

# Impact Of Fiscal Policy On Domestic Investment In Nigeria

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## **Abstract**

*The study investigated fiscal policy operations and Nigeria's domestic investment. The specific objectives of the study sought to evaluate government tax revenue generation impact on Nigeria's domestic investment; determine the impact of government domestic debt on Nigeria's domestic investment in Nigeria; and determine the impact of government capital expenditure on Nigeria's domestic investment. The researchers used time series data for the period of 1981-2022. The model was tested for stability, reliability and stationarity using the ADF test, CUSUM and CUSUM of squares test; the series were stationary and integrated of order 1(1). The integration test (Johansen approach) showed evidence of long run convergence of the variables. The technique employed for the analysis of the data was the vector error correction mechanism (VECM). Findings indicated that government domestic debt (LOGGDD) significantly impacted on domestic investment in Nigeria; government capital expenditure (LOGGCX) had significant positive and significant impact on domestic investment in Nigeria; government tax revenue generation (LOGGTR) had significant positive impact on domestic investment in Nigeria. The study recommends that: government needs to improve on the provision of infrastructure by increasing capital spending especially on target economic facilities; government should revisit its tax policies to remodel it into an incentivized instrument to encourage investment in the domestic economy; and there is need for government to adopt strategic borrowing plan such that domestic debts are ploughed into regenerative spending that could aid expansions in domestic investment.*

**Keywords:** *Fiscal Policy, Domestic Investment, Taxes, Government Debt, Vector Error Correction*

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## **I. Introduction**

Achievement of macroeconomic goals drives government into strategic actions and mechanisms involving the adoption of fiscal policy tools. Hence, fiscal policies are employed by government as it aims to significantly influence economic activities including private sector investment. According to Sebastian and Kingsley (2019) a documented evidence on the efficacy of fiscal policy in correcting, steering and supplementing market relationships in creating economic enablers for investments rebounds, abounds in literature. Fiscal policy implementation in Nigeria began before the emergence of our democratic experience as a nation, hence there is difficulty in and almost impossibility of witnessing significant growth in the economy where domestic investments are lacking. This view is supported by Falade and Olagbaju (2021). It is already a canon that economic growth is a critical economic goal of every nation especially those nations (Nigeria inclusive) who find themselves in the lower and middle classification of developed countries. In the literature of

development by Olorunfemi (2020), he points out that private sector (domestic) some of the vital functions which investments performance production of goods and services, leaning towards full employment, and the enhancement in the level of income.

Concerns about performance of domestic investment are hinged on the need to provide jobs and employment opportunities for the teeming labor force besides ensuring the availability of a wide variety of economic and consumer goods. This has led to expansions in domestic investment. The government stimulates and helps domestic investment by providing growth and performance incentives for local manufacturers and other businesses classified as real sector activities. On one hand the domestic economic activities focus on efforts in the direction of investments (establishment of more firms, development of raw materials base, market expansions, as well as human resource development); in supporting the domestic investors, the government uses fiscal policy tools (including interventions through tax legislations and expenditure portfolios especially targeting capital projects such as building of durable road networks, bridges, upgrade and standardization of seaports and airports, establishment of industrial clusters and human capital development through quality education). Fiscal policy components include government spending on capital projects. Capital expenditures are those expenditure plans of government which yield regenerative outputs or those outputs that aid the production of more outputs. Oseni and Onakoya (2018) agrees that infrastructure provision expenditure of reduces production costs for manufacturers, drive up private sector investment and greater returns for firms. Osinowo (2015) is an empirical supporting evidence to this assertion. Following the broad classification of capital expenditure of government presented by Wale (2013), it includes economic or hard infrastructure; and social or soft infrastructures. Thus, this classification by Wale makes case for easy assessment of how government prioritizes its capital projects.

Another component of fiscal policy which complements capital expenditure activities is the incorporation of tax legislation which provides an environment conducive enough to allow investors grow and expand. However, it can be employed as a veritable tool in achieving such macroeconomic objectives as improving the performance and output capacities of the private sector sectors (especially manufacturing). A tax cut or holiday for instance is considered an incentive to domestic investors (manufacturers) as well as consumers whose decisions to produce or consume are never without recourse to the tax situations in the economy. The main channel to generate the amount of revenue that could sufficiently serve to provide needed infrastructure and developing human resources according to Uchime and Anichebe (2019), is a tax system that is well-structured. The authors buttressed this point by stressing that taxation is hugely an important part of fiscal policy which could be adopted by the government and effectively utilized to develop the economy.

Domestic borrowing by government has been on an increase and often times than not, more than doubles with each fiscal year. Available data from CBN (2019) show that in 1981, the total outstanding domestic debt was ₦11.9 billion, within a decade it grown to ₦116.20 billion in 1991. By 1999 - the transition to democratic governance, it had more than tripled its 1991 value to ₦794.81 billion; as at 2016, it stood at ₦11,058.20 billion. Borrowing is justified on the premise that that there is need for intervention in the economy especially in the provision of critical infrastructural capital that enable the productive sectors of the economy to expand their capacities and widen the range of utility goods.

### ***Statement of the problem***

Evidence abounds to suggest that Nigeria (other developing countries as well), are battling with serious problems with regards to the goal of attracting investments. As a direct consequence, investors have relocated their investments and production activities to those other countries which have been verified to show evidences having a business environment that supports investments. Sebastian and Kingsley (2019) agrees with this. The authors emphasized that irrespective of various previous economic reforms, Nigeria entered the year 2016 accompanied by an abysmally lower GDP growth rate than it attained at 2015 ending due mainly to harsh economic recession. There has been a growing concerns regarding the much fiscal policy can support domestic investment especially on the manufacturing industry in Nigeria. This is despite several policies aimed at improving the growth of Nigerian economy. According to Ameh, (2017), the real sector's (domestic investments) contribution to the economy and capacity utilization of the productive sector (manufacturing), deviates marginally from the growth expectations. It is apparent that fiscal policy operation in Nigeria has been far from reviving the component sectors of the Nigerian economy. Uchime and Anichebe agree that excessive taxes (corporate tax, personal income tax and all forms of business taxes) has the capacity to slow down investment. According to their analysis taxes could see labour supply wining down as labour-leisure choice may see investors decide or settle for leisure.

Adelowo (2018) observes that although some manufacturing investments show signs of healthy performance, they would perform better if government looked into the issue of bad roads, access to raw materials and provide and enabling environment for industries to thrive. The enabling environment here may suggest incentives provided through fiscal activities of government which seek to among others; grant tax

holidays for manufacturers, improve on the ease of doing business, develop credit assistant schemes that make for easy and greater access to raw materials and equipments, and support small and medium enterprises (SME) development, etc. One of the solutions proffered by IMF and other world economic institutions to Nigeria as a way of diversifying revenue sources and improving growth is an expansion of the tax-net. The tax-net meant here is the source of tax revenue to government. This in effect will mean that certain items, persons or institutions initially excluded from taxation will now be captured in the tax window. On the heels of this suggestion, certain economic agents have mobilized to resist its implementation; the rationale is anchored on the premise that the tax sources in Nigeria are already saturated with the prevailing tax rate to the consequence that further push will spell disastrous outcomes for the economy.

Abata, Kehinde and Bolarinwa, (2022) noted that with convincing empirical evidence that fiscal policy is consequentially critical in producing a healthy economy. This follows because the power of government to tax and to spend consequently affects the disposable income of citizens and corporations, as well as the general business climate. Udeme (2020) stated that Nigeria's economy is confronted by the problem of lack of those infrastructures that enhance the provision of stable power and energy to enable industries run and office functions performed effectively to generate growth. The power sector has undergone privatization by government but is yet to yield the desired result in regard of significantly reducing the perennial electricity shortage which is affecting investments in Nigeria. In 2014, a huge N3.9billion was budgeted, approved and dispensed for power transmission infrastructure this is in addition N1.3 billion earlier approved by the National Economic Council (NEC) for the purpose of developing and training about 3,700 people as a way of generating sufficient manpower for the power sector. This therefore underscores how fiscal policy implementation can create a platform to achieve expansion in domestic investment. The study by Ucheme and Anichebe (2019) found a mixed result on how much impact taxation (a fiscal policy variable) could weigh on domestic investment. In the studies by Edame and Okoi (2018) as well as Funke (2022) on taxation and domestic investment in Nigeria; the findings indicated a negative flow running from taxation through investment; while Akpo (2015) and Asogwa and Okeke (2021) showed a positive relationship. The current study therefore, is important and will greatly aid the resolution of the divergent stances of the above studies (it seeks to undertake empirical evaluation of fiscal policy impacts run on Nigeria's domestic investment.

### ***Objectives of the Study***

Following the background built above, the current study is committed to empirically investigate the how fiscal policy impact domestic investment in Nigeria. Specific attention is directed toward: investigating how much government tax revenue generation impact domestic investment in Nigeria; evaluating the size of impact on domestic investment exerted by government borrowing; and finding out the extent to which government capital expenditure impact Nigeria's domestic investment activities. The major questions which this study seeks to answer relates basically to the extent by which domestic invested is impacted by government borrowing activities in Nigeria, and evaluate extents to which government capital projects spending explain domestic investment growth in Nigeria, and the question of how much impact government tax revenue generation could make on domestic investment in Nigeria?

## **II. Review Of Related Literature**

Conceptual, theoretical and empirical literature on the working relationship and impact of government fiscal actions on domestic investment abounds, and more in the direction of the real sectors activities (manufacturing sector and small and medium enterprises). Over the decades past, in a concerted effort towards reaching higher economic outputs, government in Nigeria has to experiment with series of alternating macroeconomic engineering policies to pilot growth of aggregate output and development of producing activities utilizing as a compass selected sectors; chiefly amongst these policy options readily employed is fiscal policy.

### ***Fiscal Policy***

This study attempts to define this concept as the use governments' utilization of a combination expenditure activities supported by tax actions in controlling economic outcomes with the goal of achieving certain macroeconomic objectives. Government's fiscal policy activities are deliberate and directed toward influencing macro-economic variables (to achieve some macroeconomic objectives). These objectives as outlined by Microsoft Corporation (2004) include improvement in the output performance of economic sectors, long term growth, high employment, low inflation and balance of payment equilibrium, among others. Thus, the combined effects of increased government spending especially on capital projects and a reduction in taxes are expected to triggered improved performance of manufacturing and other economic sectors; Dornbusch and Fischer (1990) asserts that a reverse action (including reduced spending on capital project and economic services and/or harsh increased tax environment) will lead to misfortunes for the economic sectors. The

effectiveness of fiscal policy as an applicable enabler of economic growth and stabilization is in Igwe, Edeh and Ukpere (2015), (Abata, Kehinde and Bolarinwa, 2012), Gbosi (2008), and Philips (1997).

### ***Fiscal Policy Environment in Nigeria***

The development and implementation of fiscal policies is a multi-staged exercise intended to execute, monitor and evaluate government's annual financial work-plan. In Nigeria, fiscal policy are developed, assessed, implemented, monitored and evaluated through collaboration of strategic government MDAs. This is to fulfill the requirements of the legal frameworks for fiscal policy operations in Nigeria. This legal framework is the Fiscal Responsibility Act of 2007. These usually result in the release of white paper documents which collectively function to provide indicators upon which annual fiscal activities are hinged, and they also contain frameworks of the larger economy showing projected fiscal and monetary policy targets, estimated revenues, expenditure, as well as the financial obligations expected of government in the medium and long term outlooks. These documents in extension, specify the basic reasons (assumptions) supporting projected targets as are made alongside the evaluation and analysis of the previous budget. The fiscal projections usually rest on certain rationalized assumptions regarding the aggregate Nigerian economy. Importantly, the fiscal work-plans are made on the assumptions on local and global crude oil market scenarios and the revenues expected from non-oil sources (collections by the Custom Service from imports, applicable tariffs, Value Added Tax (VAT) on aggregate national consumption, and companies' income tax etc.).

### ***Fiscal Policy and Gross Domestic Investment (GDI)***

IMF (2016) provides very useful tools which serve as channels by which fiscal policy operations could enable the attainment of growth in the long term following the endogenous growth theory, some of these are briefly highlighted thus:

**Enhancement of fiscal capital:** increases in government spending directed towards infrastructures (roads, seaports, railway, airport, bridges etc), might improve productivity in the public sector of the economy. As an aftereffect, this increase in productivity increases the return rate of whether at corporate or individual levels. A repeat of the same cycle is expected should the government cut taxes. Tax cuts act as incentive for households and businesses to double savings or achieve an increment higher than previous rates.

**Human capital:** empirical evidences abound in support of human capital as an important vehicle for stimulating economic growth. (Ubi-Abai and Ekere, (2018), and also Trebicka, (2015) are symbolic examples). Government expenditures in activities towards human capital development (for instance education and industrial training experience) by various means has the capacity to effect (directly and indirectly) sustainable growth in the long run. The direct effect of human capital formed one of the treatment variables in the production function, the other (indirect effect) come through promoting ideas and technological progress.

**Total factor productivity:** investing directly in research and development according to Ugwunta (2014) could see increases in public sector productivity from public investment. Whether directly or by proxy investments made into in research and development could take the form of investing in human development by increasing education and health spending. Expanding expenditure by government towards the provision of physical capital (infrastructures) could be an appropriate attempt at increasing private sector productivity, this will go effectively alongside other production inducements (incentives from tax cuts).

### **Tax Revenue.**

Uwazie (2016) defined taxation as "the process by which government secure funds by compulsory payment to pay for government expenditures. Tax issues relating to manufacturing activities impose a rise or fall implications on the sectoral performance. A rise in taxes or tax rates will force manufacturing firms to downsize as a cost reduction strategy; taxes refer to the number of tax items while tax rates is the percent of the tax items earmarked as tax. Suppose that the total number of tax items facing the sector are: income tax, value added tax, and industrial development fund tax; the introduction of another tax item say education fund tax will have the same impacts as when only tax rates are increased without the introduction of new items. For Akaegbu (2012), lapses in the growth of investments consequently resulting in low manufacturing contribution to GDP is attributable to multiple taxes. This gave rise to a decline in the GDP from 9.5% in 1975 to 6.65% in 1995, 3.421% in 2010; in the same manner, the capacity utilization rate of the manufacturing sector has ebbed rapidly and dipping by 29.29% in 1995, and 52.78% in 2005 as against 70.1% in 1980, it has further dipped by 6.34% down to 46.44% in 2010.

### ***Government Capital expenditure***

Capital expenditures consist of an array of physical projects intended to achieve certain economic or social needs. The structure of capital expenditure as outlaid by CBN (2015) consists of administration capital expenditures, capital expenditures for economic services, capital expenditure on community services and transfers capital expenditure. According to the bulletin, capital expenditure usually has a higher percentage composition as it is directed toward the provision of critical capital projects that promote economic activities. Public expenditures follow legislation approvals and processes through the budget instrument. Thus, public spending is an important factor for self – sustaining productivity gains for manufacturing activities and long term growth for the aggregate economy. For instance, government expenditure on capital projects such as durable road network, railway, seaport and airport can contribute to the improvement in the output and performance of the manufacturing sector, by reducing production costs, increase marginal revenue and other benefits such as economies of scale. The real significance of government expenditure actions in terms of manufacturing performance is that it amounts to a “trickle-down” benefits for the sector and other allied sectors in the economy.

The expenditure plan of government is broadly classified into recurrent and capital expenditures. While the former encompasses all expenditure regarding the running costs of government such as administration and maintenance of civil service and other overhead costs; the later comprises of those expenditures that provide critical infrastructures that are necessary for sustainable growth and development. Janku and Kappel (2014) have observed growing scholarly support in the direction that revenue increases for government greatly enhance its expenditures on socio-economic and physical infrastructures (investment enbalers).

### ***Government Borrowing and Domestic Investment in Nigeria***

Procuring alternative financing solution for government’s expenditure plans drive policymakers in the direction of borrowing. Government most time are short of the funds needed to finance critical capital expenditure needs, hence the need for borrowing from source financial institutions and even private individuals to accomplish budgeted expenditure activities. The borrowing plan contains arrangements that involve bilateral and multilateral finance institutions as well as domestic finance houses. However, of the various borrowing instruments of government, bond is the most promising and easily subscribed channel mainly due to the juicy interest accruals that accompany federal government’s bond offers. Mailafia (2014) noted that the various financial crises all over the globe underscore the need for economies to have a vibrant bond market that augment financial portfolios. These projects (mainly construction) for which borrowing need arise are not death-weight but regenerative. Thus, bonds as issued by government are usually project tied and it is expected that the underlying projects should be productive that both the principal and the interest on the bonds secured will be paid from the returns accruing to them. Some of the critical projects especially those that relates directly to and affects manufacturing performance include building roads, bridges, standardization of airports and seaports, power generation, transmission and distribution, markets and water scheme etc.

Government borrowing only gains attention when government decides on some interventionist policies; the borrowing window can continue to expand until all economic sectors especially manufacturing begins to assume some reliably significant performance indices such as aggregate output. Hence, the impact of government borrowing (as a fiscal policy instrument) on the manufacturing sector will become evident in the event of adoption of interventions into the sector –such interventions regard the expansion of critical infrastructures. Borrowed money is no free money, it is paid back in full including the accruing interests, hence the need for the effective management of government debt portfolio as entrusted to the Debt management Office (DMO), an agency under the federal ministry of finance. The main objectives of public debt management in Nigeria as outlined in the DMO’s Strategic Plan (2013-2017) for managing national debt, and to efficiently achieving minimum costs and lesser risks when meeting government financing needs; this is in addition to supporting the development of the domestic debt market and subscribing subnational governments to the adoption of sound public debt management practices, for overall macroeconomic stability of the country (DMO 2016).

### ***Empirical Review***

Sebastian and Kingsley (2019) made a research analysis on how much influence financial (fiscal) policy exert on Nigeria’s gross domestic investment. In analyzing data, the test of stationarity (unit root) showed mixed integration. This made it necessary to apply the autoregressive distributed lag (ARDL) technique for regression. The bounds test following the ARDL revealed longrun convergence of fiscal policy and Nigeria’s domestic investments. This study also found significantly negative impact of government revenue influence on gross domestic investments. However, the reverse was the case for expenditure and debt which were both found to positively influencing domestic investments.

Uchime and Anichebe (2019) studied to find out whether taxation could affect domestic investment. The data employed in the study are time series covering 1995 to 2017. The study adopted (OLS) Technique to estimate parameters. Findings provide evidences to suggest that taxation will converge in the longrun with Domestic investment in Nigeria. Personal income tax and the gross domestic product appeared to have negative but insignificant effect on domestic investment. Value added tax however does not produce significant positive flow with domestic investment. Hence, the study finds a mixed result.

In Agbarakwe (2018), they studied and analyzed the relationship between fiscal policy tools and key macroeconomic indicators in Nigeria. The period considered is 1980 to 2017. The study adopted multiple regression analysis, the results obtained indicated significant positive relationship of government expenditure with GDP. The government expenditure and total debt stock were revealed to have significant negative long run relationship with unemployment. Ubi-Abai and Ekere (2018) is a study of the effects of fiscal and monetary policies on economic growth using a panel of 47 sub-Saharan African economies. The period was from 1996 to 2016. They adopted the econometric techniques of dynamic panel General Method of Moment for data analysis. In their findings, policies (fiscal and monetary) exert positive effects on economic growth.

Arikpo, Ogar and Ojong (2017) also conducted their study on fiscal policy and its impact on the performance of the manufacturing sector in Nigeria using *ex post facto* design. The multiple regression result (OLS) revealed that increases in government revenue reduce manufacturing sector output in Nigeria. In similar way, Igwe, Edeh and Ukpere (2017) also studied fiscal policy variables and how they exert impact on economic growth in Nigeria (1970-2012). This was a managerial economics perspective set out to investigate the impact of fiscal policy variables (capital expenditure, recurrent expenditure and direct income tax) on economic growth. The co-integration revealed the long run convergence among the variables. From the VECM analysis, capital and recurrent expenditure components were found to be positively related and are statistically significant determinants of economic growth in the long run. Direct income tax was also found to relate inversely to economic growth.

In terms of factor-input, Nigeria is heavily import dependent. This culls from the inability to source the required inputs in the manufacturing sector locally. It is a chronic problem. Consequently, Ehinomen and Tomilade (2016) in their study examined the impact of exchange rate management on the growth of the manufacturing sector in Nigeria using the Ordinary Least Square (OLS) multiple regression analysis for the periods of 1986-2010. The empirical result of the study shows that exchange rate appreciation has a significant relationship with domestic output. It is also found that an appreciation in the exchange rate promotes growth in the manufacturing sector. Falade and Olagbaju (2021) investigated whether there could be any relationship which flow from government expenditure to manufacturing sector output in Nigeria. It analyzed the effect of by decomposing government expenditure into capital and recurrent. The time scope of the data employed run from 1970 to 2013. The findings show evidence supporting stationarity of the variables of interest at their first difference, the existence of cointegrating relationship, and government capital expenditure having positive impact on manufacturing sector output.

Based on the conceptual and empirical literature reviewed so far, the major gap identified in the literature is that previous researchers concentrated effort on the effect of fiscal policy on aggregate growth (GDP). This is in neglect of the fact that the aggregate output itself is a function of the rate of investments, also other authors directed efforts towards the effect of fiscal policy on total investment without attention to private domestic investment component of the aggregate demand function. This gap is closed in this literature by directing effort towards the impact of fiscal policy on domestic private investment.

### ***Theoretical Framework***

The investment multiplier provides strong theoretical foundations for this study. The theory as developed by Richar Kahn in (1982) being the chief compass driving the countercyclical fiscal policy of Keynesian economics; an injection through government spending activities into the economy will eventually lead to additions in business activity. The major proposition of the theory is the suggestion that spending can reasonably generate a boost for aggregate output and generates more income. The extra income which workers are willing to put in will yield significant growth in economic activities (GDP) that is greater than the initial amount used as a stimulus. In terms of size, the multiplier is assumed to have direct relationship with the marginal propensity to consume. The concept is simplified. The income of a business comes from the consumers' spending. This income is in turn spent by the business on procuring equipment, paying workers, other overhead costs such as energy requirements and other materials, purchase of services, and very importantly paying taxes. The payment received by workers are again spent on purchase of goods from the business, hence a continuous cycle is created. It is the belief of Keynesian economist that individuals should cut down on saving and up their spending by raising the propensity to consume. This will generate employment effect and growth effect. The impending implication thereof is of the form that a dime spent by government in form of fiscal stimulus will as a consequence generate more than proportionate rise in aggregate output. The

effect of the fiscal stimulus in form of tax incentives especially for businesses is a rapid upscale of investment procurements, employment, and overall aggregate output.

### III. Data, Model, Method And Analytical Technique

The study is empirical in nature, and focused on time series analysis of the variables. It is basically a regression analysis in view of the assessment of impacts and relationships among the variables derived from the regression models, hence the adoption of the *ex-post facto* research. In this design, time series (past values) are used to provide valid explanation for expected future outcomes. Theory and empirical facts were combined to estimate and evaluate how much impact treatment series could produce on the response series. The analytical techniques employed in the study include, the Augmented Dickey Fuller Unit Root test, the Johansen cointegration test, and the ordinary least squares regression technique. The data used in the analysis are time series data on the fiscal policy variables (taxation, government capital expenditure, and government borrowing) and the domestic investment proxy by manufacturing sector contribution to GDP; sourced from the CBN statistical bulletin (2022), the NBS, Federal Inland Revenue Service (FIRS) annual reports for various years, the Federal Inland revenue Service (FIRS) annual financial statements for various years. The unit measurements of the variables are as follows:

#### Model Specification

In determining the impact of fiscal policy implementation on the growth of domestic investment in Nigeria, this study had set out hypothesis in the introductory chapter. In order to test the hypotheses as well as achieve the set out objectives, the study specifies the following model:

$$DIV = f(GCX, GTR, GDD, INTR) \dots 1$$

#### Response variable

DIV = domestic investment

**Treatment variables:** GCX = government capital expenditure; GDD = government domestic debt; GTR= government tax revenue;

**Control variable:** INTR = interest rate

The linearized (econometric) model is specified thus

$$DIV_t = \alpha_0 + \alpha_1 GCX_t + \alpha_2 GTR_t + \alpha_3 GDD_t + \alpha_4 INTR_t + U_t \dots \text{Eq. 2}$$

The analytical method adopted for this study is the vector error correction model (VECM). Hence, the error correction differenced equation transformation of the model is:

$$\Delta DIV_t = \alpha_0 + \alpha_1 GCX_{t-1} + \alpha_2 GTR_{t-1} + \alpha_3 GDD_{t-1} + \alpha_4 INTR_{t-1} + \sum \alpha \Delta y_t + \mu_1 + e_t \dots \text{Eq 3}$$

Where  $\mathbf{Y}$  is a time series,  $\mathbf{t}$  is a linear trend,  $\Delta$  is the first difference operator,  $\alpha_0$  is a constant,  $\mathbf{n}$  is the optimum number of lags in the dependent variable and  $\mathbf{e}$  is the random error term. The a priori expectations of the model based on the investment multiplier theory is that  $\alpha_1$  to  $\alpha_3 > 0$ , while  $\alpha_4 <$

#### Description of Research Variables

**Table 1: Unit measurement of model variables**

Variable	Unit of Measurement	Sources of Data
Domestic Investment (DInv) – response variable	Annual value of private sector physical investment spending in the domestic economy, measured in billions of naira (₦)	CBN Statistical Bulletin National Bureau of Statistics (NBS), NGX.
Government capital expenditure (GCX)	Government annual expenditure incurred in the provision of capital goods. According to Wale (2013), it includes economic or hard infrastructure; and social or soft infrastructures; measured in billions of (₦)	CBN Statistical bulletin and annual reports for various years,
Government domestic debt (GDD)	Total annual value of debt instruments issued by federal government locally in order to raise the capital needed to finance its capital expenditure outlay; measured in billions of (₦)	CBN Statistical bulletin and annual reports for various years,
Government tax revenue (GTR)	Total monetary value of annual flow of money income to the government from various tax sources; measured in billions of (₦)	Federal inland revenue financial statements for various years, National Bureau of Statistics (NBS),

**Source: Researchers' Compilation 2023**

IV. Results

Unit Root Diagnostic Test

The researchers first took the natural log of the variables with large values (domestic investment, government capital expenditure, government domestic debt, and government tax revenue). Stability of model series is imperative for reliable policy application to forecasting, decision making and policy. The study performed the unit root diagnostic test to check for stationarity of the series. This was done using the Augmented Dickey Fuller approach to unit root. The test was applied on the series at levels and first difference under deterministic and trend specification. The table 1 below is a summary of the series tests.

Table 2: Summary result of unit root test

Series	ADF Test @ level			ADF Test @ 1 <sup>st</sup> difference		
	ADF-statistic	p-value	order	ADF-statistic	p-value	order
LOGDIV	-1.281780	0.8770	-	-4.817896	0.0023	1(1)
LOGGCX	-1.829138	0.6701	-	-7.254397	0.0000	1(1)
LOGGDD	-1.158403	0.9045	-	-4.785186	0.0025	1(1)
LOGGTR	-1.865658	0.6519	-	-7.220672	0.0000	1(1)
INTR	-3.473925	0.0572	-	-7.306154	0.0000	1(1)

Source: Authors' computation 2023 (Using E-views)

As indicated, the results show that the series were not stationary at level. Differencing was applied at first order and the series became stationary 1(1) order of integration. The stationarity was concluded using the p-value of the ADF test statistics. Summarily, there model variables were of the same order of integration 1(1).

Descriptive Statistics

Model series possess basic statistical features which help in preliminary and foundational understanding of their effects in policy application. The study therefore previewed the descriptive properties of the series in order to improve reliability of the findings of the study. The researcher conducted the descriptive test (table 2) showing some selected measures of central tendency and dispersion in the model variables. Measures of central tendency help to view the points of convergence of the variables and their points of divergence. The major statistics of importance are the mean, the standard deviation, skewness, and kurtosis.

Table 2: Descriptive Test Result

	INTR	LOGDIV	LOGGCX	LOGGDD	LOGGTR
Mean	12.84623	7.846523	5.385702	6.901713	5.964491
Std. Dev.	0.023773	0.144709	0.084686	0.040937	0.388714
Skewness	0.126447	-0.403446	-0.791158	-0.346431	-0.464234
Kurtosis	3.078174	1.905181	2.359540	2.008089	1.947714
Observation	38	38	38	38	38

Source: Authors' computation 2023 (Using E-views)

From the result of the descriptive test above, the domestic investment series (LOGDIV) averaged 7.84 trillion naira annually. The government capital expenditure (LOGGCX) averaged 5.38 trillion naira while the annual average values were 6.9 trillion naira for government domestic debt (LOGGDD), 5.96 trillion naira for government tax revenue (LOGGTR) and 12.84% for the monetary policy interest rate (INTR). To standard deviation was employed to check the spread or deviations of the series from the average values. A higher standard deviation value would indicate greater spread in the data and negates joint influence. Safe value tends towards zero so that the closer the deviation is to zero, the better the result. As indicated in the result, the values tended towards zero. Skewness define the extent to which a distribution differs from a normal distribution, skewed data has majority of the points located on the high or low side of the graph. The descriptive result above shows that all the data have a normal distribution. The statistical result equally indicated that all the variables have a positive kurtosis.

Correlation Test

Correlation indication between fiscal policy operations and domestic investment could offer some macroeconomic policy insight for policymakers. To further affirm the relationship between fiscal policy and domestic investment the correlation test was used to ascertain the strength and magnitude of the relationship. The result of the correlation test is presented in table 3.



**Table 3: Correlation Test Result**

	LOGDIV	LOGGCX	LOGGDD	LOGGTR	INTR
LOGDIV	1.000000				
LOGGCX	0.973568	1.000000			
LOGGDD	0.992267	0.963505	1.000000		
LOGGTR	0.992195	0.969729	0.987562	1.000000	
INTR	-0.164267	-0.126851	-0.109141	-0.166329	1.000000

*Source: Authors' computation 2023 (Using E-views)*

The correlation test result in table 3 above shows the correlation between fiscal policy and domestic investment. The relationship appeared positive for all the series except for the interest rate.

**Test of Long-run Relationship**

Long-run relationship bears significant implications for economy-wide macroeconomic indicators such as the fiscal policy variables. The policy application of macroeconomic indicators are longterm and forward looking, hence it is required that modeling for macroeconomic outlook must envisage long-run effects of treatment series and the response series. The study performed the cointegration test of long-run relationship using the Johansen approach. This approach was consequent upon the 1(1) order of integration of the series. When series are integrated of order 1(1), it is recommended to run the cointegration test to ascertain a long run tendency among the model variables. Stationary series are assumed to be cointegrated, this means that there is evidence of longrun relationship between stationary series in aa model. Hence, the Johnsen cointegration test was employed because the series were integrated of order 1(1). In testing for cointegaartion, the decision rule is:

**Decision rule:** there is cointegration (longrun relationship) if the trace statistic is greater than the 5%critical value.

**Table 4: Johansen test of longrun relationship**

Date: 12/30/23 Time: 04:01				
Sample (adjusted): 1987 2022				
Included observations: 36 after adjustments				
Trend assumption: Linear deterministic trend				
Series: LOGDIV LOGGCX LOGGDD LOGGTR INTR				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.571362	72.90119	69.81889	0.0278
At most 1	0.515297	42.40401	47.85613	0.1477
At most 2	0.228024	16.33213	29.79707	0.6887
At most 3	0.135110	7.015266	15.49471	0.5759
At most 4	0.048500	1.789774	3.841466	0.1810
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

*Source: Authors' computation 2023 (Using E-views)*

As seen on table 4, one cointegrating equation was identified. The decision criteria for the presence of cointegration is the identification of at least one cointegrating equation. The conclusion on the presence of cointegration was based on comparison of the unrestricted cointegration rank trace test statistics with the 5% critical value, and the p-value of the trace stat to be less than the level of significance 0.05). The obtained trace-stats at identified cointegrating equation is greater than the 5% critical values (92.90119 > 69.81889; p-value: 0.0278 < 0.05), hence it was concluded that the variables show evidence of long-run relationship. This means that a long-run relationship exists between fiscal policy operations and domestic investment in Nigeria.

**Lag Selection Criteria**

To evaluate the fitness of the model to the data it was generated from, the study applied the Akaike information criterion (AIC). The different possible models were compared and the one which is the best fit for the data was determined. The lag order selection result is presented below:

**Table 5: lag selection criteria AIC result**

VAR Lag Order Selection Criteria						
Endogenous variables: LOGDIV LOGGCX LOGGDD LOGGTR INTR						
Exogenous variables: C						
Date: 12/30/23 Time: 08:51						
Sample: 1985 2022						
Included observations: 35						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-186.7322	NA	0.039432	10.95613	11.17832	11.03283
1	-48.08394	229.7600	6.07e-05	4.461940	5.795095*	4.922145
2	-15.56672	44.59505*	4.33e-05*	4.032384*	6.476502	4.876093*
3	4.233447	21.49732	7.53e-05	4.329517	7.884599	5.556731
* indicates lag order selected by the criterion						

*Source: Authors' computation (Using E-views)*

The best-fit number of lag following the AIC specification is the one that explains the greatest amount of variation using the fewest possible independent variables. The rule of thumb is to adopt the lag length where the AIC has the lowest value. From the result presented on table 5, the lag order with the lowest AIC value is order 2. Hence the study adopted 2 lag lengths.

**Error Correction Mechanism**

The presence of long run relationship (cointegration) has the implication of short run errors in the system or over the periods, hence the need for the error correction mechanism. The study adopted the vector error correction mechanism because the study used a multivariate model.

**Table 6: Vector error correction estimate**

Vector Error Correction Estimates				
Date: 12/30/23 Time: 08:31				
Sample (adjusted): 1987 2022				
Included observations: 36 after adjustments				
Standard errors in ( ) & t-statistics in [ ]				
Error Correction:	D(LOGDIV)	D(LOGGCX)	D(LOGGDD)	D(LOGGTR)
CointEq1	-0.106997	0.384551	0.146350	0.706380
	(0.00416)	(0.22540)	(0.10001)	(0.17855)
	[-2.02723]	[ 1.70608]	[ 1.46341]	[ 3.95620]

The error correction mechanism smoothen the short-run errors associated with variables which have long run relationship or co-integration properties and also show the speed of adjustment of the errors. The conditions for smoothening effects are that the error correction coefficient must be negative, fractional and significant. The result indicated VECM coefficient of -0.106997 which means that about 10.7% of the short run errors are corrected each during each period. The conditions for error corrections are satisfied since the coefficient is negative, fractional and significant, and the error correction shows a fast speed of adjustment to the long-run equilibrium.

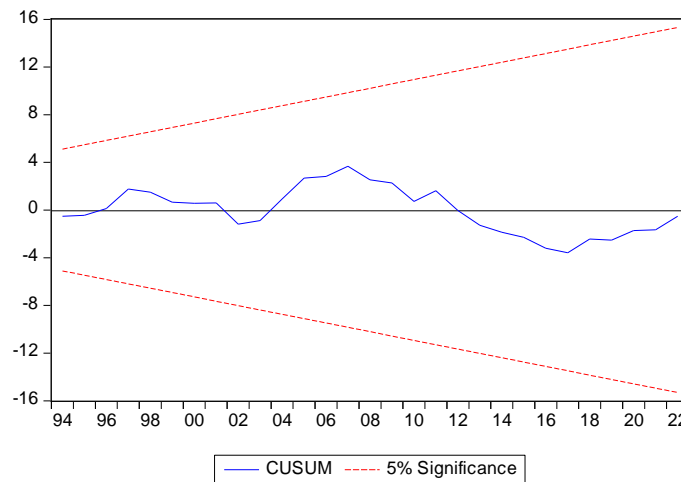
In financing budget deficit through domestic borrowing, government tend to produce drastic reduction in the size of the loanable funds available for private investment. Consequently, the demand for loanable fund grows higher than its supply. Increases in borrowing drives towards higher interest rates (cost of capital) and reduces the level of private investment. Government debt is evidenced to have positive correlation with investment based on the backup function it performs for revenue generation. Conversely, the current study

showed evidence of positive correlation of government domestic debt with respect to investment. This relationship is more evident in larger and less risky firms because debt could be substituted for bonds. The channel through which this effect operates is investors' portfolio decisions: domestic intermediaries actively substitute between lending to the federal government and the nonfinancial corporate sector.

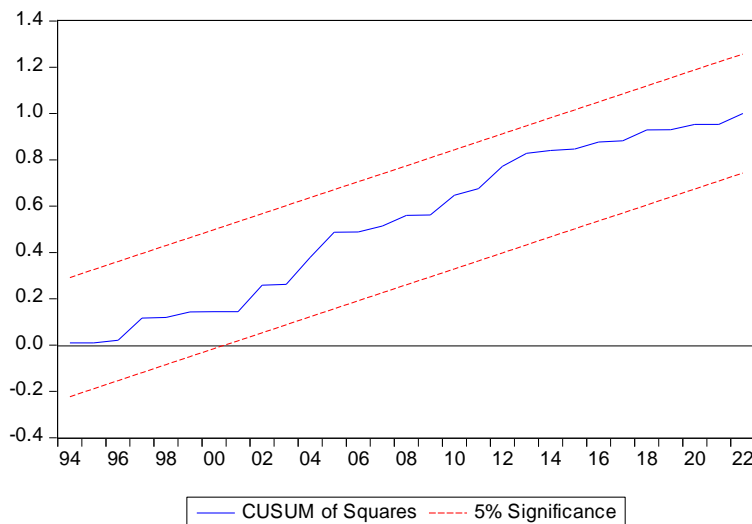
One of the common grounds of arguments in support of continuous expansionary fiscal policies in Nigeria is that government expenditures do not only have the capacity to stimulate economic growth but in addition, they often create some multiplier effects on private spending and domestic investment. The government spending however is said to be "crowding out" investment. The reason adduced for this is that it is demanding more loanable funds and thus causing increased interest rates and therefore reducing investment spending. This basic analysis has been broadened to multiple channels that might leave total output little changed or even smaller. It is said that only certain things are death and taxes. Investors form chronic allergy to tax payments and always overlooking them in their investment portfolios planning. But without the right planning for tax, expected returns could nosedive than initially envisaged. The mode of transmission of the impact of government taxes to investments and long-term financial goals take the form of reductions in the available investible income. Again there will be little money for investments in the stock market, and consequentially less investible income yields low return. However, employing and utilizing tax-advantaged accounts is one of the means to reduce the impact of taxes on the available investible income.

**Test of Model Stability and Reliability**

A stable system (model) is robust to external changes and has a lot of implication for policy application of a model. To further ensure reliability of the results the study conducted the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUM<sup>2</sup>) tests for model stability and reliability. The results are presented below:



**Figure 1: CUSUM test result**



**Figure 2: CUSUM of Squares test result**

In testing for model stability and reliability using the CUSUM approach, the decision rule for stability is that the trend line should fluctuate around the zero line. If the CUSUM of squares approach is adopted, the rule of thumb is to check the trend line against the control limits (the 5% significance lines). The model is stable if the trend lies in-between the control limits and considered unstable where the trend line cuts the control limits from above or below or falls outside the 5% significance line. From the results (figures 1 & 2), the CUSUM test showed the trend line to fluctuate around the zero line, and the CUSUM of squares also showed the trend line to lie within the control limits. Hence the model is relatively stable.

## **V. Conclusion And Recommendation**

The study empirically examined the impact of fiscal policy on domestic investment in Nigeria. The data set for this study runs for the period 1981-2022. Relevant theoretical and empirical literatures (on the subject area) were reviewed. The findings provide evidence of significant positive estimates (treatment series). The policy implication however, is that significant outcomes can be achieved regarding the government's fiscal policy activities and its impact on the growth of domestic investment in Nigeria. Based on the analytical tests and the outcomes, the study concluded that fiscal policy has significant positive impact on domestic investment in Nigeria for the period under study. Following the findings produced by the analysis, the study recommend as follows:

1. Government needs to improve on the provision of infrastructure by increasing capital spending especially on target economic facilities.
2. Government should revisit its tax policies to remodel it into an incentivized instrument to encourage investment in the domestic economy.
3. There is need for government to adopt strategic borrowing plan such that domestic debts are ploughed into regenerative spending that could aid expansions in domestic investment.