

Public expenditure profile and Economic dynamism in Nigeria: A quasi general equilibrium analysis

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Abstract

Government expenditure plays a strategically important role in economic growth and development of nations. Its contributions includes boosting economic growth, employment generation, increase in income, higher standard of living, reduction in income inequalities, increasing private initiative and boosting of regional balance. This paper studies the effects of government expenditure on inflation, unemployment, consumption and investment by analyzing four different models. The paper asks the question of what happens after government expenditure? Is the effect of government expenditure on selected variables of interest positive or negative? What shall government do to ensure that its own expenditure profile is development oriented not otherwise? The methods of analysis used for the study are ARDL Error Correction Model and Granger causality test using data for the period 1981 to 2020. Diagnostic tests that include lag order selection test and ADF stationarity test were conducted. The long run results show that both recurrent and capital expenditures have negative effects on inflation but positive effects on investment. The results also show that capital expenditure contribute to reducing unemployment. The long run result also show negative effects of both types of expenditures on consumption. But the results of the short run analysis show that both types of expenditures have positive effects on consumption. They also have positive effects on inflation in the short run. Recurrent expenditure reduces unemployment in the short run. But, government expenditure did not influence investment in the short run.

Keywords: Government Expenditure, Inflation, Unemployment, Consumption, Investment, ARDL cointegration, Granger Causality, Nigeria

Introduction

“Organized governments are as old as organized economic activity” – Lipsey and Chrystal (2005) In Nigeria, government expenditure has continued to rise since the return to democracy in 1999 and the subsequent rise in the price of crude oil in the international market over the years. Government spends for its citizens for purposes that have been approved [1]. Over the years, oil revenue has account for most of the revenue that is used to finance government expenditure in Nigeria. Historically, in Nigeria during the period of high oil revenue, government expenditure increase; while

during period of low oil revenue government expenditure drop or government resort to deficit financing. Wastages in government expenditure and corruption have led to higher government debt and inefficiency. Recently, Nigerian government has spend more than it earns, resulting in mounting debt which in turn require large interest payment to service. A study by Nurudeen and Usman on effect of government expenditure on economic growth in Nigeria shows that government total capital expenditure, total recurrent expenditures, and government expenditure on education have negative effect on economic growth [2]. But, government expendi-

ture on transport, communication and health increase economic growth. While Onodugo, Obi, Anowor, Nwonye and Ofoegbu in an empirical study on the impact of public sector expenditures and private sector investment on unemployment in Nigeria observed that capital expenditure and private sector investment serve as catalyst towards reduction of unemployment [3]. According to Abdullahi (2018) inflation rate in Nigeria rises and falls like growth in the economy; thus, the economy remained heated causing frictions. Both inflation and unemployment in Nigerian economy have remained stubbornly high, being in double digits. According to the conventional economic theory Phillips curve, rate of unemployment should come down when there is high inflation. But, wastefulness at all level of governments, corruption and poor economic management have become stumbling blocks.

Role of government expenditure in economic growth and development includes boost in economic growth, employment generation, increase in income, higher standard of living, reduction in inequalities, increasing private initiative and boosting regional balance [4]. Generally, economic growth has an important role to play in determining government expenditure. Higher economic growth may be expected to lead to higher government expenditure and the reverse may more likely be the case. According to Wagner's law an increase in economic activities leads to an increase in government activities which in turn leads to increase in government expenditure. Keynes considered government expenditure as means of achieving economic growth and development. An increase in government expenditure during depression increase aggregate demands for goods and services that leads to a large increase in income. Over the years, government expenditure has been used as an important tool for controlling business cycle. Governments in the East Asian success stories have used expenditure profile to promote economic growth and development, through maintaining price stability, increasing employment and boosting investment [5]. On the disruptive effect of inflation on economic growth, most of the East Asian success stories have achieved macroeconomic stability during their period of rapid economic growth; while on the other hand, Latin American countries where inflation was high, economic disruption become very common [6].

Hence, any study that will look at effects of government expenditure on inflation, unemployment and investment is most appropriate at this time. This paper looks at the impacts of different types of government expenditure on inflation, unemployment, consumption and investment in Nigeria during the period 1981 to 2020. Hence, the paper asks the main question of what happens after government expenditure has taken place? Is the effect of government expenditure on the selected variables positive or negative? What shall government do to ensure that its expenditure profile is pro development not otherwise? Shall Nigerian government increase or decrease its expenditure? The paper uses ARDL cointegration and granger causality tests to analyze the data for the study. The long run results show that both recurrent and capital expenditures have negative effects on inflation but positive effects on in-

vestment. The results also show that capital expenditure contribute to reducing unemployment. The long run result also show negative effects of both types of expenditures on consumption. But the results of the short run analysis show that both types of expenditures have positive effects on consumption. They also have positive effects on inflation in the short run. Recurrent expenditure reduces unemployment in the short run. But, government expenditure did not influence investment in the short run. The paper is divided into introduction, literature review, theoretical framework, methodology, results and discussion and conclusion.

Literature review

Falade and Babatunde investigate the effects of government spending on unemployment and poverty in Nigeria [7]. Government spending was disaggregated into its capital and recurrent components for the period 1980-2017. The findings show that while administrative and transfer components of capital expenditure could be used to reduce poverty both in the short and long run periods, capital expenditure on economic services and social services has no direct significant impact on poverty but rather could be used to reduce unemployment. Obayori investigates relationship between fiscal policy and unemployment in Nigeria, to find out the impact of government capital and recurrent expenditure on unemployment [8]. The result reveals that Capital and Recurrent Expenditures have negative relationship with unemployment in Nigeria. From the result, it is obvious that fiscal policy is effective in reducing unemployment rate in Nigeria. Nwaolisa and Chinelo explore the impact of government expenditure which includes expenditure on General administration, Defense, Education and Health on economic growth in Nigeria between 1983-2016 [9]. The result showed that expenditure on General Administration has a positive impact economic growth; expenditure on Defense has a negative effect on economic growth; while expenditure on Education has a positive on economic growth. Yelwa, David and Omoniyi examine the relationship between unemployment, inflation and economic growth in Nigeria: 1987-2012. The results show that public expenditures have positive impact on economic growth, while inflation and unemployment have inverse effects on growth [10]. Akobi, Umeora, and Atueyi examined the effect of government expenditure on inflation rate in Nigeria: 1981-2019 [11]. The findings indicate that government expenditure on health and telecommunications have positive effects on inflation.

Shuaibu, Muhammad, Abdullahi and Gwazawa measure impact of public debt on inflation and unemployment in Nigeria during the period 1985 to 2020 [12]. The findings of the study show that long run relationship exists between public debt and unemployment in Nigeria. It shows that increase in public debt causes more unemployment, but that external debt causes more unemployment than domestic debt. But the results of cointegration analysis show absence of relationship between public debt and inflation. Ogbeide Kanwanye and Kadiri examines the determinants of unemployment in Nigeria using error correction model (ECM) [13]. The study finds that output size (measured by GDP) curbs labour unemployment in Nigeria. Government capital expenditure, though

not significant, increases unemployment rate in Nigeria. The study has confirmed that poor public expenditure management and wrong production technology choice undermines unemployment in Nigeria. Onwuka examined the impact of fiscal and monetary policy on unemployment rate in Nigeria using Vector Autoregressive (VAR) model [14]. The findings show that government expenditure and interest rate have negative effect on unemployment rate at lag period 2. Thus, the findings show that government expenditure, money supply and interest rate are major determinants of unemployment rate in Nigeria since they were found to be statistically significant. Shuaibu, Abdullahi, Yusuf, and Yusufu measure labour market dynamics in Nigeria focusing on the relationship between economic growth and unemployment [15]. The result shows that there is positive relationship between unemployment and economic growth.

Dikeogu examines the effect of public spending on inflation in Nigeria between 1980 to 2017 [16]. The study used public capital (GCE) and recurrent (GRE) spending as the main explanatory variables while money supply (MSS) and exchange rate (EXR) were added as check variables. The result shows that government capital spending impacts negatively on inflation. Shuaibu, Yusufu, Abdullahi, Shehu, Adamu study the factors that explain economic growth in Nigeria between 1989 and 2019 [15]. Their findings show that government expenditure is among the important factors that explained economic growth in Nigeria. On the other hand, the privatization process of the last three decades has led to the reduction of government expenditure geared towards running of these previously government run enterprises. Despite the privatizations, government still own and run some enterprises that constitute part of the overall government expenditure. According to the authors of the World Bank 1995 Bureaucrats in Business, state own enterprises are contributing to macroeconomic instability because most of them are financed through deficit. The study also show that the poorer a country is, the larger the relative size of its state own enterprises. But thing may have changed since that period, with the increase in the number of privatization in Africa and elsewhere. The World Bank study noted that financing state own enterprises, especially through deficit, may lead to higher inflation. It also observed that large state own enterprises sector with large government expenditure on them poorly affect economic growth.

Theoretical framework

According to Arthur Smithies, fiscal policy is ‘a policy under which the government uses its expenditure and revenue programs to produce desirable effects and avoid undesirable effects on the national income, production and employment’. Fiscal policy shall divert society resources into productive activities by means of taxation, borrowing and expenditure. Government expenditure depends on its economic and social policies such as fighting unemployment, poverty alleviation, reducing the gap between the rich and the poor, provision of infrastructures and so on. Fiscal policy boosts economic development by increasing the rate of investment, encouraging investment in social and economic infrastruc-

ture, increasing employment opportunities, reducing balance of payments disequilibrium, dealing with inflation, reducing inequalities and boosting national income [4]. A government can control inflation and deflation by use of its expenditure and taxation tools. But, sometimes government expenditure leads to inflation. There is also the habitual fear that high government spending may crowd out private initiative. Increase in inflation may have caused the increase in the nominal value of government expenditure. According to McEwan inflation and the economic instability it represents can halt economic and social progress as effectively as a military coup. Modern governments demand large share of national income in order to meet expenditure profiles [6]. Taxes, rents, royalties, service charges and debt act as important means of financing government expenditure.

Government expenditure is implemented through public works, agriculture, industry, transport and communication, power, financial and banking institutions and social services [4]. Government expenditure on social insurance such as unemployment, pensions, poverty alleviation, trade assistance to SMEs, etc., increase the purchasing power of the receiving public. Government expenditure on education boosts human capital. Government expenditure on infrastructures boosts employment, made money available to the public, boost economic growth and investment level, etc. some government expenditures are in return for goods and services that count as part of the current output (Lipsey and Chrystal, 2005). Government expenditure can be increased through budget deficit, among others. Some government expenditure comes as a result of the transfer of resources from private production into public production. Other government expenditures are transfer payments made in return for any contribution to current output. Transfer payment helps in redistribution of income. According to the theory of maximum social advantage, public finance results in economic welfare when public expenditure and taxation are carried to that point where the benefit derived from marginal utility of expenditure is equal to the marginal disutility of sacrifice imposed by taxation [4]. Government expenditure helps in raising living standards as well as boosting national wealth [1]. Economic development in itself requires large amount of public finance.

The effect of government expenditure on the overall economic growth is depicted by:

$$Y=C+I+G \tag{1}$$

Where, Y = economic growth, C = consumption, I = investment and G = government

The equilibrium income is

$$Y = \frac{\alpha - \beta\gamma + I + G}{1 - \beta - \beta\delta} \tag{2}$$

$$\frac{dY}{dG} = \frac{1}{1 - \beta + \beta\delta} > \tag{3}$$

Equation 3 shows the government expenditure multiplier as in Chiang (2005). According to Samuelson the mere interaction between multiplier and accelerator is capable of generating cyclical fluctuations. In the model, consumption is envisaged as function not of current income but of the previous period [17]. Investment is generally influenced by general consumption spending in the economy.

$$C_t = \varphi Y_{t-1} \quad (4)$$

$$I_t = \alpha (C_t - C_{t-1}) \quad (5)$$

Where φ =MPC, α =the accelerator

$$I_t = \alpha \varphi (Y_{t-1} - Y_{t-2}) \quad (6)$$

Hence, our government expenditure model takes the form of

$$G = Y_t - \varphi(1 + \alpha) Y_{t-1} + \alpha \varphi Y_{t-2} \quad (7)$$

The famous Phillip curve has depicted relationship between inflation and unemployment as thus:

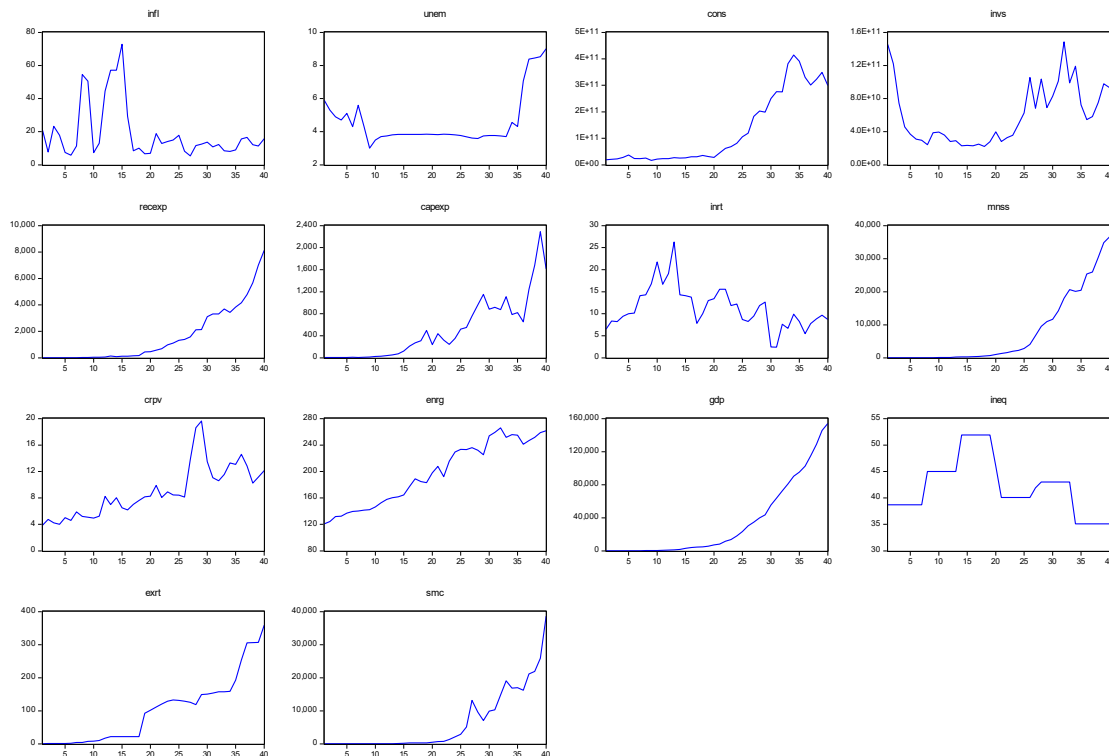
$$w = f(u) \quad (8)$$

Where w = rate of growth of money wage, u = rate of unemployment

The original form of the model shows a negative relationship between rate of growth of money wage and the rate of unemployment [18]. The rate of inflation may influence the consumption-saving decisions of the public, thus the aggregate demand for domestic production, and thereafter will, in turn, affects the rate of unemployment. Even in how government run its demand management policies, the rate of inflation can make a difference in their effectiveness. Depending on the rate of inflation, a given level of money expenditure (fiscal policy) could translate into different levels of real expenditure, and similarly, a given rate of nominal-money expansion (monetary policy) could mean varying rates of real money expansion. And these, in turn, would imply differing effects on output and unemployment (Chiang, 2005) [19].

Data and methodology

Data was sourced from Central Bank of Nigeria, National Bureau of Statistics and the World Bank for the period 1981 to 2020 data were collected in relation to inflation, unemployment, consumption, investment, money supply (M2), exchange rate, domestic credit to the private sector, energy production, GDP, inequality (GINI coefficient), interest and stock market capitalization. The data is annually collected data by the mentioned government institutions. The reputations of these government agencies can attest to the quality of our data.



Source: Authors' analysis using Eviews

Figure 1: graphs showing the study variables

The graphs in figure 1 show that both recurrent and capital expenditure has kept growing over the years. The same thing happens to consumption, money supply, domestic credit to the private sector, energy production, GDP, exchange rate and stock market capitalization. The graph shows that inflation has been lower than in the earlier decades, but unemployment has risen. Investment has fluctuated over the years while interest rate has continued to fall. Inequality has also fallen gradually.

Diagnostic tests

The following diagnostic tests were observed: lag order selection test and ADF stationarity test. Lag length selection criteria is employed to determine the Autoregressive (AR) lag length of the time series variables. Augmented Dickey Fuller test (ADF Test) is an econometric test that is being used to test whether a given Time series is stationary or not. It is one of the most used econometric tests when it comes to analyzing the stationary of a time series.

Methodology

The main methods of analysis for conducting this research are ARDL and Granger causality. The Granger causality test is an econometric test for determining whether one time series variable is important in forecasting another time series variable. The study employed Autoregressive Distributed Lag (ARDL) bounds test-

ing and Error Correction procedures to test the equilibrium relationship between variables. The advantages of ARDL over other method of analysis are well known in the econometric literature. Some of these advantages include; A- It can be used irrespective of whether variables are I(0), I(1) or a combination of both; B- It has the advantage of taking a sufficient number of lags to capture the data generating process in general to specific modeling frameworks; C- ARDL distinguish between dependent and explanatory variables; D- The small sample properties of the ARDL approach are far superior to those of the Johansen and Juselius cointegration technique; E- Pesaran and Shin have demonstrated that the appropriate lags in the ARDL model are corrected for both serial correlation and endogeneity problems [20]. The ARDL (p, q_1, q_2, \dots, q_k) model is of the form:

$$\Phi(L) y_t = \varphi + \theta_1 (L) x_{1t} + \theta_2 (L) x_{2t} + \dots + \theta_k (L) x_{kt} + \mu_t \quad (9)$$

Adopting the lag operator L to each component of a vector, $L^k y = y_{t-k}$, thus it is better to describe the lag polynomial $\Phi(L, p)$ and the vector polynomial $\beta(L, q)$. An ECt is the error correction term which is of the form:

$$EC_t = \varepsilon_t = y_t - \sum_{i=1}^k \theta_i x_{it} - \omega' W_t \quad (10)$$

In application the ARDL is of the form:

$$\begin{aligned} \Delta X_t &= \delta_{0i} + \sum_{i=1}^k \alpha_i \Delta X_{t-1} + \sum_{i=1}^k \alpha_2 \Delta Y_{t-i} + \dots + \sum_{i=1}^k \alpha_2 \Delta Z_{t-1} + \delta_1 X_{t-1} + \delta_2 Y_{t-1} + \dots + \delta_i Z_{t-1} + v_{1t} \\ \Delta Y_t &= \delta_{0i} + \sum_{i=1}^k \alpha_i \Delta Y_{t-1} + \sum_{i=1}^k \alpha_2 \Delta X_{t-i} + \dots + \sum_{i=1}^k \alpha_2 \Delta Z_{t-1} + \delta_1 Y_{t-1} + \delta_2 X_{t-1} + \dots + \delta_i Z_{t-1} + v_{1t} \\ &\vdots \\ \Delta Z_t &= \delta_{0i} + \sum_{i=1}^k \alpha_i \Delta Z_{t-1} + \sum_{i=1}^k \alpha_2 \Delta X_{t-i} + \dots + \sum_{i=1}^k \alpha_2 \Delta W_{t-1} + \delta_1 Z_{t-1} + \delta_2 X_{t-1} + \dots + \delta_i W_{t-1} + v_{1t} \end{aligned} \quad (11)$$

Joint hypotheses to be tested for the ARDL bound testing are as follows:

$$H_0: \delta_2 = \delta_3 = \delta_4 = \delta_1 = 0 \quad (12)$$

$$H_1: \delta_i \neq 0, i = 4, 5, 7, \dots \quad (13)$$

The F-Statistics test is employed to test for cointegration by quantifying the significance of the lagged levels of the time series variables.

Models:

The study tests four econometric models in order to be able to empirically measure the effects of government expenditure on in-

flation, unemployment, consumption and investment in Nigeria. Each of the models takes care of one of the four important dependent variables that the study is trying to find their reactions to change in government expenditure. Log linear forms of the models were used for the analysis.

Model 1: inflation-expenditure model. The dependent variable is inflation while the independent variables are government recurrent expenditure and government capital expenditure with money supply and exchange rate as control variables. The model tests the effects of various independent variables on inflation.

$$\ln infl = \alpha_0 + \ln reexa_1 + \ln caexa_2 + \ln mspla_3 + \ln exrta_4 + \mu \quad (14)$$

Where, reex = recurrent expenditure, caex = capital expenditure, mspl = money supply, exrt = exchange rate

Model 2: unemployment-expenditure model

The dependent variable is unemployment while the independent variables are government recurrent expenditure and government capital expenditure with domestic credit to private sector and energy production as control variables. The model tests the respond of unemployment to changes in the independent variables.

$$lnunem = \beta_0 + lnreex\beta_1 + lncaex\beta_2 + lnrcpv\beta_3 + lnenrg\beta_4 + \epsilon \quad (15)$$

Where, crpv = domestic credit to private sector, enrg = energy production

Model 3: consumption-expenditure model

The dependent variable is consumption while the independent variables are government recurrent expenditure and government capital expenditure, Gross Domestic Product (GDP) and inequality (GINI coefficient) are put as control variable. Here, the model tries to find out how government expenditure affects consumption level.

$$lncons = \gamma_0 + lnreex\gamma_1 + lncaex\gamma_2 + lngdp\gamma_3 + llineq\gamma_4 + \epsilon \quad (16)$$

Where, gdp = gross domestic product, ineq = inequality

Model 4: investment-expenditure model

Here the dependent variable is investment. The independent variables are government recurrent expenditure and government capital expenditure, while interest rate and stock market capitalization

are the control variables. Thus, the model measures relationship between investment and government expenditure.

$$lninve = \delta_0 + lnreex\delta_1 + lncaex\delta_2 + lnintr\delta_3 + lnsmcd\delta_4 + \omega \quad (17)$$

Where, intr = interest rate, stock market capitalization

Results and analysis

Stationarity tests:

The results of the unit root tests show a mixture of stationarity at level and at first difference for the variables in the study. This, therefore, satisfies the condition of using ARDL method of analysis. Thus, with these results, we proceed with testing the ARDL model.

Granger Causality analysis results:

For inflation-government expenditure model, the results of the Granger causality show that there are two ways causality between inflation and recurrent expenditure, inflation and capital expenditure, inflation and money supply, and inflation and exchange rate. See table 1. For the unemployment-government expenditure model, recurrent expenditure may have helped in reducing unemployment. It also shows that capital expenditure Granger cause unemployment. See table 2. This shows the importance of recurrent expenditure in reducing unemployment in the short run when compared with capital expenditure. For the consumption-government expenditure model, the result shows that recurrent and capital expenditures Granger cause consumption, consumption Granger cause GDP and a two-ways causality between inequality and consumption. See table 3. And finally, for investment-government expenditure model, the results show that interest rate affect investment while government expenditure did not do much to affect investment. See table 4.

Table 1: inflation-expenditure causality analysis

Null Hypothesis:	Obs	F-Statistic	Prob.
RECEXP does not Granger Cause INFL	38	0.87864	0.4248
INFL does not Granger Cause RECEXP		9.4E-05	0.9999
CAPEXP does not Granger Cause INFL	38	1.28564	0.2900
INFL does not Granger Cause CAPEXP		0.00150	0.9985
MNSS does not Granger Cause INFL	38	0.68501	0.5111
INFL does not Granger Cause MNSS		0.25738	0.7746
EXRT does not Granger Cause INFL	38	1.32599	0.2793
INFL does not Granger Cause EXRT		0.63320	0.5372

Source: author's analysis using Eview

Table 2: unemployment-expenditure causality analysis

Null Hypothesis:	Obs	F-Statistic	Prob.
RECEXP does not Granger Cause UNEM	38	3.88829	0.0305
UNEM does not Granger Cause RECEXP		4.44181	0.0196
CAPEXP does not Granger Cause UNEM	38	1.48790	0.2406
UNEM does not Granger Cause CAPEXP		3.91599	0.0298
CRPV does not Granger Cause UNEM	38	1.51610	0.2345
UNEM does not Granger Cause CRPV		0.55326	0.5803
ENRG does not Granger Cause UNEM	38	3.35585	0.0471
UNEM does not Granger Cause ENRG		0.19913	0.8204

Source: authors' analysis using Eview

Table 3: consumption-expenditure causality analysis

Null Hypothesis:	Obs	F-Statistic	Prob.
RECEXP does not Granger Cause CONS	38	2.89261	0.0696
CONS does not Granger Cause RECEXP		8.11062	0.0014
CAPEXP does not Granger Cause CONS	38	0.43722	0.6495
CONS does not Granger Cause CAPEXP		2.75432	0.0783
GDP does not Granger Cause CONS	38	4.37683	0.0206
CONS does not Granger Cause GDP		0.57367	0.5690
INEQ does not Granger Cause CONS	38	0.11138	0.8949
CONS does not Granger Cause INEQ		2.68061	0.0834

Source: authors' analysis using Eview

Table 4: investment-expenditure causality analysis

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
RECEXP does not Granger Cause INVS	38	5.45629	0.0090
INVS does not Granger Cause RECEXP		2.15636	0.1318
CAPEXP does not Granger Cause INVS	38	6.59286	0.0039
INVS does not Granger Cause CAPEXP		1.09559	0.3462
INRT does not Granger Cause INVS	38	3.04393	0.0612
INVS does not Granger Cause INRT		1.51476	0.2348
SMC does not Granger Cause INVS	38	5.45440	0.0090
INVS does not Granger Cause SMC		4.32725	0.0214

Source: authors' analysis using Eview

ARDL Error Correction Model and Bound Testing results:

The results of analysis for model 1; for the long run equilibrium of the ARDL, the result show that recurrent and capital expenditures have negative effects on inflation, while money supply has positive effect on inflation. But, exchange rate is not statistically significant. This means during the period government expenditure has not contributed in boosting inflation, but money supply had. The results of the Error correction regression show that there is 16.2% adjustment to restore equilibrium for model 1 (see table 5). The result of the ARDL bound testing show that there is cointegration for the model at all level of significance (i.e.10% level up to 1% level). See

table 6. For model 2, for the long run equilibrium of the ARDL, the result shows that capital expenditure is negatively related with unemployment. This means that capital expenditure contribute in reducing unemployment. The results of the Error correction regression show that there is 9.5% adjustment to restore equilibrium for model 2 (see table 7). The result of the ARDL bound testing show that there is no cointegration for the model at all level of significance (i.e.10% level up to 1% level). See table 8. For model 3, the long run equilibrium result shows that both recurrent and capital expenditures are not statistically significant; but their lag values are statistically significant but with negative effects on consump-

tion. The results of the Error correction regression show that there is 4.7% adjustment to restore equilibrium for model 3 (see table 9). The results of the bound testing show cointegration (see table 10). For model 4, the result of the long run equilibrium analysis shows that recurrent expenditure is positive and statistically significant while capital expenditure is positive and statistically significant

at first lag value. This means they have positive effects on investment. The results of the Error correction regression show that there is 4.2% adjustment to restore equilibrium for model 4 (see table 11). The results of the bound testing show cointegration at all levels (see table 12).

**Table 5: Model 1 ARDL ECM result
ECM Regression
Case 2: Restricted Constant and No Trend**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(INFL(-1))	-0.237040	0.127616	-1.857444	0.0844
DLOG(INFL(-2))	-0.782121	0.088913	-8.796505	0.0000
DLOG(INFL(-3))	-0.519754	0.157247	-3.305334	0.0052
DLOG(RECEXP)	-0.840694	0.378618	-2.220428	0.0434
DLOG(RECEXP(-1))	4.260856	0.730989	5.828890	0.0000
DLOG(RECEXP(-2))	3.734278	0.686936	5.436139	0.0001
DLOG(RECEXP(-3))	1.468695	0.438797	3.347095	0.0048
DLOG(CAPEXP)	-0.739740	0.183248	-4.036827	0.0012
DLOG(MNSS)	1.150329	0.507167	2.268146	0.0397
DLOG(MNSS(-1))	-0.815402	0.583735	-1.396869	0.1842
DLOG(MNSS(-2))	-1.472577	0.536151	-2.746573	0.0158
DLOG(MNSS(-3))	0.999755	0.465066	2.149708	0.0495
DLOG(EXRT)	-0.055321	0.249595	-0.221642	0.8278
DLOG(EXRT(-1))	-2.332172	0.466991	-4.994043	0.0002
DLOG(EXRT(-2))	-1.074757	0.382222	-2.811868	0.0139
DLOG(EXRT(-3))	-0.888496	0.257728	-3.447418	0.0039
CointEq(-1)*	-0.162563	0.021884	-7.428477	0.0000

Source: authors' analysis using Eview

Table 6: Model 1 Bound Testing result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.776770	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: authors' analysis using Eview

Table 7: Model 2 ARDL ECM result
ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(RECEXP)	0.098294	0.070522	1.393801	0.1756
DLOG(RECEXP(-1))	-0.206413	0.077111	-2.676823	0.0129
DLOG(RECEXP(-2))	-0.185603	0.077821	-2.385011	0.0250
DLOG(CAPEXP)	-0.126244	0.058693	-2.150927	0.0413
DLOG(CRPV)	0.210777	0.102018	2.066066	0.0493
DLOG(CRPV(-1))	-0.164802	0.109018	-1.511702	0.1431
CointEq(-1)*	-0.095966	0.025822	-3.716449	0.0010

Source: authors' analysis using Eview

Table 8: Model 2 Bound Testing result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	1.918332	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: authors' analysis using Eview

Table 9: Model 3 ARDL ECM result
ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(RECEXP)	4.08E-05	0.088953	0.000458	0.9996
DLOG(RECEXP(-1))	-0.667778	0.126558	-5.276439	0.0001
DLOG(RECEXP(-2))	-0.667514	0.133258	-5.009188	0.0001
DLOG(CAPEXP)	-0.053382	0.093587	-0.570393	0.5759
DLOG(CAPEXP(-1))	-0.483689	0.101298	-4.774899	0.0002
DLOG(CAPEXP(-2))	-0.164175	0.081498	-2.014468	0.0601
DLOG(CAPEXP(-3))	-0.192957	0.077003	-2.505852	0.0227
DLOG(GDP)	0.150049	0.281352	0.533315	0.6007
DLOG(GDP(-1))	-0.429800	0.267666	-1.605735	0.1267
DLOG(INEQ)	0.245970	0.430881	0.570854	0.5756
DLOG(INEQ(-1))	1.080869	0.540072	2.001342	0.0616
DLOG(INEQ(-2))	1.706844	0.501448	3.403831	0.0034
DLOG(INEQ(-3))	2.303395	0.557047	4.135012	0.0007
CointEq(-1)*	-0.478376	0.080316	-5.956188	0.0000

Source: authors' analysis using Eview

Table 10: Model 3 Bound Testing result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.568902	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: authors' analysis using Eview

Table 11: Model 4 ARDL ECM result**ECM Regression****Case 2: Restricted Constant and No Trend**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DLOG(INVS(-1))	-0.095972	0.123095	-0.779658	0.4447
DLOG(INVS(-2))	0.382558	0.123671	3.093366	0.0057
DLOG(RECEXP)	0.365785	0.126043	2.902075	0.0088
DLOG(RECEXP(-1))	0.561370	0.128312	4.375037	0.0003
DLOG(RECEXP(-2))	0.295688	0.120292	2.458092	0.0232
DLOG(CAPEXP)	0.002645	0.097342	0.027171	0.9786
DLOG(CAPEXP(-1))	0.382679	0.096053	3.984030	0.0007
DLOG(CAPEXP(-2))	-0.050812	0.103888	-0.489100	0.6301
DLOG(CAPEXP(-3))	-0.227603	0.104131	-2.185750	0.0409
DLOG(INRT)	-0.019661	0.079294	-0.247949	0.8067
CointEq(-1)*	-0.422725	0.069938	-6.044269	0.0000

Source: authors' analysis using Eview

Table 12: Model 4 Bound Testing result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.871092	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: authors' analysis using Eview

Implications

The main implications of the work go along the line of change in policy outcome between the long run and short run periods. This is very important considering the time it takes for policies to have real time effects on their targets. For this study, in the short run both recurrent and capital expenditures have positive effects on inflation. This implies that during the short run period government expenditure contributed to inflation. But in the long run they both have negative effects on inflation, meaning they contribute to reducing inflation or they are indifferent. The positive effect of the control variable (money supply) on inflation is expected. This means that increase in money supply caused inflation rate to rise. The long run result also shows that capital expenditure is negatively related to unemployment. This means that capital expenditure

contribute to reducing unemployment. The short run result shows that recurrent expenditure has no effect on unemployment, but capital expenditure does. These results show the important of increasing capital expenditure in order to reduce the menace of unemployment. The short run results also show that both the recurrent and capital expenditures affect consumption. This is also expected and it means government expenditure is an important mean of boosting consumption in the Nigerian economy. According to the long run results, in the long run their effects on consumption may be slightly negative. For the control variable (inequality), the results show that inequality affect consumption positively. This has been predicted by economic theory that says the poor has higher marginal propensity to consume than the rich. Finally, for the effects of government expenditure on investment the

results show that for the short run government expenditure does not affect investment. But, the control variable (interest rate) has positive effect on investment in the short run. The long run results show that in the long run both recurrent and capital expenditures have positive effects on investment. The implication of this is that as government continues to boost its expenditures the investment level in the country is expected to increase.

Conclusions and recommendations

The paper has looked at the effects of government expenditure on inflation, unemployment, consumption and investment in Nigeria. The paper asks the questions, what happens after government expenditure has taken place? Are the effects of government expenditures positive or negative? What shall government do to ensure that its expenditure profile is pro development not otherwise? Shall Nigerian government increase or decrease its expenditure? The results show that the effect of government expenditure depends on the target variable and whether it is short or long run. The results also show that government expenditure can be positive or negative or both depending on whether it is long or short run. To reduce the level of inflation in the economy government must watch it recurrent expenditure. But, at the same time government shall boost its capital expenditure in order to reduce unemployment. Government expenditure was also found to be consumption boosting in the short run. Hence, during depression government shall increase its expenditure in order to boost consumption level in the economy. Expenditure has positive effects on investment. Nigerian government shall continue to boost its expenditures, since this will mean the investment level in the country is increases. In general, the paper recommended calculated increase in government expenditure with the aim of boosting the general performance level of the economy.

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