



Impact of Revenue Allocation on Economic Growth in Nigeria

***Bulus Shadrach; **Hyellafiya Caleb; *Fatima Abubakar Gamawa; & ***Sadiq Mohammed Nadada**

*Department of General Studies, Federal Polytechnic Kaltungo, Gombe State Nigeria. **Department of General Studies, Federal Polytechnic Kaltungo. ***Department of Business Management, Federal Polytechnic Kaltungo, Gombe State, Nigeria

Abstract

This study examines the impact of revenue allocation on economic growth in Nigeria; revenue allocation among the three tiers of government in Nigeria has been a subject of burning argument for long period of time and its affect the Gross Domestic Product (GDP) in Nigeria using time series data for the period of 1981 to 2020. The data for this study were sourced through Central Bank of Nigeria Annual Report (CBN), World Development Indicators (WDI, 2021) and Federation Account Allocation Committee (FAAC, 2020). The work uses the methodology of unit root test (ADF) to test the Stationarity of the data, autoregressive distributed lag (ARDL), short run and long run, Bound test. The study's findings shows that revenue allocation for the Federal government have significant impact on Gross Domestic Product (GDP) in Nigeria, the allocation revenue for the State have negative impact on GDP with 0.17%, the lending interest rate (LINR) also have negative impact on GDP in the long run. All variables of the study are co-integration and have a long run relationship that 86% of the error correction model (ECM) disequilibrium is corrected yearly and revert back to its normal position. The study recommends among

the following; the state and local government be given higher share of the revenue that they are seen as a tool of economic growth in Nigeria.

Keywords: Revenue Allocation, economic Growth, ARDL, and sharing formula

Introduction

Every federation has a central authority to which the other authorities in the lower tiers of government are federated. A federal constitution will also usually specify the financial arrangements which have been agreed to govern the activities of both the central government and the federating units, in other words, how resources are to be mobilized, collected and shared not only between the central and other units but also how they are to be shared among the federating units. Perhaps the most important issue in fiscal federalism is revenue allocation, the sharing of national revenue among the various tiers of government (vertical revenue sharing) as well as the distribution of revenue among the federating units (that is horizontal revenue allocation) (Nyong, 2004). Prior to the commencement of value added tax (VAT), the three tiers of government in Nigeria relied heavily on their share of federally allocated revenue which in turn depended on the revenue from crude oil and

developments in the international petroleum market regulated by Organization for Petroleum Exporting Countries (OPEC). This has serious implications on government finances. Thus, government revenue had been unstable, showing up in deficits and poor delivery of services. This explains the use of tax contractors by some state governments and implementation of various kinds of levies by State and Local Governments to improve their revenue.

The sources of funds for governments federal, state and local have continued to dwindle over the years with the ascendancy of all the governments to be key actors, especially in a developing country like Nigeria. The level of these relationships between and within the nation federating units (federal, State and local government) particularly as it relate to revenue sharing has continually to remain issues in the front burner of the nation's polity. Despite the profound and lengthy discussions that have taken place on the subject for

about four and half decades, consensus has not been reached concerning the optimal formula to adopt to achieve desired economic development (Adeboye 1985; Buhari 2001) Thus, the issue of revenue allocation has been a recurring problem in Nigeria's fiscal federalism. The study identify the gap, the lending interest rate that charges on any loan borrow by the Federal Government, State Government and Local Government either internal or external borrowing respectively affect economic development in term of providing basic need as part of human capital and development of rural dwellers in Nigeria and it will take more time. The study aims to achieve the following objective; to examine the impact of revenue allocation on economic Growth in Nigeria.

Literature Review and Theoretical Framework

Conceptual Clarification

Revenue Allocation in Nigeria

Revenue Mobilisation Allocation and Fiscal Commission (RMAFC) inaugurated a special committee on Revenue Allocation together with the Federal House of Representatives on August 23, 2006 to revisit the 1992 Revenue Allocation Formula the nation has been using to share revenue among the tiers of government. Before then the polity is yet to have a constitutionally backed sharing indices for the Federal (FG), States and Local Government Councils (LGCs). The politics of revenue allocation even in the present democratic dispensation has been so contentious that a week after, an ad hoc committee of the House of Representatives headed by Mr. Mark TerseerGbillah had to undertake Public Hearings between March 2017 to March 3, 2018 across the six geopolitical zones. In all the centres there were heated debates and even some threats. Under the current sharing formula, the Federal Government takes the lion's share of 52.68 per cent from the Federation Account. The 36 states take 26.72 per cent, while the balance of 20.60 per cent is given to the 774 local governments in the country.

Current Revenue Sharing Formula in Nigeria

The Federal Government, the 36 states and their local government areas have so far shared N1.4 trillion from the federation account, being revenue generated in the first quarter of 2017. The breakdown is contained in the monthly Federation Account Allocation Committee, FAAC, report obtained by the News Agency of Nigeria, yesterday, in Abuja. The key agencies that remit funds into the federation account are Nigerian National Petroleum Corporation, NNPC; Federal Inland Revenue Service, FIRS, and Nigeria Customs Service. The total revenue shared in

January between the federal, states and local governments was N430.16 billion, meaning that federal took N168 billion, states, N114.28 billion and local governments, N85.4 billion. The federation grossed in N514 billion in February and Federal Government's share was N200.6 billion, states, N128.4 billion and local governments, N96.52 billion. (FAAC, 2017).

Revenue sharing in Nigeria has evolved significantly over the years. Revenue allocation, as it involves the federating system allocating resources to their constituent units for economic activities has been said to have a major issue in the Nigerian political system even from the pre-independence era. At any level, the whole essence of Revenue Allocation is to necessitate a just and fair revenue sharing system. Since Nigeria gained independence in 1960, the relationship between federal government functions and the lower tiers of government have not changed significantly only for few exceptions during the military regimes. About nine fiscal commissions were appointed to examine Nigeria's revenue sharing arrangements between 1948 and 1988. These include Phillipson (1946), Hicks (1952), Chick (1954), Raisman (1959), Binns (1964), Dina (1968), Aboyade (1977), Okigbo (1979), and Danjuma (1988) commissions (Ekpo, 2004; Jimoh, 2003). In Nigeria's post-independence, so many fiscal review commissions were set up by different governments to work out an acceptable revenue allocation formula for all tiers of government. Just like other post-independence formulae on revenue allocation, the Okigbo Commission's recommendation was accompanied with controversy, disagreement and conflict.

The Constitution and the Principles of Revenue Allocation

Every constitution in a federal system contains pre-determined rules for the collection, custody and disposal of revenues as well as spells out to each level of government the sources from which it can lawfully derive independent revenue (Ubok- Udom&Ndiyo 2004). Where revenues are to be collected before being shared it is normal for such collection to be undertaken at the highest tier of government or by the tier that is coordinating the activities of the component units in order to generate confidence among the units (Taiwo, 1999). Where revenue is shared before it is collected that is where sources of revenue are allocated to each tier of government the understanding is that each tier will keep within the limits of the resources allocated and not seek directly or indirectly to collect revenues from sources not allocated to it (Imeh, 1994). The constitution at times contains and often includes an agreement on how to allocate revenue and revenue sources to each unit but not the size of revenue. Once the conditions of sharing have been

determined, it is in the interest of all tiers to work to increase the size of revenue because what each unit gets depends on the size of revenue available to be shared. There are statutory provisions for revenue sharing and powers to generate revenue through specific sources. The 1979 and 1999 Constitutions of the Federal Republic of Nigeria, established the type of fiscal relationships that would exist among the various levels of government. For example, section 149(2) of the 1979 Constitution or section 162(3) of the 1999 Constitution stipulates that any amount standing to the credit of the Federation Account shall be distributed among the federation, state governments and the local government councils in each state on such terms and in such manner as may be prescribed by the National Assembly.

Under section 149 of the outdated 1979 constitution, provision is made for the creation of “Federation Account” from which allocations of revenue are made to the three tiers of government. The 1999 constitution makes a similar provision in section 162. But whereas the 1979 constitution left it for the National Assembly to determine the principles to be employed in allocating revenue to each tier and to state or local government councils, the 1999 constitution went further to provide the principles which the government should consider thus leaving it to the National Assembly to determine only the weights which should be attached to each principle. In the 1979 constitution both the principles and weight were to be determined by the National Assembly. The president, upon receiving advice from the Revenue Mobilization Allocation and Fiscal Commission, shall place before the National Assembly proposals for revenue allocation from the federation account and in determining the formula, the National Assembly shall take into account the allocation principles especially those of population, equality of states, internal revenue generation, land mass, terrain as well as population density. In addition to these provisions section 162 (2) of 1999 constitution even provides that at least 13% revenue should be allocated on derivation principle that is to say that the weight attached to the principle of derivation is at least 13% thus trying to assuage oil producing states that have been complaining about the allocation of 1.5% from derivation before now. It should be noted that this provision is not in respect of oil mineral alone but it applies to all other minerals and natural resources which contribute directly to the federation account.

Economic growth

According to the classical school of thought, Economic growth can be defined as the increase or improvement in the inflation-adjusted market value of the goods and services produced by an economy over time. Statisticians conventionally

measure such growth as the percent rate of increase in the real gross domestic product, or real GDP. Growth is usually calculated in *real* terms – i.e., inflation-adjusted terms – to eliminate the distorting effect of inflation on the prices of goods produced. Measurement of economic growth uses national income accounting. Since economic growth is measured as the annual percent change of gross domestic product (GDP), it has all the advantages and drawbacks of that measure. The economic growth-rates of countries are commonly compared using the ratio of the GDP to population (per-capita income).

The "rate of economic growth" refers to the geometric annual rate of growth in GDP between the first and the last year over a period of time. This growth rate represents the trend in the average level of GDP over the period, and ignores any fluctuations in the GDP around this trend.

Economists refer to an increase in economic growth caused by more efficient use of inputs (increased productivity of labor, of physical capital, of energy or of materials) as intensive growth. In contrast, GDP growth caused only by increases in the amount of inputs available for use (increased population, for example, or new territory) counts as extensive growth. Development of new goods and services also generates economic growth. As it so happens, in the U.S. about 60% of consumer spending in 2013 went on goods and services that did not exist in 1869.

The economic growth rate is calculated from data on GDP estimated by countries' statistical agencies. The rate of growth of GDP per capita is calculated from data on GDP and people for the initial and final periods included in the analysis of the analyst. Living standards vary widely from country to country, and furthermore, the change in living standards over time varies widely from country to country. Below is a table which shows GDP per person and annualized per person GDP growth for a selection of countries over a period of about 100 years. The GDP per person data are adjusted for inflation, hence they are "real". GDP per person (more commonly called "per capita" GDP) is the GDP of the entire country divided by the number of people in the country; GDP per person is conceptually analogous to "average income".

Theoretical Literature

Adam Smith in *the Wealth of Nations* (1776)

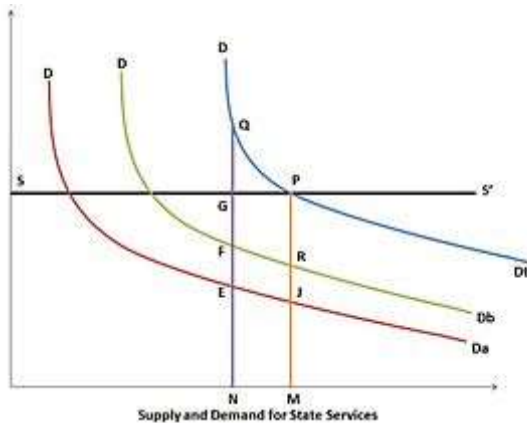
"Such things as defending the country and maintaining the institutions of good government are of general benefit to the public. Thus, it is reasonable that the population as a whole should contribute to the tax costs. It is also reasonable to

demand certain other things of a tax system for example, that the amounts of tax individuals pay should bear some relationship to their abilities to pay Good taxes meet four major criteria. They are (1) proportionate to incomes or abilities to pay (2) certain rather than arbitrary (3) payable at times and in ways convenient to the taxpayers and (4) cheap to administer and collect.

In modern public-finance literature, there have been two main issues: who can pay and who can benefit (Benefit principle). Influential theories have been the ability theory presented by Arthur Cecil Pigou and the benefit theory developed by Erik Lindahl. There is a later version of the benefit theory known as the "voluntary exchange" theory.

Under the benefit theory, tax levels are automatically determined, because taxpayers pay proportionately for the government benefits they receive. In other words, the individuals who benefit the most from public services pay the most taxes. Here, two models adopting the benefit approach are discussed: the Lindal model and the Bowen model in figure 1 and 2.

Figure 1: Lindahl's model



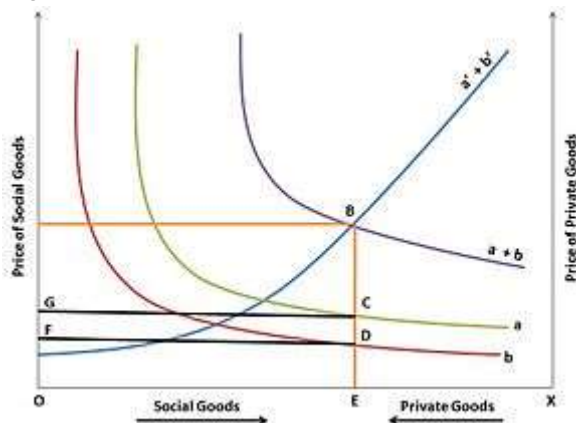
Lindahl tries to solve three problems:

- Extent of state activity
- Allocation of the total expenditure among various goods and services
- Allocation of tax burden

In the Lindahl model, if SS' is the supply curve of state services it is assumed that production of social goods is linear and homogenous. DDa is the demand curve of taxpayer A, and DDb is the demand curve of taxpayer B. The Horizontal summation of the two demand curves results in the community's total demand schedule for state services. A and B pay different proportions of the cost of the

services which is vertically measured. When ON (O = graph origin, at axes intersection) is the amount of state services produced, A contributes NE and B contributes NF; the cost of supply is NG. Since the state is non-profit, it increases its supply to OM. At this level, A contributes MJ and B contributes MR (the total cost of supply). Equilibrium is reached at point P on a voluntary-exchange basis. The Lindahl equilibrium proposes that individuals pay for the provision of a public good according to their marginal benefits in order to determine the efficient level of provision for public goods. In the equilibrium state, all individuals consume the same quantity of public goods but may face different prices because some people may value a particular good more than others. The Lindahl equilibrium price is the resulting amount paid by an individual for his or her share of the public goods.

Figure 2: Bowen's model



Bowen's model

Bowen's model has more operational significance, since it demonstrates that when social goods are produced under conditions of increasing costs, the opportunity cost of private goods is foregone. For example, if there is one social good and two taxpayers (A and B), their demand for social goods is represented by a and b; therefore, a+b is the total demand for social goods. The supply curve is shown by a'+b', indicating that goods are produced under conditions of increasing cost. The production cost of social goods is the value of foregone private goods; this means that a'+b' is also the demand curve of private goods. The intersection of the cost and demand curves at B determines how a given national income should (according to taxpayers' desires) be divided between social and private goods; hence, there should be OE social goods and EX private goods. Simultaneously, the tax shares of A and B are determined by their individual demand schedules. The total tax

requirement is the area (ABEO) out of which A is willing to pay GCEO and B is willing to pay FDEO.

Harrod-Domarmodel

Keynesian model of economic growth. It is used in development economics to explain an economy's growth rate in terms of the level of saving and of capital. It suggests that there is no natural reason for an economy to have balanced growth. The model was developed independently by Roy F. Harrod in 1939, and EvseyDomar in 1946, although a similar model had been proposed by Gustav Cassel in 1924. The Harrod–Domar model was the precursor to the exogenous growth model. Neoclassical economists claimed shortcomings in the Harrod–Domar model in particular the instability of its solutionand, by the late 1950s, started an academic dialogue that led to the development of the Solow–Swan model. According to the Harrod–Domar model there are three kinds of growth: warranted growth, actual growth and natural rate of growth. Warranted growth rate is the rate of growth at which the economy does not expand indefinitely or go into recession. Actual growth is the real rate increase in a country's GDP per year. (See also: Gross domestic product and Natural gross domestic product). Natural growth is the growth an economy requires to maintain full employment. For example, if the labor force grows at 3 percent per year, then to maintain full employment, the economy's annual growth rate must be 3 percent.

Theoretical Framework

The study anchored on Adam Smith in *the Wealth of Nations* (1776) "Such things as defending the country and maintaining the institutions of good government are of general benefit to the public. Thus, it is reasonable that the population as a whole should contribute to the tax costs. It is also reasonable to demand certain other things of a tax system for example, that the amounts of tax individuals pay should bear some relationship to their abilities to pa. Good taxes meet four major criteria. They are (1) proportionate to incomes or abilities to pay (2) certain rather than arbitrary (3) payable at times and in ways convenient to the taxpayers and (4) cheap to administer and collect.

Empirical Review

Martinez-Vazquez and McNab (2002) in a study finds out that allocation of revenue significantly reduces the growth of real GDP per capita in developed countries. A similar cross-country study on fiscal decentralization in unitary and

federal countries for the period 1971-1990 using annual data, Yilmaz (2000) finds that decentralization results in growth of real GDP per capita in the unitary countries and decentralization is insignificant to influence growth of real GDP per capita in federal countries. These studies are based on foreign economies.

In Nigeria, Akinlo (1999) finds that state governments' public expenditures are influenced by federal grants during the period of study using ordinary least squares (OLS) technique. Similarly, in the study of Akujuobi and Kalu (2009), using the same econometric technique (OLS) finds significant effects of statutory allocation on financing states' real assets investment. Aigbokhan (1999) finds a significant relationship and a high concentration ratio of expenditure and revenue using OLS technique to examine fiscal decentralization and economic growth in Nigeria. The impact of fiscal decentralization of revenue to individual federating units on economic growth of Nigeria is demonstrated in the studies of Akeem (2011) and Usman (2011) both utilizing OLS technique. Usman (2011) finds that both shares of federal government and local governments' revenue from federation account contribute to economic growth process in Nigeria. The study finds no contribution of share of states revenue from federation to economic growth process in Nigeria, which is contrary to the findings of the studies of Akinlo (1999) and Akujuobi and Kalu (2009). Usman (2011) uses the growth rate of shares of the federating units from federation account as proxies and finds direct relationship between revenue allocations to federal, states, and local governments and economic growth process in Nigeria. All of these studies made use of OLS econometric technique which does not show causality and direction of causality.

Other studies as Emengini&Anere, 2010;Olofin,Olubusoye,Bello and Olalekan,2012) use different analytical techniques such as *t*-test correlation coefficient and cluster analysis, respectively, to examine revenue allocation in Nigeria. Emengini and Anere (2010) find no influence to socioeconomic status of states and local councils by the level of revenue accruing to them from the federation account. In Olofin et al. (2012), the results show a small number of states constituting each of the clusters in terms of statutory allocation. Jimoh (2003) utilizes a causality test using Error Correction Model (ECM) to ascertain the long-run causal relationship and short-run dynamics between the degree of decentralization and economic growth in Nigeria. He finds out that more decentralized governance, in terms of increase in number of local governments and increase in transfer of revenue from federation account to states and local governments influence economic activities and growth in Nigeria. Jimoh refuses to carry out preliminary test of time series data using unit root test and cointegration

test. However, the present study differs from Jimoh because it adopts the preliminary test of time series data, and ECM and Pairwise Granger Causality test to ascertain the causal relationship and the direction of causality between revenue allocations and real GDP in Nigeria.

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Methodology

Methods and Data

Unit root test (ADF) shall be used for the preliminary estimation followed by Co-integration diagnostics tests and Error Correction Model (ECM) for this study. Time series data from several issues of World Development Indicator online data base (2021) and Office of the Accountant General of the summary of Federal Account Allocation Committee (FAAC, 2020) shall be used for the study covering the period 1981 - 2020. The rationale for this range of period relates to the fact that the mid-1980s witnessed the structural adjustment programme (SAP) in Nigeria when interests for fiscal allocation heightened.

Data

The data used for this research paper is time series from 1981 to 2020 on Impact of Revenue Allocation on Economic Growth in Nigeria, the variables are; Gross Domestic Product (GDP), Revenue allocation from Federal Government (REVFG), Revenue from the State (REVST), Revenue from Local Government (REVLG) Lending Interest Rate (LINR) and Human Capital Development (HCD) the data were sourced from World Development Indicator (WDI, 2021) and summary of Federation Account Allocation Committee to all tiers of government (FAAC, 2020).

Model Specification

The research aims to analysing the impact of revenue allocation on Economic Growth in Nigeria from 1981-2020. The dependent variable of this research paper is Gross Domestic Product (GDP), while the independent variable includes:

Revenue allocation to Federal Government (REVFG), Revenue allocation to State (REVST), Revenue allocation to local government (REVLG) and Lending Interest Rate (LINR). The functional relationship is as follows;

$$GDP = f(REVFG, REVST, REVLG, LINR, HCD)$$

The econometric relationship estimated is specified as:

$$GDP_t = \beta_0 + \beta_1 REVFG_t + \beta_2 REVST_t + \beta_3 REVLG_t + \beta_4 LINR_t + \beta_5 LHCD_t \mu_t$$

However, to avoid the problem of spurious regression, the paper adopts the liner log model given as;

$$\log GDP_t = \beta_0 + \beta_1 \log REVFG_t + \beta_2 \log REVST_t + \beta_3 \log REVLG_t + \beta_4 \log LINR_t + \beta_5 \log HCD_t + \mu_t$$

Where:

GDP = Gross Domestic Product

REVFG = Revenue Allocation to Federal Government

REVST = Revenue Allocation to State Government

REVLG = Revenue Allocation to Local Government

LINR = Lending Interest Rate

HCD = Human Capital Development

Estimation Techniques

Unit Root Test

The Unit root test procedure employed for this study is the Augmented Dickey-Fuller (ADF) test developed by Dickey Fuller (1997,1981). The ADF test requires rejecting null hypotheses of unit root, that is the series are non-stationary in favour of the alternative hypothesis of stationary (Omoke, 2010). The tests were conducted without a deterministic trend for each of the series. The general form of the ADF test is stated as:

$$\Delta y_t = \alpha_0 + \alpha_1 y_{t-1} + \sum_{i=1}^n \alpha_i \Delta y_i + \varepsilon_t$$

Where: y is a time series, t is a linear time trend, Δ is the difference operator, β_0 is a constant, n is the optimum number of lags in the dependent variable and ε_t is the error time t.

Autoregressive distributed lag (ARDL)

This model is an ordinary least square (OLS) based model which can be used for both non-stationary data as well as for data with mixed order of integration. This technique used sufficient numbers of lags to capture the data generating process in

a general to specific modeling framework (Shrestha and Bhatta, 2018). The dynamic error correction model (ECM) can be obtained from the ARDL model through a simple linear transformation. Similarly, the ECM combines both the short run dynamics with the long run equilibrium relationship. According to Akpan and Akpan (2012), the statistic underlying this test is the Wald or F-statistic in a generalized Dickey-Fuller type regression, which is used to test the significance of lagged levels of the variables under consideration in a conditional unrestricted equilibrium correction model (UECM). The general form of the Autoregressive Distributed Lag (ARDL) bounds testing model is presented as follow:

$$y_t = \alpha + \beta x_t + \delta z_t + e_t$$

The error correction version of the Autoregressive Distributed Lag (ARDL) bounds testing model is expressed as:

$$\Delta y_t = \alpha_0 + \sum_{i=1}^p \beta_1 \Delta y_{t-1} + \sum_{i=1}^p \delta_i \Delta x_{t-1} + \sum_{i=1}^p \varepsilon_i \Delta z_{t-1} + \lambda_1 y_{t-1} + \lambda_2 x_{t-1} + \lambda_3 z_{t-1} + \mu_t$$

The first part of equation (v) with β , δ and ϵ denotes short run dynamics of the model while the second part with λ s represents long run relationship. The null hypothesis that guides the ARDL approach is $\lambda_1 + \lambda_2 + \lambda_3 = 0$, which implies non-existence of long run relationship.

Error Correction Model

This is done when there is evidence of a long run relationship among the variables in the model. It requires the estimation of Ordinary Least square (OLS) model with an error correction term to capture the dynamic relationship among the variables. The purpose of the ECM is to indicate the speed of adjustment from the short run disequilibrium to long-run equilibrium.

$$\Delta y_t = \alpha_0 + \sum_{t-1}^{n-1} \beta_{1t} \Delta y_{t-1} + \lambda ECM_{t-1} + \varepsilon_t$$

Where: Δ is the difference operator and λ is the error correction coefficient.

Result and Presentation

Unit Root Test Stationarity

Table 1: Augmented Dickey-Fuller (ADF) Unit Roots Results

Null Hypothesis: the variable has a unit root

		At Level					
		LGDP	LREVFG	LREVST	LREVLG	LLINR	LHCD
With	t-	0.6175	-0.9197	-0.2609	-0.7817	-3.4148	-3.2890
Constant	Statistic						
	<i>Prob.</i>	<i>0.9885</i>	<i>0.7713</i>	<i>0.9216</i>	<i>0.8132</i>	<i>0.0165</i>	<i>0.0231</i>

		n0	n0	n0	n0	**	**
With	t-	-2.4147	-1.3937	-1.0733	-2.0036	-3.4263	-3.1827
Constant	Statistic						
& Trend							
	<i>Prob.</i>	<i>0.3667</i>	<i>0.8472</i>	<i>0.9208</i>	<i>0.5812</i>	<i>0.0628</i>	<i>0.1043</i>
		n0	n0	n0	n0	*	n0
Without	t-	3.3706	0.2473	0.9801	2.1244	-0.2669	-0.6108
Constant	Statistic						
& Trend							
	<i>Prob.</i>	<i>0.9996</i>	<i>0.7527</i>	<i>0.9105</i>	<i>0.9907</i>	<i>0.5829</i>	<i>0.4455</i>
		n0	n0	n0	n0	n0	n0
At First Difference							
		d(LGDP)	d(LREVF6)	d(LREVST)	d(LREVL6)	d(LLINR)	d(LHCD)
With	t-	-4.5312	-5.5995	-5.8587	-5.4498	-4.9769	-5.8420
Constant	Statistic						
& Trend							
	<i>Prob.</i>	<i>0.0008</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0001</i>	<i>0.0003</i>	<i>0.0000</i>
		***	***	***	***	***	***
With	t-	-4.5619	-5.6383	-6.0216	-5.3823	-4.9497	-5.7162
Constant	Statistic						
& Trend							
	<i>Prob.</i>	<i>0.0042</i>	<i>0.0002</i>	<i>0.0001</i>	<i>0.0004</i>	<i>0.0016</i>	<i>0.0002</i>
		***	***	***	***	***	***
Without	t-	-3.7630	-5.5617	-5.7406	-4.5341	-5.0515	-5.9403
Constant	Statistic						
& Trend							
	<i>Prob.</i>	<i>0.0004</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>	<i>0.0000</i>
		***	***	***	***	***	***

The unit root results presented in Table 1 shows that the variables are stationary after first difference. This implies the test statistic at first difference is greater than the critical value at 5% level of significance. Thus, the variables are integrated of order I(1) and I(0). This is also evidence from the probability values obtained after differencing the variable. These values are all less than 0.05%. The mixed of Stationarity lead this study to employ Autogressive Distributed Lag (ARDL)

approach to determine the impact of Revenue Allocation on Rural Development in Nigeria as well as the long-run equilibrium relationship between the variable.

Autoregressive Distributed Lag (ARDL)

Table 2: Autoregressive Distributed Lag (ARDL) Test Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGDP(-1)	0.588483	0.378286	1.555654	0.1948
LGDP(-2)	-0.193068	0.389507	-0.495673	0.6461
LGDP(-3)	0.235529	0.317157	0.742625	0.4990
LGDP(-4)	-0.491262	0.353615	-1.389257	0.2371
LREVFG	-0.012955	0.052658	-0.246016	0.8178
LREVFG(-1)	0.038393	0.033350	1.151223	0.3138
LREVFG(-2)	-0.062030	0.034791	-1.782938	0.1492
LREVFG(-3)	-0.002673	0.029163	-0.091658	0.9314
LREVFG(-4)	-0.157677	0.042212	-3.735342	0.0202
LREVST	0.015967	0.134406	0.118796	0.9112
LREVST(-1)	-0.020631	0.045884	-0.449636	0.6763
LREVST(-2)	0.033536	0.039865	0.841234	0.4476
LREVLG	-0.107362	0.131653	-0.815494	0.4606
LREVLG(-1)	-0.041229	0.083439	-0.494124	0.6471
LREVLG(-2)	0.129581	0.075520	1.715844	0.1613
LREVLG(-3)	0.058509	0.054848	1.066743	0.3462
LREVLG(-4)	0.176259	0.064200	2.745456	0.0516
LLINR	-0.023063	0.039216	-0.588108	0.5881
LLINR(-1)	0.020385	0.058445	0.348789	0.7448
LLINR(-2)	-0.036811	0.075402	-0.488195	0.6510
LLINR(-3)	-0.065968	0.041365	-1.594768	0.1860
LLINR(-4)	-0.065650	0.069846	-0.939924	0.4005
LHCD	-0.942645	0.487911	-1.932001	0.1255
LHCD(-1)	-0.620876	0.521059	-1.191565	0.2993
LHCD(-2)	-0.756398	0.393701	-1.921251	0.1271
LHCD(-3)	0.183000	0.617244	0.296479	0.7816
LHCD(-4)	-0.866763	0.490755	-1.766185	0.1521
C	40.59706	17.63779	2.301709	0.0828

Source: Author's computation using E-view 10

The negative sign of the short run coefficient of Federal Government Revenue (LREVFG) by 1% will also decrease the level of Gross Domestic Product in Nigeria

by 0.16% in term of non-remittance of revenue from the various sources of revenue and is statistically significance at 10% level. The positive sign of the short run coefficient of Local Government Revenue (LREVLG) from the rural areas will contribute to Gross Domestic Product (GDP) by 0.17% and is statistically significance at 10% level.

Autoregressive Distributed Lag (ARDL)

Table 3: ARDL Long Run

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LREVFG	-0.228916	0.165357	-1.384378	0.2385
LREVST	0.033559	0.181412	0.184986	0.8622
LREVLG	0.250788	0.070903	3.537053	0.0241
LLINR	-0.198887	0.064187	-3.098559	0.0363
LHCD	-3.491359	0.557424	-6.263381	0.0033
C	47.18838	2.361534	19.98209	0.0000

Source: Author's computation using E-view 10

The long run coefficient shows that the negative sing of Federal Government Revenue (LREVFG) in long run has negative influence on Gross Domestic Product (GDP) in Nigeria and is not significant, the negative sign of Lending rate (LINR) also has negative influence on Gross Domestic Product (GDP) and is statistically significance at 10% level and negative sign of Human Capital Development (LHCD) also has negative influence on Gross Domestic Product (GDP) in term of productivity and is statistically significance at 5% level of significance.

Bound Test Cointegration Result

Table 4: Bound Test Cointegration Result

Model	F-statistics	Lag	Level Significant	Bound Test Critical Value (Constant Level	
				I(0)	I(1)
LGDP, LREVFG, LREVST, LREVST, LLINR, LHCD	4.129605	4	10%	2.37	3.2
			5%	2.79	3.67
			2.5%	3.15	4.08
			1%	3.65	4.66

Source: Author's computation using E-view 10

Cointegration Bound test result on table 4: reveals that there exists long run relationship among the variables of study as the calculated F-statistics (4.129605) is greater than the lower and upper bound of I(0) and I(1) critical value at 10% level of significance levels, thereby indicating that, we can safely reject the null hypothesis of no cointegration among Gross Domestic Product (LGDP), Revenue from Federal Government (LREVFG), Revenue from State Government (LREVST), Revenue from Local Government (LREVLG), Lending Rate (LLINR) and Human Capital Development (HCD) estimated long run coefficients.

Error Correction Results

After testing for long-run relationship among the model, there is a need to determine the short run dynamics (speed of adjustment). The results obtained are presented in Table 5.

Table 5: ECM Test Result

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGDP(-1))	0.448801	0.121030	3.708175	0.0207
D(LGDP(-2))	0.255733	0.120649	2.119652	0.1014
D(LGDP(-3))	0.491262	0.115698	4.246063	0.0132
D(LREVFG)	-0.012955	0.012788	-1.013066	0.3683
D(LREVFG(-1))	0.222380	0.033112	6.715998	0.0026
D(LREVFG(-2))	0.160350	0.022807	7.030799	0.0022
D(LREVFG(-3))	0.157677	0.023042	6.842925	0.0024
D(LREVST)	0.015967	0.020283	0.787199	0.4752
D(LREVST(-1))	-0.033536	0.017724	-1.892092	0.1314
D(LREVLG)	-0.107362	0.037506	-2.862560	0.0458
D(LREVLG(-1))	-0.364348	0.057856	-6.297525	0.0032
D(LREVLG(-2))	-0.234767	0.037893	-6.195478	0.0035
D(LREVLG(-3))	-0.176259	0.032255	-5.464531	0.0055
D(LLINR)	-0.023063	0.014955	-1.542200	0.1979
D(LLINR(-1))	0.168428	0.033895	4.969114	0.0077
D(LLINR(-2))	0.131618	0.021338	6.168313	0.0035
D(LLINR(-3))	0.065650	0.015562	4.218555	0.0135
D(LHCD)	-0.942645	0.175755	-5.363397	0.0058
D(LHCD(-1))	1.440162	0.221067	6.514587	0.0029

D(LHCD(-2))	0.683764	0.170764	4.004137	0.0161
D(LHCD(-3))	0.866763	0.180949	4.790108	0.0087
CointEq(-1)*	-0.860319	0.116251	-7.400546	0.0018

Source: Author's computation using E-view 10

The positive sign of the coefficient of Federal Government Revenue (LREVF_G), this implies that a 1% increase will lead to an increase to Gross Domestic Product (LGDP) by 0.15% and is statistically significance at 5%, the negative sign of Local Government Revenue (LREVL_G) by 5% will decrease the Gross Domestic Product (GDP) by 0.17% and is statistically significance at 5% level and negative sign of Human Capital Development (HCD) by 1% will decrease the Gross Domestic Product (GDP) by 0.94% this indicate that the revenue received from the federal government is not enough to undertake the rural development since the Human capital development as growth to development is influencing the Gross Domestic Product (GDP) negatively. The Error Correction Model (ECM) test have been conducted to analyse the speed of adjustment or disequilibrium dependent variable (GDP) from long to short run equilibrium. The result shows that the speed of adjustment to short run equilibrium is 86% yearly and significance at 5% level.

For robustness, therefore, the estimated model was evaluated for presence or absence of serial correlation and Heteroskedasticity with the context of the Breusch-Godfrey Serial Correlation LM test and Breusch-Pagan-Godfrey Heteroskedasticity test, respectively. Both tests were conducted under the null hypotheses of “no serial autocorrelation” and “no Heteroskedasticity” respectively. The result indicated the estimated model were free from the econometric problems, as the F-statistics in both test were statistically insignificant (both P-value were greater than 0.05), leading to a rejection of the null hypotheses in the test as presented in table 7.

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.717407	Prob. F(5,30)	0.6154
Obs*R-squared	3.844734	Prob. Chi-Square(5)	0.5720
Scaled explained SS	7.434641	Prob. Chi-Square(5)	0.1903

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.649307	Prob. F(2,28)	0.5301
Obs*R-squared	1.595642	Prob. Chi-Square(2)	0.4503

Source: Authors' Estimation.

Table 6: Plot of Cumulative Sum of Recursive Residuals

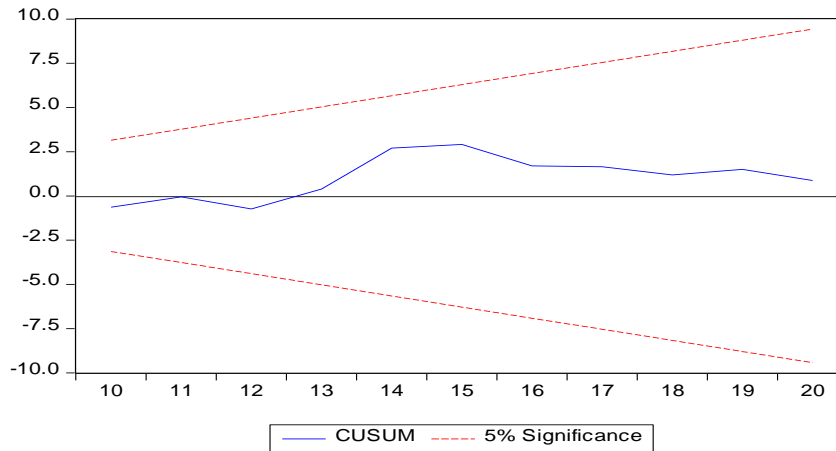
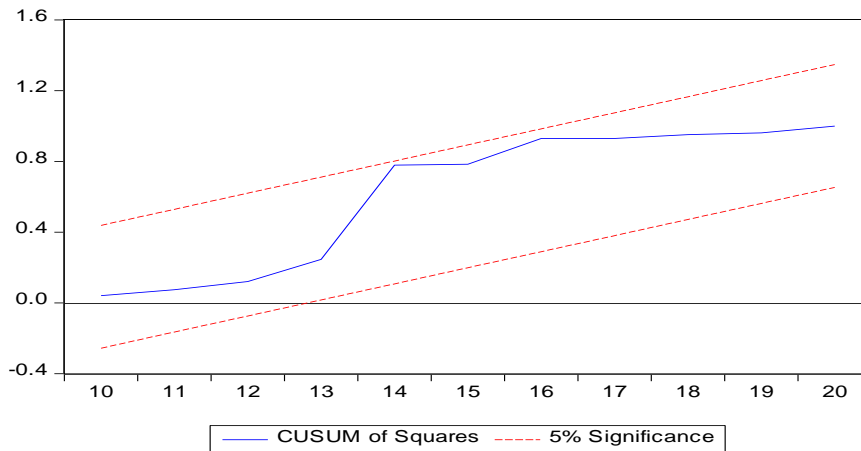


Table 7: Plot of Cumulative Sum of Square of Recursive Residuals



Conclusion and Recommendations

This study has examined the impact of revenue allocation on EconomicGrowth in Nigeria for the period 1981 to 2020. Principles of fiscal federalism, its challenges as well as the review of the past and current revenue allocation commissions were also examined. The results showed that the federal government receives the highest share of revenue from the Federation Account, 52.68%, 26.72% and 20.60%. Furthermore, the study attempted to explain the revenue allocation to the three tiers of government and its impact on EconomicGrowth in Nigeria. The result of the analysis indicates that revenue allocation contributes to economic growth in Nigeria although, in varying proportions implying that the local government contributes negatively to economic growth and federal government allocation did not yield proportionate result as expected. It also indicates that revenue allocation,

lending interest rate affect the revenue and influence the Gross Domestic Product (GDP) negatively in term of sustainable development through improvement in human capital development.

Based on the review of past and present revenue allocation formulas and the empirical findings obtained in this study, the following recommendations have been made: thus,

1. The current revenue allocation formula should be reviewed and each tier of government should be allocated revenue according to its constitutional responsibilities. This is to ensure that, the levels of government are able to carry out expenditure functions within their jurisdiction and ultimately improve the economic growth and better the standard of living of its citizens.
2. It is however recommend that the state and local government be given a higher share of the revenue, given that they are seen to be closer to the citizens in terms of providing them with basic needs because most of Nigerians lives in the rural areas where social amenities and infrastructures are lacking, further more study also recommends that the machinery for revenue generation should be improved upon for efficiency and effectiveness to stimulate national development that drops down to the masses.

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