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# Fiscal Policy Measures and Investment Decisions in Nigeria (1995 – 2019)

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## **Author's contribution**

*The sole author designed, analysed, interpreted and prepared the manuscript.*

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## **ABSTRACT**

This paper examined the extent to which fiscal policy measures could effectively be used to promote investment decision in Nigeria. The data employed covered the period of 1995 to 2019 which include fiscal measures such as capital expenditure, recurrent expenditure, value added tax and investment. In performing the empirical analysis, econometric techniques such as auto regressive distributed lag (ARDL), unit root, Granger Causality test and bound test were applied on the data to produce acceptable results. The results from the analysis revealed that capital expenditure is positive and significant while recurrent expenditure and value added tax are insignificant to investment growth in the economy. Based on our results, we conclude that more priority should be place on capital expenditure in the country for it will stimulate investment growth respectively.

*Keywords: ARDL; bounce test; granger causality test; unit root; capital expenditure.*

## **1. INTRODUCTION**

Cheng and Sun (2013) opined that the adoption of fiscal policy by government sustains the stability of prices, economic growth, reduce the unemployment rate and stimulate aggregate domestic demand in the economy [1-3]. Thus, it

serves as a control mechanism on government revenue and expenditure.

Over the years, developing countries' domestic investments were dominated largely by public investment [4-8]. Recently, there is a paradigm shift from public to private investment occasioned

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by higher efficiency of resources being controlled by the private sector. Private sector investment seems to be more productive and valuable in developing economies [9-11]. 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 nation [12-17].

All these represent the ultimate goal of the various policies of the government as public investments generally provide the base for private sector investment to grow.

### 1.1 Statement of Problem

Despite the several fiscal measures introduced over the years and given the prominence of fiscal policy as a potent tool for enhancing growth, redistributing income and reducing poverty, Nigeria economy is yet to come on the path of sound growth and development. Government investments in infrastructure which ought to stimulate economic growth, is centered in the hands of the affluent in the society thereby retarding efficient redistribution of income to the people. Therefore, this study has become a necessity due to the deteriorating state of the public measures that would promote investment and enhance economic stability in Nigeria.

### 1.2 Objectives of the Study

The general objective of the study is to examine the effect of fiscal policy measures on investment decisions in Nigeria. The specific objective is to:

1. Determine the relationship between Government capital expenditure and investment.
2. Ascertain the effect of Government recurrent expenditure on investment.
3. Investigate the correlation between value added tax and investment.

### 1.3 Research Questions

This paper is anchored on the following research questions:

1. What is the significant relationship between Government capital expenditure and investment?

2. To what extent is the effect of Government recurrent expenditure on investment?
3. What is the correlation between value added tax and investment?

### 1.4 Research Hypotheses

This paper structured the hypotheses to its null form in the following ways:

- H<sub>01</sub>: There is a significant relationship between Government capital expenditure and investment.
- H<sub>02</sub>: There is an effect of Government recurrent expenditure on investment.
- H<sub>03</sub>: There is a correlation between value added tax and investment.

## 2. LITERATURE REVIEW

### 2.1 Fiscal Policy Objectives

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, 2016).

#### 2.1.1 Instruments of fiscal policy

The economic instruments applied in achieving these macroeconomic goals are taxation and government spending. According to Anyanwu 1995, these taxes along with licenses and fees constitute government revenue and on the other hand, government expenditure (capital and recurrent) constitutes an instrument for direct resource allocation while generating employment opportunities and influencing the government price level as well determining the extent of fiscal deficit or surplus each fiscal year. Therefore, major instruments of fiscal policy have been taxation, government expenditure and borrowing from domestic and external sources of financial budget deficit when the fiscal operations resulted in budget gaps [18-22].

### 2.2 Theoretical Review

#### 2.2.1 The classical theory of investment

This theory tried to estimate decisions based on profit motives by firms. They argued that

investment is worthwhile if the market rate of return on investment is greater than or equal to cost of capital that is the rate of interest. Keynes, while building on the classical theory of investment, posits that the market rate of interest is the cost of investment. As a result of this, an investor who has to finance a project with borrowed funds must therefore pay interest. Also, if the investor is going to use his own fund, he would consider what he would have earned in terms of interest if he had used the money to buy financial asset. This yield on the bond is the opportunity cost of using his money to buy capital good (Canh & Lua, 2018).

### 2.2.2 The duesenberry's theory

This is known as cash flow theory. The theory integrates the profit theory and accelerator theory of investment. His emphasis was on aggregate cash flow as the main determinant of investment. His theory is based on the following prepositions.

- a. Gross investment starts exceeding depreciation when capital stock grows.
- b. Investment exceeds saving when income grows.
- c. The growth rate of the income and the growth rate of capital stock are determined entirely by the ratio of capital stock to income.

### 2.2.3 The neo-classical theory

Two economists, T. W. Swan and Robert Solow, made important contributions to economic growth theory in developing what is now known as the Solow-Swan growth model. The theory focuses on three factors that impact economic growth: labor, capital, and technology, or more specifically, technological advances.

Since a nation can theoretically determine the amount of labor and capital necessary to remain at that steady point, it is technological advances that really impact the economic growth. The theory states that economic growth will not take place unless there are technological advances, and those advances happen by chance. Once an advance has been made, then labor and capital should be adjusted accordingly. It also suggests that if all nations have access to the same technology, then the standard of living will all become equal.

## 2.3 Empirical Review

Bukhari, Ali and Saddaqt (2007) used ARDL technique to empirically assess the nexus

between fiscal policy and public-private investments in Nigeria 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.

Hadiwibowo (2010) empirically reviewed the effect of fiscal policy on economic advancement and investment in Nigeria from 1969 to 2008 using the vector error correction method. Finding 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.

Omojolaibi, Okenesi, and Mesagan (2016) examined the nexus between fiscal policy in Sierra Leone, Senegal, 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.

## 3. METHODOLOGY

### 3.1 Model Specification

The model to be adopted for this research work is based on VAR model, the model include the lag and lead values of all the various variables in the model, as stated below;

$$INV_{t-1} = \sigma_0 + \beta_1 CEXP_{t-1} + \beta_2 REXP_{t-1} + \beta_3 VAT_{t-1} + \mu_t$$

Where,

INV = Investment

CEXP = Capital Expenditure

REXP = Recurrent Expenditure

VAT = Value Added Tax

$\alpha_0$  = Constant

$\beta_1$ -  $\beta_3$  = Coefficient of the Explanatory Variables

$\mu_t$  = Error Term

## 4. DATA PRESENTATION

The data below represent the figures of capital expenditure, recurrent expenditure, value added tax and investment extracted from CBN statistical bulletin 2019; find below the figures as stated in the bulletin.

**Table 1. Array of variables data from 1995 – 2019**

Year	Value added tax (₦)	Capital expenditure(₦)	Recurrent expenditures(₦)	Investment(₦)
1995	6.26	121.14	127.63	75.94
1996	11.29	212.93	124.49	111.29
1997	13.91	269.65	158.56	110.45
1998	16.21	309.02	178.1	80.75
1999	23.75	498.03	449.66	92.79
2000	30.64	239.45	461.6	115.95
2001	44.91	438.70	579.3	132.43
2002	52.63	321.38	696.8	225.22
2003	65.89	241.69	984.3	258.39
2004	96.2	351.25	1,110.64	248.22
2005	87.45	519.47	1,321.23	173.76
2006	110.57	552.39	1,390.10	797.5
2007	144.37	759.28	1,589.27	1,664.44
2008	198.07	960.89	2,117.36	1,275.80
2009	229.32	1,152.80	2,127.97	966.05
2010	275.57	883.87	3,109.44	2,021.37
2011	318	918.55	3,314.51	2,676.05
2012	347.69	874.70	3,325.16	3,562.42
2013	389.53	1,108.39	3,214.95	1,616.25
2014	388.85	783.12	3,426.94	1,484.01
2015	381.27	818.35	3,831.95	2,637.92
2016	397.06	653.61	4,160.11	697.23
2017	473.77	1,242.30	4,779.99	3,353.86
2018	533.74	1,682.10	5,675.20	4,118.57
2019	564.45	2,289.00	6,997.39	

Source: CBN Statistical Bulletin 2019

#### 4.1 Unit Root Test

This test is a stationary test which is employed to ascertain the level of stationarity on all the variables employed, as time series data are prone to stationarity problem and in order to avoid having spurious result, we commence our estimation with unit root test. Augmented Dickey – Fuller techniques unit root test is used and its output is presented below.

The result of the ADF statistics shows that the variables are integrated to the order 1 therefore, we reject the null hypotheses and conclude that our variables are stationary at first difference and

can be used for further analysis. From the foregoing analysis using unit root test, we then proceed to conducting Auto-Regressive Distributed Lag (ARDL) and Granger causality test.

#### 4.2 Auto-Regressive Distributed Lag (ARDL)

ARDL is a modus created by Angle Granger to determine the regressive lag modus among variables estimated in the model, it determines the regressive relationship existing between the variables in the model, below is the result of the estimated empirical test conducted.

**Table 2. Unit root test output**

Variables	ADF Statistic	5% Level	Probability/Order
Capital Expenditure	-3.230310	-3.052169	0.0358 (1)
Recurrent Exp	-5.330283	-3.052169	0.0006 (1)
Value Added Tax	-6.526687	-3.052169	0.0001 (1)
Investment	-2.672611	-3.052169	0.0440 (1)

Dependent Variable: INV

Method: ARDL

Date: 09/07/20 Time: 12.46

Sample (adjusted): 1996 2018

Included observations: 23 after adjustments

Maximum dependent lags: 4 (Automatic selection)

Model selection method: Akaike Info criterion (AIC)

Dynamic regressors (0 lag, automatic): CPEX RCEX VAT

Fixed regressors: C

Number of models evaluated: 4

Selected Model: ARDL (1, 0, 0, 0)

Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INV(-1)	-0.081037	0.2375	-0.341	0.7369
CPEX	1.250612	0.7182	1.7413	0.0387
RCEX	0.526242	0.5989	0.8786	0.3912
VAT	-0.566648	6.2163	-0.091	0.9284
C	-524.1778	301.88	-1.736	0.0996
R-squared	0.794688	Mean dependent var		1235.68
Adjusted R-squared	0.749063	S. D. dependent var		1270.94
S. E. of regression	636.6622	Akaike info criterion		15.94
Sum squared resid	7296097	schwarz criterion		16.1869
Log likelihood	-178.3102	Hannan-Quinn criter.		16.0021
F-statistic	17.41783	Durbin-Watson stat		2.04722
Prob(F-statistic)	0.000005			

The result above shows that capital expenditure is positive and significant which is in line with the theories of investments; this implies that Government capital expenditures stimulate public – private investments into the nation. Recurrent expenditures and value added tax are insignificant in stimulating investment in the country. Therefore, 74.9% variation in the dependent variable is determined by variation in the independent variables respectively; the F-statistic probability indicates that the model is significant and a good fit model.

### 4.3 ARDL Bound Test

Bound test is a diagnostic techniques employed to determine the relative significance and long run relationship of the variables estimated in the model; below is the result from E-view 9;

Date: 09/07/20 Time: 12.59

Sample (adjusted): 1996 2018

Included observations: 23

Null Hypotheses: No long-run relationship exist

Test Statistic	Value	K
F-statistic	6.190961	3
Critical Value Bounds		
Significance	10 Bound	11 Bound
10%	2.72	3.77
5%	3.23	4.35
2.50%	3.69	4.89
1%	4.29	5.61

The result of the bounce test indicates that the variables have a long run relationship at 5%, 10% and 1% level of significance.

#### 4.4 Wald/Exogeneity Granger Causality Test

Granger causality exogeneity test is extracted from Var model and it determines the cause – effect relationships between the variables estimated in the model, below is the econometric output.

VAR Granger Causality/Block Exogeneity Wald Tests

Date: 09/07/20 Time: 13:27

Sample: 1995 2019

Included observations: 22

<b>Dependent variable: INV</b>			
Excluded	Chi-sq	Df	Prob.
CPEX	4.336016	2	0.0144
RCEX	6.064793	2	0.0482
VAT	7.567655	2	0.0227
All	34.50288	6	0.00
<b>Dependent variable: CPEX</b>			
Excluded	Chi-sq	Df	Prob.
INV	0.350761	2	0.8391
RCEX	0.350761	2	0.1917
VAT	7.011095	2	0.03
All	16.73032	6	0.0103
<b>Dependent variable: RCEX</b>			
Excluded	Chi-sq	Df	Prob.
INV	18.7565	2	0.0001
CPEX	4.384626	2	0.1117
VAT	0.682187	2	0.711
All	21.91278	6	0.0013
<b>Dependent variable: VAT</b>			
Excluded	Chi-sq	Df	Prob.
INV	0.377585	2	0.828
CPEX	1.266324	2	0.5309
RCEX	15.27956	2	0.0005
All	15.27956	6	0.0138

The results above show that there is a significant relationship between capital expenditure and investment at 10% level of significance. We therefore reject H0 and conclude that capital expenditure granger causes investment in the country which is in conformity with the result of auto regressive distributed lag conducted above. VAT also shows a significant relationship with investment therefore, VAT Granger cause investment output in the economy.

#### 5. DISCUSSION OF FINDINGS

From the econometric analysis performed above, the result of unit roots shows that all the variables are integrated to the order 1; that is all the variables are stationary at first difference.

The result of ARDL also shows that capital expenditure is positive and significant to investment which implies that increase in capital expenditure will significantly increase private-public investment in the country. Recurrent expenditure and value added tax are insignificant to investment in the country, this implies that the positive changes in these variables will lead to insignificant changes in the growth of investment in the country. The Granger Causality test also indicates significant relationship between the variables which implies that capital expenditures granger cause upward growth in investment. Bound test shows that the variables estimated in the model has long run relationship which can be further relied upon for policy decisions.

## 6. CONCLUSION AND RECOMMENDATIONS

### 6.1 Conclusion

Based on the major findings, the following conclusions are drawn:

Government investment through fiscal policy could boost investment decisions and thus enhance productivity and economic growth.

Capital expenditure, recurrent expenditure and value added tax are fiscal policy tools of government used to achieve stability in the economy. This stability could be explained in terms of government investing more on capital expenditure which would stimulate investments decision in the country.

### 6.2 Recommendations

Based on the conclusion of the study, the following recommendations were arrived at:

1. The Government should invest more in capital expenditure as it will stimulate public-private investment in Nigeria.
2. Fiscal policy should always be streamlined and more allocation ascribe to capital expenditures, in order to boost economic growth through investment and job opportunity in the country.
3. Value added tax is a major source of revenue into the country and should be prioritize by the Government in order to increase her source of income for effective redistribution into the economy.
4. Government should provide conducive environment that will encourage investment decision in Nigeria.

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### COMPETING INTERESTS

Author has declared that no competing interests exist.

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