terms of poverty reduction, unemployment reduction and reducing the income gap between the rich and the poor. Hence, this spurs the researchers to embark on the study of taxation as a tool for poverty reduction in the economy, which serves as the objective of this research piece.

The paper is divided into four sections. The first section is the introduction and background information, the second section gives insight into the issues of literatures and empirical reviews, the third section presents the methodology of the study while the final section concludes the study and equally recommends possible policy options for the Nigerian economy.

2.0 Literature Review

2.1 Taxation

Taxation according to Ukpong & Akpakpan (1998) is a tool of economic management that can be used to stimulate investment and thus, create jobs, prosperity or reduce poverty in the system, and by so doing, promote social justice. They posit that government can use taxation to steer the economy in any desired direction. If for instance, the government wishes to restrain the economy, it could do so by increasing the rate of tax. And by so doing, the taxpayers’ disposable income (income available for them to spend) reduces thereby discouraging the people from saving to invest. The government can use taxation to steer the economy in the desired direction by working out the various exemptions, allowances, differential rates schedules and other provisions to affect economic activities of the decision makers along specific lines (Bishop, 2005).

If for instance the government wishes to stimulate the economy, it could do so by cutting taxes (reducing tax rates), and by so doing, increases the disposable income of the taxpayers, thereby encouraging savings and by extension investments and production. Advocates of tax cuts claim that a reduction in the tax rate will lead to increased economic growth and prosperity, while others claim that if taxes were reduced, that almost all the benefits will go to the rich, as those are the ones who pay the most taxes. Government will earn more tax income at 1 per cent rate than at 0 per cent, but it will not earn more at 100 per cent than they will at 10 per cent, due to the disincentives high tax-rates cause.

Thus, there is a peak tax rate where government revenue is highest. The major concern of tax reformers, according to Musgrave and Musgrave (1989), has been to improve the equity of the tax structure in order to make it comply with prevailing views of what constitutes a fair distribution of tax burden, and with the effects of taxation upon the functioning of the economy. When tax is imposed, an income earner’s wage rate is reduced, and his initial reaction may be to work more. But a further increase in the tax rate will induce him to work less, limiting the revenue obtainable from a given tax. Implying that as tax rate is further increased, revenue will rise for some time until a point is reached beyond which further increase in the tax rate will result in declining revenue, and hence, a reduction in funds available for transfer.



2.2 Poverty

The concept of poverty is perceived differently by the poor themselves, politicians, planners, and academics. Poverty is a multi-dimension, socio-economic and cultural situation which transcends economic description and analysis (Okuneye, 2001). To all agencies, poverty is not seen as simply lack of income or consumption but it includes deprivation in health, education, nutrition, security, power and others. Adeleke (2012) defined poverty as a condition characterized by severe deprivation of basic human needs including food, sanitation facilities, education, information, lack of income and productive resources. From the foregoing, definition, the measurement of poverty depends on community's understanding of the concept. According to Kale (2010), poverty is measured using four approaches in the country by the Harmonized Living Standard Survey. These four approaches give rise to relative poverty, absolute poverty, Dollar per day poverty and subjective poverty.

- i. **Relative poverty:** This is measured in terms of the living standard of the majority in a given society. Those living below the majority's living standard are said to be poor. It is computed by considering households with expenditure greater than two thirds of the total household per capital expenditure as non-poor, whereas those with below as poor (Abu, 2019). Accordingly, the relative poverty measurement gives room for sub-dividing poverty into-extreme poor (i.e. household with less than one third of total household per-capital expenditure and sometimes referred to as core-poor). Moderate poor (i.e. households with greater than one third of total household per capital expenditure but less than two third of total per capital expenditure) (Abu, 2019).
- ii. **Absolute poverty:** This is defined in accordance to basic need requirement. It includes households who cannot afford the minimal requirements necessary for food, clothing, health care and shelter. The absolute poverty measurement is sometimes known as food-energy-in-take measurement of poverty. It uses the per capital expenditure approach to compute the food expenditure that can give 3000 calorie per day based on the national food basket for the poorest 40 per cent (Ogwumike and Ekpeyong, 1995).
- iii. **Dollar Poverty:** This measure poverty in terms of World Bank's Purchasing Power Parity (PPP) index, simply known as dollar per day measurement. This approach defines poverty as living on less than One US dollar per day which is referred to as poverty line (Okuneye, 2001). This is the working definition of poverty in this study and the study use the annual rating (in percentage) of the total number of poor individuals in the economy as the measure of poverty in the analysis.
- iv. **Subjective poverty:** This refers to poverty defined based on individual opinion. This approach considers the respondents' opinion on whether they consider themselves to be poor or not (Obadan, 1997).

2.3 Theoretical Framework

The theoretical anchor or foundation for examining the taxation-poverty reduction nexus can be considered in the context of Adolph Wagner's Socio-Political Theory which advocated that social and political aims are the determining factors in selecting taxes (Alzada, 1929). Wagner did not believe in the individualistic approach to a problem. He wanted that each economic problem should be looked at in its social and political context and an appropriate solution found thereof. The theory argued that the society consisted of individuals, but was more than the sum total of its individual members. Accordingly, a tax system should not be planned to serve individual members of the society, but



should be used to remedy the ills of the society in general (Alzada, 1929). In other words, Wagner was promoting a contemporary welfare approach in developing and accepting a tax policy. Hence, his Socio-Political theory precisely advocates the use of taxation in reducing income inequalities, because tax revenues can be spent appropriately and accordingly in the economy to bridge the gap between the rich and the poor, and in-turn reduce or mitigate poverty in the economy.

2.4 Empirical Review

Nyenke and Amadi (2019) examined the relationship between taxation and inequality in Nigeria using error correlation mechanism to test for the relationship between taxation and poverty from (1980-2018). The study employed time-series secondary data sourced from CBN Statistical Bulletin and National Bureau of Statistics (NBS). Long-run relationship was tested using Johansen co-integration test and the result revealed that there is a long-run relationship between the variables. The result also revealed that there is a causal relationship between the variables estimated. The variables employed in the study were petroleum profit tax, per capita income, personal income tax, poverty proxied by Gini coefficient and company income tax. The study recommended that there should be introduction and proper implementation of luxury goods tax and the revenue generated from luxury taxes should be used to implement free education and medical service for low income earners to reduce poverty in Nigeria.

In a similar study but with a separate technique of analysis Anyaduba and Otulugbu (2019) in their study “Taxation and Income Inequality in Nigeria (1990-2016)” used co-integration and Error Correction Mechanism (ECM) in the analysis. The study employed time-series secondary data sourced from CBN Statistical Bulletin and National Bureau of Statistics. The study revealed that value added tax, custom and excise duties (CED) were not significant, Company Income Tax (CIT) had a negative relationship with GINI coefficient when measured at 5% critical level. Thus, they concluded that only Company Income Tax (CIT) was able to reduce income inequality in Nigeria.

In addition, Onuoha and Akintoye (2018) examined taxation as a veritable tool for wealth creation in Nigeria. The study adopted the ex post facto design. Time series secondary data covering 16 years between 2001 and 2016 were sourced from CBN Statistical Bulletin and National Bureau of Statistics and analyzed using inferential statistics and simple regression technique. The findings showed that total tax revenues have a significant effect on the GDP which was used as proxy for wealth creation. The implication of the conclusion is the strong need for more effective collection of the tax revenue and greater emphasis on efficient tax administration.

Furthermore, Maina (2017), in the study “The Effect of Consumption Taxes on Poverty and Income Inequality in Kenya” investigates how consumption taxes can be used to reduce poverty and promote income equality in Kenya. Secondary data on GDP, Taxes, Poverty rates and Gini were sourced from the Kenyan National Data Bank while Two-OLS models were estimated; one to show the effect of consumption on income inequality and the other to show how consumption taxes influence welfare through its effect on GDP per capita. The findings confirm that consumption taxes are regressive. Consumption tax is positively related to GDP per capita. The research recommends restricted use of differentiated rates. The differentiated rate should be well targeted to the poor; lower rates are to be applied on basic goods which the poor spend more of their income on compared to the rich. Taxes collected can be utilized to provide essential facilities targeting the poor, thus leading to poverty reduction.



In order to compare the experience of a different environment, taxation issues in the Ghanaian economy was examined. In this regard, the work of Adukonu and Abebrese was reviewed. Their study in 2016 examined “Relative Impact of Various Taxes on Poverty in Ghana”. This study investigates the effect of Ghana’s tax policies on poverty. Time series-secondary data on GDP, Taxes, and Poverty rate were sourced from the Ghanaian National Data Bank and the study employed the Johansen cointegration estimation techniques for the study period of 1984 to 2013. The results shows that increase in indirect tax policies worsen poverty level in Ghana. However, direct tax policies and remittances have mitigating effect on poverty. Considering the agrarian structure of the economy, reducing export taxes will promote activities in the export sub-sector, which may also contribute in mitigating poverty level.

Masiya (2016) in the study “Taxation, Inequality and Poverty in Sub-Saharan Africa: A Panel Data Approach” used tax data from the Government Revenue Database (GRD) and Poverty and Inequality figures from the World Bank. The study analyses 14 Sub-Saharan African economies from 1990 to 2010 using a regression model. The results revealed that the more progressive the tax system, the lower the income inequality and that the higher the tax effort, the lower the poverty levels. That is, the more the tax governments collect, the lower the poverty levels.

Joel and Adesoji (2016) extended the scope of their analysis to capture the “Fiscal policy – poverty reduction Nexus in Nigeria” using time series data from 1980 - 2011. The variables employed in their study were government capital expenditure, government recurrent expenditure, government budget and the rate of poverty in Nigeria sourced from CBN Statistical Bulletin and the NBS. The study used error correction mechanism to examine the short run relationship and to determine the relationship between the variables under review. Johansen Co-integration test was employed to check the long run relationship between the variable. The study revealed that there is a long-run relationship between the variables. The study thus recommends that government should intensify action in implementing effective fiscal policies to ameliorate the level of poverty conditions in Nigeria.

The scope and analysis of the above study differs from that of Ilaboya and Ohonba (2013) who examined the effect of direct versus indirect taxation and poverty against the backdrop of the huge disparity in societal wellbeing in Nigeria. The study was a country-specific approach using tax and macroeconomic data from CBN Statistical Bulletin and NBS for the period 1980 to 2011. They estimated the data using a combination of co-integration and error correction model. Preliminary diagnostic analysis using Ramsey RESET test, Breuch-Pagan-Godfrey, Granger causality test and Breuch-Godfrey test of serial correlation were carried out to check the accuracy of the model. It was established that the Nigerian tax system has helped to enhance the redistribution of wealth within the period covered, the ratio of direct to indirect tax was found to increase inequality even though the impact was insignificant at the 5% level. It was also discovered that tax burden helped to reduce the level of inequality since it exhibited a negative impact on poverty in Nigeria.

Also, Yusuf (2012), in his study “The impact of tax management on poverty alleviation in Kano State” examined the extent to which tax is managed in Kano state and its contributions towards economic growth of the state in terms of poverty reduction. The study used secondary data from the Kano State Internal Revenue Board and simple regression as a tool of analysis. The study found that tax management is strongly related to poverty alleviation. The study however concluded that both empirical and statistical evidences indicate that the relationship between tax management and the poverty alleviation is positive.



To grasp a good understanding of the mechanisms and functions of an ideal tax system vis-a-vis its impact on poverty, it is imperative to consider studies on tax and taxation conducted outside the shores of the African environment. In this regard, Iris, Martinez-Vazquez and Vulovic (2012) using data from 1970 to 2009 for Asian countries sourced from the World Development Indicator, examined government fiscal policies and redistribution of income. The study employed panel estimation and discovered that tax systems tend to be progressive but government expenditure seems to be a more effective tool for income redistribution. Personal income tax was found to have a negative impact on poverty in Asian countries. It was revealed that one percentage point increase in personal income tax in Asia reduced poverty by 0.573% compared to 0.041% point in the rest of the world. Corporate income tax was found to reduce inequality in the rest of the world but regressive in Asia. One percentage point increase in CIT was found to increase poverty by about 0.598% point in Asia.

In addition, Pestel and Seiglock (2011) examined the effect of United States tax reform on poverty by employing a decomposition approach which differentiated the mechanical effects and changes due to policy reforms. The study employed data from the US data bank and discovered that reforms during the democrat's administration had an equalizing effect at the lower half of the distribution. While Republican era reforms had a dis-equalizing effect which was attributable to tax cuts for high income households. They discovered that overall policy effect of the period covered was marginal.

Krever and Zhang (2011) also did a country-specific study using China and examined progressive income taxation and urban individual poverty. The study used secondary data sourced from the Chinese data bank and found that China had not been able to use income tax (personal income tax to effectively redistribute income). They concluded that it would be likely that significant reform of the personal income tax law and administration would be required for income tax to be meaningful on income redistribution in China.

Furthermore, Martinez-Vazquez, Vulovic and Liu (2010) conducted a study on the impact of direct versus indirect taxes on poverty for 116 developed, developing and transitional countries from 1972 to 2005. Secondary data were sourced from the World Development Indicators and the two-stage least square procedure was employed in the data estimation to control for potential reverse causality of some of the variables. The results suggested that the effect of tax ratio to poverty is a function of the size of the taxation system. In countries with small tax system, there was positive effect on poverty. But the effect was negative in countries with larger size taxation system. For the full sample studied, the tax mix had negative effect on the Gini coefficient thereby reducing poverty in countries with share of total tax to GDP larger than (0.29). For the sub-sample of developing countries, there was no statistically significant effect of tax mix on poverty. The result according to them conformed to existing evidence of low impact of tax systems on distribution of income for developing countries.

Duncan and Sabirianova (2008) equally examined whether poverty was affected by the structural progressivity of national income tax systems. They used a detailed personal income tax schedule sourced from World Development Indicators for a large panel of countries. They developed a comprehensive time varying measures of structural progressivity of national income tax systems over 1981 to 2005. The study found that while progressivity reduced observed disparity in reported gross and net income, it had a statistically significant smaller effect on the correct inequality estimated by consumer based measures of Gini coefficient. The study also indicated that in some conditions, tax productivity may improve actual poverty mostly in countries with weak law and order and large informal nontaxable sector.



Another important study was from Weller (2007) which examined the benefits of progressive taxation to economic growth and income redistribution using cross-country data from World Development Indicators covering a period of 21 years from 1981 to 2002. The study found that progressive income taxation may lead to a higher equitable income distribution, higher revenues, less financial and economic volatility and faster growth. The evidence according to Weller revealed an association with higher revenues and a more equitable distribution.

Saez (2004) also examined the efficacy of direct and indirect tax instruments in the redistribution of income both in the long-run and short-run. Secondary data from World Development Indicators on selected developed and developing economies of the world were employed and the study revealed that indirect taxation is sub-optimal and income redistribution could only be achieved through the use of direct taxation. The study concluded that in the long-run, direct income taxation should be preferred to indirect tax instruments to raise revenue and achieve redistribution of income.

Chu, Davoodi and Gupta (2000) also investigated income distribution, tax and government social spending policies in developing countries between 1980 and 1990. This study using secondary data from World Development Indicators reported that unlike industrialized countries, developing countries have not been able to use tax and transfer policies to effectively cut down on the level of poverty.

It is obvious that Nigeria is a highly populated economy where revenue from taxation has the potency of playing a significant role in alleviating poverty; however a careful review of the studies conducted in Nigeria from the above empirical literatures will reveal that the link between taxation and poverty reduction have been neglected over time. Most authors and studies tend to concentrate attention on the impact of taxation on income redistribution and inequality. Consequently, this study intends to fill this lacuna and bridge this literature gap by examining how taxation can impact the poverty reduction or alleviation objective of the Nigerian economy.

3.0 Methodology

3.1 Sources of Data

The data used in the study are time series secondary data sourced from Central Bank of Nigerian statistical bulletin, Federal Inland Revenue Service and the National Bureau of Statistics. The research data were collected for 30 years i.e 1990 - 2019. This period is justified because it witnessed several financial and tax policy reforms such as the Tax Policy and Administration Reforms of 2001, Tax Policy and Administration Reforms Amendment of 2004, National Tax Policy of 2012 etc

3.2 Model Specification

The relationship between the dependent and independent variables can be represented in the model below:

$$POV = f(PPT, CIT, PIT, CED, VAT) \quad (1)$$

This model was adopted from the work of Anyaduba and Otulugbu (2019) with some modifications.

The econometric form of the model is written as follows:

$$POV = \beta_0 + \beta_1 PPT + \beta_2 CIT + \beta_3 PIT + \beta_4 CED + \beta_5 VAT + \mu \quad (2)$$

Where; β_0 is the intercept term, β_1 - β_5 are estimated coefficients, POV represents poverty level, PPT is petroleum profit tax, CIT represents company income tax, PIT represents personal income tax. CED is custom and excise duties, VAT is value added tax, and μ is the random variable or stochastic error term. While PPT, CIT and PIT represent direct taxes, CED and VAT were used as the indirect taxes in the model.

4.0 Discussion of Results

4.1 Unit Root Test

The test tries to examine the property of the variables. It is used to test for the presence of unit root i.e. to check for the stationary of the variables. This test is carried out using the Augmented Dickey Fuller (ADF) test.

Table 1: Stationarity Test Result

Variables	ADF Statistics @ Level	Prob	ADF @ 1st Difference	Prob	Order of Integration
POV	-1.7156	0.4131	-4.9163***	0.0005	I(1)
PPT	2.7929	1.0000	-4.3609***	0.0019	I(1)
CIT	1.7793	0.9995	-4.1038**	0.0164	I(1)
PIT	-2.8638	0.1884	-2.8466*	0.0647	I(1)
CED	-4.9402***	0.0004	-	-	I(0)
VAT	-2.6724**	0.0909	-	-	I(0)

Note: *, ** and *** represents 1%, 5% and 10% levels of significance respectively

Source: Researchers' Computation, Using E-views 10

The result in Table 1 indicates that CIT, PPT, PIT and POV is stationery at first difference while CED and VAT is stationary at level. These stationarity is determined at 5% level of significance.

Table 2: ARDL Bound Test

Test Statistics				
F-Statistics		2.9405		
Critical Value Bounds				
Significance	10%	5%	2.5%	1%
I(0)	2.08	2.39	2.7	3.06
I(1)	3.00	3.38	3.73	4.15

Source: Researchers' Computation, Using E-views 10

Given the result of the unit root tests which shows that all the variables are not stationary at level, but instead a combination of I (1) and I (0) series, therefore the most appropriate test of co- integration is the Autoregressive Distributed Lag (ARDL) Bound Test of co-integration. This is employed for the model in this study. The null hypothesis indicates that, there is no long-run relationship between the dependent and independent variables. The decision rule is to reject null hypothesis when F-statistics of the test is greater than the critical value of lower bound at a chosen level of significance i.e (5% for this study). On the other hand, the null hypothesis is accepted when the F-statistics is less than that of the critical value of the lower bound. However, the result of the test indicates that the F-statistics of the variables is 2.9405 with 5% Critical Values of the Lower Bound as 2.39 and the Upper bound as 3.38 respectively. This shows that the F-statistics of 2.9405 is greater than the Critical Values of the lower bound but lower than the Upper bounds in the model. This implies the rejection of the null hypothesis, while the alternative hypothesis is accepted. Hence, the test shows that there is co-integration (long-run relationship) between Company Income Tax, Poverty Level, Petroleum Profit Tax, Personal Income Tax, Customs and Excise duties and VAT in Nigeria. Importantly, this implies that there is co-integration (long run relationship) between the variables in the study.

Table 3: Short-run Estimated Regression Result

Below is the estimation of the regression result using Auto regressive distributed lag model (ARDL). This model is adopted because the variables are stationary at different levels.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(PIT)	-3.249898	0.771625	-4.211756	0.0084
DLOG(PIT(-1))	-11.20777	2.110519	-5.310433	0.0032
DLOG(PIT(-2))	-6.282170	2.308905	-2.720844	0.0417
DLOG(CIT)	16.16096	3.669647	4.403956	0.0070
DLOG(CIT(-1))	11.10334	2.956502	3.755565	0.0132
DLOG(CIT(-2))	2.274328	3.002874	0.757384	0.4830
DLOG(CED)	-0.447069	0.238179	-1.877029	0.1193
DLOG(CED(-1))	-0.768746	0.282377	-2.722410	0.0417
DLOG(CED(-2))	-0.733521	0.248188	-2.955510	0.0317
DLOG(PPT)	2.171487	1.179272	1.841378	0.1249
DLOG(PPT(-1))	4.144089	1.028717	4.028405	0.0100
DLOG(PPT(-2))	4.321762	1.124349	3.843789	0.0121
DLOG(VAT)	161.4228	33.63765	4.798871	0.0049
DLOG(VAT(-1))	156.3511	43.13890	3.624364	0.0151
DLOG(VAT(-2))	63.14368	15.18012	4.159631	0.0088



CointEq(-1)*	-0.505604	0.075135	-6.729310	0.0011
R-squared	0.861184	Mean dependent var	0.272963	
Adjusted R-squared	0.671889	S.D. dependent var	2.882481	
S.E. of regression	1.651112	Akaike info criterion	4.128019	
Sum squared resid	29.98789	Schwarz criterion	4.895922	
Log likelihood	-39.72825	Hannan-Quinn criter.	4.356357	
Durbin-Watson stat	2.576035			

Source: Authors' compilation from E-view 10

Table 4: Long-run Estimated Regression result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(PIT)	-8.922967	5.344786	-1.669471	0.1559
LOG(CIT)	3.892996	6.130248	0.635047	0.5533
LOG(CED)	-0.854927	3.291402	-0.259746	0.8054
LOG(PPT)	0.421785	7.893841	0.053432	0.9595
LOG(VAT)	2.599019	72.81616	0.035693	0.9729
C	123.7040	811.6933	0.152402	0.8848

$$EC = POVR - (-8.9230*LOG(PIT) + 3.8930*LOG(CIT) - 0.8549*LOG(CED) + 0.4218*LOG(PPT) + 2.5990*LOG(VAT) + 123.7040)$$

Source: Authors' compilation from E-view 10

From the estimated results above, it is clear that Poverty Level is the dependent variable while Petroleum Profit Tax, Company Income Tax, Personal Income Tax, Custom/Excise Duties and Value Added Tax are the independent variables. The coefficient of the dependent variable when all the independent variables are held constant is given as 123.7040, this indicates a positive relationship between the intercept (β_0) and Poverty Level.

The intercept of the regression equation is 123.7040. It shows the level of poverty when each of the independent variables is equal to zero. It is positive indicating that Poverty Level is positive when each of the independent variable is equal to zero. This confirms the pre-existence of poverty in the economy regardless of the influence of the explanatory or independent variables.

The regression coefficient of Petroleum Profit Tax (PPT) at first difference is 4.1440. It shows that if Petroleum Profit Tax increases by 1%, Poverty Level increases by 4.1440; this is positive indicating that there is a positive relationship between Poverty Level and Petroleum Profit Tax. This implies that

the higher the Petroleum Profit Tax, the higher the Poverty Level in the country. This reflects reality in the Nigerian environment and could be evidenced in the fact that an increase in PPT will trigger and send signals to the economy in the form of increase in the price of premium motor spirit and other petroleum products. Such gesture no doubt have aggravated hardship and worsened poverty situations in the Nigerian environment overtime. This is similar to the findings of Anyaduba and Otulugbu (2019) where they observed that PPT had a direct relationship with income inequality in the Nigerian economy. Though, the PPT has a direct relationship with poverty level, it is statistically significant at 5% level of significance.

The regression coefficient of Company Income Tax is 16.1609. It shows that if Company Income Tax increases by 1%, Poverty Level increases by 16.1609. It is positive indicating that there is a positive relationship between Company Income Tax and Poverty Level. This implies that as the Company Income Tax increases, the level of Poverty also increase in the economy. This result reflects the apriori expectation in the Nigerian environment because most business ventures tend to transfer all forms of tax hike by the government to the general public in the form of increased prices of goods and services. This will adversely affect peoples' disposable income, deteriorate their purchasing power and in-turn worsens the already complicated poverty situation in the economy. This finding is contrary to the result of Anyaduba and Otulugbu (2019) where they revealed that only CIT was responsible for bringing down the level of poverty in their model. From the foregoing, CIT and poverty level are positively related and it is statistically significant at 5% level of significance.

The regression coefficient of Personal Income Tax (PIT) at first difference is -11.2077. It shows that if PIT increases by 1%, Poverty Level decreases by 11.2077; this indicates that there is a negative relationship between Poverty Level and PIT. This finding reflects the typical Nigerian environment where majority of those that are deemed or considered poor are unemployed, and as such cannot be levied PIT, since PIT is usually levied on incomes earned from employment. It is pertinent to highlight the fact that the few employed poor individuals in the economy earn income from non-regular informal sources that makes taxing them difficult. Consequently, the poor masses in Nigeria are indirectly and unintentionally exempted from paying PIT. This implies that an increase in PIT will impact the poor positively since it brings about redistribution of funds and revenue collected from the middle and high income earning class in the economy. Though PIT has a negative relationship with poverty level, it is statistically significant 5% level of significance with a probability value of 0.0032.

The regression coefficient of Custom and Excise Duties (CED) is -0.7335. It shows that if CED increases by 1%, Poverty Level decreases by 0.7335; this indicates that there is a negative relationship between Poverty Level and Custom/Excise Duties. Custom duties are taxes levied on imports and importation businesses. As expected in Nigeria, the poor masses do not consume the highly taxed luxury goods that are imported into the country. Consequently, the poor individuals contribute little or nothing to the revenue that makes up customs and excise duties in the economy. In this regard, an increase in custom and excise duty can only have a positive redistributive impact on the poor in the Nigerian economy. Though CED is negatively related to poverty level, it is statistically significant in leading to poverty reduction.

The regression coefficient of VAT is 161.4228. It shows that if VAT increases by 1%, Poverty Level increases by 161.4228; this is positive, indicating that there is a positive relationship between Poverty Level and Value Added Tax in the Nigerian economy. VATs are indirect taxes levied on goods and services, such taxes usually translate into higher prices for the goods and services concerned. Thus, an increase in VAT automatically translates to increase spending from individuals in the economy since goods and services will become more expensive. This will strain and negatively affect the poor in the



economy, thereby worsening their poverty situation. This confirms the findings of Anyaduba & Otulugbu (2019), and Adukonu & Abebrese (2016). VAT is statistically significant in aggravating poverty at 5% level of significance.

The cointegrating equation has a negative sign and a coefficient of -0.5056. This indicates that the model is statistically fit and that there exist a relationship between the dependent and independent variables of the study.

The coefficient of determination is 0.86. It shows that 86% variation in Poverty Level is caused by the variations in Petroleum Profit Tax, Company Income Tax, Personal Income Tax, Custom/Excise Duties and Value Added Tax. This implies that only 24% of the changes in Poverty Level in Nigeria are caused by other factors that are not included in the model. The Durbin-Watson statistic is 2.576. The Durbin-Watson statistic is greater than 2.0. This shows the absence of autocorrelation in the model.

The result of the long-run analysis indicates that PPT, CIT and VAT all had positive but insignificant effect or impact on poverty level judging from their respective probability values, while PIT and CED had negative and insignificant effects on the poverty rate in the economy.

5.0 Conclusion

This study examined the impact of taxation on poverty reduction in Nigeria over the period 1990-2019. The results signify that Petroleum Profit Tax, Company Income Tax and Value Added Tax have positive and significant relationship with Poverty Level in the country while Personal Income Tax and Custom/Excise duties have negative and significant relationship with poverty level in the country. The study which is aimed at ascertaining if taxation has any significant impact on poverty in the country over the years reveals that government's tax efforts and policies have no significant impact in reducing poverty in the Nigerian economy. Thus, it will suffice to conclude that taxation as a source of revenue is not effective for poverty reduction in the country.

Based on the findings above, the government can achieve poverty reduction by lowering PPT, CIT and VAT. This is imperative because these taxes directly impacts on the prices of goods and services in the economy. Consequently, there would be reduction in the prices of goods and services, thereby relieving the economic and financial strain of the poor individuals in the economy. Another complementary policy is for the government and relevant authorities to become more accountable by providing evidence of proper utilization of tax payers' fund. Such evidences must be visible in the form of proper amenities, good roads, and other infrastructural facilities. This will go a long way in reducing poverty by increasing employment and improving the opportunities for productive activities among the poor.

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