INDIRECT TAX COMPONENTS AND ECONOMIC GROWTH OF SELECTED AFRICAN COUNTRIES: PANEL AUTOREGRESSIVE DISTRIBUTED LAG APPROACH

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ABSTRACT

This study tries to assess the causal link between components of indirect tax namely Value added tax and Custom and Excise Duties and economic growth measured using Real Gross Domestic Product. The study used panel data drawn from six (6) selected African countries namely Nigeria, Ghana, South Africa, Kenya, Egypt and Morocco from 2000 to 2018. These are countries within the African region that has a robust economy, broad gross domestic product and modernized business environment. Secondary data used were generated from World Bank World Development indicator, OECD data base on tax revenue in Africa and Central Bank of Nigeria. Quadratic match –Sum procedure was adopted in converting the annual data into quarterly data from E-views and the data are in their natural logarithm. Different econometric techniques were applied in the study while the data was analyzed by means of Autoregressive Distributed Lag (ARDL) Model using E views 10 and Stata version 16 packages. The study revealed that custom and excise duties had a positive and significant relationship with economic growth of selected African countries in the long run, while there is a positive but insignificant influence of custom and excise duties on economic growth of these countries in the short run. Also, the findings showed that there is no significant influence of Value added tax (VAT) on real GDP of the selected African countries in the long run; while Value added tax exhibited a positive though insignificant influence on real GDP in the short run in these countries. The study recommends among others that a conducive environment for entrepreneurship, tax incentives, and innovation must be offered, as well as job opportunities in order to increase these countries' revenue bases, particularly through business and also these countries' government should expand, nurture and sustain their value added tax and other tax bases in order to continue to support positive economic growth.

Introduction

Taxpayers in most African countries have not experienced the benefits of paying taxes in recent years. This situation places the efficient use of tax income by relevant government employees in carrying out their principal obligations and additional functions in doubt (Mattew, 2014). Government responsibilities continue to grow as the population grows and infrastructure deteriorates as a result of technological advancement, but government revenue continues to dwindle, forcing governments

to look for new ways to increase revenue, particularly in countries where the majority of their revenue comes from crude oil, whose prices have generally fallen, affecting the country's economy.

Taxation especially in the area of Custom and excise duties and VAT has long been viewed as a source of revenue for the government's day-to-day operations, causing the goal of taxation to be linked to the functions of government (Akhor, 2016). These taxes are primarily collected to fund government spending and equitable wealth transfer, which in turn helps to fund the country's growth (Worlu, 2012). For the period 2000 to 2018, the contribution of Custom and excise duties and VAT to the growth of African economies as measured by their contributions to Gross Domestic Product (GDP) ranged from 0.7 percent to 8.8 percent across the countries studied (Revenue statistics in Africa, 2020).

A lot of literature on these tax revenues and growth of the economy exist, but most of it is focused on a single country (Abomaye, Michael &Friday, 2018; Francis,Ochuko & Ardi, 2018; Onakoya & Afintinni, 2016; Mattew, 2014; Nyamadi,2014; Dladla & Khobai, 2018; Rudolf,2014 and Ugwunta & Ugwuanyi, 2015). The inconsistent results on the causal link between these revenues from indirect tax and economic growth has sparked a lot of discussion and disagreement on whether Custom and excise duties and Value added tax affects or contributes to economic growth in the countries under consideration. While some authors believe there is a positive relationship between these tax revenues and economic growth, others believe there is a negative association, and still others believe these taxes have no direct effect on economic growth.

This study aims at determining the influence of Custom and excise duties and Value added tax on the economic growth of selected African countries, with concentration on six (6) African countries: Nigeria, Ghana, Egypt, Morocco, Kenya, and South Africa, which are primarily from four African regions: West, North, East, and Southern Africa. These countries were selected because they belong to the African Emerging Economies (AEE), have a strong economy, and a considerable Gross Domestic Product in their respective regions. This study was carried out between the years 2000 and 2018.

Based on past studies in the field, this study made the following remarkable contributions to body of knowledge: First, the study's scope was broadened to include not only the influence of indirect tax components on the growth of a single economy (such as Nigeria), but also how these tax revenues drive the economies of other countries. Second, the work attempted to conduct a panel analysis of the impact that indirect tax revenue components have on the growth of economies in various African regions, rather than focusing on a single region, in order to gain a more comprehensive understanding of the impact these tax revenues have on the economic growth of African countries.

The study deviated slightly from previous studies' use of nominal/inflation-adjusted GDP as a measure of economic growth, instead opted for Real GDP, which accounts for the inflation factor in the economy and reflects the true value of output level in a given year. Finally, the PMG Auto Regressive Distributed Lag (ARDL) model was used in the research. Unlike most previous research, this model is an in-depth econometric technique that accounts for both the short and long run effects of the independent factors on the dependent variable.

The rest of the paper is structured into four sections showing the review of related literature, methodology, analysis and discussion of findings, then conclusion and recommendations accompanied with limitations of the study and areas of further study.

Review of related literature
Concept of Economic Growth (GDP)

Economic growth is the rise in output or productivity of a country over time. To be most accurate, the measurement must be free of inflationary impacts. Economic growth when seen from the comparison of one time period with another, relates to an increase in the release of productivity output. It can be measured in nominal or real (inflation-adjusted) terms. In spite of the occasional employment of other measures, aggregate economic growth is usually measured in terms of Gross National Product (GNP) or Real Gross Domestic Product (RGDP).

Economic growth refers to a constant rise in a country's productive capacity (as measured by comparing the gross national product of one year to the previous year), as well as a rise in per capita national output or net national product over time, which occurs when a country's production capability frontier shifts outward (Salami, Apelogun, Omidiya & Ojoye, 2015). Economic growth, in contrast to development, is a rise in national income per capital in a limited sense, and it includes the analysis of the process, particularly in monetary terms, with a focus on the functional relations Gross Domestic Product (GDP), Gross National Product (GNP), and National Income (NI), thus of the national wealth, including the production capacity (Alina, 2012).

Todaro & Smith's (2009) perspective on Economic growth is a multifaceted process that includes substantial changes in public opinion, national institutions, and social structure, as well as the acceleration of economic growth, decrease of inequality, and eradication of poverty. It is a severe, long-term phenomenon that is constrained by factors such as population growth out of control, insufficient resources, inadequate infrastructure, inefficient resource utilization, excessive governmental interference, institutional and cultural paradigms that make growth difficult.

Economic growth, according to Mladen (2015), consists of material production changes over a relatively short period of time, usually one year. Macro-economists, who rely on quantitative indicators such as gross national product or aggregate income, are primarily concerned with economic growth (Feldman, Hadjimichael, Kemeny & Lanaham, 2014).

Economic growth, according to Denison (1962) and Florin & Liliana (2015), refers to as a rise in real GDP or GDP per capita, or an increase in national product measured in constant prices. Variables such as people resources (growing the active population, investing in human capital), natural resources (land, subterranean resources), and the increase in capital employed, or technical advances all influence economic growth.

Variables such as institutions (financial institutions, private administration, etc.), the magnitude of aggregate demand, saving rates, labour and capital migration, and government efficiency all influence economic growth. People can only work more productively and consistently replace routine activities with higher-value-added, non-routine activities if they go through this complex change process (Aghion, 2006).

Economic growth is described as a rise in material well-being, as evidenced by a rise in the flow of commodities and services. Economic growth, according to Charles (2021), is seen as a rise in the production of economic goods and services from one era to the next. It is a boost in the economy's total output. It is the increase of an economy's capability to create products and services from one period to the next.

Value added tax and Real GDP

Value Added Tax (VAT) is a consumption tax levied at each stage of the consumption chain and paid by the product or service's final consumer (Olufemi et al, 2018). Under the Value Added Tax Act, each individual is required to charge and collect value added tax at a standard rate on all invoiced amounts on all goods and services that are not excluded from paying value added tax. When the taxable person's Output VAT (value added tax raised on behalf of the government) exceeds the Input VAT (value added tax paid to other persons) in a given month, the difference is anticipated to be sent to the government on a monthly basis (Federal Inland Revenue Services Information circular No. 9304). When the reversal is unavoidable, the tax payer is entitled to a reimbursement of the overpaid value added tax. The currency in which goods or services are traded determines the amount of VAT to be paid (Umeora, 2013).

VAT (Value Added Tax) is a well-known tax in many countries. VAT has been implemented in Benin Republic, Senegal, Madagascar, Cote d'Ivoire, Mauritius, Niger Republic, Togo, Guinea, Kenya, Mauritius, and Nigeria in Sub-Saharan Africa. The main reason for VAT's appeal is because it allows for a broader revenue base, which often provides significantly more income than other consumption taxes. According to Loveday & Nwanyanwu (2015), the success or failure of any tax is primarily determined by the amount to which it is efficiently handled. The way a tax is interpreted and implemented, as well as the amount of exposure it receives, determines how well it may achieve its goal.

The most common type of consumer tax system charged around the world is Value Added Tax (VAT). Although there are comparable tax concepts around the world, the rules can be passed and implemented in different ways by different countries, resulting in a wide range of compliance burdens for businesses (Ezeji & Peter, 2020). For the years 2000 to 2018, the VAT contribution to the growth of the economy as measured by its contribution to the GDP of Nigeria, Ghana, Egypt, Morocco, Kenya, and South Africa ranges from 0.8 percent to 8.8 percent. This means that VAT accounts for 15% to 29% of total tax collection in these African countries' GDP.

According to Igbasan (2017), previous studies have found a positive substantial association between VAT and economic growth. Olufemi et al (2018), Confidence & Ebipampie (2014), Uzoka & Chiedu (2018), and Igbasan (2017) backed up the findings, but Ekeocha et al (2012) found a negligible association between VAT and economic growth, which was backed up by Akhor & Ekundayo's findings (2016). According to Adereti et al. (2011), there is a positive and significant link between VAT revenue and GDP. Onalapo, Aworemi, & Ajali (2013) found that VAT has a statistically significant impact on revenue generation and, as a result, on economic growth. Based on the outcome of Owolabi & Okwu (2011), VAT revenue contributes positively to the growth of several economic sectors.

Bakare (2013) investigated the massive impact of the value added tax on Nigerian output growth. Based on the result, the relationship between value added tax and output growth in Nigeria is seen to be positive and significant. Umeora (2013) investigated the effect of VAT on Nigeria's GDP and total tax income. The findings revealed that Value Added Tax has a significant effect on both GDP and total tax revenue. The study by Denis (2010) on the relationship between Value Added Tax (VAT) and Gross Domestic Product (GDP) in Nigeria found that VAT is a significant source of revenue and is required for planning and policy formulation.

In their study of the Value Added Tax and the growth of the Nigerian economy, Adereti, Sanni, & Adesina (2011) discovered a positive and substantial association between VAT revenue and GDP. Izedonmi & Okunbor (2014) investigated the impact of VAT on the growth of the Nigerian economy, finding a positive but small link between VAT income and GDP. The impact of the value added tax on Nigeria's revenue generation prowess was investigated by Ajala, Oladayo, & Ayorinde (2010). Based on the outcome, the value added tax has a statistically significant impact on Nigeria's income generation capabilities. Yakubu & Jibrin (2013) focus their research on the effect of value added tax (VAT) on Nigerian economic growth. The research revealed that value added tax had a favourable impact on Nigeria's economic growth.

In this study, Bakare, Adewale, & Stephen (2013) looked at the influence of VAT on output growth in Nigeria. According to the findings, there is a significant and positive association between VAT and output growth in Nigeria. Bilal (2015) discovered that VAT revenue had a strong and beneficial impact on Pakistan's economic growth (GDP) in his studies using the OLS regression technique.

Custom and excise duties and Real GDP

Customs and excise duties are taxes on imports that are charged as a percentage of the import value or as a fixed amount based on quantity (Garba, 2014). Customs and excise is one of the oldest forms of contemporary tax collection, particularly in Nigeria. It is a large component of tax revenue that has contributed greatly to a country's growth and development. Customs and Excise Duties (CED) are taxes levied on importers of specified commodities, as well as levies levied on locally created goods. According to Abomaye et al (2018), custom duties are made up of import and export levies collected, whereas excise duties are charges imposed on certain commodities manufactured locally in a country, mostly to generate money. These taxes are levied as a percentage of the import value or as a set amount on a certain quantity (Igbasan, 2017). The works of Ikechukwu & Madubuko backed with this assumption (2016).

Customs and Excise Duty is a substantial source of revenue for the government and has remained so for many years. Its contribution to economic growth in various African countries ranges from 0.6 percent to 3.1 percent, accounting for roughly 11% of total tax revenue contributions to GDP (Revenue Statistics in Africa, 2020). Abomaye et al (2018), Chibu & Njoku (2015), Ogbonna & Appah (2012), Uzoka & Chiedu (2018), and Onakoya and Afintinmi (2016) found a strong positive link between Custom and Excise Duties and Economic Growth, while Onakoya and Afintinmi (2016) found a negative relationship. Asaolu et al (2015). Cited in Oladipupo and Ibadin (2018), Import duties are imposed on items based on their value, weight, size, or other government-determined factors. They are calculated as a percentage of the import value or as a set amount for a given quantity.

The impact of various taxes on economic growth in Nigeria was investigated by Ebiringa and Emeh (2012). The results show that customs and excise duties were negatively related to gross domestic product, implying that there was an inverse relationship between customs excise duties and economic growth in Nigeria. Schularick and Solomou (2009) used data from 19 countries (Argentina, Australia, Brazil, Canada, Chile, Denmark, France, Germany, Japan, Italy, India, Mexico, Netherlands, Norway, Russia, Spain, Sweden, the United Kingdom, and the United States) to reassess the relationship between custom duties and economic growth from 1870 to 1914. Their findings suggested that the reassessment was justified.

Sameti & Rafie (2010) examined the relationship between taxation's effects on income distribution and economic growth in Iran and a few East Asian nations. Their findings revealed that customs and excise duties had a negative and significant influence on economic growth. Ebiringa and Emeh (2012) employed a basic linear regression technique to evaluate the impact of various taxes on Nigerian economic growth. The results suggest that customs and excise duties are negatively connected to GDP, implying an inverse relationship. Adegbie (2011) investigated the contribution of customs and excise duties to Nigerian economic growth and

concluded that there is a substantial positive association between customs and excise duties and Nigerian economic growth.

Oladipupo & Ibadin (2015) investigate the impact of indirect taxes on Nigeria's economic growth. CED with two period lags was similarly found to have a favourable connection with RGDP. Customs and Excise duties have a negative and weakly significant association with real gross domestic product, according to Akhor & Ekundayo (2016). Furthermore, Onakoya & Afintinni (2016) discovered a negative link between customs and excise duties and real GDP. According to Adegbei (2011), there is a strong link between customs and excise duties and economic progress in Nigeria. In his analysis, Uzoka (2018) also discovered that customs and excise duties had a considerable impact on Nigeria's economic growth.

Theoretical Framework

An understanding of taxation and its influence on economic growth proceeds from an examination of a number of theories that attempt to explain the basis and rationale behind this management imperative. These theories principally include Optimum tax theory and Neo-classical growth model

Optimum tax Theory

In 1971, Mirrlees proposed the optimum tax idea. This theory aims to determine a rate of tax at which a certain quantity of government revenue can be raised with the least degree of economic distortion. This is critical in order to promote social efficiency through a more balanced share of income or an increase in welfare. This theory seeks to determine how the government can enhance social welfare through taxes and transfers while minimizing taxpayer sacrifice. The theory highlights that optimal taxation is a function of the tax rate and how it is collected in order to promote equitable welfare redistribution.

Neo-classical growth model

This approach can be traced back to Solow in 1956, when he was the first to investigate how taxation influences growth. Solow's neoclassical growth model assumes that tax policy has no effect on steady-state growth. Tax policy, however distortive, has little effect on long-term economic rates, and even if it does, it diminishes long-term economic output.

In the neoclassical paradigm, income and wealth are produced first and subsequently consumed, which means that taxes on the factors of production (capital and labour) are particularly disruptive to wealth growth. Taxes on corporations and shareholders limit the incentive to invest, grow capital, and work. The majority of past research has found that taxes have a negative impact on growth. Personal income taxes, consumption taxes, and property taxes are shown to be the most detrimental, followed by corporate income taxes.

Empirical Framework

Abomaye et al (2018) used GDP as the dependent variable while the explanatory variables include Custom and excise duties (CED), Petroleum profit tax (PPT), and Company income tax (CIT) in an empirical research of tax revenue and growth of

the Nigerian economy from 1980 to 2015. The analysis was carried out using Ordinary least squares, and the results revealed a long-term causal effect between the variables. PPT and CIT influence economic growth in Nigeria, but not significantly, according to the short run research, however CED has a major impact on economic growth in Nigeria.

From 1980 to 2013, Onakoya et al. (2016) looked at the co-integration relationship between tax revenue and economic growth in Nigeria, utilising PPT, CIT, and CED for tax revenue and GDP for economic growth. Several econometric tests were performed, including the ADF test, the Engle- Granger Co-integration test, the Autocorrelation test, and the Heteroscedasticity test. To confirm the relationships between the variables both in the short and log run, the study employed a vector error correction model. The study's findings revealed that tax revenue and economic growth in Nigeria have a long-term association, as well as a positive significant relationship between PPT, CIT, and economic growth, but a negative relationship between CED and economic growth.

With data spanning 17 years, Emmanuel (2013) analyzed the relationship between VAT, economic growth, and overall tax collection in Nigeria (1994-2010). The study's two hypotheses reveal that VAT has a minimal relationship with both GDP and overall tax income. The study's findings reveal that VAT has a strong relationship with GDP and overall tax income. As a result, he advised the government to educate tax payers about the necessity for a tax increase in order to increase annual revenue for economic development. Jalata (2014) assessed the relationship between VAT and Ethiopian economic growth from 2003 to 2012, finding that significant contributions show that value added tax has a positive relationship with economic growth in Ethiopia, with every 1% increase in VAT revenue resulting in a 13.55 percent increase in GDP, with the exception of value added tax revenue.

Methodology

The study adopted Ex-post research design where there is a panel data study of the annual publications of various African countries. This method was adopted because the data for the study already exist and are less manipulative for the study and also to utilize a quantitative way of estimating the impact of Value added tax and Custom duties on the economic growth of selected African countries. The population of the study comprises of fifty-five (55) African countries, with Egypt, Morocco, South Africa, Nigeria, Ghana, and Kenya representing the North, South, West, and Eastern parts of Africa, respectively been selected for the study. These were countries that have specific characteristics such as modernized business environment, robust economy among the African countries and significant gross domestic product. Secondary data were used for the study spanning from 2000 to 2018 which were obtained from World development indicator, OECD data base on revenue statistics in Africa and Central bank of Nigeria.

Model specification

The model for this study was adapted from the studies of Nwanakwere (2019) and Fahim & Bourdane (2019) as modified. The model for the study only represented Value added tax and custom duties for the independent variables and real GDP as measure for economic growth. The model for the study is presented in its functional form as:

Real GDP = f (CED, VAT) (1)

The econometric form of the stated model is given below:

Real GDP$kt = b_0 + b_1$CED$kt + b_2$VAT$kt + (t)$ (2)

Where, Real GDP, CED, VAT represent real gross domestic product, custom and excise duties and value added tax respectively in each selected country (k) and at different quarters (t).

The standard ARDL form of the model specified in equation (2) is stated as:

$$\Delta yt = a_0 + \sum_{ik=1}^{n} \beta i \Delta yt_{-i} + \sum_{ik=0}^{n} \partial i \Delta xt_{-i}$$
$$+ \sum_{ik=0}^{n} \phi i \Delta zt_{-i} + \sum_{ik=0}^{n} \varepsilon i \Delta pt_{-i} + \sum_{ik=0}^{n} \delta i \Delta vt_{-i} + \lambda 1yt-_1 + \lambda 2xt_{-1} + \lambda 3zt_{-1}$$
$$+ \lambda 4pt_{-1} + \lambda 5vt_{-1} \quad {}_{+\ \mu t}$$

(3)

Where, yt is the dependent variable and xt,zt,pt and vt are the independent variables. Δ is the difference operator while is the stochastic term. The first part of the equation with β, ∂, ϕ, δ and ε represents short run dynamics of the model while the second phase with λs represents long term relationship.

A Prior Expectation
All explanatory variables, such as value added tax and customs and excise charges, are projected to have positive economic expectations (higher than zero), indicating a positive increase in economic growth in the selected countries.

Data estimation techniques

To ensure the robustness and reliability of the analysis' conclusions, this study used numerous panel data approaches in its panel data analysis. Cross sectional dependence test, Slope heterogeneity test, Panel unit root, Co-integration test, PMG-ARDL model, and Granger causality test were among the procedures used in this study.

Data presentation and analysis of result

The panel data analysis started with the preliminary analyses are in two parts: Descriptive Statistics and Stationarity test.

Table 1 Descriptive statistics

Variable	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera(P-value)
LNCED	0.779183	0.037140	-0.196895	1.505692	7.164082(0.027819)
LNVAT	0.881814	0.060807	-0.524096	1.919137	6.800909(0.033358)
LNRGDP	2.762626	0.025515	0.009864	1.717429	4.936131(0.084749)

Source: Authors computation using E-views 10.0 (2022).

The outcome of the descriptive statistics for the panel data are presented in Table 1 above. The result showed that LNRGDP has the highest mean value for the selected African countries followed by LNVAT and LNCED. The result also showed that the variables are negatively skewed except for LNRGDP that is positively skewed.

All the variables are platykurtic in nature as their values for kurtosis is less than 3. This indicates a lower than normal distribution and also implies that the distributions produce fewer or less extreme outliers than does the normal distribution. The P-value of the Jarque-Bera test for Log CED and log VAT are not normally distributed whereas the Log RGDP is normally distributed at 5% level of significance. These discrepancies in results of normality create reasons to subject all the variables to Unit root test.

Cross sectional dependency and slope heterogeneity test

The analysis began with a cross-sectional dependency test and slope heterogeneity test which inform the opinion of this study on the choice of unit-root test to adopt, first or second generation. This study adopted Pesaran 2004 CD test and Pesaran 2015 weak CD test. The results of both the Cross sectional dependency tests and slope heterogeneity test are outlined in Table 2.

Table 2 shows the results of both Pesaran 2004 Cross sectional dependence test and Pesaran 2015 weak Cross sectional dependence test values and their probability values. The probability values for the CD tests of all variables in this study are significant at 1% and therefore reject the null hypothesis of cross sectional independence.

The slope heterogeneity test value was also significant at 1%. Subsequently, the second generation unit root tests were applied on the ground that CD test provided evidence to reject the null of cross-sectional independence effects.

Table 2: Cross sectional dependence and Slope heterogeneity test results

CD test	Pesaran CD		Pesaran Weak CD	
Panel A				
Variables	**CD**	**P-value**	**CD**	**P-value**
lnrgdp	16.17	0.000	12.061	0.000
lnced	6.45	0.000	6.614	0.000
lnvat	15.13	0.000	13.450	0.000
Panel B: Slope heterogeneity test				
	Delta	**P-value**		
	3.994	0.000		
adj.	4.859	0.000		

Source: Authors computation using Stata16.0 (2022).

Unit root test results

The second generations unit root test requires a unit root test technique that addresses the issue of cross sectional dependency and effective in dealing with heterogeneity. Therefore, the study adopted the Cross sectional IPS (CIPS) and the Cross sectional ADF (CADF) unit root test techniques. The results of the panel unit root tests are presented in Table 3 below

Table 3: Unit root test

Variables	CADF (Level)	CADF I(1)	CIPS (Level)	CIPS I(1)
lnrgdp	-1.540 (0.644)	-2.982 (0.008)	-1.36	-3.437
lnced	-1.715 (0.511)	-2.582 (0.049)	-1.805	-3.340
lnvat	-2.320 (0.126)	-2.931 (0.010)	-2.175	-3.511

Source: Authors computation using Stata16.0 (2022).

Table 3 shows the outcomes of the CADF and CIPS unit root test presented at constant. The results show that all the variables are non-stationary at the level and stationary at first difference. This result informed the adoption of the ARDL model as the model can be accommodated whether the series is stationary at first difference or non-stationary at levels or mutually co-integrated variables in the same regression. The stationarity of all the variables at first difference makes the variables fit for analysis and the results suitable for policy making.

Co-integration test results

The study adopted two types of panel co-integration test which are techniques that are sensitive to cross-sectional effects. These techniques are the Pedroni co-integration test and Westerlund co-integration test. The results of these tests are presented in Table 4.

Table 4 shows the results of panel pedroni and westerlund co-integration tests. The results imply that the variables are linked or associated with RGDP in the long run at 5% significant level and also there is a long run effect on CED and VAT. Both panel co-integration tests refuse to accept the null hypothesis of no co-integration

showing that there is a long term relationship between the independent variables, CED and VAT and the dependent variable RGDP. With the outcome of these tests, the panel study can proceed with the estimation of the parameter of error-correction model using the PMG-ARDL method.

Table 4: Pedroni and Westerlund co-integration test results

Pedroni co-integration test		
Panel A		
Technique	**Statistics**	**P-value**
Modified Phillips-Perron t	2.5026	0.0062
Phillips-Perron t	1.8841	0.0298
Augmented Dickey-Fuller t	2.0327	0.0210
Panel B: Westerlund co-integration test		
	Statistics	**P-value**
Variance ratio	1.8536	0.0319

Source: Authors computation using Stata16.0 (2022).

PMG estimation results

The study used the Pooled Mean Group (PMG)-ARDL method to estimate the relationships between the independent variables namely Custom and Excise Duties (CED), Value Added Tax (VAT) and the dependent variable Real GDP both in the short run and in the long run. The results of the long run and short relationships of the panel data are presented in Table 4.5 below.

Table 5: PMG-ARDL Estimation results

D.lnrgdp	Coef.	Std. Err	z	P>|z|	[95% Conf. Interval]	(ECT)
lnced	0.526408	0.1645049	3.20	0.001	0 .2039844	0.8488317
lnvat	-0.2280139	0.2473457	-0.92	0.357	-0.7128026	0.2567748
Short Run Relationship						
Ect	-0.0814189	0.0399922	-2.04	0.042	-0.1598022	-0.0030356
Lnced	0.0242508	0.0376074	0.64	0.519	-0.0494583	0.0979598
lnvat	-0.04235	0.0366666	-1.16	0.248	-0.1142152	0.0295153
Cons	0.7810407	0.3839642	2.03	0.042	0.0284847	1.533597

Source: Authors computation using Stata16.0 (2022).

Table 5 shows the outcome of the long run and short run relationships of the independent variables which are Custom and Excise Duties (CED) and Value added tax (VAT) on economic growth. Considering the long run relationship, log CED has a positive and significant effect on economic growth (Real GDP) meaning that in the long run, one percent change in Custom and Excise Duties (CED) will increase Real GDP by 0.52%. The result of the study confirms the studies of Uzoka (2018) and contradicts the studies of Onakoya et al (2016). Also, Log VAT has a negative and insignificant effect on economic growth showing that in the long run, one

percent rise in Value Added Tax (VAT) will decrease Real GDP by 0.22%. This result confirms the studies of Akhor (2016), Onakoya et al (2016) and contradicts the studies of Uzoka (2018).

In the short run, the Error Correction Term (ECT) is negative (-0.0814) and significant (0.042) implying that there is a weak speed at which the short run errors are corrected in the long run. Also, log CED show a positive but insignificant effect on Real GDP in the short run implying that 1% change in Custom and excise duties (CED) results 0.02% increase in Real GDP in the immediate but might turn negative in the long run.

On the other hand, log VAT is negatively and insignificantly linked with economic growth (RGDP) in the short run meaning the benefits from Value Added Tax (VAT) on economic growth is not immediate and may also not reverse in the long run.

Granger causality test
The study applied the Dumitrescu and Hurlin (2012) panel causality test to check the granger causality of the variables in the estimation. The result of the granger causality test is as presented in Table 4.6 below.

Table 6: Granger causality test results

Null Hypothesis	W-Stat	Z-bar Stat	Prob
lnced does not Granger-cause lnrgdp.	2.8818	2.6613	0.0078
lnvat does not Granger-cause lnrgdp	6.8426	8.2627	0.0000

Note: ***denotes significance at 10% level.

Table 6 above shows the granger causality relationship results of the variables under study based on Dumitrescu and Hurlin (2012). It became necessary to determine the directional point of causality effect existing between the growth of the economies and the selected tax revenue sources. The results above show that there is a one side directional causality relationship running from economic growth to both Custom and Excise Duties (CED) and Value added Tax (VAT).

Discussion of findings
The outcome of this analysis shows that Custom and Excise duties have a long run significant influence on Real GDP of selected African countries. The insignificant effect of CED on the short run economic growth shows that CED does not have an immediate effect on economic growth but influences economic growth over time. Also the percentage contribution of Custom and Excise Duties to GDP of the selected countries which ranging from 1% to 3.1% of the GDP contribution across the countries showing that Custom and excise exerts some influence on economic growth in these countries especially with its long term sustenance. This outcome is consistent with the results of Uzoka & Chiedu (2018), Macek (2014) and Asaolu, Olabisi, Akinbode & Alebiosu (2018).

The result of this analysis shows that there is no significant influence of Value added tax (VAT) on real GDP of the selected African countries in the long run; also Value added tax exhibited a positive though insignificant influence on real GDP in the short run in these countries. The insignificant result of the effect of Value added tax on real GDP in both long run and short run shows that there are other factors that may exert more influence of the economic growth of these countries as a whole other than value added tax as the percentage contribution of VAT to GDP of these countries which ranges from 2% to 9% for the years under study. This result disagrees with the findings of Uzoka & Chiedu (2018). But the result is consistent with the findings of Onakoya & Afintinni (2016).

Conclusion and recommendations

The broad aim of the study is to examine the causal link between Custom and Excise Duties; Value added Tax and economic growth of selected African countries. However, from the research findings above, custom and excise duties was found to have a positive and significant relationship with economic growth of selected African countries in the long run, while there is a positive but insignificant influence of custom and excise duties on economic growth of these countries in the short run. This implies that custom and excise duties do not have an immediate effect on economic growth but influences economic growth over time.

Value added tax was found to have a negative and insignificant relationship with economic growth of the selected African countries in both long and short run. This means that the revenue realized from Value added tax from these countries have not really been fully deplored into the economy as to have significant influence on the growth of such economies. The study came to a reasonable conclusion that both CED and VAT have influence on the growth of the economies of the selected African countries though Value added tax seems to be insignificant implying that there are other factors that may exert more influence of the economic growth of these countries as a whole other than value added tax.

Flowing from the above research findings, the study therefore recommends that; a conducive environment for entrepreneurship, tax incentives, and innovation must be offered, as well as job opportunities in order to increase these countries' revenue bases, particularly through business. These countries' government should expand, nurture and sustain their value added tax and other tax bases in order to continue to support positive economic growth. Also, having seen that impact custom and excise duties and value added tax have on economic growth, government should enact new fiscal laws and strengthen existing ones to catch tax evaders and avoidant in the act, reducing corruption, tax evasion, and avoidance.

Data availability was a limiting factor in the study, particularly in the area of value added tax for Nigeria, at such; the study was unable to broaden the period scope to her liking. Also, the study made use of a time invariant model and at such the effect of time was not considered in the study. In consideration to these limitations,

the study suggests that a model that accommodates the effect of time should be used to check the effect Custom and excise duties and value added tax revenues have on economic growth.

References

Abomaye, N., Williams, A. S., Michael, J. E. & Friday, H. C. (2018). An emperical analysis of tax revenue and economic growth in Nigeria from 1980 to 2015. *Global Journal of Human Social Science*, 18(3)

Adegbie, F.F., & Fakile, A.S (2011). Company Income Tax and Nigeria Economic Development. *European Journal of Social Sciences*, 22(2), 309-319

Adereti S. A., Adesina, J. A., & Sanni, M. R. (2011). Value added tax and Economic growth of Nigeria. *European Journal of Humanities and Social Sciences*, 10(1), 455-471 .

Aghion, P. (2006). "A primer on innovation and growth". Bruegel Policy Brief, 6, 1-8.

Akhor, S. O. (2016). The impact of indirect tax revenue on economic growth: The Nigeria experience. *Igbinedion University Journal of Accounting* , 61-87.

Akhor, S. O., & Ekundayo, O. U. (2016). The Impact of Indirect Tax Revenue on Economic Growth: the Nigeria Experience. I*gbinedion University Journal of Accounting. 2*: 62-87.

Alina, H. (2012). Concepts of Economic growth and development: Challenges of crisis and knowledge. Romanian Academy

Bakare, A. S. (2013), Value Added Tax and Output Growth in Nigeria. Proceedings of 8th Annual London Business Research Conference Imperial College, London, UK,

Charles, R. (2021). Economic growth: a comparative study for the east European countries annals of the university of Oradea. Economic Science Series, 23(1),369-378.

Confidence J I &Ebipanipre G M (2014). Taxation as an instrument of economic growth (The Nigerian perspective*). Info. Knowl. Manage. 12*(4).

Ebiringa R, & Emeh O. (2012). Analysis of Tax Formation and Impact on Economic Growth in Nigeria, *International Journal of Accounting and Financial Reporting*

Ekeocha, P., Ekeocha, C., Malaolu,V., & Oduh, M. (2012). Revenue implications of Nigeria's tax system, *Journal of Economics and Sustainable Development, 3*(8), 206-215

Ezeji .E. C.,& Peter. I (2020). Econometric Analysis of the Impact of Value Added Tax on Economic Growth in Nigeria .Department of Financial Management Technology, Federal University of Technology Owerri, Imo State

Fahim, O. & Bourdane, Y (2019). Tax revenue and economic growth in Morocco: Application of ARDL approache, *Revue "Reperes et perspectives Economique" [Enligne], 3*(2)/2 semetre

Feldman, M., Hadjimichael, T., Kemeny, T. & Lanahan, L. (2014). "The logic of economic development: a definition and model for investment". Environmental and planning government policy.

Florin, T. B. & Litiana, C. (2015). The main determinants affecting economic growth. Bulletin of the transilvania university of Brasov. Series V, *Economic Science 8*(57), 2-20.

Francis, E, C., Emudainohwo, O. B., & Gunardi, A. (2018). Tax Revenue and Economic Growth: A Study of Nigeria and Ghana. *Signifikan: Jurnal Ilmu Ekonomi. 7* (2): 213 – 220. doi: http//dx.doi.org/10.15408/sjie. v7i2.7341.

Igbasan, E. (2017). Tax revenue and economic growth of Nigeria (1981 - 2015). Dissertation work submitted to Babcock University, Ogun state Nigeria

Ikechukwu, I. O., Joseph, U. M., & Amah, K.O. (2016).An assessment of the causal relationship between economic growth and indirect taxes in Nigeria. *International Journal of Development and Economic Sustainability, 4*(5), 56-65.

Jalata, D.W. (2014). Taxation for Economic Growth: Evidence from Ethiopia. *International Journal of Economics and Empirical Research, 2*(7), 294-300

Loveday, A. & Nwanyanwu O, (2015). Value Added Tax Administration in Nigeria: *Journal Applied Economics and Finance 2* (4)

Macek, R. (2014). The impact of taxation on economic growth: Case study of OECD countries, *Review of economic perspectives, 14*(4), 309-328.

Mattew, A. A. (2014), Impact of tax revenue on Nigerian economy (A case of Federal Board of Inland Revenue). *Journal of Policy and Development Studies, 9* (1), 157-9385

Nwanakwere, J.T. (2019). Tax and economic growth in Nigeria: An ARDL Approach, *Jurnal Ekonomi & Studi Pembangunan, 20*(2), 124-134

Nyamadi, G. (2014). Tax Policy and Economic Growth: Evidence from Ghana. (Unpublished Dissertation). Accra: University of Ghana.

Ogbonna, K. & Appah,M. (2012). Impact of tax reforms and economic growth of Nigeria. *Current Research Journal of Social Sciences 4*(1).

Olufemi, A, O, Olabisi, J. & Akinbode, S. O (2018). Tax revenue and ecoonomic growth in Nigeria. Scholedge, *International Journal of Management and Development. 5*(7), 72-85

Onakoya, A. B. & Afintinni, O. I.(2016). Taxation and economic growth in Nigeria. *Asian Journal of Economic Modelling, 4*(4), 2313-2884

Onaolapo, A. A., Aworemi, R. J., & Ajala, O. A. (2013). Assessment of value added tax and its effects on revenue generation in Nigeria. *International Journal of Business and Social Science, 4*(1), 220-225

Revenue Statistics in Africa (2020). Retrieved from http://www.oecd.org/tax/revenue-statistics-in-africa-9789264253308-enfr.htm

Rudolf, M. (2014). The impact of taxation on economic growth: Case study of OECD Countries. *Review of Economic Perspectives, 14*(4), 309-328

Salami, G.O., Apelogun, K.H., Omidiya, O.M., & Ojoye, O.F. (2015). Taxation and Nigerian economic growth process. *Research Journal of Finance and Accounting. 6*(10), 93-101.

Sameti. M and Rafie, L. (2010) Interaction of income distribution, taxes and economic growth in Iran and some East Asian Countries, *Iranian Economic Review,14*(25)

Todaro, M. P., & Smith, S. C. (2009). Economic development, Harlow: Addison Wesley

Ugwunta, O. D & Ugwuanyi U B (2015). Effect of distortionary and non-distortionary taxes on economic growth: Evidence from Sub-Saharan African countries. *J. Account. Taxation. 7*(6):106-112.

Umeora, C. E. (2013). The Effects of Value Added Tax (VAT) on the Economic Growth of Nigeria. *Journal of Economics and Sustainable Development, 4*(6)

Uzoka, P. U., & Chiedu, C. O. (2018). Effect of tax revenue on economic growth in Nigeria, *International Journal of Social Science and Management Research, 4*(7), 2545-5303

Worlu, C. N., & Nkoro, E. (2012). Tax revenue and economic development in Nigeria: A macro econometric approach. *Academic Journal of Interdisciplinary Studies, 1*(2), 2281-3993

Yakubu, J. P & Sansui, N. (2013). Analyzing the impact of value added tax (VAT) on Economic Growth in Nigeria. *Mathematic Theory and Modeling 3*(14)