



An Empirical Analysis of the Effect of Fiscal Policy on Real Sector Growth in Nigeria using ARDL Approach

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Abstract

The study employs an empirical analysis, utilizing the ARDL approach, to investigate the impact of Fiscal Policy on Real Sector Growth in Nigeria. Specifically, it examines the influence of Federal government Non-oil Taxes and oil taxes, recurrent expenditure, and capital expenditure on the country's inflation rate. Using data spanning from 1995 to 2020 from the Central Bank of Nigeria statistical bulletin, the research employs the Augmented Dickey-Fuller unit root test and the General-to-Specific approach to Autoregressive Distributed Lag (ARDL) modeling for establishing both long-run and short-run equilibrium conditions. The findings indicate that Federal government Non-oil Taxes have a negative and nonsignificant effect on Nigeria's inflation rate in both the long and short run. Similarly, Federal government Oil Taxes, recurrent expenditure, and capital expenditure exhibit negative and nonsignificant impacts on the inflation rate, both in the long and short term. These results suggest that these fiscal variables do not significantly influence inflation rates in Nigeria. The study's implications underscore the need for economic diversification, particularly in sectors like mining, to establish multiple robust income sources. Additionally, enhancing institutions, especially through anti-corruption agencies, is crucial to strengthen the oil sector's impact on per capita growth. Proactive measures in recurrent expenditure areas such as education, agriculture, transportation, community services, and general administration are essential to bolster economic conditions.

Keywords Fiscal Policy; Real Sector Growth; ARDL Approach; Nigeria

Citation Oluka, K. U., Ugwu, F. I. & Chime, A. I. (2023). An Empirical Analysis of the Effect of Fiscal Policy on Real Sector Growth in Nigeria using ARDL Approach. *International Journal of Advanced Finance and Accounting*, 4(4), 57-69, <https://doi.org/10.5281/zenodo.10064759>



Introduction

It is an established fact that market mechanism cannot solely perform all the economic functions in a country; and as such public policy is required to correct, guide and supplement the market forces (Ozurumba, 2019). Fiscal policies are such policies government uses to correct market imperfections and failure. In Nigeria, governments at various times had used these policies to manage the economy with a view to achieving desired macroeconomic objectives such as promoting employment generation, ensuring economic stability, maintaining price stability and balance of payment viability, ensuring exchange rate stability and maintaining stable economic growth (Ezeabasilli, Mojekwu and Herbert, 2019). The policy thrust used in manipulating the economy depends on the objectives that need to be achieved at any time period. Government intervention in the economy through fiscal policy has been to manipulate the receipt and expenditure sides of its budget in order to achieve certain national objectives. The reality however is that often, there have been wastages, some spending has been politicized, and there has been high level misappropriation, mismanagement and corruption. Ajisafe and Folorunsho (2020) argued that inappropriate government expenditure, tax policies and large deficits have been responsible for the macroeconomic disequilibrium at varying times in Nigeria. Nwaoha (2016) noted that fiscal governance is strong only when government can deliver their fiscal policy in a sustainable way and are efficiently applied to the provision of public goods and services.

Fiscal policy according to (Ezirim, 2018) fiscal policy is the use of government revenue collection (taxes or tax cuts) and expenditure (spending) to influence a country's economy. The use of government revenues and expenditures to influence macroeconomic variables developed as a result of the Great Depression, when the previous laissez-faire approach to economic management became discredited. The performance of fiscal policies in Nigeria is affected largely by the specific attributes of the country, key of which are oil dependency and high level of openness (Froya & Waud, 2018). Oil dependency, for example, makes the country's fiscal policy to be affected by challenges such as volatility of oil price, oil-related ethnic conflicts, and the voracity effect which involves channeling of public funds into private pockets by powerful individuals when there are oil windfalls. The high level of openness, caused largely by the liberalization policy of the Structural Adjustment Programme (SAP) introduced in the country in 1986, for example, makes the monetary policy of the economy to be susceptible to international developments such as fluctuations of the world interest rate (Agu, Idike, Okwor & Ugwunta, 2020).

The growth and development of the Nigerian economy have not been stable over the years. As a result, the country's economy has witnessed so many shocks and disturbances both internally and externally over the decades. Internally, the unstable investment and consumption patterns, as well as the improper implementation of public policies, changes in future expectations, and the accelerator, are some of the factors responsible for it. Similarly, the external factors identified are wars, revolutions, population growth rates and migration, technological transfer and changes, as well as the openness of the country's economy are some of the factors responsible. Fiscal policy is a major economic stabilization weapon that involves measures taken to regulate and control the volume, cost, and availability, as well as direction of money in an economy to achieve some specified macroeconomic policy objective and to counteract undesirable trends in the Nigerian economy (Gbosi, 2016).

Statement of the Problem

Over the years, there has been expansion in deficit financing and unstable fiscal policy, driven largely by oil prices between 2015 and 2018, and 2020 and 2022; revenue and expenditure have increased sharply. This, as typically seen, followed the reduction of expenditures as oil prices substantially decline, though at times with an interval after the decline in oil prices. The implications of such boom-burst fiscal policies include transmission of oil-price volatility to the stable provision of government services. This has added to the failure over the years of public spending and stagnancy in economic growth. The Nigerian economy started experiencing recession from early 1980s that led to a depression in the mid-1980s. This depression continued until early 1990s without recovering from it. As such, the government continually initiated policy measures that would tackle and overcome the dwindling economy. Drawing from the experience of the great depression, government policy measure to curb the depression was in the form of increased government spending (Nagayasu, 2003). According to Okunroumu (1993), the management of the Nigerian economy in order to achieve macroeconomic stability has been unproductive and negative, hence one cannot say the Nigerian economy is performing. This is evident in the adverse inflationary trend, government fiscal

policies, rippling foreign exchange rates, the fall and rise of gross domestic product, unfavourable balance of payments as well as increasing unemployment rates which are all symptoms of growing macroeconomic instability. As such, the Nigerian economy is unable to function well in an environment where there is low-capacity utilization attributed to shortage in foreign exchange as well as the volatile and unpredictable government policies in Nigeria (Isaksson, 2001). Studies have been conducted on the impact of fiscal policy on economic growth of Nigeria as seen in the literature review and it has been discovered that emphasis is laid on the relative effectiveness of the fiscal policy components. Therefore, this research study will contribute to the stock of knowledge by examining fiscal policy and real sector in Nigeria.

Objectives of the Study

The broad objective of the study was an empirical analysis of the effect of Fiscal Policy on Real Sector Growth in Nigeria using ARDL approach. The following are the specific objective of the study:

- i. To examine the effect of Federal government Non-oil Taxes on real gross domestic product in Nigeria.
- ii. To examine the effect of federal government oil taxes on real gross domestic product in Nigeria.
- iii. To ascertain the effect of Federal government recurrent expenditure on real gross domestic product in Nigeria.
- iv. To assess the effect of Federal government capital expenditure on real gross domestic product in Nigeria.

Research Questions

The following research questions will also aid the study:

- i. To what extent does Federal government Non-oil Taxes affect real gross domestic product in Nigeria?
- ii. To what extent does federal government oil taxes affect real gross domestic product in Nigeria?
- iii. What is the effect of Federal government recurrent expenditure on real gross domestic product in Nigeria?
- iv. What is the effect of Federal government capital expenditure on real gross domestic product in Nigeria?

Research Hypotheses

The following alternative hypothesis will guide the study

- i. Federal government Non-oil Taxes has positive and significant effect on real gross domestic product in Nigeria.
- ii. Federal government oil taxes has positive and significant effect on real gross domestic product in Nigeria
- iii. Federal government recurrent expenditure has positive and significant effect on real gross domestic product in Nigeria.
- iv. Federal government capital expenditure has positive and significant effect on real gross domestic product in Nigeria.

Significance of the Study

This research work will be of immense benefit to the following group of persons:

1. **Society:** The findings of this study will help the public understand that monetary and fiscal policy is a technique for economic management to bring about Sustainable economic growth and development.
2. **Bankers:** This study will be of great benefit to bankers, investment analysts, government agencies, academics, private and public sectors more so, it will be useful to policymakers in the attempt to fashion out dynamic and reliable monetary policy measure for controlling inflation and also controlling commercial banks ability to create money and thereby influence the effective development of the economy.

Scope of the Study

The research work deals on the empirical analysis of the effect of Fiscal Policy on Real Sector Growth in Nigeria using ARDL approach. This research work will cover the period between 1995 - 2021. The study adopted Federal government Non-oil Taxes, Federal government recurrent expenditure and Federal government capital expenditure as a measure of fiscal policy and real gross domestic product to measure the growth of Nigerian Economy.

Review of Related Literature

Conceptual framework

Fiscal Policy

Asogu (2011) defines fiscal policy as the use of Government expenditure, taxes, borrowing and financial administration to further national economic objectives. According to Central Bank of Nigeria (CBN) (2003) Fiscal Policy refers to the discretionary changes in the level, composition and timing of government expenditures and revenue. Fiscal expenditure is capable of increasing output in the desired direction while 'fiscal deficits tend to have serious adverse effects on monetary aggregates and inflation. Nwaoha (2012) states that, pure Fiscal Policy in the conventional macroeconomic model assumes the government finances its expenditures through borrowing from the public after exhausting the revenue. He also mentioned that discretionary

Fiscal measures are those which depend for execution upon the decision of government officials, administrators and legislators. "It is they who must decide whether government expenditures are to be increased or decreased, whether higher or lower taxes shall be levied and by how much in each instance. He argues that the tools available through government's Fiscal Power are rare, potent and forceful, for they may enlarge or reduce the volume of money spending directly. According to him, such are not fool proof, a characteristic they share with most other controls in social as well as physical spheres because of difficulties in timing and other problems they cannot guarantee perfection in result. According to Umole (2018), "Fiscal Policy, in its broad definition, is the use of Government expenditure and taxation to influence the country's economic activities". From the above definition, it is obvious that there are two major tools at the disposal of Government or Fiscal Policy makers and these are Government expenditure and taxation.

Fiscal policy is the government's management of the economy through the manipulation of its income and spending power to actualize some desired macroeconomic objectives amongst which are price stability and economic growth (Ozurumba, 2012). It is also a deliberate alteration of the government spending and taxation to help achieve desired macroeconomic objectives by changing the level and composition of aggregate demand (AD). This simply means that fiscal policy works through the manipulation of subsidies, exchange rate, checks on the external reserve, borrowing which may be used to finance deficits where the projected expenditure exceed revenue. Ezirim (2018) defined fiscal policy as the means by which a government adjusts its level of spending in order to monitor and influence a nation's economy. According to Reem (2009), fiscal policy is based on the theories of a British economist John Maynard Keynes whose theory basically states that governments can influence macroeconomic productivity levels by increasing or decreasing tax levels and public spending. This influence in turn, curbs inflation, increase employment and maintains a healthy value of money. Various researchers have written on different aspects of fiscal policy especially as it relates to price stability.

Dembarg and Medougall (2017) defined Fiscal Policy as "the use of the budget of the Federal Government in order to influence the level of total spending in the economy by means of changing the amount of or altering the income of the private sector by changing taxes or Government transfer outlays to individuals". Accordingly, to Iyioha (2015) Fiscal Policy is the use of changes in Government expenditures and changes in taxes to influence the level of key economic aggregates like GNP, employment, the general price level and the balance: 'of payments. To understand the influence of Government on the economy, it is usual to start by examining the budget, that is, the counter-cyclical fiscal policy.

Federal government Non-oil Taxes

Non-Oil revenue according to Nuka, Park & Ogaba (2018) is the income or proceeds generated from the commodities that are sold in the international market, excluding crude oil (petroleum product). The nonoil sector therefore comprises of those group of activities other than petroleum and gas industry. That is, it is composed of sectors such as manufacturing, telecommunication, agriculture, finance, tourism, real estate, entertainment, construction, health sector, etc. (Kromfit & Gukat, 2016). According to Adams (2013), non-oil revenue in Nigeria comprises company

income tax, custom and excise duties and independent revenue sources which consist of fees, licenses, rent on government property. Other non-oil sources of revenue worthy of note in this study include agriculture, tourism, entertainment, services, hospitality, sports, manufacturing, ICT and solid mineral.

Ozurumba & Chigbu (2013) asserts that the non-oil sector has huge potentials for foreign exchange earnings and can bring about huge employment generation and poverty reduction through the extensive backward linkages it offers. The diversification of the Nigeria economy is necessary for various reasons: first the volatility of the international oil market with the resultant fluctuation of government revenue. This gives credence to the argument for diversification of the nation's economy.

Federal Government Oil Taxes

Observing that crude oil has been a major source of revenue, energy and foreign exchange for the Nigerian economy, Odularu (2008) analyzed the relationship between the crude oil sector and the Nigerian economic performance. Finding revealed that crude oil consumption and export have contributed to the improvement of the Nigerian economy. Thus, the study concluded that government should implement policies that would encourage active private sector participation in the crude oil sector in the country. Adedokun (2012) examined the effect of oil export revenue on economic growth in Nigeria between the period of 1975 and 2009.

Federal Government Recurrent Expenditure

Recurrent expenditure refers to payments made by governments or organizations for all purposes except capital costs (Emerenini and Okezie, 2019). Recurrent expenditure includes payments made on goods and services as well as interest and subsidies. Recurrent expenditures are typically made more than once, and may even be made on a scheduled basis. Some expenses, such as wages and salaries made to employees by companies, are made periodically on a weekly or bi-weekly basis. Recurrent expenditures exclude payments for capital assets, such as stock, bonds and property. Capital and recurrent expenditure are considered to be overall expenditure, and account for all fees and net lending that is doled out by governments.

Recurrent expenditure on goods and services is expenditure, which does not result in the creation or acquisition of fixed assets (new or second-hand) (Njoku, Ugwu and Chigbu, 2016). It consists mainly of expenditure on wages, salaries and supplements, purchases of goods and services and consumption of fixed capital (depreciation). When fees charged for goods and services are offset against recurrent expenditure, the result equates to final consumption expenditure in the Australian Bureau of Statistics' national accounts framework. Recurrent expenditure refers mainly to expenditure on operations, wages and salaries, purchases of goods and services, and current grants and subsidies (Okoro, 2010). In 2018-10, recurrent expenditure was \$5,769.2m or 87% of total cultural funding. The Australian Government allocated \$2,218.4m (90%) of its cultural funding towards recurrent activity, while state and territory governments allocated \$2,502.1m (83%) and local governments allocated \$1,048.7m (88%).

Federal Government Capital Expenditure

Capital expenditure or capital expense (capex or CAPEX) is the money a company spends to buy, maintain, or improve its fixed assets, such as buildings, vehicles, equipment, or land. It is considered a capital expenditure when the asset is newly purchased or when money is used towards extending the useful life of an existing asset, such as repairing the roof (Agbonkhese and Asekhome, 2019).

Capital expenditures contrast with operating expenses (Opex), which are ongoing expenses that are inherent to the operation of the asset. Opex includes items like electricity or cleaning. The difference between Opex and Capex may not be immediately obvious for some expenses; for instance, repaving the parking lot may be thought of inherent to the operation of a shopping mall. The dividing line for items like these is that the expense is considered Capex if the financial benefit of the expenditure extends beyond the current fiscal year (Akpan and Abang, 2018).

Capital expenditures are the funds used to acquire or upgrade a company's fixed assets, such as expenditures towards property, plant, or equipment (PP&E). In the case when a capital expenditure constitutes a major financial decision for a company, the expenditure must be formalized at an annual shareholders meeting or a special meeting of the Board of Directors. In accounting, a capital expenditure is added to an asset account, thus increasing the asset's basis (the cost or value of an asset adjusted for tax purposes). Capex is commonly found on the cash flow statement under "Investment in Plant, Property, and Equipment" or something similar in the Investing subsection (Awomuse, Olorunleke and Alimi, 2011).

Real Sector Development

Economic growth has long been considered an important goal of economic policy with a substantial body of research dedicated to explaining how this goal can be achieved (Fadare, 2010). Economic growth has received much attention among scholars. According to Khorravi and Karimi (2010), classical studies estimate that economic growth is largely linked to labour and capital as factors of production. The emergence of the endogenous growth theory has encouraged specialists to question the role of other factors in explaining the economic growth phenomenon (Bogdanov, 2010).

Economic growth represents the expansion of a country's potential GDP or output. For instance, if the social rate of return on investment exceeds the private return, then tax policies that encourage can raise the growth rate and levels of utility. Growth models that incorporate public services, the optimal tax policy lingers on the characteristic of services (Olopade & Olopade, 2010). Economic growth has provided insight into why state growth at different rates over time; and this influence government in her choice of tax rates and expenditure levels that will influence the growth rates.

Theoretical Review

This study is anchored principally on Musgrave Theory of Public Expenditure Growth.

Musgrave Theory of Public Expenditure Growth

This theory was propounded by Musgrave in 1959 as he found changes in the income elasticity of demand for public services in three ranges of per capita income. He posits that at low levels of per capita income, demand for public services tends to be very low, this is so because according to him such income is devoted to satisfying primary needs and that when per capita income starts to rise above these levels of low income, the demand for services supplied by the public sector such as health, education and transport starts to rise, thereby forcing government to increase expenditure on them. He observes that at the high levels of per capita income, typical of developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied.

Empirical Review

Okezie and Azubike (2016) evaluated the contribution of non-oil revenue to government revenue and economic growth in Nigeria from 1980 to 2014. Secondary data was used for the study. The data was analyzed using ordinary Least Square Regression. The result revealed a positive and significant contribution of non-oil revenue to economic growth.

Ude and Agodi (2014) investigated the time series role of non-oil revenue variables on economic growth in Nigeria. The study employed annual observations from 1980 to 2013. The non-oil revenue variables analyzed are agricultural revenue and manufacturing revenue. Results indicate that Agricultural and manufacturing revenue have a significant impact on economic growth.

Kawai (2017) evaluated the impact of Nigeria's non-oil exports as to whether they have been effective in diversifying the production base of the Nigerian economy from crude oil as the major source of foreign exchange using annual data between 1980- 2016. The study adopted the Philip Perrom (PP), the Engel Granger Model (EGM) for co-

integration. Finding revealed a strong evidence of co-integration relationship of non-oil exports in influencing rate of change in the level of economic growth in Nigeria.

Aremu and Olakunle (2014) conducted an assessment of non-oil revenue on economic growth and development in Nigeria using primary data from 1972 to 2012. The study used multiple regressions for its analysis and the result showed a positive impact of non-oil revenue on economic growth and development.

Okafor (2012) carried out a study on the impact of Income Tax Revenue on the Economic development of Nigeria. Secondary data were collected for a period: 1981-2007. The ordinary least square (OLS) regression analysis was also used. The results suggest a very positive and significant relationship between the variables.

Baghebo and Atima (2013) carried out a study on the Impact of Petroleum on Economic Growth in Nigeria and data covering the period 1980-2011 was collected from the Central Bank of Nigeria Statistical Bulletin and transparency international Agency annual publications. The research work made use of the econometric approach in estimating the relationship between oil export, foreign direct investment, corruption index, external debt and the Nigerian economic growth. The stationary status of the time series data was examined using Augmented Dickey Fuller test. The Johansen co-integration test was conducted to ascertain the long run equilibrium condition of the variables in the model. The variables were cointegrated because four co-integrating equations were found. Oil revenue on the other hand impacted negatively and significantly on Real GDP. A unit change in Oil revenue brings about a fall in GDP. The results indicate that a unit change in oil revenue result to 1.362996 reductions in GDP.

Chude & Chude (2020) investigated the effects of public expenditure in education on economic growth in Nigeria over a period from 1997 to 2019, with particular focus on disaggregated and sectoral expenditures analysis. Government expenditures are very crucial instruments for economic growth at the disposal of policy makers in developing countries like Nigeria. The objective of this study is to determine the effect of public expenditure on economic growth in Nigeria using Error Correction Model (ECM). The study used Ex-post facto research design and applied time series econometrics technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicate that Total Expenditure Education is highly and statistically significant and have positive relationship on economic growth in Nigeria in the long run.

Bashir, Hamza & Rafiat (2018) examined the impact of government expenditure on economic growth in Nigeria. It covers the period of 1981-2014 and the Ordinary Least Square (OLS) method of econometric technique and granger causality test was used. The analysis uses GDP as depending variable and the independent variables are labour, human capital, physical capital, government capital expenditure and government recurrent expenditure as the independent variables. The result indicates that there is negative and insignificant relationship between human capital and GDP, positive but insignificant relationship between physical capital and GDP, and there is positive but insignificant relationship between government capital expenditure (GCE) and GDP. Furthermore, the result of granger causality test shows that government expenditure granger cause GDP but GDP did not granger cause government expenditure.

Okoro (2018) used time series data of 32years period (1986-2017), this study investigated the impact of government spending on the Nigerian economic growth. Employing the ordinary least square multiple regression analysis to estimate the model specified. Real Gross Domestic Product (RGDP) was adopted as the dependent variable while government capital expenditure (GCEXP) and government recurrent expenditure (GREXP) represents the independent variables. With the application of Granger Causality test, Johansen Cointegration Test and Error Correction Mechanism, the result shows that there exists a long-run equilibrium relationship between government spending and economic growth in Nigeria. The short-run dynamics adjusts to the long-run equilibrium at the rate of 60% per annum.

Adeyemi & Stephen (2017) investigated the impact of both government recurrent and capital expenditure on growth performance using an econometric analysis based on Johansen technique for the period of 1990-2015. The study found the component of total expenditure impacting negatively (except education and health) and insignificantly on growth rate; further diagnosis test reveals capital expenditure may likely induce significant impact on growth rate in

the long-run. Notable recommendations include, proper management of capital and recurrent expenditure, proper surveillance and quantification of capital spending in order to boost social and human capital, and development of sound institutions void of political influences.

Methodology

Research Design

Ex-post facto design will be adopted for this study. This is because the independent and dependent variables used for analysis involved data already compiled. Hence the research cannot exert any control on them. Therefore, *Ex-post facto* is suitable for the objectives of this study.

Nature and Sources of Data

This study made use of mainly data collected from secondary sources. The study utilizes data obtained from Central Bank of Nigeria Statistical Bulletin covering the period of 1995 – 2021.

Model Specification

Armstrong (2012) opines that regression analysis is a set of statistical processes for estimating the relationships among variables. It includes many techniques for modeling and analyzing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. An autoregressive distributed lag (ARDL) model was adopted in testing research hypotheses. Autoregressive Distributed Lag (ARDL) approach to cointegration helps in identifying the cointegrating vector(s). The reparametrized result gives short-run dynamics (i.e., traditional ARDL) and long run relationship of the variables of a single model. The following model is specific in an attempt to determine fiscal policy imperative on Nigerian economy.

ARDL specification for the model;

$$\Delta(\ln RGDP)_t = \pi_0 + \pi_1(\ln RGDP)_{t-1} + \pi_2(\ln FGNOT)_{t-1} + \pi_3(\ln FGOT)_{t-1} + \pi_4(\ln FGRE)_{t-1} + \pi_5(\ln FGCE) + \pi_6(\ln NEFT) + \pi_7(INTR)_{t-1} \dots \dots \dots \text{Equation 1}$$

Equation 1 reads the Real Gross Domestic Product as a function of Federal government Non-oil Taxes, Federal government capital expenditure and Federal government recurrent expenditure. In order to capture the influence of the stochastic or random variable, the equation is explicitly transformed as:

Where:

RGDP	=	Real gross domestic product (Dependent Variable)
FGNOT	=	Federal government Non-oil Taxes (Independent Variable)
FGOT	=	Federal government Oil Taxes (Independent Variable)
FGRE	=	Federal government recurrent expenditure (Independent Variable)
FGCE	=	Federal government capital expenditure (Independent Variable)
RGDP	=	Inflation rate (Control variable)

Δ denotes the first difference operator

π_0 is the drift component,

μ_t is the white noise residuals.

Techniques of Data Analysis

The method used for this work is Autoregressive Distributed Lag (ARDL).

Data Presentation and Analysis

Data Presentation

Table 1: The ARDL Long run result

Dependent Variable: LR GDP
 Method: ARDL
 Date: 07/14/23 Time: 09:15
 Sample (adjusted): 1996 2021
 Included observations: 26 after adjustments
 Maximum dependent lags: 1 (Automatic selection)
 Model selection method: Akaike info criterion (AIC)
 Dynamic regressors (0 lag, automatic): LFGNOT LFGOT LFGRE LFGCE
 Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LR GDP(-1)	0.840950	0.052004	16.17089	0.0000
LFGNOT	0.054851	0.032714	1.676653	0.1092
LFGOT	0.029831	0.011426	2.610726	0.0167
LFGRE	-0.010106	0.026428	-0.382383	0.7062
LFGCE	-0.022401	0.017204	-1.302099	0.2077
C	1.337194	0.429990	3.109826	0.0055
R-squared	0.997451	Mean dependent var	10.68401	
Adjusted R-squared	0.996813	S.D. dependent var	0.450090	
S.E. of regression	0.025408	Akaike info criterion	-4.308343	
Sum squared resid	0.012911	Schwarz criterion	-4.018013	
Log likelihood	62.00845	Hannan-Quinn criter.	-4.224738	
F-statistic	1565.038	Durbin-Watson stat	1.684605	
Prob(F-statistic)	0.000000			

*Note: p-values and any subsequent tests do not account for model selection.

Source: Eviews, Output 9.0.

The ARDL long run results presented in Table 1, the estimated coefficient of the long run relationship showed that Federal government Non-oil Taxes with coefficient of 0.054851 had a non-significant effect on real gross domestic product. This means that an increase in Federal government Non-oil Taxes will increase real gross domestic product to 5%. The estimated coefficient showed that Federal government Oil Taxes with coefficient of 0.029831 had a non-significant effect on real gross domestic product. This means that an increase in Federal government Non-oil Taxes will increase real gross domestic product to 3%.

The estimated coefficient showed that Federal government recurrent expenditure with coefficient of -0.010106 had a non-significant and negative effect on real gross domestic product. This means that an increase in Federal government recurrent expenditure will decrease inflation rate to -1%.

The estimated coefficient showed that Federal government capital expenditure with coefficient of -0.022401 had a non-significant and negative effect on real gross domestic product. This means that an increase in Federal government Non-oil Taxes will decrease inflation rate to -2%. R² which shows 0.997451 which is also 99% shows that the model has goodness of fit.

Testing of Research Hypotheses

Hypothesis 1

Decision Rule: Reject H_0 if $t\text{-value} > 2$ and $p\text{-value} \leq .05$, otherwise accept H_1 .

Restatement of the hypothesis in null and alternate forms

Hypotheses One:

H₁: Federal government Non-oil Taxes has positive and significant effect on real gross domestic product in Nigeria.

Decision:

The decision criteria is to reject H₀ if the statistic is > 2.0 and the probability of the t-statistics is < 0.05. It is shown in table 1 that the t-statics is 1.676653 while the probability value is 0.1092, this depict that the t-statistics is less than 2.0 while the probability value is greater than 0.05; therefore, the null hypothesis (H₀) is accepted and concluded that Federal government Non-oil Taxes has positive and non-significant effect on real gross domestic product in Nigeria.

Hypothesis 2

Decision Rule: *Reject H₀ if p-value ≤ .05, otherwise accept H₁.*

Restatement of the hypothesis in null and alternate forms

Hypotheses Two:

H₁: Federal government Oil Taxes has positive and significant effect on real gross domestic product in Nigeria.

Decision:

The decision criteria is to reject H₀ if the statistic is > 2.0 and the probability of the t-statistics is < 0.05. It is shown in table 1 that the t-statics is 2.610726 while the probability value is 0.0167, this depict that the t-statistics is greater than 2.0 while the probability value is less than 0.05; therefore, the null hypothesis (H₀) is rejected and concluded that Federal government Oil Taxes has positive and significant effect on real gross domestic product in Nigeria.

Hypothesis 3

Decision Rule: *Reject H₀ if p-value ≤ .05, otherwise accept H₁.*

Hypotheses Three:

H₂: Federal government recurrent expenditure has positive and significant on real gross domestic product in Nigeria.

Decision:

The decision criteria is to reject H₀ if the statistic is > 2.0 and the probability of the t-statistics is < 0.05. It is shown in table 1 that the t-statics is -0.382383 while the probability value is 0.7062, this depict that the t-statistics is less than 2.0 while the probability value is greater than 0.05; therefore, the null hypothesis (H₀) is accepted and concluded that Federal government recurrent expenditure has negative and non-significant on real gross domestic product in Nigeria.

Hypothesis Four

H₃: Federal government capital expenditure has positive and significant on real gross domestic product in Nigeria.

Decision Rule: *Reject H₀ if p-value ≤ .05, otherwise accept H₁.*

Decision:

The decision criteria is to reject H₀ if the statistic is > 2.0 and the probability of the t-statistics is < 0.05. It is shown in table 1 that the t-statics is -1.302099 while the probability value is 0.2077, this depict that the t-statistics is less than 2.0 while the probability value is greater than 0.05; therefore, the null hypothesis (H₀) is accepted and concluded that Federal government capital expenditure has negative and non-significant on real gross domestic product in Nigeria.

Discussion of Result

In testing hypothesis one; the decision criteria is to reject H₀ if the statistic is > 2.0 and the probability of the t-statistics is < 0.05. It is shown in table 1 that the t-statics is 1.676653 while the probability value is 0.1092, this depict that the t-statistics is less than 2.0 while the probability value is greater than 0.05; therefore, the null hypothesis (H₀) is accepted and concluded that Federal government Non-oil Taxes has positive and non-significant effect on real gross domestic product in Nigeria.

In testing hypothesis two; the decision criteria is to reject H_0 if the statistic is > 2.0 and the probability of the t-statistics is < 0.05 . It is shown in table 1 that the t-statistics is 2.610726 while the probability value is 0.0167, this depicts that the t-statistics is greater than 2.0 while the probability value is less than 0.05; therefore, the null hypothesis (H_0) is rejected and concluded that Federal government Oil Taxes has positive and significant effect on real gross domestic product in Nigeria.

In testing hypothesis three; the decision criteria is to reject H_0 if the statistic is > 2.0 and the probability of the t-statistics is < 0.05 . It is shown in table 1 that the t-statistics is -0.382383 while the probability value is 0.7062, this depicts that the t-statistics is less than 2.0 while the probability value is greater than 0.05; therefore, the null hypothesis (H_0) is accepted and concluded that Federal government recurrent expenditure has negative and non-significant on real gross domestic product in Nigeria.

In testing hypothesis four; the decision criteria is to reject H_0 if the statistic is > 2.0 and the probability of the t-statistics is < 0.05 . It is shown in table 1 that the t-statistics is -1.302099 while the probability value is 0.2077, this depicts that the t-statistics is less than 2.0 while the probability value is greater than 0.05; therefore, the null hypothesis (H_0) is accepted and concluded that Federal government capital expenditure has negative and non-significant on real gross domestic product in Nigeria.

Summary of Findings

The following findings were made;

- i. Federal government Non-oil Taxes has positive and non-significant effect on real gross domestic product in Nigeria; (t-statistics is 1.676653 while the probability value is 0.1092).
- ii. Federal government Oil Taxes has positive and significant effect on real gross domestic product in Nigeria (t-statistics is 2.610726 while the probability value is 0.0167).
- iii. Federal government recurrent expenditure has negative and non-significant on real gross domestic product in Nigeria; (t-statistics is -0.382383 while the probability value is 0.7062).
- iv. Federal government capital expenditure has negative and non-significant on real gross domestic product in Nigeria; (t-statistics is -1.302099 while the probability value is 0.2077).

Conclusion

The indicators of fiscal policy which include Federal government Non-oil Taxes, Federal government Oil Taxes, Federal government recurrent expenditure and Federal government capital expenditure and measured real sector with real gross domestic product. The findings revealed that Federal government Non-oil Taxes has positive and non-significant effect on real gross domestic product in Nigeria. Federal government Oil Taxes has positive and significant effect on real gross domestic product in Nigeria. Federal government recurrent expenditure has negative and non-significant on real gross domestic product in Nigeria. Federal government capital expenditure has negative and non-significant on real gross domestic product in Nigeria. Therefore, we conclude that fiscal policy had non-significant effect on real sector in Nigeria on both long and short run.

Recommendations

Based on the research findings and conclusions the followings are recommendations;

- i. There is need for government to lay emphasis on diversification of the economy, especially in the area of mining, to enable her have variety of viable sources of income to pursue its cardinal objective of provision of welfare services to its citizenry. The government at different levels (Federal, State and Local) should sustain and improve on its policies on the agricultural sector in order to boost agricultural production.
- ii. Recommend that more attention be given to the development of strong institutions by setting up anti-corruption agencies to prosecute corrupt individuals in order to strengthen the oil sector, whose impact remains important to the per capita growth level in the country.
- iii. Recurrent expenditure such as expenses done on education, agriculture, transportation, other communities services and general administration should be more proactive in order to improve the state of things in our economy.

- iv. The government should also adopt a public expenditure rule that prohibits the deficits from exceeding GDP. The government should adopt a public medium term expenditure framework to ensure predictable and sustainable public financing at all level of government.

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