Effect of Tax Revenue on Unemployment Rate in Nigeria

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Abstract
Revenue generated from taxes is usually controversial, while some school of thought informed that taxes are revenue government spends on its citizens and should have a positive effect, others scholars believe that tax revenues withdraws income from the economy and thus the effect is negative. Some have concluded that the effect of tax revenue is insignificant. Therefore this study examined the effect of tax revenue on unemployment in Nigeria from the period between 1994 to 2020. Tax revenue was proxied by Corporate Taxes and Value Added Tax (VAT) and Customs and Excise Duties as independent variables and unemployment was proxied as the dependent variables. The study used Co-integration and Error Correction Model (ECM) to analysed the data. The finding show corporate taxes and Value Added Tax has a positive and significant effect on unemployment in Nigeria, while Customs and Excise Duties have a negative effect and significantly affect unemployment in Nigeria. The study recommends that government should reduce the rate of Corporate Tax on company from its current rate to 25 percent, as well as reduce VAT to 5 percent and CED payable on export duties on finished goods and import duties on raw materials. This would encourage investment, boast the profitability of manufacturing companies, minimize the tax burden on producer of finished goods, boost market competitiveness, increase tax compliance and create greater employment opportunities.
Keywords: Tax Revenue, Unemployment, Corporate Tax, Value Added Tax, Customs and Excise Duties, Nigeria

1. Introduction
Taxation was originally designed to generate revenue for public authorities and it has been in existence for ages. Government tax revenue is a major source of revenue for government. It is an important tool of fiscal policy of the government and the opposite of government spending. Under the influence of popular economic thought, governments now raise or lower taxes in order to prevent inflation, check business recessions, reduce unemployment and promote economic activity and growth. Tax is presumed to affect unemployment through its effects on capital investment (Ara & Tadas, 2017)

It is anticipated that when government cuts taxes especially for industries more funds are available to these industries and they are able to expand their operations. This would cause them to employ more thus creating a dent in the unemployment rate. Similarly when government reduces personal income tax, individual have more income to either spend or save. Spending this income would increase the aggregate demand level in the economy and therefore cause the economy to grow, which will boost employment. However, if the individual chooses to save the income coming from personal income tax, financial institutions would have surplus funds to lend to the deficit sector of the society this will also result in economic growth that will stimulate employment generation.

Globally, countries have employed taxes to reduce unemployment for instance during the 2008-2009 financial crisis that resulted in unemployment rate rising to 10% from 5% in the United States of America the Obama administration passed a $830 million expansionary policy in early 2009 involving both tax cuts and government spending this resulted in unemployment rate dropping from the end of 2009 and consistently fell till 2017. Similarly, during the 2008-2009 financial crisis the United Kingdom was not keen on pursuing an expansionary fiscal policy but because unemployment rate kept rising 7.6% in 2009 as against 5.3% in 2007, the UK government cut VAT and increased government spending. By early 2010 unemployment rate started slowing down. Looking at Nigeria today and the various tax reforms carried out in 2020 at a time when the Nigerian economy is faced with recession coupled with growing unemployment, the federal government has doubled its efforts to increase the revenue generated from taxes for instance Value Added Tax was increased from 5% to 7.5% in February 2020 (FGN Finance Act, 2020). Secondly, in November 2020 a progressive company's Income tax was introduced. Is it possible for these changes to negate the gains achieved? How has the tax policy adopted over the years affected unemployment rate in Nigeria? It is against this background that this study sets out to examine the effects of taxation on unemployment in Nigeria because understanding the impact is vital for a country in order to help facilitate responsible taxation policies.

Some studies have found that a decline in tax may alleviate unemployment and stimulate job creation (Chen, 2017; Ara &Tadas, 2017). Others have found that fiscal policy does not affect unemployment significantly (Athanasios, 2013; Brasoveanu, Brasoveanu & Paun, 2007). To this end the main objective of this study is to evaluate the effect of tax revenue on unemployment rate in Nigeria. The specific objectives include:

- To examine how Corporate Tax has affected unemployment rate in Nigeria
- To what extent has Value Added Tax affected unemployment rate in Nigeria
- To what extent has Customs and Excise duties affected unemployment rate in Nigeria

The study formulated the following hypotheses:

Ho1: Corporate tax has no significant effect on unemployment rate in Nigeria.

Ho2: Value added tax has no significant effect on unemployment rate in Nigeria.

Ho3: Customs and excise duties has no significant effect on unemployment rate in Nigeria.

2. Literature Review

2.1 Concept of Tax Revenue

According to Dalton (1935), tax revenue is a compulsory contribution imposed by a public authority, irrespective of the exact amount of service rendered to the taxpayer in return, and not imposed as penalty for any legal offence. His view suggested that tax is forcefully collected from the citizen and that no taxpayer pays tax willingly. Bofah (2003) further simplified taxes to mean the revenue that is collected by the government to provide services and finance themselves. This view however, did not state from whom the revenue is collected from.

In contrast to Bofah (2003), Dike (2014) elucidated more on the notion of taxes, and asserted that tax is a compulsory exaction from a taxpayer, either remitted in cash or in kind to the government to provide for the public services of common interest without particular regard to a particular benefit received by the taxpayer. In other words, the remittance is done individually, but the outcome of the services provided is enjoyed by all rather than giving specific benefits to a taxpayer.

If tax is levied directly on personal or corporate income, then it is a direct tax. If tax is levied on the price of a good or service, then it is called an indirect tax. Although, the purpose of taxation is to finance government expenditure.

2.1.1 Corporate Tax

Companies Income Tax (CIT) is a tax on the profits of registered companies in Nigeria. It also includes the tax on the profits of foreign companies carrying on any business in Nigeria. The CIT is paid by limited liability companies inclusive of the public limited liability companies. Resident companies are liable to corporate income tax (CIT) on their worldwide income while non-residents are subject to CIT on their Nigeria-source income. Corporate income tax is based on accounting profits adjusted for tax purposes (Adejare, 2015). The CIT rate is 35% for large companies, that is, companies with gross turnover greater than N100 million and it is assessed on a preceding year basis, thus, it is charged on profits for the accounting year ending in the year preceding assessment.

Exbrayat and Geys (2015) informed that government subsidies firm's high labour cost through lower corporate tax rates and the firms transfer their tax burden to their workers in form of lower wages. In contrary, Cottarelli (2012) asserted that corporate tax affect employment by reducing investment and production, and by reducing labour supply to the extent that firm pass on these taxes to employees in the form of lower wages. Meanwhile, Aras and Tadas (2016) pointed that evidence of increasing corporate tax rate may lead to increases in unemployment.

However, George-Anokwuru and Okowa (2021) opined that tax revenue from company income in Nigeria has not been efficiently and effectively used to provide infrastructural facilities and social amenities that will help the different sectors of the economy to function very well thereby reducing unemployment in the country

2.1.2 Value Added Tax

Value Added Tax is an indirect tax levied on goods and/or services as a percentage of their value added. According to Gupta, (2006), VAT was introduced as a revenue mobilization strategy to cover up the deficiencies experienced with the former sales tax because of its progressive nature. Government ability to adequately and effectively retrieve the proceeds from companies and other agents of collection remains a problem. VAT is a tax levied on the value added at various stages of sales. VAT is a consumption tax levied at each stage of the consumption chain borne by the final consumer of the product or services (Onodugo, 2013). Meaning in each stage, each person is required to charge and collect VAT at a flat rate on all invoice amounts, on all goods and services not exempted from paying VAT.

In Nigeria, Value Added Tax (VAT) was introduced in 1st September, 1993 and begin operational in 1st January 1994. The rate of VAT was increased from 5% to 7.5% as contained in the Finance Act, 2019 signed by Nigeria President and effective on 13 January 2020, included the VAT rate change. According to Okoli and Afolayan (2015), VAT is the incremental value which a producer using labour contributes to his raw materials of purchases before selling the processed goods or services. The producer can be a manufacturer, distributor or supplier of goods and services.

VAT has economic impact in consumption pattern in Nigeria. Aguwamba, Ughulu and Onovughakpo, (2018) asserted that VAT has positive impact on revenue generation in Nigeria. Thus, Onodugo (2013) opined that there should be judicious use of the proceeds of VAT and other forms of taxes because the tax-payers are watching out for areas of development to be properly addressed with the money they are paying. Anything contrary will de-motivate them from further payment.

2.1.3 Customs and Excise Duties
Customs duty is the tax charged most times on the value of goods or upon the weight, dimensions, or some other criteria that will be determined by the government on imports by the customs service of Nigeria to raise revenue for the country and also to save domestic and infant industries from cut-throat competition. It is a duty that is applied selectively on particular commodities such as tobacco, cigarettes and alcohol in order to compel the users of the excisable commodities to internalize the externalities associated with the commodities, and it is also charged for revenue purposes (Okello, 2001).

Customs and excise duties are the oldest forms of modern taxation and are otherwise known as import duties which are charged either as a percentage of the value of import or a fixed amount on specific quantity (Fasoranti, 2013). Customs duties in Nigeria are the oldest form of modern taxation. It is dated back to 1860 known as import duties, which represents taxes on imports into Nigeria, charged either as a percentage of the value of imports or as a fixed amount of contingent on quantity. Import duties are the country's highest yielding indirect or expenditure tax.

Custom and Excise Duty that has the potential of diversifying the revenue portfolio for the country to promote fiscal sustainability and economic growth (Azaiki & Shagari, 2007). It is used to discourage consumption of harmful goods.   There has been a determined effort by the government at diversifying the export base from the traditional oil exports towards giving impetus to the non-oil export sector and bolstering value-added. Inyiama and Ubesie (2016) opined that Customs and Excise Duties is among major revenue contributors to Nigeria Gross Domestic Product.

2.1.4 Unemployment
The Central Bank of Nigeria (2017) defined unemployment rate as the percentage of persons among the labour force (15-65 years) excluding students and those medically unfit, who are available for work but could not secure work. Unemployment can also refer to the situation of persons working zero hours and earning zero income. Unemployment occurs when a person who is actively searching for employment is unable to find work. According to the Organisation for Economic Co-operation and Development (OECD) is persons above a specified age (usually 15) not being in paid employment or self-employment but currently available for work during the reference period. However, the International Labour Organization (ILO, 2020) are of the opinion that unemployed people are those without a job, have been actively seeking work in the past four weeks and are available to start in the next two weeks or those out of a job and are waiting to start in the next two weeks.

2.2 Empirical Review
2.2.1 Government Tax Revenue and Unemployment
A number of studies have focused on the relationship between fiscal policy tools and employment rate as well as unemployment rate in developed and developing countries. Anyanwu (1997) investigated the effect of taxes on unemployment rates in Nigeria between 1981 and 1996. Using data on taxes and unemployment rates during the period of study and the results of his log-linear regression reveal a positive relationship between taxes and inflation rate, but with insignificant coefficient. Based on this result, his findings reveal that different taxes affect Nigeria's unemployment rate for the different period between 1981 and 1996. He concluded that taxes vary negatively with unemployment, and with the coefficient of unemployment being insignificant.

Similarly Adesola (2013) studied the effect of government taxes on Nigeria's unemployment rate using the weighted least square regression techniques. However his study differs from Anyanwu (1997) because tax was disaggregated. The findings showed that there exist a positive significant relationship between unemployment, company income tax and custom, and excise duty, while a negative significant relationship exists between unemployment, petroleum profit tax and value added tax.

More so, Aras and Tadas (2017) study the effect of corporate taxation on unemployment utilizing a dynamic panel covering 41 countries over 11 years. The purpose of this article is to investigate how changes in the corporate income tax affect unemployment. A system general method of moments (GMM) was employed due to peculiarities of the data set and the endogeneity issues present in the research problem. It was discovered that a rise in the effective average corporate tax rate significantly increases unemployment levels, which directly contradicts past findings of some seminal authors. Besides, the present research supports the findings of past studies on capital tax elasticity that obtained similar insights using differing methodologies. This research lays the groundwork for future studies, which may take the same methodology and apply it to even larger

international panels. This research implies that international tax competition is affecting unemployment, presumably through its effects on international capital investment. These results provide support for policymakers who may be wary of raising corporate tax rates in countries where capital is especially mobile because of the negative effects which may accumulate to the voting public in the form of unemployment.

Also Sehrish, Nazish, Khalid, Saiqa, Adeela, Aqil and Zahid (2012) investigated whether fiscal policy may have an implication on price volatility or not? The study further evaluates the short- and long-run implications of fiscal deficit and reserve money supply on price level in Pakistan. Dynamic short-run causality effects of fiscal deficit and seignorage towards price stability are also investigated in this study. Data was analyzed by the autoregressive distributed lag model for 1980-2010. The result indicates that if there is a one percent increase in the budget deficit, the price level increases by up to 0.11 percent, which shows that high fiscal deficit affecting inflationary expectations in the long-run. The result of the short-run causality test indicates that causality running from money supply to price level in Pakistan. The overall implication of the fiscal deficit on inflation operates through both increases in aggregate demand as well as associated growth in broad money. Thus, the role of money in inflation becomes obvious, but that process is largely conditioned by the fiscal deficit.

The effect of government taxes on Nigeria's unemployment rate using the weighted least square regression techniques was investigated by Adesola (2013). The findings showed that a positive relationship exists between unemployment, company income tax and custom, and excise duty, while a negative relationship exists between unemployment, petroleum profit tax and value added tax. This study failed to consider other fiscal policy measures other than taxes and the result contradict similar research, thus gap exist.

In contract to above empirical review, Asagunla and Agbede (2018) examine the contribution of the oil and tax revenue to Nigerian output growth and its effect on unemployment rate for the period of 1981 to 2014. Using Beghebo and Atima model with little modification, the study employed the fully modified ordinary least squared method (FMOLS) to examine the relationship. Data covering the period 1981-2014 were sourced from the Central Bank of Nigeria Statistical Bulletin and Nigerian National Petroleum Corporation Statistical Bulletin. The study discovered that oil revenue does not have a short-run impact on the economic activities of Nigeria, but, the long-run impact of this policy gave a sterling story, as it was revealed that the persistence rise in oil revenue will ultimately lead to the future economic growth of the country.

The effect of government tax revenue on unemployment was investigated by Ironkwe and Agu (2019). The study covered the period of 1986-2016. The main objective of the study is to investigate the relationship between total tax revenue on economic growth in Nigeria focusing on unemployment rate. The study used government tax revenue and unemployment as the variables for the study. Methodology used was multiple regression analysis in analysing the data with the aid of Stata version 13. The study found that there is significant positive relationship between total tax revenue and unemployment in Nigeria. The study concludes that total tax revenue relates positively to unemployment and recommends that the government should distribute its social welfare programmes in such a way to provide direct benefit to taxpayers. This makes them believe that the portion of their hard-earned money paid as taxes is being effectively utilised by the government. The tax official needs improvement through adequate training and provision of suitable working materials and facilities. The time frame for the study was outdated because it supposed to stop at 2018. There is gap in current study that intend to disaggregate tax revenue tools for corporate tax, VAT and customs and excise duties as a means of controlling unemployment rate in Nigeria using data from 1994 to 2019.

2.3 Keynesian Economic Theory of Employment

This postulation was advanced by Maynard Keynes in 1936. The theory of Keynes was against the belief of classical economists that the market forces in capitalist economy adjust themselves to attain equilibrium. He has criticized classical theory of employment in his book. Vie General Theory of Employment, Interest and Money. Keynes not only criticized classical economists, but also advocated his own theory of employment.

The Keynes theory of employment was based on the view of the short run which assumed that the factors of production, such as capital goods, supply of labour, technology, and efficiency of labour, remain unchanged while determining the level of employment. Therefore, according to Keynes, level of employment is dependent on national income and output. In addition, Keynes advocated that if there is an increase in national income, there would be an increase in level of employment and vice versa. Therefore, Keynes theory of employment is also known as theory of employment determination and theory of income determination.

3. Methodology

This study used *Ex-post facto* research design because it examined the implications of taxation on unemployment rate in Nigeria from 1994-2020. The choice of this research design is based on the fact that this study examined the cause and effect relationship where cause already exists in the form of data in legally established government agencies and could not be manipulated. Secondary data was collected from the Central Bank of Nigeria Statistical Bulletin (2020), and unemployment rate data was sourced from the National Bureau of Statistics (NBS,

2020) for 26years. These sources of data collection have been proven to minimized bias and maximized the reliability of the evidence collected. It is also permanent and available in a form that can be cross-checked and open to public scrutiny.

The study adopted descriptive and analytical econometric methods of data analysis, include Normality Test, Unit Root Test, Co-integration Test and Walt test.

The Augmented Dickey-Fuller (ADF) test was used to test for stationarity. The ADF handles bigger, more complex models. It does have the downside of a fairly high Type I error rate. The ADF tests the null hypothesis that $|\rho| = 0$ against an alternative that $|\rho| < 0$ in the autoregressive equations:

$$\Delta y_t = \alpha + \beta_t + \rho y_{t-1} + \sum_{i=1}^{k} \delta_i \Delta y_{t-1} + \mu_t \; - - - \; (1)$$

Where: y_t is the time series under consideration, μ_t is pure white noise error, t is trend, β_t is drift and $\delta = \rho - 1$, the number of lagged difference terms to include is often determined empirically, the idea being to include enough terms so that the error term is serially uncorrelated. If the null hypothesis that $\delta = 0$ is rejected, it means the series is stationary. Unfortunately, under the null hypothesis that $\delta = 0$ (i.e., $\rho = 1$), the t value of the estimated coefficient of does not follow the t distribution even in large samples; that is, it does not have an asymptotic normal distribution.

3.1 Model Specification
The Auto-regressive Distributive Lag (ARDL) bound test model was used in analyzing the data to determine the short run and long run effect of taxation on unemployment in Nigeria. ARDL is preferred when the different time series exhibit cointegration at different levels. The robustness of the results of the ARDL was be examined using diagnostic tests such as serial correlation, normality, and heteroscedasticity tests. The results of these tests indicated the accuracy and reliability of the functional form of the models estimated.

$$\Delta lnUNPt = \partial_0 + \partial_1 lnCT_{t-1} + \partial_2 lnVAT_{t-1} + \partial_3 lnCEDT_{t-1} + \sum_{t=1}^{k} \gamma_{1i} \Delta lnCT_{t-1} +$$
$$\sum_{t=1}^{k} \gamma_{2i} \Delta lnVAT_{t-1} + \sum_{t=1}^{k} \gamma_{2i} \Delta lnCEDT_{t-1} + \varepsilon_t \qquad \ldots\ldots$$

……………………… (2)

Where:
- k = lag length for the Unrestricted Error-Correction Model (UECM)
- Δ = first differencing operator
- ε = white noise disturbance error term
- UNP = Unemployment Rate (Dependent Variable)
- CT = Corporate Tax (Independent Variable).
- VAT = Value Added Tax (Independent Variable).
- CEDT = Customs and Excise Duties (Independent Variable).
- t = Time series (Annual) values.
- B_0 = Represents the constant or intercept on Y axis.
- $B_1 ... \beta_2$ = Regression coefficients to be estimated
- ∂_0 = intercepts
- $\partial_1, \partial_2, \partial_3,$ = coefficient parameters to be estimated

3.2 Variable Description and Measurement
Description of the variables involves describing how the variables will be measured and studies that supported this stance.

Table 1

Variable	Source	Supporting Studies
Unemployment Rate (UNP)	National Bureau of Statistics bulletin (2020)	Onodugo, Obi Anowor, Nwoye and Ofoegbu (2017), Abomaye-Nimembo and Inimino (2016)
Corporate Tax	Central Bank of Nigeria bulletin (2020)	George-Anokwuru and Okowa (2021); Aras and Tadas (2017)
Value added tax	Central Bank of Nigeria bulletin (2020)	Anichebe (2019), Aguwamba, Ughulu and Onovughakpo, (2018)
Customs and Excise Duties	Central Bank of Nigeria bulletin (2020)	Inyiama and Ubesie (2016)

Source: Authors Computation, 2021

3.2.1 Data Analysis

Table 2: Unit Root Test Results

Variable	Order of Integration	ADF Test Statistics	Critical ADF Test Statistics
CT	I(1)	-4.319924**	-3.622033
VAT	I(1)	-3.642255*	-3.622033
CED	I(1)	-5.831022*	-4.394309
UNP	I(0)	-3.255810***	-3.243079

Note: The tests include intercept with trend; *, ** *and* *** *implies significant at 1%, 5% and 10%*
Source: Authors Computation, 2021 (Eviews-10)

From Table 2, it could be observed that three variables, CT, VAT and CED were found to be stationary at first difference, that is, they are integrated at order one {I(1)} and at 5%, 1% and 10% levels of significance. At this order of integration, their ADF test statistics, -4.319924, -3.642255 and -5.831022 were greater than the critical test statistics of (-3.622033, -3.622033, and -4.394309) at 1% significant level respectively. However, UNP was found to be stationary at levels; that is integrated at order zero and at 10% level of significance. Since all the variables were found to be stationary at different orders, it was safe for the study to employ ARDL bound test approach to validate or test for the presence of Co-integration.

ARDL Bound Test
Having established that the series in the analysis are not stationary in their levels and are characterized by a unit root process, we move on to determine if they are cointegrated. The cointegration test is based on the argument that if time series have a unit root and are cointegrated, then a long-run relationship exist between a linear combination of such series. The Bounds-Test method is employed in the cointegration test. The result of the Bounds Test cointegration test is reported in Table 3.

Table 3: ARDL Bound Test for Co-integration

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance	I(0)	I(1)
F-statistic	4.14030	10%	2.37	3.2
K	3	5%	2.79	3.67
		1%	3.65	4.66

Source: Author's computations (2021), using Eviews-10

The F-statistic value of 4.14030 is greater than the lower (I(0)) and upper bound (I(1)) critical values at the 5% significance stage, according to the results of the co-integration test. At the 5% significance mark, the null hypothesis of no long-run relationship is thus rejected. As a consequence, the variables can be considered to be co-integrated; and as a result, tax revenues and unemployment rates in Nigeria have a long-run co-integrating relationship.

Table 4: ARDL Error Correction Model (ECM) Result

Variable	Coefficient	t-Statistic	Prob.
DLOG(UNP(-1))	0.128761	1.97878	0.0508
DLOG(CT)	-0.27589	-2.60521	0.0395
DLOG(CT(-1))	-0.20762	-2.35631	0.0029
DLOG(VAT)	-0.27059	-2.49178	0.0335
DLOG(VAT(-1))	0.306074	1.58454	0.0718
DLOG(CED)	-1.10013	-2.82283	0.0181
DLOG(CED(-1))	0.642812	1.82682	0.0977
ECT(-1)*	-0.91443	-5.38658	0.0003
R-squared	0.793188	F-statistic	11.05619
Adjusted R-squared	0.689782	Prob(F-statistic)	0.001544
Durbin-Watson stat	1.598551		
Lon-run Results			
Variable	**Coefficient**	**t-Statistic**	**Prob.**
LOG(CT)	0.36622	2.39753	0.0153
LOG(VAT)	0.31843	2.25584	0.0183
LOG(CED)	-0.04687	-2.06504	0.0494
C	2.84858	1.99319	0.0525

Source: Authors Computation, 2021 (Eviews-10)

The one period lagged Error Correction Model (ECM) is negative, less than unity and statistically significant at 5% as shown in Table 4. The ECM coefficient value of -0.9144 revealed that once there is disequilibrium in the system, it takes an average (annual) speed of 91.44 percent to restore a long-run relationship between the tax revenue and unemployment. The implication of this is that, once there is disequilibrium in the system, it takes an average speed of 91.44% to adjust itself back towards long-run equilibrium level as captured in Table 4.

The coefficient of determination (R-square), which was used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction. It showed that 79.31 percent changes in unemployment rates were collectively due to CT, VAT and CED while 20.69 percent unaccounted variations were captured by the error term.

The model also indicated that there is no autocorrelation among the variables as indicated by Durbin Watson (DW) statistic of 1.59855 (which fell within the acceptable range of 1.5 and 2.4). This showed that the estimates were unbiased and can be relied upon for policy decisions.

The long-result showed that corporate tax (with coefficient value of 0.36622) and value added tax (with associated coefficient value of 0.31843) had positive and significant relationship with unemployment rates in Nigeria. However, customs and excise duties were found to have negative, but significant relationship with unemployment rates in Nigeria as shown in Table 4.

Walt Test

Table 5: Hypothesis 1

H_{01}:   Corporate tax has no significant effect on unemployment rate in Nigeria.

Test Statistic	F-Value	Df	Probability
F-statistic	4.648227	(2, 17)	0.0245
Chi-square	9.296455	2	0.0096

Source: Authors Computation, 2021 (Eviews-10)

The Wald-test in Table 5 indicated that the calculated F-value for Corporate tax is 4.648227 and its probability value is 0.0245. Since the probability value is less than 0.05 at 5percent level of significance, it thus falls in the rejection region and hence, the first null hypothesis (H_{01}) was rejected. The result thus shows that corporate tax has a significant effect on unemployment rate in Nigeria.

Table 6: Hypothesis 2

H_{02}: Value added tax has no significant effect on unemployment rate in Nigeria

Test Statistic	F-Value	Df	Probability
F-statistic	3.216824	(2, 17)	0.0453
Chi-square	6.433649	2	0.0401

Source: Authors Computation, 2021 (Eviews-10)

Furthermore, from the Wald-test result in Table 6, the calculated f-statistic value of value added tax and unemployment rate in Nigeria was found to be 3.216824 and its probability value is 0.0453. The probability value is less than 0.05 using 5% confidence level. It thus falls also in the rejection region and hence, we reject the second null hypothesis (H_{02}) and conclude that value added tax has a significant effect on unemployment rate in Nigeria.

Table 7: Hypothesis 3

H_{03}:   Customs and Excise Duties has no significant effect on unemployment rate in Nigeria

Test Statistic	F-Value	Df	Probability
F-statistic	4.234359	(2, 17)	0.0322
Chi-square	8.468718	2	0.0145

Source: Authors Computation, 2021 (Eviews-10)

The Wald-test in Table 6 indicated that the calculated F-value for Customs and Excise Duties was found to be 4.234359 and its probability value is 0.0322. Since the probability value is less than 0.05 or 5percent level of significance, and fell in the rejection region, the study rejects the third null hypothesis (H_{03}) and conclude that customs and excise duties have a significant effect on unemployment rate in Nigeria.

Diagnostic Test

Table 8: Robustness (Test) Results

Tests		Outcomes		
	Statistic	Coefficient	Probability
Breusch-Godfrey-Serial-Correlation Test	F-stat.	0.361263	0.7076
Heteroscedasticity- Breusch-Pagan-Godfrey Test	F-stat.	2.103780	0.1259
Normality Test	Jarque-Bera	0.257697	0.8792

Source: Authors Computation, 2021 (Eviews-10)

The ARDL model result as presented in Table 8 revealed that there were no evidences of serial correlation and heteroskedasticity in the estimated ARDL model as the p-values of both (0.7076 and 0.1259) were found to be greater than 0.05 or 5percent. Furthermore, Jarque-bera test for normal distribution revealed that the result attained a normal distribution with a bell-shaped symmetrical distribution at 5percent significance level. This was captured by the Jarque-bera probability value of 0.8792 and found to be greater than 0.05.

4. Discussion of Findings

The study findings revealed that corporate taxes have a positive and significant effect on unemployment rate in Nigeria as valided in Onakoya and Afinitinni (2016). The implication of this result is that the higher the corporate tax rates, the higher the level of unemployment in Nigeria. An increased corporate tax reduces the revenues generated by corporate organizations leading to a reduction in marginal profits and increased unemployment rates.

In additional, the findings of the study indicated a positive relationship between value added tax (VAT) and Unemployment rate in Nigeria as seen on Apere and Durojaiye (2016). The effect of value added tax on unemployment is also significant. As a result of this finding, changes in the value added tax exacerbate the country's unemployment rate. In principle, the burden of value Added Tax should fall on final customers because they are the ones that pay the tax. In a developing country like Nigeria, the informal economy and tax evasion are common; and as a result, some businesses find it difficult to completely pass the tax burden to the customer. In other words, the responsibility is ultimately borne by the manufacturers. This leads to higher production costs and a negative impact on employment growth. As a result, rises in value added tax revenue result in a rise in the unemployment rate. The steady increase in the amount of revenue raised by value added tax each year has contributed significantly to the country's rising unemployment rate. This is in-line with Adegbie and Fakile (2011) whose findings revealed that there is an insignificant relationship between tax and Nigerian economic development; and that high tax rates are the major hindrances to output growth in Nigeria and rising unemployment rates in the country.

The study however showed that customs and excise duties have a negative but significant effect on unemployment rate in Nigeria as valided by Akhor (2016). This means that as customs and excise duties increase, unemployment rate falls. The implication of this result is that, increased taxation on imported finished goods, encourages local manufacturing activities which stimulates employment generation. As such, as imports are discouraged through high import duties and a reduced export duty, unemployment rate reduces.

5. Conclusion and Recommendations

The study appraised the impact of tax revenues on unemployment rates in Nigeria. Despite successive government's efforts at redressing structural imbalances in the economy, national unemployment rate was discovered to have grown from 11.9 percent in 2005 to 19.7 percent in 2009, 23.1 percent as at 2018; and 33.3 percent in 2020. The relatively high rates of taxes as well as the existence of multiple taxes may have driven up the cost of doing business thereby leading to a decline in the rate of employment. To investigate this, the study applied ARDL technique on time series data on the components of tax and unemployment rates. Based on the findings, the study concludes that tax revenues have a significant impact on unemployment rates in Nigeria. It showed that rising taxes especially via value added tax and corporate tax rates have led to increasing unemployment rates witnessed in the country.

Based on the findings, the following recommendations were made:

- The study recommends that there is the need for the Government to reduce the rate at which corporate tax is levied to boost profitability of the manufacturing firms and reduce unemployment rates in the country. A marginally reduced corporate tax rates to 25% will encourage investments, create greater employment opportunities and increase tax compliance.
- There is the need to reduce the rate of value added taxes to 5% from current rate of 7.5% and other multiplicity problems associated with it. The value added tax system should be generally restructured so as to avoid been a burden on its payers, especially the producers of finished goods who have the capacities to

create employment opportunities for the unemployed. The management, administration and implementation of value added tax in Nigeria should be done in such a way that it will not hinder investment and employment in the country.

- More so, in order to reduce costs of Nigerian manufacturers, and make their products more competitive, government should reduce export duties on finished products and that of import duties of raw materials to a barest minimum (where this would not conflict with international / regional obligations, such as ECOWAS commitments). This will encourage the production of both intermediate and finished goods and develop the Nigerian economy targeted towards job creations and employment generations.

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Appendix 1

Table A: Data Presentation

YEARS	UNEMPOLYMENT RATE	CORPORATE TAX	CUSTOMS AND EXCISE DUTIES	VALUE ADDED TAX
Years	UNP	CT	CED	VAT
1994	3.20	12274.80	18294.60	7260.80
1995	1.90	21873.30	37364.00	20761.00
1996	2.80	22000.00	55000.00	31000.00
1997	3.40	26000.00	63000.00	34000.00
1998	3.50	33315.30	57683.00	36867.70
1999	17.50	46211.20	87906.90	47135.80
2000	18.10	51147.40	101523.60	58469.60
2001	13.70	68700.00	170600.00	91800.00
2002	12.20	89104.00	181400.00	108600.00
2003	14.80	114800.00	195500.00	136400.00
2004	11.80	113000.00	217200.00	159500.00
2005	11.90	140300.00	232800.00	178100.00
2006	12.30	244900.00	177700.00	230400.00
2007	12.70	327000.00	241400.00	301700.00
2008	14.70	416800.00	281300.00	404500.00
2009	19.70	568800.00	297500.00	468400.00
2010	21.10	657300.00	309200.00	562900.00
2011	15.80	700500.00	438300.00	649500.00
2012	16.20	848600.00	474900.00	710200.00
2013	16.70	985500.00	433600.00	795800.00
2014	17.10	1207300.00	566200.00	794200.00
2015	17.60	1029100.00	546200.00	778700.00
2016	18.00	988400.00	548800.00	811000.00
2017	18.50	1206300.00	628000.00	967700.00
2018	23.10	1429900.00	705500.00	1097400.00
2019	23.42	1637200.00	837300.00	1175900.00

Source: CBN (2019); NBS, 2020

Appendix 2

Null Hypothesis: D(CED) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 0 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.831022	0.0004
Test critical values:	1% level	-4.394309	
	5% level	-3.612199	
	10% level	-3.243079	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: D(CT) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.319924	0.0122
Test critical values:	1% level	-4.416345	
	5% level	-3.622033	
	10% level	-3.248592	

*MacKinnon (1996) one-sided p-values.

Null Hypothesis: UNP has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.255810	0.0977
Test critical values:	1% level	-4.394309	
	5% level	-3.612199	
	10% level	-3.243079	

*MacKinnon (1996) one-sided p-values.

Appendix 3

Null Hypothesis: D(VAT) has a unit root
Exogenous: Constant, Linear Trend
Lag Length: 1 (Automatic - based on SIC, maxlag=5)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.642255	0.0481
Test critical values:	1% level	-4.416345	
	5% level	-3.622033	
	10% level	-3.248592	

*MacKinnon (1996) one-sided p-values.

Appendix 4
ARDL Error Correction Regression
Dependent Variable: DLOG(UNP)
Selected Model: ARDL(2, 2, 2, 2)
Case 2: Restricted Constant and No Trend
Date: 03/28/21   Time: 14:29
Sample: 1994 2019
Included observations: 22

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(UNP(-1))	0.128761	0.065071	1.97878	0.0508
DLOG(CT)	-0.27589	0.105899	-2.60521	0.0395
DLOG(CT(-1))	-0.20762	0.088113	-2.35631	0.0029
DLOG(VAT)	-0.27059	0.108594	-2.49178	0.0335
DLOG(VAT(-1))	0.306074	0.193163	1.58454	0.0718
DLOG(CED)	-1.10013	0.389724	-2.82283	0.0181
DLOG(CED(-1))	0.642812	0.351875	1.82682	0.0977
CointEq(-1)*	-0.91443	0.169761	-5.38658	0.0003

R-squared	0.793188	Mean dependent var	0.087719
Adjusted R-squared	0.689782	S.D. dependent var	0.368654
S.E. of regression	0.205330	Akaike info criterion	-0.053110
Sum squared resid	0.590245	Schwarz criterion	0.343633
Log likelihood	8.584212	Hannan-Quinn criter.	0.040350
F-statistic	11.05619		
Prob(F-statistic)	0.001544		
Durbin-Watson stat	1.598551		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.145030	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

Appendix 5

ARDL Long Run Form and Bounds Test

Dependent Variable: DLOG(UNP)

Selected Model: ARDL(2, 2, 2, 2)

Case 2: Restricted Constant and No Trend

Date: 03/28/21   Time: 14:28

Sample: 1994 2019

Included observations: 22

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(CT)	0.366225	0.152748	2.39753	0.0153
LOG(VAT)	0.318426	1.141156	2.25584	0.0183
LOG(CED)	-0.046872	0.022697	-2.06504	0.0494
C	2.848588	1.429160	1.99319	0.0525

EC=LOG(UNP) - (0.3662*LOG(CT) -0.3184*LOG(VAT) -0.0469*LOG(CED) + 2.8486)

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	4.145030	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
			Finite Sample: n=35	
Actual Sample Size	22			
		10%	2.618	3.532
		5%	3.164	4.194
		1%	4.428	5.816
			Finite Sample: n=30	
		10%	2.676	3.586
		5%	3.272	4.306
		1%	4.614	5.966

Appendix 6

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.361263	Prob. F(2,8)	0.7076
Obs*R-squared	1.822361	Prob. Chi-Square(2)	0.4020

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.103780	Prob. F(11,10)	0.1259
Obs*R-squared	15.36181	Prob. Chi-Square(11)	0.1665
Scaled explained SS	3.402724	Prob. Chi-Square(11)	0.9843

Appendix 7
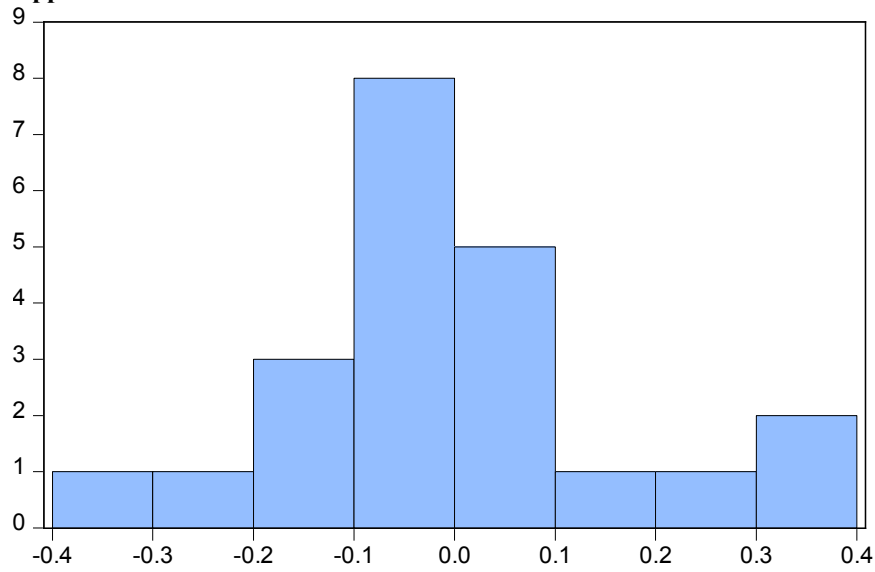
Series: Residuals	
Sample 1998 2019	
Observations 22	
Mean	-2.22e-15
Median	-0.006064
Maximum	0.349499
Minimum	-0.351694
Std. Dev.	0.167651
Skewness	0.255117
Kurtosis	3.144172
Jarque-Bera	0.257697
Probability	0.879107