

PUBLIC EXPENDITURE, INCOME DISTRIBUTION AND ECONOMIC GROWTH NEXUS IN NIGERIA**MGBEMENA, I. B.****Department of Finance and Banking, University of Port Harcourt,****River State, Nigeria.****IFIONU, E.P.****Department of Finance and Banking, University of Port Harcourt,****River State, Nigeria.****AND****OGUNBIYI, S. S.****Department of Finance and Banking, University of Port Harcourt,****River State, Nigeria.***Abstract*

The debate on the level of social inclusion and income inequality is becoming severe globally. That social and political crises are on the rise is unarguable and whether this is a product of widening income inequality is a subject of investigation. Therefore, the study examined the Implication of fiscal policy on economic development in Nigeria between 1981 to 2020. A model was developed in which economic growth (proxied as growth rate of gross domestic product) is expressed as a function of public recurrent and capital expenditure as moderated by income distribution (represented using the Gini coefficient). The econometric techniques of Augmented Dickey Fuller test, Co-integration test, Error Correction model estimation, and the dynamic partial correlation analysis. Income inequality had a dampening effect on the efficacy of public expenditure on economic growth which shows that the expenditure patterns are highly skewed towards increasing inequality in the economy. Besides, the study recommends to the Nigerian governments to enhance gross domestic investment and regulatory quality and reduce government consumption policies to improve their countries' economic growth.

Keywords: Expenditure, Inequality, Economic Growth, Capital Expenditure, Recurrent Expenditure.

Introduction

In recent decades, Nigeria has become a region of extremes. Aggressive wealth gap has opened up, driven largely by wage disparity and differing levels of access to basic amenities as noted by a recent report by the Asian Development Bank (2020). This gap is at its highest level in decades for developed economies, while the inequality trend has been rising in many developing countries. In Nigeria, despite recent economic growth, income distribution has been worsening as well. However, according to the World Bank's World Development Report 2017, public policy implementations

have to generate development outcomes such as security, growth, and equity. Hence, public policies through spending and tax influence economic growth and income inequality (Gnangoin, Du, Assamoi, Edjoukou, & Kassi, 2019).

The debate on social inclusion and inequality and how these affects harmonious existence in the society appears to have occupied the centre stage of global policymaking. The escalation in inequality is one of the global issues claimed to be responsible for mounting social and political crises (Okafor, 2020). Oxfam (2017) alerts

that the wealth of only eight men equals the value of the poorest half of the population of the world, estimated at 3.6 billion people. Peaceful co-existence in the society with this phenomenon can be a source of concern as the rich are perceived with resentment by the poor. To worsen the situation, the global economy has shown a weak outlook: After more than eight years of experiencing a global financial and economic crisis, recovery has been frail and, the only way out is to adopt co-ordinated policies that are inclusive {International Labour Organisation (ILO), 2016}.

However, the level of commitment of the world leaders to the philosophy of inclusivity seems to have generated controversies. It is noted that "if we are to secure a sustainable economic recovery, we need to ensure that nobody is left behind" (Thyssen, 2017, par. 16). The Global Risk Report by the World Economic Forum involving over 750 experts assessed 30 global risks and 13 underlying trends in the global economy (WEF, 2017a). Rising income inequality and wealth disparity came as number one of the five top risks identified; the other four, based on their severity, are changing climate, increasing polarisation in societies, rising cyber dependency, and ageing population (WEF, 2017a).

Nigeria's income inequality level has remained high (Oldekop et al., 2016) in different parts of the world. Nigeria has been around 48% over the past 7 years and recorded less than 40% for the past 30 years (World Income Inequality Database, WIID3.4, 2017). Its inclusive development index rating has also not improved. Nigeria's inclusive development index (IDI) absolute score in the 2017 report was put at 3.07 (on a scale of 1 representing lowest score and 7 signifying best score), and the 5-year IDI trend was put at -2.99% between 2011 and 2015. Designing

a fiscal policy framework that is anchored on fair redistributive mechanisms are important to social justice (De Muro, 2016). This is to empower the poor and ultimately alter the course of income inequality (Mayer, Lopoo, & Groves, 2016). The outcome is, however, dependent on the disposition of policymakers towards social expenditures and public expenditure management process. As observed by Gates (2018), developing countries like Nigeria pay less attention to human capital development through education and healthcare than physical infrastructures. Also, some critiques see social costs by the government as "a cost of forgone output" arguing that such cost does not add productive returns to the economy (Marinkov, 2015, p.77). This debate is far from ending; therefore, it remains an essential issue in policymaking and research.

Fiscal policy is the use of government revenue collection and expenditure to influence the economy. The application of fiscal policy is basically rooted in the budget of the government. The most vital aspect of a public budget is its use as an instrument to manage an economy (Omitogun & Ayinla, 2007). Fiscal policy is a deliberate action of government which entails government revenue, expenditure, and borrowing to influence the form of economic activities, level of output growth, employment, inflation and employment (Ugwanta, 2014). Economic growth is considered is a key macroeconomic objective of a country and that increase in government spending on socio-economic and infrastructural development encourages economic growth (Barro, 1990).

Infrastructural development such as road, power, communication, railway, etc, reduces cost of production, raises formal private sector investment and production profitability of firms thus enhancing economic growth. Barro (1990) supported

this assertion that increase in government expenditure fosters economic growth. Conversely, another school of thought argued that increasing government expenditure inhibits economic growth. This school of thought maintained that higher levels of government expenditure tend to reduce the aggregate performance of an economy. Furthermore, in an attempt to cater for increasing spending, government tends to increase taxation and/or borrowing which might affect her spending behavior. High taxation de-motivates individuals or firms from investment sphere, which in turn reduces income and aggregate demand (Maku, 2015). Similarly, high taxation increase cost of production and reduces investment expenditure and profitability of firms especially the infant firms. Government borrowings, especially domestically, in order to finance expenditure; it will crowd out the private sector, thus hampers private investment.

The argument on the efficacy of fiscal policy as an instrument for stimulating growth and development remains biased given conflicting results of past studies. Oshinowo (2015) observed dual sides of the review concerning the role of fiscal policy in stimulating growth. The first view is that government's support for knowledge, research and development, productive investment, maintenance of law and order and provision of public services can stimulate growth in short-run and long-run. Conversely, the second view is that governments, especially in developed economies, are bureaucratic and less efficient and as a result they tend to impede growth if they get involved in the productive sectors of the economy.

Fiscal policy is perceived to destabilize economic growth by distorting the effect of tax and inefficient government spending. In

addition, propositions exist on the effect of fiscal policy on economic development outcomes. Khosravi and Karami (2010) stated that supporters of the classical school of thought believed that the effect of government spending is temporary and not effective particularly in the long-run when prices adjust and output is at optimal level. In similar vein, endogenous theorists proposed that government expenditure and taxation have temporary and permanent effect on economic growth. To this end, the study contributed to the argument by examining the effect on fiscal policy on economic development in Nigeria.

Statement of Problem

Over the years, Nigeria's potential for sustainable economic growth and development has remained unattained. This is quite disheartening that despite the enormous mineral and human resources the country owns coupled with increasing trend of public spending year in-year out, the economy has been performing below expectation. Policy analysts, economists and other professionals hinged weakening of the Nigerian economy to corruption, bureaucracy, political instability, lack of accountability and transparency, poor control and lack of vision that will direct the economy to the path of growth.

Asaju, Adagba and Kajang (2014) added that the lack of congruence between monetary and fiscal policies and the hitches in the adoptions of non-market tools instituted set back to achieving fiscal objectives in Nigeria. The public has continued inept in terms of service delivery, decay in infrastructure, corruption and lack of accountability and probity in the management of public policies and resources shows the depth of the ineptitude of the public sector in Nigeria that is supposed to

lead the economy through fiscal policies. These have resulted to high rate of unemployment, rising inflation, declined in growth, decreasing real incomes and increasing poverty level. It can be unequivocally stated that fiscal policy has not been effectual in the accomplishment of macroeconomic objectives of price stability, full employment, balance of payment equilibrium, efficient resource allocation, uneven redistribution of income and wealth, exchange rate stability and economic growth. Moreover, there has been serious contention in literature as to which policy is more appropriate for the quest of macroeconomic equilibrium in developing economies. Supporters of the monetarist school of thought reported that monetary policy exerts greater influence on economic development and it should be embraced by developing economies. On the other hand, the Keynesians school of thought posited that fiscal policy has greater influence on economic development and should be adopted by developing economies. However, both monetary and fiscal policies have not been appropriately used to spur improved performance of the Nigerian economy (Ugwanta, 2014).

Different studies (Muinelo-Gallo & Roca-Sagales, 2013; Afonso, Schuknecht, & Tanzi, 2010; Li, Xie, & Zou, 2000) have established a link between redistributive spending and income inequality. However, Korpi and Palme (1998) have posited that paradox exists in redistribution as the more the policies are targeted at the poor, the less likely the poverty level is. Huber and Stephens (2012) found otherwise in Latin America and, by extension, in developing economies because of dependency trap (Marx et al., 2013), redistributive inefficiency (Van Oorschot, 2002), and Robin-Hood paradox (Wong, 2017). It can be deduced that

government's priority in investing in the social sector is key in realising social objectives.

Various challenges exist in public expenditure management (Kasim, 2016). Some of these arise from fiscal risk due to fiscal indiscipline (PwC, 2017), inappropriate allocations to social spending, and poor accountability and transparency emanating from poor institutional quality in the operational implementation of budgets (Tommasi, 2009). Weak institutions perhaps could make the government derail its set social objective.

The main objectives of this study therefore are to evaluate the impact of public expenditure on economic growth in Nigeria as mediated by income equality. The study disaggregated the public expenditure into capital and recurrent expenditure.

To achieve these objectives, this paper has been organized into five sections with the introduction as section one. Section two is a survey of literature. Section three examines the methodology. Section four looks at the presentation and discussion of results. While section five deals with the summary, conclusions and the policy recommendations. The study period covers the period of 1981 and 2020.

Public expenditure is captured using the capital and recurrent expenditure and similarly, economic growth is streamlined to real gross domestic product growth rate. Inequality/Income equality is measured using the Gini coefficient. The Gini coefficient is a single number that demonstrates a degree of inequality in a distribution of income/wealth. It is used to estimate how far a country's wealth or income distribution deviates from a totally equal distribution. In terms of income-ordered population percentiles, the Gini coefficient is the cumulative shortfall from equal share of the total income up to each

percentile. That summed shortfall is then divided by the value it would have in the case of complete equality. The Gini coefficient is usually defined mathematically based on the Lorenz curve

Theoretical Review

Social Political Instability Theory

According to the socio-political instability approach (Alesina et al. 1996) a highly skewed distribution of resources induces people to engage in social activities outside the normal markets, such as crime, revolutions, and violent protests. This, in turn, introduces uncertainty and distrust towards the economic system and discourages investments and capital accumulation. In the long run, it slows down the process of economic growth. Barro (1991); Grossman and Helpman (1991); Rebelo (1991); Michaelowa (2000); Benhabib and Spiegel (1994); Krueger and Lindahl (2001); Afzal et al. (2010); Lin et al. (2003); Tamang et al. (2011); Baldacci et al. (2004) demonstrated that economic growth and education are positively related. While Devarajan et al. (1996) showed in their analysis a negative correlation between education spending and economic growth. Galor and Zang (1997) formalized the link between fertility and schooling decisions and their impact on growth. Given the distribution of income, a higher rate of fertility means that the family has fewer resources to invest in education, with a contracting effect on growth.

A theoretical model where the trade-off between inequality and growth works through the channel of fertility decisions demonstrates that economies with a less equitable income distribution experience higher fertility differentials, invest less in human capital, which in turn weakens the

process of development (De la Croix and Doepke 2003).

Galor and Moav (2004) provided a unified theory in which the relationship between the distribution of income and growth is not stable over time, but depends on the stage of development in a country. The positive impact of inequality upon growth reflects the situation of an economy during its early stages of industrialization. In this phase, the accumulation of physical capital is the principal engine of growth and it is promoted by disparities among individuals. Once the economy has passed over this initial phase, the accumulation of human capital becomes the prime engine of growth and a more equalitarian distribution of resources allows more people to invest in education. In this stage, in the presence of credit constraints, access to education is easier if wealth is evenly spread among individuals, and hence policy decisions have to be directed towards inequality-reducing strategies. Their conclusions are particularly relevant for less developed countries (LDCs).

Persson and Tabellini (1994) focused on the political economy approach, by considering welfare transfers on a small sample of 13 OECD countries for which data were available, to find non-significant results about the prediction that inequality increases redistribution and that redistribution reduces growth. As noted before, other authors support a different relationship between inequalities and redistributive policies. The significance of institutions on economic growth was initially highlighted by North (1987, 1991) and was empirically asserted by several studies (Acemoglu et al. 2002; Rodrik et al. 2004; Berggren and Jordahl 2005; Glaeser et al. 2004).

Lorenz Inequality Theory

The Lorenz curve. The most commonly used theory is based on the Lorenz curve. Lorenz (1905) developed it in order to analyze the distribution of income and wealth within populations. In economics, the Lorenz curve is a graphical representation of the distribution of income or of wealth. It was developed by Max O. Lorenz in 1905 for representing inequality of the wealth distribution. The curve is a graph showing the proportion of overall income or wealth assumed by the bottom x% of the people, although this is not rigorously true for a finite population (see below). It is often used to represent income distribution, where it

shows for the bottom x% of households, what percentage (y%) of the total income they have.

The percentage of households is plotted on the x-axis, the percentage of income on the y-axis. It can also be used to show distribution of assets. In such use, many economists consider it to be a measure of social inequality. The concept is useful in describing inequality among the size of individuals in ecology and in studies of biodiversity, where the cumulative proportion of species is plotted against the cumulative proportion of individuals (Egghe & Rousseau, 2019).

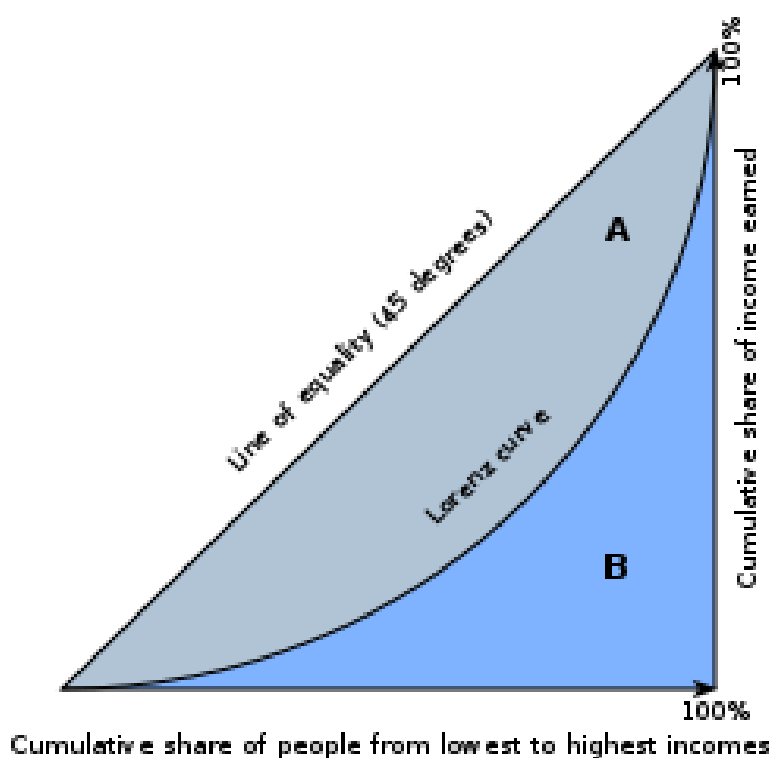


Figure 1: A typical Lorenz curve
Source: Egghe and Rousseau (2019)

Classical Growth Theory

The classical growth theory is the oldest theory that is developed in growth literature. The classical growth theory is primarily

associated with Thomas Malthus. The classical growth theory, which was developed in the late 1700s, has no practical relevance

in today's modern economy (Abata, Kehinde & Bolarinwa, 2012). In short, the major points of the classical growth theory as espoused by Jhingan (2007) may be described as follows:

1. Due to technological development, the amount of capital increases and the marginal product of labour rise.
2. GDP per capital rises as the economy grow, so also living standard and population.
3. As population increases, the labour productivity falls (more individuals but the same amount of capital).
4. GDP per capita will fall again. When GDP per capita has fallen to a level just high enough to keep the population from starving, population will cease to grow.
5. Destruction of capital, for example, through war, works in the opposite way. The marginal product of labour declines and population falls. This will again lead to an increase in the marginal product of labour and GDP per capita returns to the survival rate.

The main point of the model is that population growth will always eliminate the positive effects of technological development and GDP per capita will always return to the survival level. The postulations of the model are not correct. During the rest of the 1800s, Europe experienced a growth in GDP per capita. Although the population growth was high, it was not nearly sufficient to eliminate the positive effects of technological progress.

The Neo-Classical Growth Model

The main purpose of another growth model, the neo-classical growth model, is to explain how it is possible to have a permanent growth in GDP per capita (Fashola, 2001). The model was developed by Robert Solow in the 1960s and it is sometimes called the Solow growth model or exogenous growth model. The main difference between the classical

and neo-classical growth model is that population is endogenous in the former and exogenous in the latter. In the classical model, population will increase or decrease depending on whether GDP per capita is higher or lower than the survival level.

In the neo-classical model, population growth is not affected by GDP per capita; however, population growth will affect the growth in GDP per capita (Jhingan, 2007). The neo-classical model posits that it is only technological progress that affects the GDP per capita in the long-run. There will be permanent increase in GDP per capita when there is a technological development that increases productivity of labour. Permanent growth in GDP requires continuous technological progress (Odubunmi, 2013). It is not possible for the government, except temporarily, to affect the growth rate in the neo-classical model. The government might be able to affect GDP per capita, but the growth rate is always returned to the level determined by technological progress.

Empirical Review

Several studies have been carried out to examine the effect of fiscal policy on economic growth in Nigeria and Diaspora.

Okafor (2020) examined the issues in redistributive expenditure management and its role in mitigating income inequality. A review of literature and documents is adopted in exploring how the application of the principles of public expenditure management (PEM) - fiscal discipline, allocative efficiency, and operational efficiency - can be used to assess the commitment of the governments to redistributive spending geared towards empowering the poor and consequently bridge the income inequality gap. Income inequality seems to lack the desired attention in developing countries like Nigeria.

Efforts towards making fund available to redistributive expenditures to empower the poor aimed at reducing income inequality appear to be discouraging. Therefore, to improve the situation, fiscal risk, allocative inefficiency, and institutional weakness in the provision of public goods and services in general and social (education and health) goods and services in particular need to be controlled. There seems to be a lack-lustre commitment on the governments in developing countries in providing a sustainable allocation to social goods and services. Additionally, the resources available for education and healthcare financing appear to be adversely affected by corruption. Nevertheless, empirical research is required to know the strength of these relationships in Nigeria.

Gnangoin, Du, Assamoi, Edjoukou, and Kassi (2019) offers an empirical examination of the relationship between government spending's, income inequality, and economic growth by using the case of 19 Asian countries from 2002 to 2017. For this purpose, the paper uses robust difference-GMM estimation and panel granger causality test. We found that gross domestic investment and regulatory quality are the main variables that contribute to these countries' economic growth. While current government consumption reduces economic growth. Also, government expenditure on education and regulatory quality granger cause economic growth in these countries. However, the effect of government expenditure on education on economic growth is not significant. So, to increase their economic growth, this study recommends these countries' governments to encourage gross domestic investment, maintain regulatory quality and reduce their current consumption. This study also concludes that

income inequality has no impact on these countries' economic growth for this period.

Agu, Idike and Okwor (2014) examined the impact of various components of fiscal policy on the Nigerian economy between 1961 and 2010. The study disaggregated fiscal policy into government spending on administration, social and community services and economic services. The results showed that total government expenditures have tended to increase with government revenue, with expenditure peaking faster than revenue. Investment expenditure was found to be much lower than recurrent expenditures evidencing poor growth in the country's economy. In addition, the results showed that government expenditure on economic services is positively related to economic growth. An increase in budgetary allocation to economic services will lead to enhancement in economic stability.

Audu (2012) evaluated the causal relationship between money supply, fiscal deficits and exports as means of analyzing the impact of fiscal policy on the growth of the Nigerian economy between 1970 and 2010. The study employed the Error Correction Model and two band recursive least square to test for the stability of variables on economic growth. The findings showed a significant causal relationship between GDP, fiscal deficit, money supply and export. The study maintained that fiscal policies have significant influence on output growth of the Nigerian economy.

Babalola and Aminu (2014) examined the impact of fiscal policy in Nigeria between 1977 and 2009. Fiscal policy was captured by government productive expenditure, unproductive expenditure, distortionary and non-distortionary taxation. The study employed the Augmented-Dickey Fuller test, Cointegration test and Error Correction

Model. The findings revealed that productive government expenditure has long-run positive impact on economic growth. Unexpectedly, distortionary taxation positively impacted economic growth. The study maintained that government should increase its spending on health, education and economic services, as components of productive expenditure to boost economic growth.

Olasunkanmi and Babatunde (2012) investigated the fiscal policy variables that contributed to growth in Nigeria between 1981 and 2010 in a view to hypothesize the fiscal policy variables-growth effect. The variables utilized are productive expenditure, unproductive expenditure, distortionary taxes, non-distortionary taxes, fiscal deficit and real growth rate of GDP. The results of fiscal-growth effect model found that productive expenditure, distortionary taxes and fiscal deficit contribute to growth in Nigeria. Furthermore, non-distortionary tax was found to exert significant impact on economic growth in Nigeria.

Onwe (2014) examined the impacts of fiscal policy components on economic growth in Nigeria between 1980 and 2012. Expenditure on administration, economic services, social and community services, transfers and ratio of federal government expenditure to GDP are regressed on GDP growth rate. The result of the regression analysis revealed that expenditure on administration, social and community services and ratio of federal government expenditure to GDP have positive impact on economic growth while expenditure on transfers and economic services has negative impact on economic growth in Nigeria. The study maintained that fiscal policy components have no robust impact on economic growth in Nigeria within the estimated period.

Falade and Folorunsho (2015) examined the relative effectiveness of fiscal and monetary policy instruments on economic growth in Nigeria in order to determine the appropriate mix of both policies. The study employed the error correction mechanism between 1970 and 2013. Real GDP was expressed as a function of money supply, exchange rate, interest rate (monetary policy instruments), government revenue, government expenditure (fiscal policy instruments) gross capital formation and inflation rate (control variables). The results showed that all the fiscal and monetary policy variables attained stationary. The results also showed a long-run relationship among fiscal and monetary variables and economic growth. The study maintained that the current level of exchange rate and its previous level, interest rate and current level of government expenditure and money supply are the suitable appropriate policy mix in promoting economic growth in Nigeria in short-run and long-run.

Abdulrauf (2015) examined the short and long run impact of fiscal policy on economic development in Nigeria between 1981 and 2013. The study used government recurrent expenditure, government capital expenditure, government investment and tax revenue to indicate fiscal policy. Economic development was proxied by real per capita income. The study employed the vector error correction model. The results revealed that government recurrent expenditure and government investment have significant positive impact on economic development in both the short and long run. Capital expenditure appeared to have a short run positive impact but not in the long run. Tax revenue has negative significant impact in both short and long run. The speed of adjustment to long run equilibrium stood at 115%.

Maku (2015) examined the impact of fiscal policy on economic growth in Nigeria between 1970 and 2011. The study employed the Engle-Granger cointegration for long-run relationship, ordinary least square for long run estimate and diagnostic test for consistency of instruments. Economic growth was proxied by real gross domestic product while fiscal balance was used to denote fiscal policy. Macroeconomic indices such as gross capital formation, broad money supply and exchange rate were captured in the study. The results revealed fiscal policy exerted significant positive effect on economic growth, which indicates that appropriate fiscal measures stimulate economic growth in Nigeria. The study maintained that government spending has greater impact on the growth rate of the Nigerian economy.

Osuola and Jones (2014) employed the autoregressive distributed lag model to empirically analyze the impact of fiscal policy on economic growth in Nigeria between 1986 and 2010. The fiscal policy variables considered in the study include government recurrent and capital expenditure, non-oil taxes and government debt. The findings revealed an evidence of long run equilibrium relationship between fiscal policy and economic growth within the period estimated. Government recurrent and capital expenditure were found to have significant and positive impact on economic growth while non-oil taxes and government debts have no significant impact on real GDP. Only capital expenditure had short-run equilibrium relationship with economic growth.

Oshinowo (2015) broadly examined the effect of fiscal policy on sectorial output growth in Nigeria between 1970 and 2013. The study employed autoregressive distributed lag model and error correction model. The study investigated the effect of total fiscal expenditure on growth on

agriculture, manufacturing, building and construction, mining and services sectors. The results showed that total fiscal expenditure have positively contributed to all the sectors' output except the agriculture. The finding also shows that manufacturing is positively correlated with all determinant variables while inflation rate is negatively correlated with output growth of all the sectors except agriculture. The study maintained dichotomy between sectorial responses to fiscal policy variables.

Ugwanta (2014) determined the effect of fiscal policy variables on economic growth of selected Sub-Saharan African countries. Government productive and unproductive expenditure and distortionary and non-distortionary taxes are used to measure fiscal policy. The results of the panel least squares showed that government productive and unproductive expenditure as well as distortionary. The results showed that budget balances of some selected nation have positive correlation with economic growth.

Tchokote and Ibe (2016) studied the consequence of monetary and fiscal policies on economic growth in Nigeria. The study adopted correlation analysis, unit-root, ordinary least square and granger causality test on selected fiscal and monetary policies variables – money supply, interest rate, and government revenue and expenditure. The results showed that money supply exerts greater impact on growth than government expenditure.

Abubakar (2016) investigated the impact of fiscal policy shocks on growth and unemployment in Nigeria between 1981 and 2015. The study employed the structural vector autoregressive methodology coupled with unit root and cointegration tests. The results showed that shock in public expenditure have positive long-lasting effect

on output while revenue shock was found to exert a positive effect (lower than that of public expenditure shock) on output. However, the effect of revenue shock on unemployment was found to be negative but short-lived.

Odetayo and Adeyemi (2017) examined fiscal policy sustainability and economic growth in Nigeria between 1980 and 2015. The study adopted the error correction model and autoregressive distributed lag model to analyze the effect on government spending and revenue on output growth in Nigeria. It shows that government revenue, government spending and fiscal deficit grew massively within the period considered. The results equally revealed that fiscal policy is weakly sustainable in Nigeria.

Methodology

Using the Ex-post Facto Research Design, the variables of focus in this study are government/public expenditure (recurrent and capital), gross domestic product growth rate, and gini coefficient (income equality measure). The variables covered a 38-year period spanning between 1981 and 2020.

Model Specification

The study empirically examines the impact of fiscal policy on economic growth of Nigeria. The model is specified as:

$$\text{PERF} = f(\text{GEXP}, \text{GINI}) \dots \dots \dots (3.1)$$

Where: GDPGR= Gross Domestic Product growth rate, GEXP = Government expenditure and Gini = Gini Coefficient (inequality). Based on this, the functional notation of the model is expressed as:

$$\text{GDPGR} = f(\text{RCRX}, \text{CPEX}, \text{GINI}) \dots \dots \dots (3.2)$$

Where:

GDPGR = Gross Domestic Product Growth Rate.

RCRX = Recurrent Expenditure

CPEX = Capital Expenditure.

GINI = Gini Coefficient (proxy by inequality).

The standardized econometric form of the model with the inclusion of constant term and regression coefficients is specified as:

$$\text{GDPGR} = \beta_0 + \beta_1 \text{RCRX} + \beta_2 \text{CPEX} + \beta_3 \text{GINI} + \mu \dots \dots (3.3)$$

Where:

β_0 = Constant term of the regression model.

β_1 - β_3 = Regression coefficients of explanatory

μ = Error term.

Sources of Data: Secondary annual-time series data are used in the study. The data are sourced from the Central Bank of Nigeria Statistical Bulletin and World Bank for various issues spanning between 1981 and 2020.

Estimation Techniques: Econometric Views (E-VIEWS) was adopted for estimation. The Augmented Dickey Fuller (ADF) test was adopted to test the time-series properties of data and determine the order of integration to stationary. The Co-integration is applied to determine the existence of long-run relationship between fiscal policy variables and economic growth. The Error Correction Model is employed to determine the speed of adjustment of the variables to long-run equilibrium.

Results and Discussion

Unit-Root Test

In order to avoid having spurious results, the Augmented-Dickey Fuller test was carried out to remove any trend that might be present in the series. Most importantly, the ADF unit root test is carried out to ensure that robust results are generated as most macroeconomic data have unit root problem. Variables that are stationary produce robust results than non-stationary ones. The table below shows the Augmented-Dickey Fuller test (ADF) of the variables. The 5% probability value is used in the analysis.

Table 4.2: Unit Root Test OF Employed Variables

Series	ADF test statistic at Level I(0)	Critical value	ADF test statistic at difference I(1)	Critical value at difference	Order of Integration
GDPGR	0.09	-2.95	-3.22	-2.95	I(1)
RCRX	-1.46	-2.95	-3.44	-2.96	I(1)
CPEX	-1.31	-2.94	-5.84	-2.95	I(1)
GINI	-1.27	-2.94	-5.45	-2.95	I(1)

Source: Author's Computation from E-views Output

Table 4.2 presented the ADF unit root test for the variables. None of variables was stationary at level as their ADF test statistic less than 5%. However, the variables became stationary at first-order difference and thus integrated at order one. Since at least one of the variables is stationary, the Cointegration needs to be carried out.

Cointegration Test

To determine the long-run equilibrium relationship between economic

growth and fiscal policy variables cointegration test was conducted and decomposed into the Trace Statistic and Maximum Eigen value statistic. Cointegration is said to be existent between two or more variables if the Trace Statistic and Maximum Eigen value statistic indicates at least one cointegrating equation. The asterisk indicates the rejection of no cointegration at 5%.

Table 4.2: Johansen Cointegration Test

Hypothesized No. of CE(s)	Trace statistic	0.05 Critical value	Probability value
None*	102.68	95.73	0.01
≤ 1*	76.63	69.81	0.03
≤ 2	42.09	47.86	0.15
≤ 3	21.13	29.79	0.35

Max-Eigen Statistic

Hypothesized No. of CE(s)	Max-Eigen statistics	0.05 Critical value	Probability value
None*	36.04	35.07	0.03
≤ 1*	34.55	33.87	0.01

≤ 2	20.95	27.58	0.27
≤ 3	16.30	21.13	0.20

Source: Author's Computation from E-views Output

The Trace statistic indicates one cointegrating equation between economic growth and the independent variables (recurrent expenditure, capital expenditure, and the Gini coefficient) while the Maximum Eigen Statistic indicates no cointegrating equation. However, Green (2007) posited that whenever there is conflict in the number of cointegrating equations between Trace Statistic and Maximum Eigen Statistic, the result of the Trace Statistic should be reported because the Trace Statistic is superior to the Maximum Eigen Statistic because the former engulfs smaller components of the latter. Thus, going by the Trace Statistic, there is a long run equilibrium relationship between public expenditure,

economic growth and inequality (Gini coefficient). It is possible for shocks to arise in the short-run to prevent the variables from reaching a state of equilibrium in the long run. In other words, the variables possess the characteristics that would cause them to converge in the long-run.

Error Correction Mechanism

Given the fact that the variables are cointegrated, the next step is to estimate the short-run dynamics in the error correction model in order to capture the speed of adjustment to equilibrium in case of any shock that might arise in the independent variables. The error correction model estimation is carried out to integrate short-run dynamics with long-run relationship.

Table 4.3: Error Correction Model Estimation of the Impact of Fiscal Policy on Economic growth in Nigeria

Dependent Variable: D(GDPGR)

Method: Least Squares

Sample (adjusted): 1982 2020

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015634	0.003630	4.306999	0.0002
D(RCRX)	0.004754	0.033353	0.142534	0.8877
D(CPEX)	0.015506	0.021480	0.721878	0.4764
D(GINI)	0.022843	0.012293	1.858147	0.0737
ECM(-1)	-0.867251	0.171335	-5.015034	0.0000
R-squared	0.690145	Mean dependent var		0.018531
Adjusted R-squared	0.623628	S.D. dependent var		0.018682
S.E. of regression	0.016461	Akaike info criterion		-5.198743
Sum squared resid	0.007587	Schwarz criterion		-4.887674
Log likelihood	97.97801	Hannan-Quinn criter.	-5.091362	
F-statistic	9.632240	Durbin-Watson stat	1.920489	
Prob(F-statistic)	0.037589			

Source: Author’s Computation from E-views Output

The result showed that the coefficient of error correction mechanism is negative (0.867) and significant as its probability value is less than 0.05. This indicates that about 86.7% disequilibria in Nigeria’s Economic growth (gross domestic product growth rate) in the previous year are corrected in the current year. The speed of adjustment from short-run equilibrium to long-run equilibrium is approximately 86.7% per annum. The overall goodness of fit of the model as indicated by the coefficient of determination is 0.69.

This indicates that the independent variables – public expenditure and income inequality, explained about 69% variation in economic growth in Nigeria. The adjusted R-squared stood at 62.3% after allowing for

degree of freedom. The value of the F-statistic is 9.63, with a probability value of 0.04, which is considered significant. This implies that the combined effect of the independent variable is statistically significant on economic growth (gross domestic product growth rate) within the estimated periods. The Durbin-Watson statistic of 1.92 indicates the absence of autocorrelation in the model. All employed dimensions of public expenditure do not significantly influence economic growth in the long run.

Dynamic Partial Correlation Analysis

To determine the moderating effect of income distribution, the study presents the following table as follows;

Table 4.4: Dynamic Partial Correlation for Moderating Effect

Dependent Variable		
Gross Domestic Product Growth Rate		
Moderator: Gini		
Independent Variables	Moderating Coefficient	Significance
RCRX	-0.3499	0.000
CPEX	-0.1168	0.000

Source: Author’s Computation from E-views Output

The negative moderator coefficient shows that, the inequality in Nigeria as measured using the Gini coefficient shows a value of -0.3499 for RCRX and -0.1168 for CPEX. Both moderating effects are observed to be significant as they possess significance value of 0.000 (less than the 0.05 significance level). This shows that the level of inequality in Nigeria weakens the effect of public expenditure.

The size of -0.3499 for recurrent expenditure and -0,1168 for capital expenditure shows that there inequality is

most prevalent in the recurrent expenditure. This can be linked to evidence of ghost workers, irregular payment options and other rent seeking activities associated with the administration and mobilization of recurrent public expenditures. Although the coefficient value of -0.1168 similarly shows that the inequality affects capital expenditure mobilization. This therefore shows evidence that capital expenditure is not significantly affecting economic growth because of the presence of income inequality.

Summary, Conclusion and Policy Recommendations

Summary of the Study

The study examined the impact of public expenditure on economic growth of Nigeria as moderated by income inequality. It was established that, in the long run, there is no significant relationship between recurrent and capital expenditure on economic growth (gross domestic product growth rate) as a result of the drowsing/negative moderating effect of the level of inequality. This therefore means that there is high level of inequality that is retarding the impact of public expenditure and economic growth.

Conclusion

It was concluded that public expenditure are ineffective on economic growth (as a result of the influence of income inequality which could be linked to negative practices. This effect is larger in the recurrent expenditure than the capital expenditure. This partial effectiveness of fiscal policy on the Nigeria's economy could be attributed to lack of proper economic planning and projection, misappropriation of public funds, deficiencies in the structure and content of budget, lack of full implementation of budget, corruption and weak institutional framework.

Recommendations

In an attempt to accelerate the rate of development of the Nigerian economy through fiscal policy, the following recommendations are proposed for implementation.

- The Nigerian governments to enhance gross domestic investment and regulatory quality and reduce government consumption policies to improve their countries' economic growth.
- Government should strive to reduce expenditure on recreational, cultural and

religious affairs and other functions like political administrative expenses in order to stabilize the economy.

- Government should enhance investment in productive expenditure including expenditure on education, health, manufacturing, mining and agriculture and also ensure that funds meant for development of these sectors are properly utilized.
- Anti-corruption agencies like the Economic and Financial Crimes Commission (EFCC) and Independent Corrupt Practices Commission (ICPC) and the judicial system should be strengthened to tackle the high incidence of corruption in public sector. This will go a long way to ensure that public funds are expended on productive purposes.
- Government should ensure a strict fiscal policy discipline. Also government needs to demonstrate high level of commitment to policy consistency and implementation. In addition, consistency in macroeconomic policies implementation in the non-oil sectors of economy should be pursued.

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