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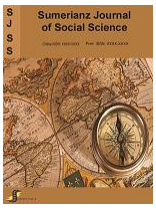

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Influence of Fiscal Policy on Gross Domestic Investment (GDI) in Nigeria

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Abstract

The study analyzed influence of fiscal policy on gross domestic investments in Nigeria. Specifically, the influence of government revenue, government expenditure and government debt on gross domestic investments was investigated. Data spanning 36 years, from 1981 to 2017, was used for the study's tests and analysis. For the data analysis, unit root test results showed that the data were of mixed integration, hence the autoregressive distributed lag (ARDL) approach to regression analysis was applied. The ARDL bounds test revealed that fiscal policy and domestic investments in Nigeria had long-run relationship. It was also revealed that government revenue had negative and significant influence on gross domestic investments, while government expenditure and government debt both had positive influence on domestic investments with government expenditure been significant. As such, the paper recommended, among other things, that revenue from sources other than tax should be encouraged, through better means of accelerating agricultural productivity to cushion the dwindling revenue from Nigerian oil sector as this would help to accelerate non-tax revenue in the years ahead.

Keywords: Fiscal policy; Gross domestic investments; Government expenditure; Fiscal deficit; Government revenue.
Jel Classification: H3; E2; E65; E31; E5; F43.

1. Introduction

1.1. Background to the Study

A well-documented fact in finance and economic literature is that fiscal policy is required to correct, guide and supplement the market forces in creating a conducive economic environment for investments to thrive. The primary significance of fiscal policy is especially perceived in connection with its primary aim of allocation, stabilization and redistribution (Osuala and Ebieri, 2014). Fiscal policy is usually represented by the level and structure of government spending and revenue generation. As a result, implementation of fiscal policy is essentially channeled through government's annual budget. As such, fiscal policy as a deliberate action of government involves the use of government spending, tax and other sources of revenue and borrowing to influence the pattern of economic activities in a country. These economic activities are evident in increased investments and productivity, high employment creation and low inflation which is aimed at stabilizing the economy.

Scholars have argued that increase in government revenue facilitated increased expenditures on socio-economic and physical infrastructures which in turn facilitates investments (Janku and Kappel, 2014). Similarly, expenditure on infrastructure such as roads, communications, power, etc. reduces production costs, increases private sector investment and profitability of firms, thus fostering investment activities across the economy. Supporting this view, scholars concluded that expansion of government expenditure encouraged investments and contributed positively to economic growth (Samanta and Cerf, 2009). Furthermore, in an attempt to finance rising expenditure, government might increase taxes and/or borrowing which might affect her spending behavior (Checherita and Rother, 2010). However, higher corporate tax might lead to loss of profit and cause disincentive to domestic investments, while income taxes could discourage individuals from working for long hours or even searching for jobs and this could reduce income and aggregate demand. In the same vein, higher profit tax tends to increase production costs and reduce investment expenditure as well as profitability of firms. Moreover, if government increases borrowing (especially from commercial banks) in order to finance its expenditure; it would compete away the private sector, thus reducing domestic private investments.

Theoretically, propositions exist on effect of fiscal policy on investment outcomes in an economy. For instance, classical studies have estimated that investments in economic production is largely linked to factors of production particularly labour and capital. The proponents of the classical view asserted that effect of government spending was temporary and not effective particularly in the long-run when prices adjusted and output and employment were at their optimum levels (Khosravi and Karimi, 2010). Furthermore, Omran (2017), noted on the contrary, the Keynesian view as represented in Blinder and Solow (2005), that consumption had a positive effect on the economy. In recent years, there have been the emergence of endogenous growth theory which predicted that government expenditure and taxation would have both temporary and permanent effects on investment activities (Njuru, 2012; Osuala and Ebieri, 2014).

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Indeed, economic growth studies have shown that influence of government in her choice of revenue and expenditure would determine that level at which investments would grow in an economy. Unfortunately, when compared with emerging economies of Southeast Asian countries, it was glaring that domestic investments in Nigeria has been slow despite huge expenditures reported in the annual budget. This is because the Nigerian investment climate has been plagued with several challenges such as inconsistent fiscal policies, macroeconomic and political instability (Okoh *et al.*, 2016). In spite of frequent adjustments in fiscal policy, Nigeria is yet to tap her potentials for rapid economic growth through accelerated investment activities. Notably, fiscal policy is central to the health of any economy, as government has power to raise revenue and expend such revenue to meet national needs through budgetary allocation. These actions affect the disposable income of citizens and corporations which in turn affects the general investments as the economic wellbeing of the country.

It is obvious that Nigeria and other developing countries, have presently been facing serious problems in attracting investments as many investors have had to move their investment activities to other countries with better investment environment. For instance, despite various economic reforms undertaken by Nigeria in previous years, the country entered the year 2016 with a low GDP growth rate which was lower than the level it attained at the end of the 2015 due to harsh economic recession. In this light, the pursuit of sound fiscal policy and good governance could exert a strong moderating influence on the exogenous factors that must have militated against the rapid growth of the Nigerian economy. It is based on this background that this study would explore impact of fiscal policy on gross domestic investments of Nigeria.

1.2. Statement of the Problem

Fundamental to this problem statement is the representation of fiscal policy. In theory, three standard fiscal policy measures; expenditure, revenue and deficits exist. Out of these three variables, literature did not single out any as the most representative of fiscal policy. While scholars such as Okorie *et al.* (2017) have made use of tax rates as a proxy for fiscal policy others such as Umaru and Gattawa (2014), have used deficits to account for fiscal policy in their estimations. Yet, scholars including (Osuala and Ebieri, 2014), used expenditure to account for fiscal policy stance. When expenditure is considered as a fiscal policy measure certain studies have considered aggregate government expenditure as a single variable while others are of the view that the variable ought to be decomposed into several categories like recurrent and capital expenditure (Osuala and Ebieri, 2014).

However, a significant problem with most of the Nigerian studies is the inability of these studies to apply both total government revenue and expenditure as a measure of fiscal policy in a single model. This implies testing effects of fiscal policy on gross domestic investments taking into account the structure of fiscal policy, that is, both sides of total revenue and total expenditure. Most previous studies on Nigeria had focused on effect of government deliberate spending on economic performance while partially ignoring, the other sides (revenue and debt) of fiscal policy. The present study would sort out these mixed-ups or gap created in past studies. By the time it is completed, the true position of affairs would be ascertained.

1.2.1. Objectives of the Study

The primary objective of this study is to investigate influence of fiscal policy on gross domestic investments in Nigeria. The specific objectives are:

1) To determine influence of government revenue collection gross domestic investments of Nigeria.
2) To ascertain influence of government expenditure on gross domestic investments of Nigeria.
3) To assess influence of public debts on gross domestic investments of Nigeria.

1.2.2. Research Questions

The study would seek answers to the following questions:

1) To what extent does government revenue collectioninfluence gross domestic investments of Nigeria?
2) How have government expenditures been in influencing gross domestic investments of Nigeria?
3) To what degree do public debts influence gross domestic investments of Nigeria?

1.2.3. Hypotheses

The following hypotheses are to be tested in this study:

H_{o1}: Government revenue collection have no significant influence on gross domestic investments in Nigeria.
H_{o2}: Government expenditures have no significant influence on gross domestic investments in Nigeria.
H_{o3}: Public debts have no significant influence on gross domestic investments in Nigeria.

2. Review of Related Literature

2.1. Fiscal Policy

It has been argued that fiscal policy is concerned with deliberate actions which the government of a country take in the area of spending money and or levying taxes with the objective of influencing macroeconomic variables such as the level of national income or output, employment level, aggregate demand level, general level of prices, etc. in a desired direction. Bhatia (2008), noted that fiscal policy consisted of steps and measures which the government took both on the revenue and expenditure sides of its budget and that it was the aggregate effects of government expenditures and taxation on income, production and employment. Again, Osuala and Ebieri (2014), referred to fiscal policy as government action plan concerning how to raise funds and disburse funds. They further posited that

it was the use of government revenue and expenditure programmes to affect the economy in a way to produce desirable effects such as achieving full employment, general good price level, aggregate demand and economic growth and development. They noted that the instruments of fiscal policy were taxation, government expenditure, government budget, public debts and subsidy.

Fiscal policy involves use of government spending, taxation and borrowing to influence the pattern of economic activities and also the level and growth of aggregate demand, output and employment. Fiscal policy entails government's management of the economy through manipulation of its income and spending power to achieve certain desired macroeconomic objectives (goals) amongst which is economic growth. Omran (2017), opined that fiscal policy has conventionally been associated with use of taxation and public expenditure to influence level of economic activities. He further said implementation of fiscal policy is essentially routed through government's budget. Fiscal policy is mostly meant to achieve macroeconomic policy; it is to reconcile the changes which government modifies in taxation and expenditure, development programmes or to regulate full employment price and total demand to be used through instruments such as government expenditures, taxation and debt management.

2.2. Fiscal Policy and Gross Domestic Investment (GDI) in Nigeria

The impact of fiscal policy on gross domestic investments has generated large volume of empirical studies with mixed findings using cross sectional, time series and panel data. Fiscal policy is generally believed to be associated with growth, or more precisely, it is held that appropriate fiscal measures in particular circumstances couldbe used to stimulate investments in the economy.

The power of fiscal policy as an instrument of economic stabilization was acknowledged in the works of Trebicka (2015), Osuala and Ebieri (2014). Despite the lofty place of fiscal policy in the management of an economy, the Nigerian investment environment is yet to be sound. Fadare (2010), indicated that Nigerian economy is still marred by chronic unemployment, rising rate of inflation, dependence on foreign technology, foreign exchange earnings from crude oil, etc. Nigeria is endowed with enormous potentials for growth and development with her vast oil and gas resources, rich and expensive agricultural land, solid minerals and abundant human resources. Notwithstanding the existence of these factors, since the 1960s successive efforts of various governments to put the economy on a sound footing have not yielded the desired results, a situation one might say is due to wrong application of the nation's resources away from being directed to productive sector to chart the path of growth and development. The net result is that the economy of Nigeria is now performing below her potentials.

A cursory examination of the structure of selected macroeconomic indicators of performance of fiscal policy revealed that the Nigerian situation has been far from ideal (Okorie *et al.*, 2017). Over the period (1990-2016), trends in budgetary balance revealed that with the exception of 1995 and 1996, Nigerian government has been recording budget deficits in its annual budgets (CBN, 2017). Even the surpluses (₦1 billion and ₦32.05 billion) so claimed in 1995 and 1996, respectively turned out to be deficits when they were subjected to more accounting and budgetary procedures. However, deficits are not totally condemnable provided:

a) They do not exceed 3 per cent of the GDP;
b) They are not chronic and there is overall balance or surplus taking several years together;
c) They are not financed by borrowing from the banking sector, especially the central bank; and
d) They are spent on productive activities, which will generate resources for paying back.

According to IMF (2016), the endogenous growth theory determined four main instruments through which fiscal policy could enhance the long- run growth as follows:

Enhance fiscal capital: When the government increases its spending on infrastructures such as spending on roads and bridges, it might improve the productivity of public sector because of these facilities. The increase of productivity might lead to an increase in the rate of return on both corporate and individual levels, and thus, the increase of the public-sector productivity might in turn lead to an increase in the long run growth rate. The same thing might happen when the government cuts taxes. Tax cuts in capital income might encourage individuals and businesses to increase savings. This increase in savings might lead to an increase in the long-term growth rate or capital formation of the economy.

Enhance human capital: Several past studies have shown the important role that human capital plays in stimulating economic growth (Trebicka, 2015; Ubi-Abai and Ekere, 2018). Government spending in the Human capital such as education and health could affect the long-run growth directly and indirectly. The direct effect of human capital is being captured as component in the production function. The indirect impact of human capital comes through promoting ideas and technological progress. When it comes to the revenue side, it suggested that an appropriate tax reform might enhance human capital accumulation and thereby stimulate the long-run economic growth (Nayab, 2015).

Total factor productivity: According to Ugwunta (2014), public investment has the potentials to increase public sector productivity. The government could invest directly in research and development and indirectly by investing in human capital through education and health spending. This might increase productivity of the private sector and thus promote the long run growth rate. Also, the government could increase private sector productivity by increasing spending in physical capital and giving incentives to increase research and development (R&D) by cutting taxes.

Labor supply: Fiscal policy could affect labor supply through the tax system. Individual's decision whether to work or not depends on the tax benefits. The more taxes he pays, the fewer incentives to work he has. When the government makes tax cuts, it increases the income of the worker and thus encourages him to work. On the other hand, when the government increases taxes, it might discourage individuals' desire to work. According to Samanta

and Cerf (2009), impact of the tax system on work decisions has been greater for some specific groups than the others.

Disheartening, however, is the fact that budget deficits in Nigeria have hardly complied with these principles (Okorie *et al*., 2017). The unproductive performance of ever increasing government expenditure is also reflected in the level of economic growth mirrored by real GDP growth rate that was, in fact, negative between 1990 and 1994 which suggested fiscal deficits of ₦22.12 billion, ₦35.76 billion, ₦39.53 billion, ₦65.16 billion and ₦70.27 billion, respectively. Also, the high degree of instability became more obvious with the inflationary trends maintaining two digits for 2015 and 2016 when fiscal deficits stood at ₦1,557.79 billion and ₦1,226.08 billion, respectively.

By and large, the behavior of fiscal policy in Nigeria has followed unsteady pattern, assessing the significance of the policy; therefore, in the actualization of sustainable economic growth is imperative more so that the country has been working towards achieving the millennium development goals (Okorie *et al*., 2017).

3. Theoretical Framework Review

3.1. Endogenous Economic Growth Theory

The theoretical underpinning for this study is basically on the endogenous growth theory, which advocates the stimulation of growth rate of per capita output using fiscal policy. Endogenous growth theory holds that economic growth is primarily the result of endogenous and not external forces. Endogenous growth theory holds that investment in human capital, innovation, and knowledge are significant contributors to economic growth. The theory also focuses on positive externalities and spillover effects of a knowledge-based economy which would lead to economic development. The endogenous growth theory primarily holds that the long run growth rate of an economy depends on policy measures. An Endogenous growth theory implication is that policies which embrace openness, competition, change and innovation would promote growth (Fadare, 2010). The endogenous growth model is an economic theory which argues that economic growth is generated from within a system as a direct result of internal processes. Specifically, the theory notes that the enhancement of a nation's human capital would lead to economic growth by means of the development of new forms of technology and efficient and effective means of production.

3.2. The Traditional Keynesian Theory

In the simplest static model with fixed prices, an exogenous reduction of public expenditure (or a contraction of disposable income following a tax hike) would bring about traditional Keynesian effects through the demand side by way of the well-known multiplier mechanism. In the short-run horizon envisaged by the model, Keynesian effects would prevail and restrictive fiscal policies would have contractionary effects on private consumption and economic activity. When assessing effects of a fiscal loosening, the size of the multiplier, however, is affected by a number of factors which might entail crowding-out effects, such as insufficient slack in productive capacity, increases in market interest rates, the degree of openness of the economy and appreciation of the exchange rate, and the possibility of at least limited price flexibility. Depending on these conditions, the expansionary effects of fiscal loosening on demand could be very limited.

In a dynamic model, which does not assume full market clearing, the longer temporal horizon broadens the range of possible channels of transmission of fiscal policy to aggregate demand. In this context, agents form expectations about future developments in public finances and budget policies, and therefore of their future disposable income and wealth. The intertemporal optimization implies complex, non-linear relationships in the traditional consumption and investment model, which depend, among other things, on how economic agents form their expectations. In particular, the inclusion of the New Classical elements (e.g. Ricardian Equivalence property) in the model implies that wealth and expectation effects might well outweigh the traditional Keynesian multiplier effects on demand and activity.

3.3. Rational Expectations View

When agents form rational expectations, permanent changes in fiscal policy could modify their expected permanent income, while transitory fiscal changes might not affect it at all. Since agents bring forward the long-term effects of fiscal policy to the present, short-term effects become relevant. In particular, if agents expect that an initial increase in interest rates and/or an appreciation of the exchange rate, following fiscal expansion, would continue or even became larger, crowding-out effects would be augmented and the fiscal multiplier may become negative. Under such circumstances, a weak Keynesian effect is dependent on the effects of policy measures that was being made permanent, with the transmission to aggregate demand being extended through the permanent income hypothesis (Nayab, 2015).

4. Empirical Review of Related Literature

Agbarakwe (2018), examined relationship between fiscal policy tools i.e. government expenditure, government tax revenue and total debt stock and key macroeconomic indicators for the period 1980 to 2017. The selected macroeconomic indicators were economic growth, inflation and unemployment. The scientific method adopted for that investigation was multiple regression analysis. However, the study carried out some diagnostic tests which included unit root test, co- integration analysis, vector error correction model (VECM) and granger causality test. The vector error correction model was employed to estimate both the short-run and long-run relationship between the regressor and the regressand. The results obtained indicated that government expenditure had significant positive relationship with GDP while government expenditure and total debt stock had significant negative long run

relationship with unemployment. The granger causality test established a unidirectional causality running from fiscal policy tools to the selected macroeconomic variables in Nigeria. Based on the findings of the study, he made the following recommendations that government should increase expenditure on capital project like infrastructure, borrowed fund should be invested properly and intensify fight against corruption as possible ways of putting the economy on the wheel of rapid growth and development.

Ubi-Abai and Ekere (2018), analyzed effects of fiscal and monetary policies on economic growth in a panelof 47 sub-Saharan African economies from 1996 to 2016, using descriptive analysis, the econometric techniques of dynamic panel General Method of Moment and the Dumitrescu-Hurlin causality; the scaling quantity analysis inclusive. The study traced the debate from the Keynesians to the Monetarists. The findings of their work showed that fiscal and monetary policies had affected economic growth positively in the sub-region. Moreover, fiscal policy had a greater scale effect in enhancing economic growth in sub-Saharan Africa. The study therefore concluded that fiscal policy had greater influence on growth than monetary policy. It was recommended, amongst others, that governments of countries in the sub-Saharan region should focus more attention on formulating and implementing programmes that support productive investments; fostered favourable trade; improve productivity of labour; and made the political environment stable.

Hasanov *et al.* (2018), investigated non-oil sector effects of fiscal policy in Azerbaijan over a long time period(1960-2016) in which a recent low oil prices sample was incorporated. To obtain robust empirical findings, the study useddifferent test and estimation methods as well as addressed small-sample bias issues in the extendedproduction function framework. Results showed that fiscal policy had a statistically significant positiveimpact on the non-oil sector both in the long and short run. However, the size of impact wassmall compared to the findings of earlier studies which might be due to low oil-price environmentand different specifications used. Hence, Azerbaijani policymakers should take measures to compensatefor the declining share of oil revenues in government revenues. They might equally consider increasing taxrates, import and export fees, energy and other tariffs as rapid remedies to fill the budget but thesemeasures might hurt economic development. Alternative and less harmful remedies would beoptimizing government spending, strongly monitoring ongoing projects, and phasing out social andinfrastructure projects, which made lower contributions to growth.

Omran (2017), investigated short-term effects of fiscal policy shocks including government spending and tax revenue on real gross domestic product in Egypt. The study applied structural vector autoregressive model (SVAR) model and impulse response function (IRF) using annual data for the period 1985-2015. The main findings of the research were that Government spending shock had a negative impact on real gross domestic product. The impact of taxation seemed to be less efficient as it had a positive but weak impact on real gross domestic product. Nevertheless, the impulse response functions were statistically insignificant. Recommendation was made that government should secure tax collections by administering fiscal policy in a way that would create conducive investment environment.

Okorie *et al.* (2017), ascertained relative effectiveness of fiscal and monetary policies in Nigeria using a quarterly time-series from 1981-2012. From the ordinary least squares analysis, it discovered that monetary and fiscal policies both had significant positive impact on income. This conformed to *a priori* expectation and it was discovered that monetary policy had affected income faster than fiscal policy. In the short run, monetary policy had affected income more than fiscal policy but the reverse was the case for the long run. Total impact of fiscal policy was higher than that of monetary policy. The study supported the use of both policies to achieve change in income but this would depend on the objective the authorities would want to achieve.

Nwankwo *et al.* (2017), investigated impact of fiscal policy on economic growth in Nigeria from 1970 to 2014 period. The data used was sourced from Central Bank of Nigeria Statistical Bulletin of various issues and World Bank Development Indicator (WDI) and the Co-integration and Error Correction (ECM) approaches were utilized in analyzing the data. The result of the unit root test showed that government capital expenditure, oil revenue, gross domestic product and tax revenue were stationary at first difference I(1), while government recurrent expenditure was stationary at levels I(0). The co-integration result revealed that there were 3 cointegrating equations at 5 per cent level of significance. This meant that there existed a long-run relationship between fiscal policy and economic growth. The estimated ECM had required negative sign of -0.447 (45%) and lied within the accepted region of less than unity although, government capital and recurrent expenditures at lagged two years were found insignificant and therefore had no impact on economic growth. Based on the findings from that empirical analysis, the study recommended among others, the need for the Nigerian government to invest in productive investments through increases in capital expenditure over and above recurrent expenditure in order to stimulate economic growth.

Kuranti (2017), surveyed and assessed the empirical literature on the sources of budget deficit and their policy implications on the processes of sustainable economic growth and development. The sample used for this study was based on panel data-sets between 1994 and 2014. Results obtained from the analysis pointed to an adverse impact of continued budget deficits on the processes of economic growth and development. The paper therefore recommended adoption and implementation of policies that could reverse the un-sustained budget deficits leading to crowding out of the private investments but rather, put the economy on a sustained path of growth and, development in the medium to long term.

Aslam (2016), tested dynamic relationship between budget deficit and economic growth of Sri Lanka using annual time series data from 1959 to 2013. To test this objective, the Johansen cointegration technique and Vector Error Correction Model were used to test both long and short - run dynamic relationships between budget deficit and economic growth of Sri Lanka. This study found that all variables were co-integrated. In the meantime the budget deficit and economic growth of Sri Lanka had preserved a long- run dynamic relationship during the study period but

no short- run dynamic relationship was discovered. In addition, the budget deficit had positive relationship with economic growth of Sri Lanka.

Ialomiţianu *et al.* (2016), examined results of fiscal policy implementation inRomania, their impact on economic growth and how fiscal policies had influenced growth of budgetary deficits. The methodology consisted in analyzing the information provided by national and international financial institutions, comparing it to past, proposed and assumed values, and examining the efforts and results. The conclusion reached was that, in order to restore the sustainability of public finances, the needarose for considerable fiscal consolidation effort, as well as for deep structural reforms, with a view to creating favourable conditions for sustainable economic growth.

Khalifa (2016), investigated effect of fiscal policy on investment spending in Libya for the period 2000-2015 and he used multiple regression models in his tests and analysis. The study showed that gross domestic product had a positive effect on investment spending in Libya and growth in gross domestic product (GDP) would lead to the expansion of investment spending in Libya during the study period (2000- 2015). It was recommended that policy makers should centre attention on using gross domestic product as a tool of fiscal policy tools and increasing gross domestic investment.

Kabanda (2016), investigated relative contribution of monetary and fiscal policies to changes in nominal output, and possible interaction between these policies in Rwanda from 1990 to 2014. The findings of that study discovered that monetary policy was more effective than fiscal policy, and that there was interaction between both economic policies in Rwanda. It was therefore recommended that the central bank should also ensure that its interventions on the foreign exchange market did not harm the behaviour of the market.

Trebicka (2015), empirically investigated impact of fiscal policy on the level of economic growth in Albania. The study covered the period between 1994 and 2014. The cointegration technique with its implied error correction model was used for the study. Three indicators of fiscal policy were used: profit after tax, government expenditure and external debt. The result indicatedthat these three indicators had positive impact on economic growth of Albania. It was thus concluded that a good use of the fiscal policy would improve growth of economy in Albania.

Agu *et al.* (2015), analyzed impact of various components of fiscal policy on the Nigerian economy. The study used descriptive statistics to show contribution of government fiscal policy to economic growth, and to ascertain and explain growth rates, and an ordinary least square (OLS) in a multiple form to ascertain relationship between economic growth and government expenditure components after ensuring data stationarity. Findings revealed that total governmentexpenditures have tended to increase with government revenue, with expenditures peaking faster than revenue. Investmentexpenditures were much lower than recurrent expenditures evidencing the poor growth in the country's economy. Hence, there was some evidence of positive correlation between government expenditure on economic services and economic growth. Therefore, in public spending, it is important to note that effectiveness of the private sector depends on the stability and predictability of the public incentive framework, which promotes or crowds out private investment.

Nayab (2015), examined impact of budget deficit on economic growth of Pakistan during the period from 1976-2007. The technique of time series econometrics such as Granger Causality, Johansen co integration and error correction model were used in the study. Johansen co integration showed that all variables were cointegrated and error correction term was also significant. However, any significant impact of budget deficit on economic growth of Pakistan was not found. The results also showed that GDP caused investments and investments caused deficit. However budget deficit did not cause GDP growth. The results of that study also supported Keynesian view about budget deficit. The findings as well revealed that the budget deficit had a positive impact on growth.

Falade and Folorunsho (2015), examined relative effectiveness of fiscal and monetary policy instruments on economic growth sustainability in Nigeria in order to determine the appropriate mix of both policies. The paper employed error correction mechanism whereby the time series properties of fiscal and monetary variables were first examined using Augmented Dickey-Fuller and Philip Perron unit root tests, then followed by Johansen cointegration test among the series using annual data for the period 1970-2013. Data were sourced mainly from Statistical Bulletin published by the Central Bank Nigeria. The results showed that all the fiscal and monetary variables of interest cointegrated with economic growth series in the country. This evidence has suggested that there was a long run relationship among fiscal and monetary variables and economic growth in Nigeria. The paper, however, found that the current level of exchange rate and its immediate past level, domestic interest rate, current level of government revenue and current level of money supply were the appropriate policy instruments mix in promoting economic growth both in the short and long run. The paper concluded that fiscal and monetary policies were still complementary.

Umaru and Gattawa (2014), examined impact of fiscal deficit and a disaggregated government expenditure on economic growth in Nigeria from 1970 to 2011 using autoregressive distributed lagged (ARDL) approach. The ARDL estimation revealed that a percentage increase in fiscal deficit expanded the national output by 10.05% while a 10% increase in government capital expenditure in Nigeria increased growth rate of the economy by 62.21%. However, recurrent expenditure has no significant impact on economic growth. On the direction of causality, a unidirectional causality was found running from capital expenditure to economic growth, while no causality between recurrent expenditure and economic growth and also between fiscal deficit and economic growth were discovered. Hence, a sustainable and absorbable deficit budget which should be geared towards capital projects like infrastructural and human capital development to achieve sustainable growth, not as it was currently being directed towards unproductive and insignificant recurrent expenditure was recommended.

Osuala and Ebieri (2014), analyzed impact of fiscal policy on economic growth of Nigeria. Time series data from 1986 to 2010 relevant to the study were collected from the Central Bank of Nigeria Statistical Bulletin, Volume 22 and the National Bureau of Statistics. The ordinary least square method of multivariate regression was utilized in

analyzing the log-linearized model. The findings of the work were that, there was evidence of long run equilibrium relationship between fiscal policy and economic growth in Nigeria during the period studied. The adjusted R^2 value of 0.6850 showed that about 68.5% of the total variation in the real GDP was explained by the independent variables included in the model. Specific fiscal policy variables that had significant and positive impact on economic growth in Nigeria were government recurrent and capital expenditures. Non-oil taxes and government total debts had no significant impact on real GDP. It was therefore recommended that government should establish a strong fiscal responsibility and transparency system in the fiscal institutions; and tax reforms should be such that would encourage increases in investments and help reduce corruption.

5. Research Methodology

5.1. Research Design

A research design is a blueprint that guides the researcher in his or her investigation and analysis (Onwumere, 2009). This study is designed to structurally ascertain effect of fiscal policy on GDP in Nigeria and it adopted an *ex-post facto* research design in its execution. *Ex post facto* also known as "after the fact" design attempts to identify a natural impetus for specific outcomes without actually manipulating the independent variable. *Ex-post facto* implies that the event being investigated had already taken place. Therefore, the data used are already in existence.*Ex post facto*, or "after the fact" designs, attempt to identify a natural impetus for specific outcomes without actually manipulating the independent variable. This type of design is often utilized when it is not possible to control the experience, exposure, or influences which might affect participants.

5.2. Sources of Data

This research made use of annual time series data from the CBN (2017) and National Bureau of Statistics. Basically, the nature and source of data for the analysis of this work was secondary data. This is because the data would be ideal in answering the stated research questions in the study and to empirically test the research hypotheses in order to achieve the stated objectives of the study.

5.3. Model Specification

The model for this study was structured in a way to empirically show effect of fiscal policy on gross domestic investments in Nigeria. The model adopted from, Osuala & Ebieri (2014) is as follows:

$$RGDP = \hat{\beta}_0 + \hat{\beta}_1(NTR) + \hat{\beta}_2(REX) + \hat{\beta}_3(CEX) + \hat{\beta}_4(TD) + \varepsilon \quad . \qquad \text{Eqn. (3.1)}$$

Where,
RGDP = Real GDP
NTR = Non-oil tax revenue
REX =Recurrent expenditure
CEX = Capital. Expenditure
TD = Total debt

Equation (3.1) was modified to capture total government revenue (that is, the sum of tax and non-tax revenue to GDP ratio) as both tax and non-tax revenue are required to stimulate public finance. Also, total government expenditures was measured by the sum of recurrent and capital expenditures while total debt was measured by the sum domestic of and external debt/GDP ratio (that is, theoretical representation of debt overhang). Also, other macroeconomic variables like inflation and exchange rate were included in the model as control variables since fiscal policy in conjunction with macroeconomic fluctuations could influence domestic investments (Falade and Folorunsho, 2015). As such, the above model (equation 1) was modified to capture the key variables used in the present study:

$$GDI = \hat{\beta}_0 + \hat{\beta}_1(TGRV) + \hat{\beta}_2(TGEXPDT) + \hat{\beta}_3(TDBT) + \hat{\beta}_4(INF) + \hat{\beta}_5(EXCHR) + \varepsilon \ldots\ldots \text{Equ (3.2)}$$

Where,
β_0 = Constant parameter
$\beta_1 - \beta_5$= Coefficients
ε = Estimated error term
GDI = Gross domestic investments
TGRV = Total government revenue
TGEXPDT= Total government expenditure
TDBT = Total government debt
INF = Inflation
EXCHR = Exchange rate

The variables used in the study were described as follows:

Gross domestic investments (GDI): GDI is the dependent variable for the model measured by gross domestic investments to GDP ratio. It connotes the measure of physical investments used in the computation of GDP. This is an important component of GDP because it provides an indicator of the future productive capacity of the economy. Large GDI to *GDP*ratio may be a sign that a country is catching up economically.

Total government revenue (TGRV): This represents aggregate revenue earned by Nigerian government through taxes, exports, non-taxable sources such as government-owned corporations' incomes, central bank revenue, etc. It was expressed as a ratio of GDP to capturehow much a nation's government controls its economic resources.

On the other hand, the following independent variables, that is, measures of fiscal policy were used:

Total government expenditures (TGEXPDT): Government expenditures includes all government consumption, investment, and transfer payments. For this study, it was expressed as a ratio of GDP to ascertain the rate which provides an indication of government size.

Total debt (TDBT): This is total government debt to GDP ratio. A low debt-to-GDP ratio indicates an economy that produces and sells goods and services sufficient to pay back debts without incurring further debts.

Control variables: The control variables used in the study are inflation (INF) and exchange rate (EXCHR). These variables were included in the model because an increase in government spending and/or a decrease in government revenues would lead to a deficit that would be financed by increased borrowing, then the borrowing could increase interest rates which in turn would cause inflation to surge and exchange rate depreciation thereby leading to a reduction in domesticinvestments.

6. Estimation Procedure

Unit root test: Conducting a stationarity test is preliminary for the relevance of this research findings, andthe augmented Dickey-Fuller(ADF) test was adopted based on its use in similar empirical literature related to this study (Osuala and Ebieri, 2014). The time series properties of the series are concerned with the stationarity of the series. This was investigated using the unit root test on the basis of Augmented Dickey Fuller (ADF) (Dickey and Fuller, 1979). This particular stage is necessary, this because most macroeconomic time series contains unit root and any regression involving non-stationary series almost always produce significant relationships where, in fact, no relationship exist between the variables (Pesaran *et al.*, 2001).

Cointegration test: The concept of co-integration was introduced by Engle Granger in 1981. Cointegration is the statistical implication of the existence of long run relationship between the variables which are individually non-stationary at their level form but stationary after difference (Gujarati, 2004). The ARDL bounds testing approach was used because the present study dealt with variables that were integrated of different order, I(0), I(1), which was detected through the bounds F-statistic. In this approach, long run relationship of the series is said to be established when the F-statistic exceeds the critical value band.

The Error-Correction Model (ECM): The study could not apply ordinary least squares method (OLS) directly since not all variables were stationary at levels. ECM model assumes that the short-run effects occur when the economy is still in disequilibrium, and that the long-run effects occur when the economy moves to equilibrium (Enders, 1995). The coefficients in the ECM, describe effect of a unit change of a given fiscal variable on gross domestic investments in the short-run, while the cointegration coefficients capture the long-run effects.

7. Data Analysis and Discussion of Findings

7.1. Unit Root Test

This is the test of non-stationarity under time series variables in order to avoid spurious regression results. Unit root tests are carried out on the individual variables in isolation; that is, it does not take into account any relationship that might be between the variables that are being tested and any variable selected to be in the model. The study employed the Augmented Dickey – Fuller (ADF) tests to examine the variables. The test results are presented in Table 1 below.

Table-1. Unit root test results

Variables	Level	First Difference	Decision
GDI	-3.089990 (0.1243)	-5.547390 (0.0004)***	I(1)
TGRV	-2.017232 (0.5725)	-6.009374 (0.0001)***	I(1)
TGEXPDT	-3.277131 (0.0863)	-9.887361 (0.0000)***	I(1)
TDBT	-2.939993 (0.1634)	-4.208582 (0.0109)**	I(1)
INF	-3.904384 (0.0224)**	---	I(0)
EXCHR	-1.213744 (0.8920)	-3.803112 (0.0283)**	I(1)

Notes: The null hypothesis is that the series is not stationary. The critical value for rejection at 5% level of significance is -3.544284 for model with constant and trend.

Theapplication of unit root tests in autoregressive distributed lag (ARDL) technique is necessary in order to ensure that the variables are integrated of order one and none of the variables is integrated of order 2 because the computed F-statistic provided by Pesaran *et al.* (2001) are valid for only variables that are $I(0)$ or $I(1)$ and a combination of both. The outcome of the unit root test in Table 1 above, indicated that the logged series for all the variables were integrated of order one except inflation (INF) which was integrated of order zero. Therefore, the variables under study are of mixed integration order and this justified the use of ARDL bounds test approach to co-integration over other conventional approaches that require the variables to be integrated of the same order.

7.2. ARDL Bounds Test for Cointegration

The results obtained from the bounds test was presented in Table 2 as shown below:

Table-2. Bounds test results for co-integration

Test Statistic	Value	k
F-statistic	4.376416	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.5%	2.96	4.18
1%	3.41	4.68

Source: Author's computations (2019) using EViews 9.0

The computed F-statistic as shown in Table 2 was 4.376416. This value was above the upper bounds of the critical value of 3.79 at 5% level ofsignificance. This implied that there was cointegration (long run relationship) between gross domestic investment (GDI) and components of fiscal policy in Nigeria. Therefore, the null hypothesis of no cointegration between these variables under study was rejected and the alternative hypothesis of long-run relationship was accepted**.**

7.3. Short-run Coefficient Estimates and Error Correction Mechanism

The outcome of the error correction mechanism (ECM) and short-run coefficients of the ARDL model was presented in Table 3 below:

Table-3. Error correction mechanism and short-run coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDI(-1))	0.611617	0.127000	4.815891	0.0002
D(TGRV)	-0.175974	0.075750	-2.323091	0.0346
D(TGEXPDT(-1))	-0.527206	0.198538	-2.655436	0.0180
D(TDBT(-1))	-0.239426	0.060933	-3.929312	0.0013
D(INF)	-0.025815	0.021437	-1.204226	0.2472
D(EXCHR)	-0.060871	0.022305	-2.729015	0.0155
ECM(-1)	-0.405875	0.112259	-3.615519	0.0025

Source: Author's Computations (2019) using EViews 9.0

The results of the short-run dynamic coefficients obtained from the error correction model were given in Table 3 above. The estimated error correction coefficient of -0.405875 (0.0028) was highly significant, had the right sign, and it implied a fairly moderate speed of adjustment to equilibrium after a shock. Approximately 40.58% of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current year. This implied that the significance of fiscal policy on gross domestic investments was evident in the long-run. The short-run coefficient indicated that all the fiscal policy parameters emerged with negative but significant coefficients except lagged GDI which had a positive effect on domestic investment of Nigeria. The implication of this negative showing of recurrent expenditure, total government expenditure that included capital expenditure and total domestic debts meant that adequate capital expenditures that would positively influence domestic investment have not been made by the government. Again, greater proportion of domestic debts have not been applied to domestic investments to positively affect GDI in real terms for the period covered by the study, despite the fact that domestic debts led GDI in Nigeria.

7.4. Long-Run Coefficient Estimates

The long-run coefficient estimates are presented in Table 4 below:

Table-4. Long-run ARDL Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TGRV	-1.000601	0.319416	-3.132595	0.0068
TGEXPDT	2.171902	0.890861	2.437982	0.0277
TDBT	0.041571	0.051313	0.810140	0.4305
INF	-0.063602	0.052942	-1.201364	0.2482
EXCHR	0.128187	0.032673	3.923363	0.0014
C	-2.941160	5.248742	-0.560355	0.5835

Source: Author's Computations (2019) using EViews 9.0

The long-run negative but significant coefficient of TGRV indicated that increases in total government revenue caused gross domestic investments (GDI) to reduce by -1.000601 which could be due to increased taxes associated with higher revenue (Osuala and Ebieri, 2014; Ubi-Abai and Ekere, 2018). On the other hand, the positive and significant coefficient of TGEX implies that increase in total government expenditures caused GDI to increase by 2.171902 which was adduced to the fact that government expenditures, especially capital expenditures had resulted to better infrastructures on which investments and productivity could thrive (Omran, 2017). Also, TDBT which emerged with positive but insignificant coefficient showed that total government debts over the years influenced gross domestic investments at a rate of 0.041571. Regarding effect of the control variables (INF and EXR) in the

model, it was revealed that inflation and exchange rate both had negative and positive influence on GDI amidst fiscal policy in Nigeria respectively, however only exchange rate was found to be significant in the long-run.

7.5. Diagnostic and Stability Tests

The results diagnostic tests for the ARDL model are presented in Table 5 as follows:

Table-5. Diagnostic tests for ARDL model

Tests	Statistic	Prob.
Jarque-Bera normality test	1.2272	0.5413
Heteroskedasticity test	0.5348	0.8968
Breush-Godfrey serial Correlation LM	2.4603	0.1241

Source: Author's computations using EViews 9.0

As observed from Table 5, the ARDL model passed all the diagnostic tests for serial correlation (Breusch-Godfrey test), heteroskedasticity, and normality test. This implied that the model has been well specified. The decision was based on accepting the null hypothesis when the p-values of the t-Statistic is greater than 0.05. Cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) was also applied to determine the long-run parameter stability as shown in the figures 1 and 2 below:

Figure-1. CUSUM test

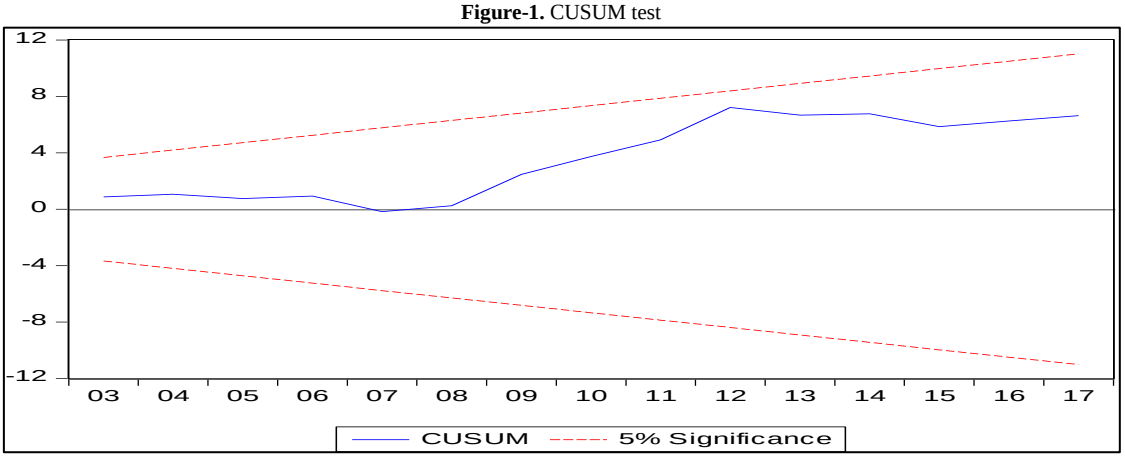
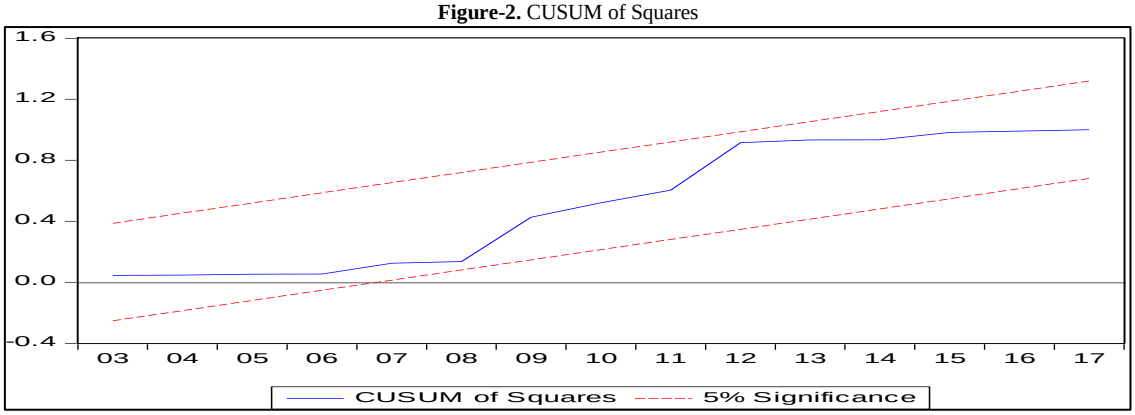


Figure-2. CUSUM of Squares



Cumulative sum of recursive residuals (CUSUM) and the CUSUM of square (CUSUMSQ) was used to confirm the parameter stability as shown in figures 1 and 2 above. The figures present the recursive estimate for residuals and showed the coefficients passed stability test. The absence of instability of the parameters was confirmed by the plot of the CUSUM statistic and the CUSUM of square (CUSUMSQ) which fell inside and between the critical bounds of the 5% confidence interval of parameter stability.

8. Summary, Conclusion and Recommendations

8.1. Summary

Having analyzed influence of fiscal policy on gross domestic investments of Nigeria, the following findings were made:

1) Total government revenue had negative but significant influence on gross domestic investments in the long-run and short-run.
2) Total government expenditures had significant long-run influence on gross domestic investments in Nigeria.
3) Total government debts had positive but insignificant long-run influence on domestic investments of Nigeria.

9. Conclusion

Fiscal policy instruments are the tools that governments use to influence domestic investments in Nigeria. The first tool of fiscal policy is revenue from taxes which presents the revenue side of the government's budget. The second tool of fiscal policy is government spending which presents the expenses side of government's budget.In the light of the influence of fiscal policy variables on gross domestic investments, it was concluded that domestic investments was significantly influenced by government revenue and expenditures in the long-run. Hence, based on the significance of the ARDL model applied by the study, the study concluded that fiscal policy is imperative in determining gross domestic investments in Nigeria.

Recommendations

Based on the findings of the work, the following recommendations have been put forward;

1) There is need to encourage revenue generation from sources other than tax, through better means of accelerating agricultural productivity to cushion the dwindling revenue from the oil sector as this would help accelerate non-tax revenue.
2) The Nigerian Government should strive to reduce expenditure on recreational cultural-religious affairs and other functions like political administrative expenses in order to achieve stabilization policies.
3) There is need for consistency in the application of prudent debt management framework, prudent borrowing only for self-liquidating projects, and regular debt servicing commitment as well as outright liquidation of all outstanding debt liabilities.

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