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Fiscal Policy and Public-Private Investment in Nigeria

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Abstract

The effect of fiscal policy on public-private investment was examined in Nigeria from 1981 to 2016 using the ARDL technique. The results showed that expenditures tend to exert positive impact on investment in both the short-run and long-run with a weak negative influence. The policy implication of the findings is that fiscal policy needs to look more inwards in terms of a long-term expansion of investment in the country. Continued focus on external financing for long-run investments can create intertemporal instability in investment in Nigeria.

Key words: Fiscal Policy, Private Investment, Public Investment, Investment, Nigeria

JEL Classification: E62, H4, E22, H32

Paper Classification: Research Paper

Introduction

Governments worldwide play a fundamental role in the development and advancement of any economies. This role is entirely different for developed and emerging economies. In emerging economies, government's role is limitless unlike in developed economies where the government focuses more on governance. Fiscal policy influences economic growth through the enhancement and provision of a critical skilled labour force and physical capital. The availability of government investment through fiscal policy could boost private sector investment thus enhancing total factor productivity and economic growth. The government uses fiscal and monetary policy to make informed decisions to pilot the affairs of the economy on the pathway of growth. Fiscal policy is one of the primary drivers of a nation's economic performance. Fiscal policy is concerned with the expenditure and revenue collection of government.

Laopodis (2009) opined that fiscal policy is a deliberate tradeoff between government revenue generation and expenditure. Kopcke, Tootell and Triest (2006) explain that the debate on fiscal policies has attracted renewed attention to the effects of large sustained fiscal deficits on the current account, interest rates, investment as well as national savings.

According to Cheng and Sun (2013), the adoption of fiscal policy by the government sustains the stability of prices, economic growth, reduces the unemployment rate and stimulates aggregate domestic demand in the economy. Thus, it serves as a control mechanism on government revenue

and expenditure. The financial system could be influenced directly or indirectly by fiscal policies. And that the direct impact is based on government capability to stimulate the bonds market by issuing or retiring public debt (Tavares & Valkanov, 2003).

Over the years, developing countries domestic investments were dominated largely by public investment. However, over time there is a paradigm shift from public to private investment occasioned by higher efficiency of resources being controlled by the private sector. Private sector investment seems to be more productive and valuable in developing economies. Thus a large share of the domestic investment should be controlled by the private sector because it serves as a drive to economic growth, while public investment could be geared toward the provision of social and capital services to alleviate poverty as well as redistribute the wealth of the economy. This study focuses on the impacts of fiscal policy on public-private investment in Nigeria.

Review of Literature

Government uses fiscal policy as a macroeconomic tool to adjust its level of expenditures and revenues in order to scrutinize and manipulate a nation's economy which aims at achieving major macroeconomic goals such as sizeable proportions of GDP, price stability, full employment level which consequentially leads to reduced poverty level, better living standards for its people, balance of payment surplus, better infrastructures to enhance the economy's growth and development (Sede & Omorokunwa, 2015). This policy uses two main tools to achieve the desired result. The contractionary tools which function in cases of inflation, even though this is seldom used due to its slow influence on economic growth. And secondly, the expansionary tool which functions in time of deflation. The economic instruments applied in achieving these macroeconomic goals are taxation and government spending. Changes in one of these variables say the tax would affect the disposable income of individuals. This directly reduces the individuals' percentage spent on goods and services, savings and also investment (Menjo & Kotut, 2012).

A variety of economic policy tools are usually used by government to effectively optimize the use of its existing resources, with the primary objective of producing goods and services that will facilitate as much as possible the satisfaction of the needs and demands and also achieve greater prosperity for its people not excluding a revenue base for the government to perform its functions (Ali, 2014). All these represent the ultimate goal of the various policies of the government and to fully understand the level of relativity flanked by fiscal policy and private investment we need to realize that they are highly interrelated as changes in the one variable significantly affects the other. The general budget is the principal fiscal mechanism by which the government regulates how much of its resources and energy to allocate to these two major activities (Ali, 2014).

Canh and Lua (2018) assert that public investment has an extensive and profound influence on the rate of growth of the economy through the aggregate demand by driving private investment as well as through aggregate supply by channeling investment funds from the private sector. There are a lot of arguments on how public investment affects private investment. Some scholars argued that public investment on goods, services as well as infrastructural development could improve private sector investment capital.

Besides, the availability of these basic social amenities most especially good road network linking the rural and urban areas, stable electricity, ease of setting up and doing business and security could reduce the private sector investment cost as well as attract more private capital investments (Canh & Lua, 2018). Public investments generally provide the base for private sector investment to grow. The more impactful the public investment in the private sectors the better the economy in terms of growth and development.

Private investments are funds by private individuals including local and foreign investors other than the government that is injected into an economy production or financial sector amongst others. Private investment is regarded as a fundamental element in promoting a broad-based and continuous growth that in turn would help in reducing poverty. They are essential to a country growth both socially politically and economically. Thus, it is essential that government continuously seek measures that will enhance private investment from both citizens and foreigners and contribute to the expansion of the nation's economy as it has been seen that increased participation of private sectors in manufacturing and production activities may cause an increase in tax proceeds for government from the earnings of factors of production (Ahuja, 2007). Taxes, government expenditure, government debt servicing and fiscal reforms could either advance or abase private investment both in the short and long run. It is suggested that just as other macroeconomic goals are taken into consideration while formulating the necessary fiscal policy framework, the growth of private sectors through adequate private investment should not be left out (Agu, Okwor & Ugwunta, 2014).

A basic significant wheel of advancement and viable development in many developing nations is the active exploitation of private resources (private investment) from citizens and foreigners (European Commission, 2014). The level of productivity innate in the use of private capitals is well higher than that of the public sector. The financial performance of private industry or investments and prospects are substantially determined by the policies, tools initiatives, and also incentives put in place by the government to help improve and advance the private sector-led transformation and growth of the economy into a society that is stable, buoyant and reaching its full resource capacity.

The geometric growth in population exerts more pressure on the government of the developing economies in the form of providing more basic social amenities. The government of developing countries not only provide basic amenities but also create jobs that influence economic growth. With the increase in population coupled with a decline in revenue generation, there is a need for the private sector to step up. Government should focus more attention on providing infrastructural development which in turn should drive and grow the private sector. Government through its policies should boost private investment both locally and internationally to actually boost economic growth that surpasses its population growth rate. And this policy should be sustained to maintain a stable and growing economy with little or no debt. For the economy to grow there is need for synergy between the private and public sectors in the form of public-private partnership framework.

The core aim of fiscal policy in Nigeria is basically to create healthy economic advancement and stability. Specifically fiscal policy in Nigeria was planned to divert resources that are less socially desirable to those investments that have more social desirability. It also planned to expand investment in both sectors. Fiscal policy is designed to help in managing the rate of growth of the Nigerian economy towards ensuring its full stability, maintain full employment condition as well as accelerating the rate of investment and capital formation. It provides an equitable distribution of the nation's wealth and income.

There are basically three main propositions concerning the function of government in the economy. Firstly, the Keynesian proposes that the government should be very active in running the economy because of its multiplier effects on the economy. This is in line with the finding of Ang (2009) that in the long run public investment could stimulate private investment.

Secondly, the Neoclassical posit that there should be reduced government involvement in economic activities since government involvement may lead to the reduction of private sector

involvement in economic activities. Mitra (2006) found that government involvement in economic activities could crowd out private sector investment. Finally, the Ricardian Equivalence advocates for the neutrality of deficits based on empirical proof.

Canh and Lua (2018) used the ARDL technique to assess the influence of public-private investments on economic development in Vietnam from 1990 to 2016. The findings revealed the existence of a short run crowding-in effect on private investment as well as a long run crowding-out effect. Omojolaibi, Okenesi, and Mesagan (2016) examined the nexus between fiscal policy in Sierra Leone, Senegal, Nigeria, Ivory Coast and Nigeria using the panel data technique from 1993 to 2014. The study revealed the existence of crowding-in-effect of tax revenue and government capital expenditure as well as crowding-out effect of non-tax revenue.

Malik (2013) examined the direct and indirect effect of fiscal policy on private sector investment in Pakistan. The findings showed that aggregated and disaggregated Pakistan government revenues and expenditures have a different effect on private investment. Haque (2013) examined the nexus between private-public investments in Bangladesh using the error correction model. The study revealed that public investments, as well as private investment, boost the growth and advancement of the economy. Hadiwibowo (2010) empirically reviewed the effect of fiscal policy on economic advancement and investment in Indonesia using the vector error correction method from 1969 to 2008. The findings from the study showed that fiscal policy determinants such as government current expenditure and revenue are negatively related to investment. The result also showed that government current expenditure is positively and significantly related to investment. Bukhari, Ali and Saddaqat (2007) used ARDL technique to empirically assess the nexus between public-private investments in the Asia economies from 1971 to 2000. The study showed that the redistribution of public investment has a significant and positive influence on the advancement of the economy. And that public consumption, private investment as well as public investment have long term influences on the advancement of economic growth.

The Model and Methodology

The model specified for the impact of fiscal policy on investment is founded on the simple neoclassical investment and capital formation equation that demonstrates that investment expenditures drive capital formation at any given time. Thus, additions to current capital (capital accumulation) could be formulated as:

$$K_t - K_{t-1} = I_t - \delta K_{t-1} \quad (1)$$

Where K is capital, I is the investment, and δ is depreciation. The model states that net addition to capital is current investment expenditure less depreciation. Equation (1) can be re-written as:

$$K_t = (1- \delta)K_{t-1} + I_t \quad (2)$$

From the Golden rule of capital accumulation and the Neoclassical growth model, the optimal saving strategy involves that investment is determined as a proportion of income, such that

$$I = sY \quad (3)$$

Thus, capital accumulation can be expanded as:

$$K_t = (1- \delta)K_{t-1} + sY \quad (4)$$

From the crowding out model stated in the theoretical framework presented above, aggregate savings decisions become inefficient with the presence of government debt and debt servicing.

Debt servicing makes savings inefficient both in the private and public sectors since a proportion of savings is expected to be taxed away to pay back public debt. Hence, the capital accumulation model becomes

$$K_t = (1-\delta)K_{t-1} + (s-\tau)Y \quad (5)$$

Where τ is the share of income from savings that is taxed away to repay debt. It is through this medium that government debt enters the model. Moreover, since government spending is part of aggregate expenditure, such aspects of fiscal policy also come into the model. The model can, therefore, be specified as:

$$K_t = \beta K_{t-1} + \lambda Y + \eta(D/Y) + \eta EXPYR + \eta INTR + \eta PRICE \quad (6)$$

Where Y is real GDP, D/Y is debt to GDP ratio, EXPYR is the government expenditure to GDP ratio, INTR is lending interest rate, and PRICE shows the aggregate price level (proxied y the GDP deflator).

The particular model used in this study is, therefore, a modified version of the model used by Iyoha (2004) and Twine, Kiiza and Bashaasha (2015). The modification becomes necessary to situate the dynamic nature of the debt stock, debt servicing and capital formation. In the econometric form, the model is specified as:

$$INVR_t = \alpha_0 + \alpha_1(D/Y)_t + \alpha_2 GEXYR_t + \alpha_3 INTR_t + \alpha_4 PRICE_t + \alpha_5 RGDP_t + \alpha_5 INV_{t-1} + U_1 \quad (7)$$

Estimation Technique

Based on the dynamic features of investment and the goal of the study, the Autoregressive Distributed Lags (ARDL) model to cointegration relationship modeling is adopted. The ARDL procedure to cointegration is established on the technique delineated in Pesaran and Shin (1999). The major benefit of this procedure is that it can be used irrespective of the variables' stationary properties in the model. It also permits for extrapolations of estimate on the long-run that is not plausible in the alternative cointegration techniques (Belke & Polleit, 2005). The Pesaran and Shin (1999) and Pesaran et al. (2001) Bounds Testing / ARDL technique has some characteristics that made it more robust than the conventional cointegration testing. Concerning the current study, the expanded ARDL model that explains the dynamic relationship between fiscal policy on investment in Nigeria is specified as:

$$\begin{aligned}\Delta invr_t = {} & \alpha_0 + \phi invr_{t-1} + \delta_1\left(\frac{d}{y}\right)_{t-1} + \delta_2 gexyr_{t-1} + \delta_3 intr_{t-1} + \delta_4 price_{t-1} \\ & + \delta_5 rgdp_{t-1} \\ & + \sum_{i=1}^{p-1}\psi_i \Delta invr_{t-i} + \sum_{i=1}^{q_1-1}\varphi_1\Delta\left(\frac{d}{y}\right)_{t-i} + \sum_{i=1}^{q_1-1}\varphi_2\Delta gexyr_{t-i} + \sum_{i=1}^{q_1-1}\varphi_3\Delta intr_{t-i} \\ & + \sum_{i=1}^{q_1-1}\varphi_4\Delta price_{t-i} + \sum_{i=1}^{q_1-1}\varphi_1\Delta rgdp_{t-i} \\ & + \xi_t \end{aligned} \quad (8)$$

The conditional long-run model can then be created from the reduced form solution of equation (8) when the first-differenced variables jointly equal zero. The cointegrating equation determines the adjustment to long-run investment. Also, the values of short-run investment are given by the φ_is, while the values of long-run tax effort are represented as $\varphi_{it}/(1-\varphi_{it})$ for tax-to-income tax effort estimations.

Diagnostic Tests

The application of the ARDL technique presupposes that certain times series data properties employed in the analysis possess these qualities. These qualities were tested based on the diagnostic testing procedure.

Testing for Stationarity

To test for stationarity, the Kwiatkowski–Phillips–Schmidt–Shin (KPSS), Phillip-Perron (P-P) as well as the Augmented Dickey-Fuller (ADF) unit roots test was used. Belke and Polleit (2005) assert that when the critical value of a variable in absolute terms is lesser than the calculated value or test statistic, the variable is said to be stationary and the critical value is read at a certain level of significance. The use of a non-stationary variable is used in regression analysis results in a spurious relationship. This would lead to poor forecasts.

Empirical Analysis

The descriptive statistics of the data employed in this study are presented in Table 1. Average investment rate for the period is 14.89 per cent which is relatively low given that the country requires much investment expenditure for productivity growth. The standard deviation of the investment rate is quite low at 2.33, suggesting that the rate of investment has been relatively steady over the years. Apparently, a sharp burst in the factors that promote investment is required for changing the rate over the years. The government expenditure ratio (at 8.98 per cent) appears to be moderate given that government has played huge roles in the economy in the past years. Although the standard deviation value is low, it can be seen that the large gap exists between the maximum value of 17.86 per cent and 5.08 per cent. In disaggregating the expenditure-income ratio, it is seen that recurrent expenditure has a larger average value, compared with capital expenditure, although the maximum values for both variables are rather close.

Table 1: Descriptive Statistics

	Mean	Max.	Min.	Std. Dev.	Skewness	Cov	J-B	Prob.
invr	14.89	20.07	10.65	2.33	0.36	0.16	1.02	0.60
expyr	8.98	17.86	5.08	2.72	1.31	0.30	16.46	0.00
debtyr	35.89	79.38	7.26	24.50	0.34	0.68	2.92	0.23
capyr	3.31	9.38	0.63	1.98	1.03	0.60	7.11	0.03
recyr	5.56	10.86	3.29	1.57	1.25	0.28	15.43	0.00
fdebtyr	23.76	59.82	1.27	21.00	0.35	0.88	3.07	0.22
ddebtyr	12.12	23.12	5.93	4.56	0.73	0.38	2.93	0.23

Source: Author's computations

The average total debt ratio is the highest value among the ratios in the Table 1, with foreign debt ratio having a larger proportion of 23.76 per cent than domestic debt ratio with a proportion

of 12.12 per cent. This indicates that the debt ratio has been much larger than the expenditure ratio over the years in Nigeria. Although the debt ratio does not appear to be unsustainable, the values in relation to total expenditure indicate the inter-temporal burden of debt on the economy. This is particularly true given that debt ratios were as high as 79.38 per cent over the years. In general, there does not seem to be many variations over the period, given that the coefficient of variation for each of the variables is low. The J-B values, however, show that all the expenditure variables are non-normally distributed in their probability structure.

Data description also involves examining the initial patterns of nexus among the variables as shown in Table 2. The Table shows that the investment rate has the strongest correlation with foreign debt, suggesting that the investment rate rises along with increased foreign debt. Expenditure rate has a positive correlation with all the other variables, except domestic debt. Thus, expenditure ratios tend to increase along with an increase in total and foreign debt accumulation. Surprisingly, domestic debt has a negative correlation with total expenditure as well as both recurrent and capital expenditures. Thus, raining more debt in the domestic sector tends to be associated with lower expenditure levels. This negative relationship can be explained by the enormous proportion of domestic debt that is made up of unmet obligations to contractors (see Ilamah, 2006).

Table 2: Correlation Matrix

	invr	expyr	debtyr	capyr	recyr	fdebt	ddebt
expyr	0.209 (0.252)						
debtyr	-0.130 (0.479)	0.715 (0.000)					
capyr	0.250 (0.167)	0.832 (0.000)	0.539 0.002				
recyr	0.051 (0.783)	0.719 (0.000)	0.638 0.000	0.229 0.208			
fdebt	0.479 (0.006)	0.019 (0.916)	-0.022 0.904	-0.161 0.379	0.279 0.122		
ddebt	-0.154 (0.400)	-0.608 (0.000)	-0.633 0.000	-0.636 (0.000)	-0.263 0.147	0.247 0.173	

Note: probabilities of the t-values in parentheses
Source: Author's Computations

Cointegration Analysis and Unit Root

Two tests of stationarity were employed in this study to check whether there are unit-roots or not. The results are displayed in first differences and in levels. These allow us to comparatively determine the existence of unit root among the variables of interest as well as to obtain robust results. The results of Augmented Dickey-Fuller (ADF) and Philip-Perron (PP) tests are displayed in Table 3 at levels and first differences without considering the trend in the variables. This is because the explicit test for the trend pattern of the time series has not been done. The results indicate that each of the variables possesses both ADF and PP values that are less than the 95 per cent critical values for the level series and greater than the critical value for the differenced series. The first differences for all the variables were stationary but at the level form, they were found to be non-stationary in all the cases. In order words, all variables were I(1). Based on this, it is

suitable to estimate the nexus between the variables using the co-integration technique, as long as the technique allows for the possibility of joint endogeneity of all variables as suggested by Guest and Swift (2008).

Table 3: Variables Unit Root Test

Var	ADF-Test		Phillip-Perron-Test		Integration Order
	Levels	First Diff	Levels	First Diff	
invr	1.954	-45.14*	1.137	-37.67*	I[1]
expr	-2.329	-6.155*	-2.298	-6.157*	I[1]
debtyr	-0.808	-3.165*	-0.398	-6.038*	I[1]
capyr	-1.034	-5.458	-1.244	-10.48	I[1]
recyr	-1.054	-4.449	-0.883	-6.836	I[1]
fdebt	-0.963	-5.887	-1.174	-10.47	I[1]
ddebt	-1.003	-4.924	-1.376	-8.372	I[1]
rgdp	-1.374	-6.266	-1.366	-7.843	I[1]

Note: * indicates significant @ 5 per cent

Source: Author's Computations

Given that the study focuses on error correction processes in the ARDL procedure, a test for a common stochastic trend is also conducted in this study. This involves the existence of a cointegrating relationship between investment and fiscal policy variables. This test also helps to confirm the application of a dynamic structure for the model estimation. In terms of the effects of the main fiscal policy variables on investment in Nigeria, the study proposed the test of a long-term autoregressive pattern of relationship. Table 4 shows the result of the Bounds test of long-run effects for the ARDL specifications for the two equations. The evaluation of the results is based on the critical F-statistic values for the lower and upper bounds as also reported in the results. According to the output of the F-values in Table 4, it can be seen that the null hypothesis of no long-run relationship of investment rate on the entire determinant variables is rejected for each of the structural component and the total effort at the 5 per cent level. These results show that for each of the equations, the determinant variables had strong long-run relationships with the appropriate tax effort outcome. Apparently, the investment rate in Nigeria moves interdem with the determinant variables in the long run.

Table 4: Results of Bounds Test

Test Stats	Val.	K	Test Statistic	Val.	K
F-stats	4.0842	5	F-statistic	11.97614	7
Critical Value Bounds					
Signif.	I0 Bound	I1 Bound	Signif.	I0 Bound	I1 Bound
10%	2.26	3.35	10%	2.03	3.13
5%	2.62	3.79	5%	2.32	3.5
2.50%	2.96	4.18	2.50%	2.6	3.84
1%	3.41	4.68	1%	2.96	4.26

Source: Author's Computations

The results of the ARDL estimations are analyzed in this section by reporting both the overparameterized results as well as the cointegrated results. The results of the over-parameterised estimates, which is the OLS estimates of the distributed lags equation without taking the cointegration structure of the relationships into cognizance, are presented in Table 5. Both the aggregated and disaggregated results show impressive diagnostic tests, with high R-squared values and highly significant F-values. This indicates that the model possesses high explanatory capacity. The second lag of total expenditure is significant at the 1 per cent level, although the coefficient indicates a negative impact of total expenditure on investment rate. The second lag of the total debt ratio also passed the significance test, with a positive coefficient. Each of the real GDP coefficients (for current and first two lags) are significant, although the coefficients alternative over the lagged variables, suggesting a rather unstable impact of real income on investment rate over a dynamic cycle. This was also the pattern of real income effects in the disaggregated results. Each of the disaggregated expenditure coefficients is negative, although only those of first and second lags of recurrent expenditure as well as that of the second lag of capital expenditure were significant. The results also showed that foreign debt fails the significance test, while domestic debt was significant for both the current and first lagged coefficients. The pattern of effects of the expenditure and debt variables suggest that there are always lags between expenditures and investment outcomes.

Table 5: The Over-Parameterised Results

Variable	Aggregated		Dis-aggregated	
	Coefficient	Prob.*	Coefficient	Prob.*
constant	51.54	0.15	156.3**	0.00
$\Delta invr_{t-1}$	0.256	0.19	0.002	0.99
$\Delta expyr$	0.157	0.42	-	-
$expyr_{t-1}$	0.119	0.55	-	-
$expyr_{t-2}$	-0.53**	0.00	-	-
recyr	-	-	0.411	0.12
$recyr_{t-1}$	-	-	-0.811*	0.01
$recyr_{t-2}$	-	-	-0.501*	0.03
capyr	-	-	-0.147	0.56
$capyr_{t-1}$	-	-	-0.26	0.22
$capyr_{t-2}$	-	-	-0.613*	0.02
debtyr	0.051	0.42	-	-
$debtyr_{t-1}$	-0.096	0.16	-	-
$debtyr_{t-2}$	0.185**	0.00	-	-
fdebt	-	-	0.775	0.27
$fdebt_{t-1}$	-	-	0.662	0.28
ddebt	-	-	9.999**	0.00
$ddebt_{t-1}$	-	-	-6.913**	0.01
intr	-0.485**	0.00	-0.383**	0.00
$intr_{t-1}$	-	-	-0.359**	0.00
$intr_{t-2}$	-	-	0.398**	0.00
rgdp	27.54*	0.03	31.9*	0.03
$rgdp_{t-1}$	-60.41**	0.00	-47.60**	0.00
$rgdp_{t-2}$	29.10*	0.02	-	-
price	1.562	0.73	5.188	0.24
$price_{t-1}$	-10.77	0.07	-5.161	0.22
$price_{t-2}$	11.29**	0.01	-	-
Adjusted R-squared	0.753		o.855	
F-statistic	7.31		10.46	
D-W stat	1.76		2.42	

Source: Author's Computations

The results of the cointegrated equations for both aggregated and disaggregated expenditure and debt variables are reported in Table 6 below. In the results, the short-run cointegrated and the long-run estimates are reported. In the short-run results, the current total expenditure coefficient failed the significance test while the lagged coefficient is significant and positive, indicating that aggregate expenditures tend to improve investment rates in the short-run in Nigeria with a one-period lag. Similarly, the current coefficients of both capital and current expenditures fail the test, while the lagged coefficients passed the test with positive effects. Apparently, expenditures are transmitted into investment performances over time. It can also be noted that the coefficient

of lagged capital expenditure is larger than that of the current expenditure, suggesting that capital expenditures exert more positive short-term impacts on investment in Nigeria.

Table 6: The Cointegrated Results

	Aggregated		Dis-aggregated	
Variable	**Coefficient**	**Prob.**	**Coefficient**	**Prob.**
Short run Cointegrated results				
Δexpyr	0.157	0.42	-	-
$\Delta expyr_{t-1}$	0.53**	0.00	-	-
Δrecyr	-	-	0.411	0.12
$\Delta recyr_{t-1}$	-	-	0.501**	0.03
Δcapyr)	-	-	-0.147	0.56
$\Delta capyr_{t-1}$	-	-	0.613**	0.02
Δdebtyr	0.051	0.42	-	-
$\Delta debtyr_{t-1}$	-0.185**	0.00	-	-
Δlfdebt	-	-	0.775	0.27
Δlddebt	-	-	9.999**	0.00
Δintr	-0.485**	0.00	-0.383**	0.00
$\Delta intr_{t-1}$	-	-	-0.398**	0.00
Δlrgdp	27.54*	0.03	31.995*	0.03
$\Delta lrgdp_{t-1}$	-29.103*	0.02	-	-
Δlprice	1.562	0.73	5.188	0.24
$\Delta lprice_{t-1}$	-11.29**	0.01	-	-
ecm_{t-1}	-0.744**	0.00	-0.998**	0.00
Long run results				
constant	69.28	0.08	156.711	0.00
expyr	-0.342	0.47	-	
recyr	-	-	-0.902	0.06
capyr	-	-	-1.022	0.02
debtyr	0.188**	0.05	-	-
lfdebt	-	-	1.44	0.01
lddebt	-	-	3.093	0.14
intr	-0.651**	0.03	-0.344	0.03
rgdp	5.061	0.21	15.64	0.00
price	2.818**	0.04	0.027	0.99

Source: Author's Computations

The lagged total debt coefficient is negative and highly significant, although the coefficient of domestic debt is positive and also significant. Given that the coefficient of foreign debt fails the test in the short-run equation, the results give evidence that the initial effects of debt on investment differ from the delayed impact in the short run. Both current and lagged international interest rates have a significant impact on investment rate which shows that higher international borrowing rates tend to increase liquidity constraints of government, thereby reducing investment

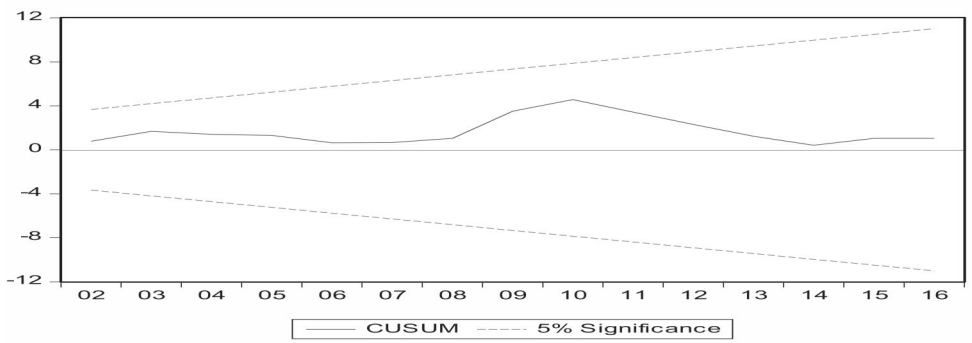
performance. The short-run results also highlight the unstable impact of real GDP on investment rate, given that the signs of the coefficients alternate between current and lagged coefficients.

The coefficient of the ECM term for each of the estimation results has the expected negative sign and highly significant at the 1 per cent level. This shows that long-run equilibrium is stable and that any short-run deviation from the long-run equilibrium level will always be restored on the bases of the fiscal policy variables and other factors in the model. The coefficients of the ECM terms are also large, especially that of the disaggregated equation. Thus, there is evidence that adjustment to long-run equilibrium will be rapid within the models.

In the long run results, the steady-state impacts of each variable on investment rate are demonstrated. The long-run coefficients of all the expenditure variables are rather surprising, given the negative signs. This indicates that in the long run, government expenditures in Nigeria actually lead to a fall in investment rates. The coefficients of total and recurrent expenditures, however, fail the test at the 5 per cent level. The long-run effects of total and foreign debts are however positive and highly significant, while that of real GDP is positive. Thus, in the long run, it is external debt accumulation, real income and overall price level that stimulates investment in Nigeria. Expenditures by the government do not appear to improve aggregate investment rates in Nigeria over the long term.

Robustness check is provided by testing the stability of the data set across the cross-sections in the sample. This helps to eliminate doubt about possible outlier regression for any of the groups in the sample. The chart in Figure 1 shows the result of the CUSUM on squares test. It can be seen that the CUSUM of squares line for the result lies entirely within the dotted 5 per cent significance bound line throughout the chart. This reveals that the estimation is stable within the analysis.

Fig.1: CUSUM Test Diagram



Conclusion

In this study, the impact of fiscal policy on domestic investment in Nigeria was examined. Government expenditure was considered in terms of expenditures and debt accumulation. Moreover, both expenditures and debt were disaggregated, and the effects of each component was also examined in the study. Using data covering the period 1981 to 2016, a dynamic framework was employed in the analysis. In this regard, the Autoregressive Distributed Lags (ARDL) technique was adopted to study both the short-run and long-run relationships. It is was found in the study that expenditures tend to exert positive impacts on investment in the short-run, while the effects are largely weak and negative in the long-run. The study, therefore, implies that

budgetary applications in Nigeria are better focused on adjusting aggregate investment in the short-run, while the long-run focus is more on the use of external borrowing.

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