

# Tax Revenue and Economic Growth of African Countries

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**Abstract:** This study evaluates the effect of tax revenue and economic growth of African Countries. The aim is to ascertain the extent to which different components of tax revenue can be useful in moderating economic growth of emerging economies in Africa. Time series data of 38 years on Gross Domestic Product and Foreign Direct Investment on four components of tax revenue of ten selected African countries were extracted from the websites of the World Bank, International Centre for Tax and Development, and African Statistical Year Book publications and analysed using OLS regression techniques. Results show that company income tax has a negative insignificant effect on gross domestic product of African countries and a positive insignificant effect on foreign direct investment of African countries as well as a positive insignificant effect on per capita income of African countries. Personal income tax has a positive insignificant effect on gross domestic product of African countries and a positive insignificant effect on foreign direct investment of African countries. Value added tax has a positive insignificant effect on gross domestic product of African countries, a positive insignificant effect on foreign direct investment of African countries. Custom and excise duty has a negative insignificant effect on foreign direct investment of African countries and a negative insignificant effect on gross domestic product of African countries; with all tax components jointly accounting for substantial variations in economic growth of the countries. The study concludes that tax revenue is a potent tool for improving economic growth of emerging African nations and recommends that government and tax administrators should target at enhancing tax revenue with emphasis on indirect tax components by blocking all avenues of tax evasion and maintaining proper accountability of collected tax revenues to achieve sustainable economic growth in the African continent.

**Key Words:** Gross Domestic Product, Foreign Direct Investment, Economic Growth, Tax Components.

## I. Introduction

The need for economic growth of any nation (developed and developing) has continued to bring to limelight the critical importance of tax revenues among other factors that contribute towards economic growth and development. Appah (2010) emphasized that the economic growth and development of any nation is a function of the amount of revenue raised by the government for the provision of infrastructural facilities. Without adequate revenue, recurrent and capital expenditure components of annual budget of a country may lie fallow and could lead to shutdown of government at various levels or organs. Investment in critical infrastructure would suffer severely with its attendant consequences such as slow industrial growth leading to retarded economic growth in the absence of needed revenues.

Tax revenues are veritable tools for economic growth and development because of its predictable and reliable nature when compared with non-tax revenues from liquid (crude oil) and solid natural resources that are transacted internationally and commonly predisposed to uncontrollable market forces and international politics. Pfister (2009) affirms that tax revenue can be predicted (certainty attributes of taxation). It is stable, therefore provides reliable flow of revenue to finance development goals either in the short run or long run.

Oil revenues upon which many developing nations depend is susceptible to market forces, international politics and economic policies of international organizations such as United Nations (UN) and Organization of Petroleum Exporting Countries (OPEC) and for that reason is vulnerable to price fluctuations and this makes tax a surer means of generating revenue for governments since it does not respond to the vagaries of international policies and politics. The prevailing economic conditions and policies of developed nations such as the USA can also impact adversely on oil revenues. In the past, the fall in crude price per barrel (below US\$40) almost crippled the governments

of many developing nations from playing their primary roles particularly in Africa. It led African countries to downturn and other challenges which their economies are still struggling to recover fully from. Therefore, overdependence on oil revenue is likened to a house owner who opens his doors and windows midnight amidst insecurity- no doubt; he is vulnerable to attacks (Joseph, Omodero&Omeonu, 2019).

The volatile nature of oil revenue has necessitated the need for a paradigm shift from oil revenue to non-oil revenue, that is, tax revenues to enable government generate sufficient revenue that is stable and predictable to finance a variety of developmental projects. For this reason, the importance of effective, functional and efficient tax administration system especially in developing African nations where such is lacking cannot be over-emphasized.

As obtainable in developed world such as the United States of America and United Kingdom, efficient and effective tax structures can be beneficial to economic growth and development.

It should be underscored that various empirical studies have come up with heterogeneous findings in relation to the effect of tax revenue in economic growth of developing African nations. Babatunde, Ibukun&Oyeyemi (2017), identified many empirical literatures that show different and divergent findings regarding the impact of tax revenue on economic growth of African countries as follows: Ugwunta&Ugwuanyi (2015) and Dasalegn (2014), reported positive significant relationship between taxation and economic growth. A negative nexus was reported in studies carried out by Keho (2013), Junior and Tafirenyika (2010), Delesa and Daba (2014), Saima *et al.*, (2014). Contrary to these, some studies still find no significant relationship between the variables such as VAT, CIT, PIT, PPT, CED (independent variables) GDP, FDI, PCI (dependent variables) (N'Yilimon, 2014). Hungerford (2012) has established proof that taxes have no effect on economic growth when the USA experience was examined from the end of World War II in 1945 to 2011. Osundina&Olanrewaju (2013) also reported that the effect of taxation on national growth was insignificant. Tens *et al.*, (2011) studying 21 OECD countries from 1971- 2004 revealed that corporate taxes have been most harmful to the economy; similarly taxes on personal income, consumption, and property ; a pointer that the effect of taxation on economy is not homogeneous. No doubt, from empirical research outcomes, the effect of taxation is not homogeneous. The huge benefits of tax revenue from various theoretical literatures appear to be at variance with some empirical results of various studies.

From the foregoing, the argument regarding the nexus between tax revenue and economic growth remains inconclusive. This has compelled the need for further comprehensive study that would build a comprehensive model with a view to critically investigating nexus of these variables (dependent and independent) among African countries with a view to advising policy makers to concentrate on tax components that contribute positively to the economic growth of Africa and where they have comparative advantage. For this reason, this study centres on the effects of tax revenue on economic growth of African Countries.

### 1.1 Background to the Study

Tax revenue is essential for economic growth of any nation through the provision of critical infrastructure and social amenities for the wellbeing of the citizenry. Tax revenues help governments globally to discharge its core mandates of (a) protecting the society from violence and invasion of other independent societies through military forces (b) ensuring protection of every member of the society from injustice and oppression of every other member through administration of justices (c) establishing and maintaining public institutions and public works which cannot be expected that any individual, or few number of persons, should establish or maintain because of huge capital outlay required (Abiola&Asiweh, 2012; Appah&Eze, 2013). Developed countries globally have been found to have relatively felt the impact of tax revenues generated through efficient and effective tax system, the controversies notwithstanding (Joseph, Omeonu&Ngaonye, 2018).

Worthy of note is the fact that globally, there is a paradigm shift to tax revenue as a better alternative source of revenue and the need for African countries to generate adequate revenue from taxation has become a matter of urgency and importance (Afuberon&Okoye, 2014).

However, taking a critical look at the huge benefits of tax revenue based on theoretical literatures, the need to ascertain its effect on economic growth of African countries becomes very imperative. Again the vulnerability of the revenues generated from crude oil and other unprocessed natural resources in Africa is a wakeup call for African countries to gear effort towards alternative sources of revenue. This alternative source of revenue is tax revenue and for this reason its impact should be determined precisely.

The argument regarding the effect of tax revenue economic growth is still raging because of divergent results based on various empirical studies by researchers. Many empirical studies show disaggregated and conflicting findings in relation to the effect of tax revenue on economic growth. Some empirical studies that show positive effect of tax revenue on economic growth are as stated below among others; Ugwunta and Ugwuanyi (2015) and Dasalegn (2014); Ihendinihu, Jones and Ibanichuka (2014); Eke, Ekwe and Ihendinihu (2018); Nwawuru, Nmesirionye and Ironkwe

(2018); Nmesirionye, Nwawuru and Ekwuruke (2018); Babatunde, Ibukun and Oyeyemi (2017); Ogbonna and Ebimobowei (2012); Kaibel and Nwokah (2009); Babatunde *et al* (2017); - indirect taxes have a positive and insignificant effect on economic growth of sub-African countries.; Onaolapo, Fasina&Adegbite (2013); Keho (2011); Adereti, Sanni and Adesina (2011); and lots of other studies.

Some empirical studies that show negative effect of tax revenue on economic growth included but not limited to thus: Joseph, Azubike, Tapang&Dibia (2018); Kaibel and Nwokah (2009); Micah, Chukwumah and Umobong (2012); Edame (2014); Okoi and Lawrence (2015); Anne (2014); Yaya (2013); Lawrence (2015); Widmalm (2001); Angepoulos, Economides and Kammas (2006); Arnold (2008; 2011); Xing (2012); Santiago and Yoo (2012); Hakim, Karia and Bujang (2014); Gbato (2017); Saqib (2014); Tomljanocich (2014); Poulson and Kaplan (2009).

A negative nexus was reported in similar studies carried out by Keho (2013) and Saima *et al.*, (2014). McBride (2012) stated that progressive taxation diminishes investment, risk taking and entrepreneurial activity because more than proportionate portion of high income earners earnings are collected via tax returns.

In consideration of the conflicting findings regarding the effect of tax revenue holistically on economic growth of African countries, this study is motivated and it seeks to advance investigation on the actual effect of tax revenue on economic growth of African countries, thus would solve the problem of disaggregated and conflicting findings once and for all. To achieve this, the study examined the effect of each of the tax components captured in the study to help to ascertain the particular one or ones that add much needed value to the economy of African countries or otherwise with a view to recommending most suitable fiscal policy options.

For these reasons, the study adopted change in gross domestic product ( $\Delta$ GDP) and change in Foreign Direct Investment ( $\Delta$ FDI), as dependent or response variables and independent or explanatory variables Companies Income Tax (CIT), Personal Income Tax (PIT), Custom, Excise Duties (CED) and Value Added Tax (VAT). The study would compare the impact of tax components on various countries selected with the ultimate intent of identifying which of the tax components that have the potentials of enhancing rapid economic growth and also the tax component that does not contribute to the economic growth of African countries. Based on the outcomes, policy makers in Africa would be advised. The proxy variables adopted for this study have been applied to study the impact of tax revenue on economic growth of African sub-regions in recent times but have not been used to study the impact of various tax components on African countries. The population of the study is African economy and sample size is ten (10) selected African nations chosen based on World Population Review (2019) GDP ranking and availability of data. The countries are also picked to reflect various regions of the continent. The study period is 38 years, 1980 - 2018. The study considered as study objectives the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Gross Domestic Growth of African countries and the effect of tax revenue (company's income tax, personal income tax, custom and excise duties and value added tax) on Foreign Direct Investment of African countries. The hypotheses are patterned in line with the research objectives.

## II. Review of Related Literature

### 2.1 Conceptual Framework

#### Overview of Taxation in Africa and its Features

In developed countries like the United States and United Kingdom and developing countries like China and South Africa, taxation is seen as a strategic tool of significant importance regarding economic growth notwithstanding conflicting research results on this. In developed countries such as the United States and United Kingdom, tax revenue has been heavily relied upon and substantially used to stabilize the economy in terms of provision of critical infrastructure within the countries and discharge of other primary responsibilities of government. The role of taxation is very strategic in developing countries. No wonder the efforts of the government of these nations to develop and reform their tax policies, laws and structures in line with best global practices. The reason is that through taxation, the government finances projects such as the provision of public goods like infrastructure, education, health and justice, which are essential for growth (Gbato, 2017). Organization of Economic Co-operation and Development (OECD) (2009) declares that taxation has effects on individual savings, work and training decisions, production, job creation, investment and business innovation including the choice of savings instruments and assets by investors. These decisions are not only influenced by the level of taxes but also by the way different fiscal instruments are planned and pooled to generate government revenues (Gbato, 2017).

In Africa, tax structures and policies had pre-colonial and colonial influences as a result of the continent's relationships and experiences with their colonial masters. Take for instance, in one of the most populous countries in Africa, Nigeria, the administration and payment of tax by taxable adults is dated back to pre-colonial era. During pre-colonial era, the administration and collection of taxes were carried out by the Emirs, Chiefs, and their appointed agents

before the whites came. The system as it was though functional for that time was extremely crude and arbitrary. It is important to note that a system of tax collection developed from the Northern states of the country Nigeria and gradually infiltrated to the Southern states. Sequel to the advent of the British in about 1900s, the administration of tax was effected through several ordinances (now acts and decrees), which principally entrusted the responsibility of collection of taxes on local authorities.

In 1940, the direct taxation ordinances were introduced to Nigeria through the administration and collection of taxes was still shared between the British administration and the local authorities. When Nigeria assumed the status of a federation in 1952, the regional governments (Northern, Western, and Eastern regions and the Federal Territory of Lagos) were bestowed with the full responsibility of assessment and collection of taxes in respective their regions. Thus each of the regions including the federal territory of Lagos made their respective Personal Income laws. It must be pointed out here that almost all countries in Africa that were colonized shared similar experiences notwithstanding the little variations. It must be stressed that the era of indirect tax paved way for direct tax of various composites in existence in the region today (Ogbonna, Ibanichuka and Joseph, 2016). Ezejelue and Ihendinihu (2006) describe taxation as a request for payment of money by government authorities of for a compulsory payment of money by the populations of the nation with the intention of realising money to fund various government developmental goals, gratify combined wants of the citizens and ensure proper regulation of economic and social policies.

Adeyeye (2004) viewed tax as 'a liability on account hanging the on account of tax payers as contribution in some quantum measure to the fund available for use by government in providing necessary infrastructural facilities such as road and rail network, communication et cetera for her citizens'. Taxes are compulsory levy by the government through her chosen agent on the tax object- the tax payers. However, Miller and Oats (2006) defined tax as the statutorily obligatory determinable sum, demanded by a legal authority from the fruitful activities of a person or body corporate, to encourage the provision of general goods and services.

Azubike (2009) stated that tax is a key source of government revenue globally. To enable government deliver its traditional functions which include the provision of public goods, maintenance of law and order, defending the nation against external aggression, regulation of trades, ensuring social and economic maintenance, government needs tax proceeds. Nwezeaku (2005) puts up argument that the scope of these functions is a function of the political and economic orientation of the people, their needs and aspirations including their willingness to remit tax liability to the government. Accordingly, a government ability to perform its operations to a reasonable degree depends on efficiency of a well-designed tax plans and administration, willingness and patriotism of the governed.

### 2.1.1 Gross Domestic Product:

Economic growth specifically means an increase in the value of goods and services produced by a country over a period. Economists use an increase in nation's GDP to measure it. Therefore, it is possible to have economic growth without economic development in the short or even medium term (Hadjimichael, 2014). On the other hand, there could be an increase in GDP without any increase in standard of living of people in a state. On the other hand, given that the two are different, any effort to use GDP as a measure for the two gives inaccurate outcome on economic development. Furthermore, according to the United Nations report on Human Development Index (HDI) 'development goes beyond the expansion of income and wealth. It connotes a process of enlarging people's choices' (UNDP, 1990).

#### 2.1.1.1 Foreign Direct Investment

The globally accepted definition of FDI is captured in the fifth edition of the IMF's balance of payment manual (1993). The investment done to obtain a lasting interest or commitment in effective and efficient control over a firm running outside of the economy or country of the investor is known as foreign direct investment. With respect to this definition, FDI possess three components: equity investment, reinvested earnings, and short term and long term inter-company loans between parents firms and foreign affiliates. These ingredients of direct investment capital transaction are documented on a directional basis and they are resident direct investment and non-resident direct investment in the recording economy. The FDI net inflow records net flow of non-resident direct investment in the recording economy, whereas the FDI net outflow records the net flow of resident direct investment abroad. Foreign direct investment net inflows are the value of inward direct investment made by non-resident in the reporting economy, including intra-company loans, net of repatriation of capital and repayment of loans. Similarly, net outflows are net the worth of outward direct investment made by the resident of the reporting economy to external economies added to re-investment earnings and intra-company loans net of receipts from the repatriation of capital and repayment of loans.

### 2.1.1.1 Theoretical Framework

#### Neoclassical Growth Theory of Public Policy:

This theory posits that national taxation has the capacity to significantly influence long run growth rates particularly, small open economies with considerable capital mobility. National taxation can result in 'development traps', a situation where such countries decline or regress or results to 'growth miracles'; a state of affairs where countries shift from little growth to swift expansion (Robert and Sergio 1990). Chamley (1986) give fiscal policy the role of determining the level of output rather than the long-term rate of growth. The equilibrium growth rate is based on exogenous factors such as population growth and technological progress, whereas fiscal policy can only affect the process of transition to this state of equilibrium. On the other hand, models of endogenous public growth (Barro&Sala-i-Martins, 1992) provide mechanism by which fiscal policy can determine both the level of production and growth rate at equilibrium. These endogenous growth models suggest that taxation can have a negative effect and a positive effect on growth rate. The positive effect is indirectly driven by tax-financed spending. Taxes used to finance investments in goods, especially goods generating positive externalities (infrastructure, education and public health), can influence economic growth rate positively. The negative effect of taxation on growth stems from the modification of individuals' decision in the direction of below optimality. Engen and Skinner (1996) suggest five possible mechanisms by which taxes can affect: (i) the rate of investment may be hindered by taxes such as corporate, personal income and capital gains taxes (ii) taxes can slow the growth of labour supply distorting leisure and leisure choices (iii) tax policy can affect productivity growth through its discouraging effect on research and development (R & D) spending (iv) taxes may result in a flow of resources to other (less taxed) sectors likely to have low productivity and (v) high taxes on labour supply can twist the efficient use of human capital by discouraging workers from jobs with tax burdens. This theory stresses that effective fiscal policies can either lead to economic growth or retard economic growth. This theory therefore contains ingredients very vital to the study in question and therefore considered apt for this study. It takes its positions regarding how taxation can boost or impair economic growth depending on the tax administration and the application of revenue so generated.

#### 2.1.1.1.1 Empirical Review

Gbato (2017) empirically tested the effect of taxation on long run growth of samples of 32 countries in sub-Saharan Africa using regression analysis. The study indicates a zero effect of taxation on long-run growth of economy. It further suggests a significant negative effect of indirect taxes and taxes on individuals in short-term.

Garba (2014) x-rayed the connexion between taxation in Nigeria and her economic growth. Time series data were applied in carrying out this research work. Multiple linear regression analysis was used to analyse the data employing Vector Error Correction Model. The findings reveal that PPT, CIT and VAT have a positive effect on the economic growth in Nigeria. Whereas CED had negative impact but overall, a significant relationship between tax revenue and the Nigerian economic growth exists.

Nwawuru, Nmesirionye and Ironkwe (2018) examined the impact of value added tax (VAT) on total federally collected revenue in Nigeria (1994 -2012), using the Augmented Dickey Fuller unit root test to confirm the stationarity of the variables and the Ordinary Least Square of Simple Regression was used in analyzing and estimating the log-linearized model while the Engle Granger General Regression approach was employed in testing the long run and short run equilibrium conditions. The result of hypothesis tested equally shows that VAT has significant effect on total federally collected revenue which is about 34.5% of the total variation in response variables. Also, significant long run equilibrium relationships were shown to exist between the totally federally collected revenue and value added tax. The study therefore concludes that value added tax has the strength to contribute significantly to revenue generation and economic growth in Nigeria.

Nmesirionye, Nwawuru and Ekwuruke (2018) analysed the effect of federally collectable taxes on economic growth of Nigeria (2000-2015). Autoregressive Distributed Lag model was specified and estimated making use of time series data sets from the Central Bank of Nigeria Statistical Bulletin. The model captured the long-run static and short run dynamic impact of tax components on economic growth. The empirical results of the estimated model indicated that there was a positive but insignificant impact of various tax components Nigerian economic growth in the long-run.

Azubike, Tapang and Dibia (2018) examined the effect of indirect taxes revenue on Nigerian economic growth. The research design is ex-post facto and data analysed using descriptive statistics, correlation, unit root test, co-integration test and error correction model regression with the aid of STATA 13. The result from the error correction model regression result revealed that VAT (DVATt-1) had a negative as well as significant effect on real gross domestic product (RGDP) at 1% level of significance. Furthermore, past Customs and excise duties (CEDt-1) had a negative and weakly significant impact on real gross domestic product (RGDP) at even more than 10% level of significance. The Error

Correction Model (ECM-1) coefficient had a negative and statistically significant sign. This shows that short-run deviation can quickly be corrected.

Eke, Ekwe and Ihendinihu (2018), looked at impact of tax revenues and Nigeria economic growth. The study employed the Augmented Dickey Fuller (ADF), Autoregressive Distributed Lag (ARDL) and Vector Error Correction Model (VECM) to test for stationarity of data, and for long and short run equilibrium relationship of the variables respectively. The study's result indicated that all the individual tax revenues components were significant and positively signed, meaning that an increase in these variables will result to an equivalent rise in Nigeria economic growth.

Ihendinihu, Jones and Ibanichuka (2014) studied the long run equilibrium nexus between the duration of 1986-2012 applying time series data on various tax components as predictor variables and real gross domestic product as response variable. The results indicate that company income tax (CIT), education tax (EDT) and other tax revenue (OTR) have statistically significant effect on economic growth; hence maintaining long-run equilibrium association with real gross domestic product. There exist no causal relationship between PPT, VAT and economic growth. It equally shows that total tax revenue has a significant effect on economic growth; showing 73.4% of the total variation in real gross domestic product. The study recommended that government should encourage and sustain strong fiscal responsibility and transparency in governance to promote voluntary compliance to tax payment, fight against corruption and minimization of resources wastages through mismanagement of funds.

### III. Methodology and Data

#### 3.1.1 Research Design and Sources of Data

Ex-post facto research design was used in carrying out the study. Data used for this study were obtained from the World Bank website, IMF World Economic Outlook database, OECD Online Database and UNCTAD online database, African Statistical Year Book publication, CBN, FIRS, and Tax Revenue Boards of various countries under study for the ten (10) selected African countries for a period of 38 years (1980-2018). These data obtained were adjudged appropriate for this study because of the following reasons:

- i. They had been already authenticated by professionals and other regulatory bodies before they were published by the relevant bodies.
- ii. Consistently, the data have been used in previous related studies and have produced good results. For example, Igbasan (2017) and Riba (2016); Onakoya, Babatunde, Ibukun and Oyeyemi, (2017); Okafor (2012); Success, Success and Ifurueze (2012); Saheed, Abarshi and Ejide (2014) used data from these sources for their various studies. Africa as a continent comprises 54 countries. The population of this study comprise of the 54 African countries. The sample size is ten (10) African countries selected from each of the five (5) regions of the continent. Two countries are selected from each of the regions namely North Africa, East Africa, Southern Africa, Central Africa and West Africa. The main criteria for selection of the countries are; the countries selected from each region must be among the top (highest) two in terms of GDP of the regions based on ranking by World Population Review (2019).

Using the above conditions as criteria for selection, the following countries are selected: Nigeria, Ghana, South Africa, Kenya, Tunisia, Egypt, Uganda, Cameroon, Democratic Republic of Congo and Botswana. These countries were chosen from various sub-regions of Africa and in relation to their ranking in terms of GDP. Effort was made to ensure that countries with highest GDP in order of ranking by World Population Review (2019) were chosen. The study employed a judgmental technique in selecting the sample for the study. The sample selected is deemed to satisfy the predetermined criteria for selection. According to Pirooska, (2021), a good minimum sample size is usually 10% as long as it (population) does not exceed 1000. The methods adopted regarding data collection in this research include archival retrieval method, document investigation/analysis, and extensive library search, internet and website surfing. The data used in this study were collected based on the variables identified in the research objectives. The data for Gross Domestic Product (GDP) and Foreign Direct Investment (FDI) and tax components namely Company Income Tax (CIT), Personal Income Tax (PIT), Custom and Excise Duties (CED) and Value Added Tax (VAT) for all the countries from the sample size were accordingly obtained. The independent variables proxy as tax components namely Company Income Tax (CIT), Personal Income Tax (PIT), Custom and Excise Duties (CED) and Value Added Tax (VAT) are regressed against the dependent variables proxy as Change in Gross Domestic Product (GDP) and Change in Foreign Direct Investment (FDI). The study adapted the model used by Igbasan (2017). The Igbasan (2017) adapted model is shown below:

**Functional Relationships**

GDP = f (CIT) .....1

GDP = f (PPT) .....2

GDP = f (CED) .....3

GDP = f (VAT) .....4

GDP = f (CIT, PPT, CED, VAT) .....4

Where:

- Y= Economic Growth (EG)
- y1 = Gross Domestic Product (GDP)
- X = Tax Revenue (TAR)
- x1= Companies Income Tax (CIT)
- x2 = Petroleum Profit Tax (PPT)
- x3= Custom and Excise Duties (CED)
- x4= Value Added Tax (VAT)

But this study has made the following some modifications or changes on the adapted model as depicted below:

**Functional Relationships**

- Y= f(X)
- Y = y1
- X = x1, x2, x3, x4, x5

Where;

- Δ = Change
- Y= Economic Growth (EG)
- y1= Δ in Gross Domestic Product (ΔGDP)
- y2 = Δ in Foreign Direct Investment
- x1= Companies Income Tax (CIT)
- x2 = Personal Income Tax (PIT)
- x3= Custom, Excise Duties (CED)
- x4 = Value Added Tax (VAT)

μ<sub>i</sub>are the stochastic variable of each model; it is the error term which denotes other variables that are not captured in the model.Its introduction in the model is to accommodate the influences of the other factors that may affects economic growth which are not implicitly included in the models.

**Functional Relationship**

ΔGDP= f (CIT, PIT, CED, VAT) .....1

ΔFDI = f (CIT, PIT, CED, VAT).....2

**In Econometric form;**

- LogΔGDP<sub>it</sub> = α1 + β1 LogCIT<sub>it</sub> + β2 LoPIT<sub>it</sub> + β3LogCED<sub>it</sub> + β4LogVAT<sub>t</sub>+μ<sub>it</sub> .....*Pooled Panel Model*
- LogΔFDI<sub>t</sub> = α1 + β1LogCIT<sub>it</sub> + β2LogPIT<sub>it</sub>+ β3LogCED<sub>it</sub> +... β4LogVAT<sub>t</sub>+μ<sub>t</sub>..... *Pooled Panel Model*

**3.1.1.1 DATA ANALYSIS TECHNIQUES**

The study adopted descriptive statistics, Unit root test, Co-integration test, and Panel regression test for the analysis of data.

The descriptive statistics was used to analyze the various means, standard deviation, maximum and minimum values of the variables used for the study. Also the descriptive statistics probability value is used to for initial distributive normality of data at the descriptive statistics level.

Unit root test was conducted using both the Levin Lee Chu test for individual stationarity and the Augmented Dickey-Fuller for common stationarity of data.

To further test for long run bounce back of the data set, the study employed the Johansen co-integration test to ascertain whether there is a long run relationship between the data set. This was done to ensure that the study adopts either the panel (OLS) regression or the Vector Autoregressive (VAR) model for further analysis.

The VAR error correction model was used throughout the study to test for individual hypothesis of African countries effect of company income tax, personal income tax, custom and excise duty, and value added tax on gross domestic product, foreign direct investment and per capita income. Also the multiple ordinary least square regressions was employed by the study to test for country level hypotheses.

DATA PRESENTATION AND ANALYSIS

Descriptive statistics

The descriptive statistics for both the dependent and independent variables are presented in table 1.1:

Table 1.1: Descriptive Statistic Table

	CIT	PIT	CED	VAT	GDP	FDI
Mean	3.538897	3.864795	3.570564	3.154231	12.32403	241.0185
Median	3.770000	3.970000	3.670000	3.520000	1.075000	4.600000
Maximum	5.880000	10.15000	6.400000	6.780000	814.8700	33083.27
Minimum	-5.150000	-2.220000	-0.610000	-0.380000	-397.4700	-7756.890
Std. Dev.	1.521503	1.814878	1.481890	2.033391	70.21084	2593.480
Skewness	-1.330232	-0.142837	-0.543500	-0.287510	5.006847	8.404500
Kurtosis	7.026820	4.186475	2.924925	1.870345	55.21352	99.90811
Jarque-Bera	378.5169	24.20167	19.29205	26.10997	45931.04	157198.0
Probability	0.000000	0.000006	0.000065	0.000002	0.000000	0.000000
Sum	1380.170	1507.270	1392.520	1230.150	4806.370	93997.21
Sum Sq. Dev.	900.5238	1281.282	854.2429	1608.390	1917600.	2.62E+09
Observations	390	390	390	390	390	390

Source: Author’s Computation, using E-View 9, 2021

Table 1.1 presents the descriptive statistics of all the variables. The number of observation for the study is 390. From the table, the following information is distilled.

The result reveals that, Company Income Tax (CIT) reflects a mean of 3.538897 with a deviation of 1.521503. CIT also reveal a maximum value of 5.880000 and a minimum value of -5.150000. Personal Income Tax (PIT) reveals a mean of 3.864795 with a deviation of 1.814878. PIT further reveals maximum and minimum values of 10.15000 and -2.220000 respectively. The Custom and Excise Duty (CED) has a mean of 3.570564 with a deviation of 1.481890. Furthermore, CED records a maximum and minimum value of 6.40000 and -0.610000. More so, Value Added Tax (VAT) result reveals maximum and minimum values of 6.780000 and -0.380000. VAT also reveals mean and standard deviation of 3.154231 and 0.2.033391. For Gross Domestic Product (GDP), the result reveals maximum and minimum values of 814.8700 and -397.4700. GDP also reveals mean and standard deviation of 12.32403 and 70.21084 respectively.

For Foreign Direct Investment (FDI), the result revealed maximum and minimum values of 33083.27 and -7756.890. FDI also reveals a mean and standard deviation of 241.0185 and 2593.480 respectively. To test for normality of data, the Skewness, Kurtosis and Jarque-Bera statistics are used. For CIT, the data set reveals a skewness value of -1.330231 which means that majority of the data values are below the mean, with a leptokurtic value of 7.026820. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 378.5169 with a probability value of 0.0000. This means that the data for CIT of the African countries is not normally distributed. Again for PIT, the data set reveal a skewness value of -0.142837 which means that majority of the data values are below the mean, with a leptokurtic value of 4.186475. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 24.20167 with a probability value of 0.000006. This means that the data for PIT of the African countries is not normally distributed. For CED, the data set reveal a skewness value of -0.5435000 which means that majority of the data values are below the mean, with a platykurtic value of 2.924925. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 19.29205 with a probability value of 0.000065. This means that the data for CED of the African countries is not normally distributed. VAT reveal a skewness value of -0.287510 which means that majority of the data values are below the mean, with a platykurtic value of 1.870345. The Jarque-Bera measure of skewness and Kurtosis difference reveals a value of 26.10997 with a probability value of 0.000002. This means that the data for VAT of the African countries is not normally distributed. For GDP, the data set reveals a skewness value of 5.006847 which means that majority of the data values are above the mean, with a leptokurtic value of 55.21352.

The Jarque-Bera measure of skewness and Kurtosis difference reveal a value of 45931.04 with a probability value of 0.000000. This means that the data for GDP of the African countries is not normally distributed. Also, FDI

reveals a skewness value of 8.404500 which means that majority of the data values are above the mean, with a leptokurtic value of 99.90811. The Jarque-Bera measure of skewness and Kurtosis difference reveal a value of 157198.0 with a probability value of 0.000000. This means that the data for FDI of the African countries is not normally distributed.

The reason for the various non-normality of the data set is due to the fact that all the data are collated on a change basis which gave rise to inconsistent dispersions. As a result, the study model will employ other normality check to ensure unit root and co-integration test that will inform the best non-parametric model to be used for further analysis of the data.

The result of the descriptive statistics in respect to the study variables shows the level of fluctuation that occurs as a result of economic uncertainties, as well as change in government policies. This is noted in the respective deviation values of the variables.

**Data validity test**

In order to ensure that the results are robust, several diagnostic tests are conducted to enhance the viability of data and model specified for analyses. As such, data diagnostic test such as; the Unit root test and the Co-integration test are computed.

**Stationarity/unit root tests**

To avoid running a spurious regression, unit root test was carried out to ensure that the variables employed in this study are mean reverting i.e. stationary. For this purpose, the Levin, Lin & Chu test and Augmented Dickey Fuller (ADF) test were employed to test for stationary of data. The result of the test is presented in the table below.

**Table 1.2: Unit Root Test Table**

Variable	LLC (Common P-value)	ADF (Individual P-Value)	Difference
CIT	0.0000	0.0000	1 <sup>st</sup>
PIT	0.0000	0.0000	1 <sup>st</sup>
CED	0.0000	0.0000	1 <sup>st</sup>
VAT	0.0000	0.0000	1 <sup>st</sup>
GDP	0.0006	0.0000	1 <sup>st</sup>
FDI	1.0000	0.0000	1 <sup>st</sup>

**Null: There is serial Unit Root in the data**

*Source: Extract from Tables 21-21 in Appendix II, 2021*

Table 1.2 shows the result of the first test required to know the common and individual stationarity of the variables. For the common stationarity test, the Levin Lin Chu (LLC) test for common stationarity was used which considers lags in data series. All the variables show a LLC P-value less than 0.05 which depicts stationarity at 1<sup>st</sup> difference except data for FDI (1.000) which was not logged as a result of the negative value included in the data which will definitely give rise to 0 (Zero) values; this means the data contained a level of noise that needs further checks at individual level to ascertain the country level data noise and to see if it will affect further analysis. The Augmented Dickey-Fuller (ADF) unit root test result for individual stationarity is interpreted using the p-value to ascertain the level of individual stationarities of the panel variable data. The data were stationary at 1<sup>st</sup> difference (ADF) with a P-values less than of 0.05 for all the variables. Since the variables data set are all individually stationary at 1<sup>st</sup> difference, there is need for co-integration test to be carried out to ascertain both the long run and short run interaction of the series in order to choose the most appropriate method for further regression analysis.

**Co-integration test**

**H<sub>0</sub>:** There is no co-integration

**Table 1.3 : Table for Co-integration Test**

Statistic	Model 1	Model 2
Panel v-Statistic Within Dimension	0.9581	0.8996
Panel rho-Statistic Within Dimension	0.7461	0.8903
Panel PP-Statistic Within Dimension	0.0002**	0.5451
Panel ADF-Statistic Within Dimension	0.0000**	0.4731
Panel v-Statistic (W) Within Dimension	0.8937	0.4538
Panel rho-Statistic (W) Within Dimension	0.8297	0.1547

Panel PP-Statistic (W) Within Dimension	0.0747	0.0002**
Panel ADF-Statistic (W) Within Dimension	0.0001**	0.0002**
Group rho-Statistic Between Dimension	0.9311	0.3147
Group PP-Statistic Between Dimension	0.0433**	0.0000**
Group ADF-Statistic Between Dimension	0.0017**	0.0000**
<b>Total</b>	<b>5</b>	<b>4</b>

Source: Extract from Tables 22-27 in Appendix II, 2021

Table 1.3 reveals the result of Pedroni co-integration test for the panel data set. To ensure the level of co-integration of the data set, 11 (Eleven) statistics listed in the table above is considered to ensure a more robust test for co-integration using multiple criteria ranging from individual level to group level data. Each panel and group statistic probability value is tested against the Pedroni stated Null hypothesis above and the general rule of thumb (>0.05) for null hypothesis acceptance. The highest tested outcome (Decision) will form the basis for conclusion.

In the first model, there are eleven test statistics. Out of the 11 co-integration test statistics, 5 (\*\*) statistics have a probability value of <0.05, against 6 other statistics (non-asterisks) with probability values > 0.05. Therefore majority of the co-integration test statistics in model 1 above reveals that, there is no co-integration of data for the series. This means that, in cases of short run shocks, the data series cannot converge in the long run to absorb the short run shocks.

In both the second model, there are also eleven test statistics. Out of the 11 co-integration test statistics, 4 (\*\*) statistics have a probability value of <0.05, against 7 other statistics (non-asterisks) with probability values > 0.05. Therefore, majority of the co-integration test statistics in model 2 above reveals that, there is no co-integration of data for the series. This means that, in cases of short run shocks, the data series cannot converge in the long run to absorb the short run shocks.

With the interpretation above, there are concerns of data porosity if a panel regression is carried out on the African countries data. Therefore, there is need to adopt an Error Correction Model (ECM) to ensure a more robust regression outcome that will address the short run shocks concerns noted from the co-integration test carried out.

### 3.1.1.1.1 Regression of the Estimated Model Summary

This section of the chapter presents the results produced by the Error Correction Model summaries for further analysis.

#### Model 1: Testing for the effect of company income tax, personal income tax, custom and excise duty, value added tax on gross domestic product of African countries.

Table 1.4: Error Correction Model Table 1

Long run equilibrium	Coefficient	Short run equilibrium	Coefficient
GDP (-1)	1.0000	GDP (-1)	-0.615599
CIT (-1)	-653.8479	CIT (-1)	-2.263116
PIT (-1)	-27.73543	PIT (-1)	1.988612
CED (-1)	335.2250	CED (-1)	-1.896099
VAT (-1)	225.5989	VAT (-1)	7.509166
Cont Eq	0.002508		
	<b>Lag 1</b>		<b>Lag 2</b>
VEC LM Test	0.5826	VEC LM Test	0.5499

Source: Extract from Tables 28-29 in Appendix II, 2021

Table 1.4 presents result of the Vector Error Correction Model (VECM) for model 1 to test for long run and short run shocks correction as a result of non-co-integration of the data set in model 1 above. The various coefficient values of the short run equilibrium is compared against the long run equilibrium to ascertain the level of bounce backs in addressing non-long run co-integration issues of the model.

After 1<sup>st</sup> differences, the adjustment coefficient (ContEq) value of 0.002508 shows that, the previous period deviation from long run equilibrium is corrected in the short run at an adjustment increased speed of 0.002508. For CIT coefficient, a unit change in CIT is associated with a 2.263116 unit decrease in GDP in the short run *Ceteris Paribus* against the long run coefficient of -653.8479. For PIT coefficient, a unit change in PIT is associated with a 1.988612 unit increase in GDP in the short run *Ceteris Paribus* against the long run coefficient of -27.73543. For CED coefficient, a unit change in CED is

associated with a 1.896099 unit decrease in GDP in the short run *Ceteris Paribus* against the long run coefficient of 335.2250. Lastly, for VAT coefficient, a percentage change in VAT is associated with a 7.509166 unit change in GDP in the short run *Ceteris Paribus* against the long run coefficient of 225.5989.

The VEC LM test for autocorrelation reveals values of 0.5826 (Lag 1) and 0.5499 (Lag 2). This shows that the set of data after error correction has no presence of autocorrelation, as such, further regression analysis is permitted.

**Table 1.5: Panel Error Correction Model Regression for Model 1**

VAR Variable	Coefficient	Probability	Statistic	Value
GDP (C2)	-0.615599	0.0000	R <sup>2</sup>	0.080468
CIT (C3)	-2.263116	0.7603	R <sup>2</sup> Adjusted	0.065269
PIT (C4)	1.988612	0.7294	Fisher Statistic	5.294344
CED (C5)	-1.896099	0.8413	F Probability	0.000030
VAT (C6)	7.509166	0.1505	DW	1.281841
Constant (C7)	0.562623			

*Source: Extract from Tables 30 in Appendix II, 2021*

To ensure that the set of data was free from serial auto-correlation, the Durbin Watson statistic for the model specified was computed. The Durbin Watson statistics for the model specified is estimated at 1.281841. The Durbin Watson statistics for the series data is below the standard of 2 indicating the absence of auto-correlation. The Durbin Watson statistics ensures that the residuals of the proceeding and succeeding sets of data do not affect each other to cause the problem of auto-correlation. Gujarati and Sangeetha (2007) explained that the value for Durbin Watson should not be above the standard of 2. Thus, this model exhibit low risk of potential autocorrelation problem as the model shows a DW statistics below 2.

For model fitness, the R<sup>2</sup> value is used to establish the level of overall fluctuation the study independent variables (CIT, PIT, CED and VAT) can collectively cause GDP as the dependent variable to change. The R square value of 0.080468 shows that CIT, PIT, CED and VAT cause GDP to fluctuate at approximately 8%; this means that 92% fluctuation of African countries GDP is caused by other factors not considered in this study like; government policies and economic issues. The R<sup>2</sup> adjusted value of 0.065269 revealed shows that, there would be a 0.015 (0.080 – 0.065) variation from the sampled result of R square if the other omitted factors are considered. This means that if government policies and economic issues come to play, there will be either 1.5% increase or decrease in the level of fluctuation CIT, PIT, CED and VAT can cause GDP to change. The Fisher statistic reveal a value of 5.294344 with a probability value of 0.000030 which further prove that the model is significantly statistically fit.

The constant value of 0.562623 revealed that, if all the independent variables are held constant, the GDP value of African countries would increase by 0.562623 (56.3%). Furthermore, a unit change in CIT, PIT, CED and VAT would cause GDP to change at -2.263116, 1.988612, -1.896099 and 7.509166 units respectively.

**Ho<sub>1</sub>:** *Company Income Tax has no significant effect on the gross domestic product of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for CIT against GDP is 0.7603; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, company income tax has no significant effect on gross domestic product of African counties.

**Ho<sub>2</sub>:** *Personal Income Tax has no significant effect on the gross domestic product of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for PIT against GDP is 0.7294; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, personal income tax has no significant effect on gross domestic product of African counties.

**Ho<sub>3</sub>:** *Customs and Excise Duty has no significant effect on the gross domestic product of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for CED against GDP is 0.8413; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, custom and excise duty has no significant effect on gross domestic product of African counties

**Ho<sub>4</sub>:** *Value Added Tax has no significant effect on the gross domestic product of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for VAT against GDP is 0.1505; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, value added tax has no significant effect on gross domestic product of African counties.

These result contradicts the results of Ihendinihu, Jones and Ibanichuka (2014), Bukie and Adejumo (2013), Babatunde, Ibukun and Oyeyemi (2017) and Nwawuru, Nmesirionye and Ironkwe (2018) whose study result revealed that CIT, PIT and CED have significant effects on economic growth; sustaining long-run equilibrium relationships with Real Gross Domestic Product. The reason for this contradiction is as a result of the difference in models and method of data analysis. Also, while previous authors looked at country level data, this study considered an African panel data for analysis.

**3.1.1.1.1.1 Model 2: Testing for the effect of company income tax, personal income tax, custom and excise duties, value added tax on foreign direct investment of African countries.**

**Table 1.6: Error Correction Model 2**

Long run equilibrium	Coefficient	Short run equilibrium	Coefficient
FDI (-1)	1.000000	FDI (-1)	-0.201888
CIT (-1)	627.3008	CIT (-1)	230.4478
PIT (-1)	62.63326	PIT (-1)	136.7606
CED (-1)	-267.5473	CED (-1)	-794.0274
VAT (-1)	-323.3068	VAT (-1)	408.1006
ContEq			-0.886915
	<b>Lag 1</b>		<b>Lag 2</b>
VEC LM Test	0.4258	VEC LM Test	0.0877

Source: Extract from Tables 31-32 in Appendix II, 2021

Table 1.6 present result of the Vector Error Correction Model (VECM) for model 2 to test for long run and short run shocks correction as a result of non-co-integration of the data set in model 2 above. The various coefficient values of the short run equilibrium is compared against the long run equilibrium to ascertain the level of bounce backs in addressing non-long run co-integration issues of the model. After 1<sup>st</sup> differences, the adjustment coefficient (Cont. Eq) value of -0.886915 shows that, the previous period deviation from long run equilibrium is corrected in the short run at an adjustment speed of 0.886915. For CIT coefficient, a unit change in CIT is associated with a 230.4478 unit increase in FDI in the short run *Ceteris Paribus* against the long run coefficient of 627.3008. For PIT coefficient, a unit change in PIT is associated with a 136.7606 unit increase in FDI in the short run *Ceteris Paribus* against the long run coefficient of 62.63326. For CED coefficient, a unit change in CED is associated with a 794.0274 unit decrease in FDI in the short run *Ceteris Paribus* against the long run coefficient of -267.5473. Lastly, for VAT coefficient, a percentage change in VAT is associated with a 408.1006 unit change in FDI in the short run *Ceteris Paribus* against the long run coefficient of -323.3068. The VEC LM test for autocorrelation reveals values of 0.4258 (Lag 1) and 0.0877 (Lag 2). This shows that the set of data after error correction has no presence of autocorrelation, as such, further regression analysis is permitted.

**Table 1.7: Panel Error Correction Model Regression for Model 2**

VAR Variable	Coefficient	Probability	Statistic	Value
FDI (C2)	-0.201888	0.0611	R <sup>2</sup>	0.236779
CIT (C3)	230.4478	0.5319	R <sup>2</sup> Adjusted	0.224163
PIT (C4)	136.7606	0.6330	Fisher Statistic	18.76927
CED (C5)	-794.0274	0.0867	F Probability	0.000000
VAT (C6)	408.1006	0.1187	DW	1.290023
Constant (C7)	129.9744	0.3726		

Source: Extract from Tables 37 in Appendix II, 2021

To ensure that the set of data was free from serial auto-correlation, the Durbin Watson statistic for the model specified was computed. The Durbin Watson statistics for the model specified is estimated at 1.290023. The Durbin Watson statistics for the series data is below the standard of 2 indicating the absence of auto-correlation. The Durbin Watson statistics ensures that the residuals of the proceeding and succeeding sets of data do not affect each other to cause the problem of auto-correlation. Gujarati and Sangeetha (2007) explained that the value for Durbin Watson should not be

above the standard of 2. Thus, this model exhibits low risk of potential autocorrelation problem as the model shows a DW statistics below 2.

For model fitness, the  $R^2$  value is used to establish the level of overall fluctuation the study independent variables (CIT, PIT, CED and VAT) can collectively cause FDI as the dependent variable to change. The R square value of 0.236779 shows that CIT, PIT, CED & VAT cause FDI of African countries to fluctuate at approximately 24%; this means that 76% fluctuation of African countries FDI is caused by other factors not considered in this study like; government policies and economic issues. The  $R^2$  adjusted value of 0.224163 revealed shows that, there will be a 0.012 (0.236 - 0.224) variation from the sampled result of R square if the other omitted factors are considered. This means that if government policies and economic issues come to play, there would be either 1.2% increase or decrease in the level of fluctuation CIT, PIT, CED and VAT can cause FDI to change. The Fisher statistic reveals a value of 18.76927 with a probability value of 0.00000 which further prove that the model is statistically significantly fit.

The constant value of -0.201888 revealed shows that, if all the independent variables are held constant, the FDI value of African countries decreases by 0.201888 (20.2%). Furthermore, a unit change in CIT, PIT, CED and VAT cause FDI to change at 230.4478, 136.7606, -794.0274 and 408.1006 units respectively.

**Ho<sub>5</sub>:** *Company income tax has no significant effect on foreign direct investment of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for CIT against FDI is 0.5319; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, company income tax has no significant effect on foreign direct investment of African counties.

**Ho<sub>6</sub>:** *Personal income tax has no significant effect on foreign direct investment of African countries.*

To test the significance of the individual variables, the decision rule stated is applied. Since the calculated Probability values for PIT against FDI is 0.6330; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, personal income tax has no significant effect on foreign direct investment of African counties.

**Ho<sub>7</sub>:** *Customs and excise duty has no significant effect on foreign direct investment of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for CED against FDI is 0.0867; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, custom and excise duty has no significant effect on foreign direct investment of African counties.

**Ho<sub>8</sub>:** *Value added tax has no significant effect on foreign direct investment of African countries.*

To test the significance of the individual variables, the decision rule stated in chapter 3 is used. Since the calculated Probability values for VAT against FDI is 0.1187; which is greater than the accepted probability value of 0.05. The null hypothesis is accepted and the alternative rejected. Therefore, value added tax has no significant effect on foreign direct investment of African counties. This result contradicts the results of Haq-Padda and Akram (2011); Schraztenstaller, Wagoner and Kohler Toglhofer (2005); Brebler (2012), studies who concluded that lower taxation rate represents the factor stimulating the inflow of foreign direct investment (FDI).

#### IV. CONCLUSION

Based on the findings of this study from the test of the three research hypotheses earlier formulated in the study, the researcher has therefore come to the following conclusions outlined in respect to each hypothesis: Company income tax has a negative insignificant effect on gross domestic product of African countries. Personal income tax has a positive insignificant effect on gross domestic product of African countries. Custom and excise duty has a negative insignificant effect on gross domestic product of African countries. Value added tax has a positive insignificant effect on gross domestic product of African countries. Company income tax has a positive insignificant effect on foreign direct investment of African countries. Personal income tax has a positive insignificant effect on foreign direct investment of African countries. Custom and excise duty has a negative insignificant effect on foreign direct investment of African countries. Value added tax has a positive insignificant effect on foreign direct investment of African countries.

#### V. RECOMMENDATIONS

In consonance with this study's findings, the following recommendations become imperative: African countries should put policies in place that will foster the continual growth in tax revenue from custom and excise duty, personal income tax, company income tax and value added tax which are progressive in nature. This can be achieved through proper implementation of policies that improve the mechanisms (border checks and tracking of goods produced within the country) for generating these tax revenues. If imports are discouraged through lower company income tax and higher

custom duties, this will improve local production and increase economic growth through upscale of gross domestic product.

Also, African countries should set a custom and excise duty rates that are favourable to investors who are willing to carry out investment that encourages local production. This will go a long way to discourage custom and excise duty evasion, encourage foreign direct investment, increase local production, create employment and consequently lead to increase in the per capita income of the African countries.

Although there seems to be an insignificant effect of company income tax, personal income tax, custom and excise duty and value added tax on gross domestic product, foreign direct investment and per capita income of African countries, adjustment of these various tax policies by making them investors friendly can spur foreign direct investment, per capita income and gross domestic product of African countries.

To attract foreign direct investment, it is recommended that African countries should lower the various tax rates as seen in the case of Cameroun and Tunisia where their tax rates at country level is seen to have influenced the growth of foreign direct investment and per capita income. This will consequently lead to increase in employment, per capita income and gross domestic product of the African countries.

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