Impact factor: 4.02

LOGAN REVIEW OF ENTREPRENEURSHIP, FINANCE AND INVESTMENT
11(4)2024 LREFI

ISSN: 3067-2287

PUBLIC DEBT AND ECONOMIC GROWTH: EVALUATING DOMESTICINVESTMENT IN NIGERIA

Chukwudi Emmanuel Nwosu
Professor of Financial Economics, Department of Finance and Banking, University of Port Harcourt, Rivers State, Nigeria.

Abstract: This study was motivated to examine the relationship between Nigerian public debt and domestic investment from 1990 – 2023. The general objective is to examine the extent to which public debt affect Nigerian domestic investment while the specific objectives are to investigate the extent to which Domestic Debt, External Debt, Debt Servicing and Deficit Financing affect domestic level of investment in Nigeria. Time series data were sourced from Central Bank of Nigeria Statistical Bulletin. Domestic investment was modeled as the function of Domestic Debt, External Debt, Debt Servicing and Deficit Financing. Ordinary Least Square Method of Analysis was used to examine the relationship between the variables. Findings from the regression results reveal that Domestic Debt and External Debt have positive and significant relationship with Nigerian Gross Level of investment while Debt Servicing and Deficit Financing have positive but insignificant effect. The study conclude that Public Debt have significant relationship with Nigerian Gross Level of Investment. It therefore recommends that policies should be device and the investment environment well managed to enhance domestic level of investment in Nigeria.

Keywords: Public Debt, Domestic Investment, External Debt, Domestic Debt, Deficit Financing, Time Series Study

INTRODUCTION

The macroeconomic goals of Nigerian government in the past four decades have been to achieve sustainable economic growth, increase in aggregate supply and demand, price stability and full employment. To achieve this, government intervenes in the market economy as justified by the Keynesian's economist to bridge supply-demand gap in the market by providing public goods for the citizen. This led to government deficit budget and a means of financing it. Public debt is a government receipt aimed at bridging the savings investment gap in the government. Economic theory suggests that reasonable level of borrowing by a developing country is likely to enhance its economic growth (Abdelmawla & Mohammed, 2005; Mabula and Mutasa, 2019; Joy & Panda, 2020). Public debt comprises the domestic and the external debt. Theoretically and empirically, there are two opposite effect of public debt. Public debt when properly accounted for and invested in the domestic economy have the capacity of increasing the productive capacity of the economy by putting idle resource to work, increase

production beyond national consumption. However, the debt structure of the country affects individual's citizens, government aid corporate organizations such as the banking institutions. For instance, findings indicate that government borrowing crowd out investment; this means discouraging savings as a result of debt servicing. This is one of the negative effects of public debt. (Adesola, 2009).Historically Nigerians public debt can be traced to 1956 when Nigeria contracted her first external debt to finance rail way. Adam (2004) opined that government borrowed for two reasons, macroeconomic reason and financing of balance of payment. In Nigeria, the issue of debt became important in recent time especially prior to the debt forgiveness due to the huge amount required in the serving and the domestic and international effect on the banking industry (Ayadi and Ayadi, 2008).Historically Nigerian debt crisis started in 1954 when a loan of $28million was contracted to finance the Nigerian railway construction. The astronics increase in Nigerian debt from 1980s has been traced to little domestic investment, high level of consumption, Poor public debt management policies, decreasing export earnings from the oil sector and lack of the accountability and stewardship (Ezeabasili, 2011; Magumisi, 2021). Iyoha (2004) noted that the effect or indicators of external debt in Nigeria is seen from the Gross Domestic product as a percentage of total debt, the ratio of interest payment to export, the ratio of external reserve total external debt, the ratio of debt servicing to total debt. In 1990, the ratio of Nigerian external debt to GDP at current market price was 114.6%, in 2000, it was 192.4%. However, the ratio has dropped due to the debt forgiveness of 60% on Nigerian in 2005. In 2007 the ratio was 49.8%, increase to 52.7% in 2011 and increase to 62.8% in 2012. The consequence to Nigerian economy is the huge amount spent in debt servicing, pressure in balance of payment and exchange rate. One of the valid critics of the past administration is the rising stock of Nigerian public debt. According to Debt Management Office, Nigerian debt was ₦8.32trillion in 2013. Nigeria has long-been known as the most indebted African country, but not the most developed African country. A critical examination of the Nigerian macroeconomic indicators revealed that, the country is characterized with abundant idle human and material resources which would have been exploited with the public debt borrowed by the government. For instance Nigerian is rated one of the poorest country in the world and 148th out 177 countries in Human Development index (HDI) in spite of the significant growth in public debt and black gold exploitation (Ajayi & Khan, 2000; Eric, Ndayizeye, & Barthelemy, 2021;). There is high rate of infrastructural decay that threatens the existence and survival of entrepreneur development. The problem is that significant proportion of Nigerian external debt cannot be accounted for while others are embezzled and invested in personal use in the country. There are many empirical findings on the effect of public debt on the growth and development of developing countries like Nigeria but its effects on the domestic level of investment is lacking in literature. Therefore, this study examined the impact of public debt on domestic investment in Nigeria.

LITERATURE REVIEW

Theoretical Framework

Classical View of Public Debt

Classical economists are of the view that government debt withdraws capital from productive private employment. According to Say (1880), national debt is disadvantageous since it diverts capital from productive uses to unproductive consumption. For countries with low credit levels, debt has a more negative effect by raising the interest rates since the government is willing to pay higher interest rates than what individuals will be willing to pay. On the other hand Say argues that moderate levels of debt, when put to productive investment, is advantageous since it puts capital into good use rather than being in the hands of individuals who would use it for consumption purposes or leave it idle. Therefore, not unless debt is to be used for productive investment, it will

be better for the government not to borrow or for the capital to remain idle in the hands of the public since then the government will not incur interest payments. Mill (2004) argues that when the government borrows it opens up a channel for investment of capital which would not have been accumulated within the country or not accumulated at all, and then this implies that this was just surplus capital and thus this has no effect on the interest rates. If however it competes for capital and takes away funds that would have been used for productive investment in the country then it will raise the interest rates.

Ricardian View of Public Debt

The Ricardian equivalence theorem, the burden to the society from government expenditure was brought about by the wastefulness of its use rather than the source of financing the expenditure. It therefore did not matter whether the funds were raised through taxation or by borrowing loans. If current government expenditure is financed by borrowing, the taxes that the current generation has to pay are reduced. Taxation of future generations will be higher to repay the debt implying that disposable income in the next period will be reduced. The tax burden is merely postponed rather than reduced. If individuals are aware that their tax burden in the future will increase, they will not increase consumption rather they will save or invest an amount of money equal to the reduced taxes. Government debt is viewed as being equivalent to future taxes as there is no crowding effect of capital and consumption by individuals remains unchanged which implies then neutrality of debt to growth, (Roberts, 1942 ;Elmendorf and Mankiw, 1999). Another aspect of government debt is the effect of government bonds on different sets of individuals. To bondholders, government bonds are an asset while to taxpayers they are a liability. A debt-financed tax cut makes the bond holders wealthier while the taxpayers become poorer. Thus, the net effect of debt is that there is no wealth creation. Household are no richer than they were before and they should not increase their consumption in response to the tax cut, (Barro, 1974).

Lerner's View of Public Debt

Lerner came up with the theory of functional finance in which fiscal policies are measured by their effect rather than the soundness of the policy. Lerner argues that deficits in government revenue can be covered by either printing money or borrowing. According to Lerner, public debt should only be incurred up to the point where the interest rate is most desirable for private investments. Government debt should only be issued only if it is desirable for the public to hold more bonds and have less money at their disposal. This is to avoid a situation the public has a lot of money and therefore they are more than willing to lend it out thus pushing the interest rates too low and the private sector undertakes high investment expenditure and brings about inflation as a result. Issuing public debt thus reduces the excess liquidity in the private sector. Lerner, therefore, views debt as a means of achieving the optimal rate of interest for private investment rather than as a means of balancing the budget, (Lerner, 1943; Aspromourgos, 2006; Lucky, & Uzah, 2017).). Lerner also argues that for as long as demand for current output is maintained, high national debt is not detrimental to society. Interest payments on the debt should also be paid by borrowing rather than taxation not unless it is necessary to avoid inflation by reducing spending. Lerner disagrees with economists such as Alvin Hansen who argue that as long as the debt-GDP ratio is reasonable and interest payment for debt can be sourced from taxes. According to Lerner, high income taxes to pay holders of government debt will discourage private investors by reducing returns on risky investments such that the investor is not compensated for the risk of losing his investment. This results in the government undertaking more deficit financing so as to maintain employment and income levels. This will necessitate even higher taxation to pay the even higher interest on debt. Private investments become unprofitable as the burden of taxation increases, (Lerner, 1943).

Keynesian View of Public Debt

According to Keynesian theory of debt, at high debt levels, taxes are expected to increase which in turn negates the positive effects of public spending by decreasing investment, lowering consumption, reducing employment and reducing the growth rate of the economy. However at moderate levels, public debt may increase the economic growth rate, (Ferreira, 2009). The government can use the creation of debt to use the savings that are available to undertake productive investment and thus increase national income. The increase in national income facilitates debt servicing through payment of taxes. The increase in debt during periods of unemployment contributes to capital formation and stimulates economic growth, (Varughese, 1999).

Neoclassical View of Public Debt

According to Diamond, if the rate of growth of the economy is higher than the interest rate, capital will be over accumulated and increase in public debt in this scenario will serve to improve the welfare of current and future generations, (Saint-Paul, 1992). Diamond also argues the debt reduces future consumption and savings by households since taxes are used to make payments for interest accrued from debts. The reduction in savings leads to a decreases in capital stock. Debt is assumed to mature after one period and is refloated in each period and that it pays for the current interest costs. External debt affects the economy through reduced utility that is brought about by the increased taxes that are needed to finance the interest cost that is not paid for by the increased debt. Internal debt also has the same effect and an additional effect of reducing capital stock due to the substitution of physical capital by government debt in the wealth owners' portfolios thus causing a decline in output. Thus crowding out is brought about by internal debt, (Diamond, 1965).

Ngerebo-a, Nwosi & Lucky, 2016)

Modigliani's Theory on Debt

Modigliani argued that an increase in national debt is advantageous to those who are in existence at the time of the increase but it is the next generation which bears the burden of the current national debt through a reduction in private capital stock. The reverse holds true where a reduction in the national debt levels is a burden to the present generation and a gain to the next generation. The burden or gain to future generations is measured by the rate of interest at which the government borrows which can be taken as a proxy to represent the marginal productivity of private capital. The burden may be offset in part, totally or more than offset if the increase in debt leads to an increase in government expenditure that increases the real income of future generations through channels such as productive public investments, (Modigliani, 1961).

Empirical Literature Review

Anoke, Odo and Nnabu. (2021) investigated the relationship between public debt and domestic private investment in Nigeria from 1980 to 2018. The paper employed the vector error correction model and the Granger causality for the analysis. The variables used by the author are domestic private investment, external debt, domestic debt, debt servicing, interest rate and foreign direct investment. The result shows that both external debt and domestic have negative but significant impact on the domestic private investment. Debt servicing has a negative and insignificant impact on domestic private investment. Therefore, the researcher concluded that public debt crowds out domestic private investment in the long run within the period under review. The study recommended that the debt management office of Nigeria should review its credit policies to be in favour of the private sector. Also, that all foreign direct investment should be channeled to critical sectors of the economy. The study used the right technique which is VECM to analyze the data because they are all integrated at first difference. However, the study failed to specify the VECM model that was used for the study. Magumisi (2021) examined the impact of

public debt on private investment in Zimbabwe, using quarterly time series data from 2009 to 2017. The variables used for the study are external debt, interest rates, political risk, trade openness and household consumption. The Vector Error Correction Model (VECM) was used as the estimation techniques. The study found that external debt has a negative impact on private investment in the long run. This means that Zimbabwe's external debt is crowding out private investment. The study recommends the Zimbabwe's government to invest its external debt into investment ventures like education, health and infrastructure which could potentially stimulate future investment. The study used political risk as one of the independent variable. Using a proxy for political risk could differs from country to country due to political differences. Eric, Ndayizeye and Barthélémy (2021) analyzed the effect of domestic public debt on domestic private investment in Burundi between 1980 and 2020 using univariate, bivariate and multivariate analyses. The variables used were Credits to the Private Sector which was the dependent variable, Internal State Credits, Gross Domestic Product, Money Supply level; Interest Rate and the Real Exchange Rate were the independent variables. The findings revealed that in the long run increase in domestic public borrowing did not lead to a reduction in private sector investment, That is, there is no crowding out effect. The result thereby invalidated the hypothesis that domestic public debt has a negative effect on private investment. The study recommends government to place particular emphasis on implementing legislative measures to increase and mobilize economic actors in the informal sector to migrate to the formal sector. The introduction of the study is not comprehensively outlined. It failed to review relevant theories as well as the theoretical framework. No clear indication of the technique of analysis used in the study. Also, the model for the study was not specified, and the study failed to make recommendations. Thilanka and Ranjith (2020) evaluated the impact of public debt on private investment in Sri Lanka using the annual data for the period 1978-2015. The study used the Johansen cointegration test and the Vector Error Correction Model (VECM) to find out the long-run impact. The variables used are private investment, domestic debt, external debt and Real Gross Domestic Product. The study found evidence for the presence of crowding-in effect of public debt on private investment in the long-run. The study further revealed that real GDP also has positive effect on private investment. Hence, it was recommended that policies with regard to fiscal operations should be aimed at the well-managed borrowing for the purpose of boosting private investment further. The study did not include the objectives of the study. Theoretical review and framework were not captured in the study. The study failed to include the probability value of the error correction term in the result. The probability value determines the significant of the error correction term. Mabula and Mutasa (2019) evaluated the effect of public debt on private investment in Tanzania, using secondary data for the period 1970 to 2016. The study used private investment as the dependent variable while domestic debt percentage of GDP, external debt percentage of GDP, debt service percentage of total export and private consumption expenditure percentage of GDP were used as the explanatory variables. The Autoregressive Distributed Lag (ARDL) bound test was sued to test for cointegration among the variables. The study found that significant evidence of nonlinear long run and short run relationship between external debt and private investment but the relationship is rather a co-movement than causal based on the Granger causality test. The study recommends the government of Tanzania to adopt strict policies on project implementations to ensure positive returns of borrowed funds and closely monitoring of public debt, particularly external debt on which private investment is more responsive than domestic debt and debt service, despite its sustainability at present. The study adopted the work of Apere 2014 but did not specify it in his study. Ogunjimi (2019) examined the impact of public debts on investment in Nigeria from 1981 to 2016 using the Autoregressive Distributed Lag (ARDL) technique of analysis. The study used the variables private investment; public investment, foreign direct investment and public debt in

the study. The result revealed that domestic debt improved both private and public investment in the short-run and long-run. In order words, domestic debt crowded-in both private and public investment, but does not attract foreign direct investment (FDI). The study further revealed that external debt crowded in private investment both in the short-run and the long run, crowded-out public investment, but does not influence FDI. The study recommends that policy makers formulate and implement appropriate policies to ensure public debts are put to optimal use to stimulate investment. The study also recommends that external debt should be more favored over domestic debt because of its impact on investments. Ogunjimi used the right technique of data analysis. However, it failed to review relevant theories as well as theoretical framework for the Chinanuife, Eze and Nwodo (2018) evaluated public debt spiral and domestic investment in Nigeria using Auto-Regressive Distributed Lag model to estimate quarterly time series data from 1981 to 2016. The study used public investment as the dependent variable while public debt, real interest rates, financial development, debt service and inflation were used as the independent variables. The result of the study shows that public debt has negative relationship with public investment but has statistical significant impact on public investment in Nigeria during the period under review. The study therefore recommends that greater percentage of public debt should be invested in order to reduce future borrowing in Nigeria. Furthermore, that government should borrow domestically rather than borrowing externally in other to overcome exchange rate fluctuations problem. The introduction of the study is not broad enough to capture the relevant variables of the study. Relevant theories related to debt and domestic investment was not reviewed. Also, the theoretical framework which the theory is based on was not captured in the study. The scope of the study ends at 2016 which needs to be updated. Akpan, Awujola and Impalure (2023) investigated how Nigeria's public debts have impacted on the country's private domestic investment using time series data from 1981 to 2021. The data were estimated using the Auto-distributed Lag Model (ARDL) and Error Correction Model (ECM) techniques of analysis. Cointegration test showed that long-run (or equilibrium) relationship exists between public debt and private domestic investment in Nigeria. Findings from the study revealed that public external debt and pubic domestic debt have negative relationship with private domestic investment, while public debt service has positive relationship with private domestic investment. The study concluded that public debt have significant impact on private domestic investment due to the joint result of the Wald test. The paper recommended that the Debt Management Office (DMO) of Nigeria who is vested with the management of the country's debt should advice the federal government to minimize or discourage the collection of debts to fund her budget. Also, the funds borrowed should be channeled into investment on projects that will improve private domestic investment. Ogbaga and Udede (2018) examined the relationship between deficit financing and private sector investment in Nigeria from 1986 to 2016 using autoregressive distributed lag model. The variables used are gross private domestic investment, domestic deficit financing, interest rate, domestic credit to the private sector and gross domestic product. The study found that domestic debt financing, interest rate, domestic credit to the private sector and gross domestic product have a positive and statistically significant impact on the gross private investment in Nigeria during the period under study. The implication of the outcome is that domestic deficit financing ruled out a crowding out tendency of domestic private investment but rather crowds in private investment in Nigeria. The study recommends that government should continue in deficit financing and also formulate monetary policies that will enhance private sector access to credit in order to boost investment. The theory employed econometric approach without stating the type of techniques used for the study. Although, the ARDL technique was used for the study, the model was not specified. Also, the study reviewed related theories but could not choose any for the theoretical framework. Furthermore, the study made use of four objectives but

only made two recommendations. The scope of the study ends at 2016 hence not up to date. Nwaeze (2017) studied the possibility of crowding out effect of public borrowing on private investment in Nigeria using the vector auto-regression techniques for the analysis. The study used growth rate of domestic credit to the private sector as proxy for private domestic investment, while the overall fiscal deficits, domestic borrowing debt stock, external debt stock and interest rates are used as the independent variables. The study found the existence of long run relationship among the variables. Also, a positive relationship was found between private investment and domestic borrowing. The study therefore concludes that domestic borrowing crowds out private investment in Nigeria. The study recommended that the Nigerian government should discourage the rising trend of using domestic debt to finance public expenditure. Akomolafe et al. (2015) looked at the effect of public borrowing on private investment in Nigeria from 1980 to 2010. The study separated public debt into external debt and domestic debt. The Johansen Co-integration test and Vector Error Correction Model (VECM) were used for data analysis. The result revealed that domestic debt crowded out domestic investment in both short run and long run. It further revealed that external debt crowded in domestic investments in the long run. The study recommends that government should try to make efforts to reduce her debt profile by improving her revenue base through diversification of the economy. Also recommended was that any new borrowing by the government should be properly utilized for the purpose why the debt is been taken. This study did not review relevant theories for the study; and no theoretical framework. The empirical review is too scanty as only five literatures were empirically reviewed by the author. Also, no post estimation tests in the study to ascertain the presence of autocorrelation as well as the presence of heteroscedasticity. Putunoi and Mutuku (2013) used VAR analysis to investigate the relationship between domestic debt and economic growth in Kenya. A positive and statistically significant relationship was found to exist between the two. Past values of GDP, interest rates, private sector credit and debt were the variables affecting economic growth. The study concluded that if domestic debt is used for productive purposes then it will have a positive effect. Interest rates and GDP growth were found to have a negative but statistically insignificant relationship. This could imply that debt has no effect on interest rates and therefore no crowding-out effect on private investments. Tasos (2014) used Granger causality analysis to establish the relationship between public debt and GDP growth in Greece. The results showed that it was not possible to establish causality between debt and levels of economic growth in Greece. This means that the two variables are exogenous of one another. This implies that public debt does not play a huge role in determining the economic growth and neither does economic growth determine public debt levels.Greiner (2012a), in such a set-up, debt is completely irrelevant and the non-linear relationship between debt and growth is given by the growth-maximizing tax rate. He then showed that allowing for a more general debt policy leads to a monotone and negative relationship between public debt and steady-state growth. Greiner (2011, 2012b) also argued that the effect of debt on growth depends on the presence of rigidities in the economy. In particular, Greiner (2011) showed that, in a model with no rigidities and elastic labor supply, public debt has a negative effect on labor supply, investment, and economic growth. In the presence of wage rigidities and unemployment, instead, public debt has no effect on the allocation of resources and can even have a positive effect if it is used to finance productive investment. Greiner (2012a) concluded that there is no well-specified model that can generate an inverted U-shaped relationship between debt and growth. Non-linearities may arise if there is a tipping point above which public debt suddenly become unsustainable (Ghosh et al, 2012, provide a formal model). It is also possible that high levels of debt pose constraints on a country's ability to conduct countercyclical policies, and thus increase output volatility and reduce economic growth (Ramey and Ramey, 1995). However, the relationship between debt and

the ability to conduct countercyclical policies is more likely to depend on the composition of public debt than on the level of public debt (Hausmann and Panizza, 2011; De Grauwe, 2011). This suggests that countries with different debt structures and monetary arrangements are likely to start facing problems at very different levels of debt. Minea and Parent (2012) examined the relationship between debt and growth by using the Panel Smooth Threshold Regressions model originally proposed by Gonzalez et al, (2005). Using this approach, that allows for a gradual change in the regression coefficient when moving from one regime to the other. Minea and Parent (2012) showed that public debt is negatively associated with growth when the debt-to-GDP ratio is above 90 percent and below 115 percent. However, they also found that the correlation between debt and growth becomes positive when debt surpasses 115 percent of GDP. While Minea and Parent's (2012) results suggests the existence of complex non-linearity, which may not be captured by models that use a set of exogenous thresholds. Egert (2012) extends the time coverage of the Reinhart and Rogoff (2010b) sample back to 1790. He found a small negative correlation between debt and growth and, using an endogenous threshold model, some evidence of a non-linear relationship between debt and growth. However, the estimated endogenous debt-to-GDP thresholds are generally much lower than 90 percent. In addition, Egert (2012) mentioned that the presence and the level of the thresholds are not robust to small changes in country coverage, data frequency, and changes in the assumptions on the minimum number of observations included in each regime. On the other hand almost all the studies with specific reference to Nigeria have used linear models without testing the nonlinearity of the relationship. Wosowei (2013) examined the relationship between fiscal deficit and macroeconomic performance in Nigeria over the period 1980 to 2010. Using the OLS and found that fiscal deficits though negative had no significant effect on output growth. Amassoma (2011) examined the causal nexus between external debt, domestic debt and economic growth in Nigeria between 1970 and 2009 using a Vector Autoregressive (VAR) and a Vector Error Correction (VEC) models. They found that whereas there was no long-run relationship between domestic debt and economic growth external debt and economic growth showed a longrun relationship. Amassoma also found a bi-directional causality between domestic debt and economic growth and a unidirectional causality from economic growth to external debt in Nigeria. Oke and Sulaiman (2012) examined the impact of external debt on the level of economic growth and the volume of investment in Nigeria between 1980 and 2008. It was found that there exists a positive relationship between external debt, economic growth and investment. Adofu and Abula (2010) who examined the relationship between domestic debt and economic growth in Nigeria for the period 1986 – 2005 found a negative relationship between domestic debt and economic growth. Kehinde, and Awotundun (2012) examined the contribution of the total debt portfolio to real sector growth in Nigeria using a linear regression model showed that debt portfolio was negatively related to real sector growth in Nigeria. Uma, et al (2013) examined the influence of total domestic debt, total external debt cum servicing of external debt from 1970-2010 on the economic development of Nigeria and showed that total domestic and total external debts are inversely related to real gross domestic product, a proxy for economic development, but were statistically not significant. Umaru, et al (2013) investigated into the relationship between economic growth, external debt and domestic debt in Nigeria for the period 1970-2010 using the OLS method they showed that external debt had a negative impact on economic growth while domestic debt impacted positively on economic growth. Ajao and Ogiemudia (2012) examined the effect of foreign debt management on sustainable economic development with emphasis on Nigeria over the period of 1979–2009. The results showed a positive relationship between external debt and economic development in Nigeria, and a negative relationship between debt servicing and GDP. Further results revealed that external debt stock and debt servicing had a mix delay effect on the Nigerian economy. Emmanuel (2012)

focused on the impact of public debt on economic growth in Nigeria. He showed that the joint impact of debt on economic growth is negative and quite significant in the long-run but become positive in the short-run. This was attributed to incompetent debt management. Paiko (2012) examined the impact of government expenditures on private investment and also how the financing of budget deficit have not only affected the performance of private investment but also how it crowds out private investment in Nigeria. His findings revealed a negative relationship between deficit financing and investment. Ajayi and Oke (2012) investigated the effect of external debt burden on economic growth and development in Nigeria and showed that external debt burden had an adverse effect on the nation's income and per capital income. Anayochukwu (2012) examined the causal relationship between inflation and fiscal deficits in Nigeria, covering the period 1970-2009, using an autoregressive distributed lag (ARDL) model and the Granger-causality test and found that causality runs from fiscal deficit to inflation and not the other way round. A negative and significant relationship between growth in fiscal deficit as percentage share of GDP and inflation was also found. Onwioduokit (2012) investigated the causal relationship between inflation and fiscal deficit in Nigeria from 1970 to 1994 and found that although fiscal deficit causes inflation, there was no feedback between inflation and fiscal deficit. They however showed that feedback existed between inflation and fiscal deficit deflated by the GDP. Also a structural model of inflation was estimated which revealed that, it takes about two years for fiscal deficit to impact on inflation in Nigeria. Ezeabasili, Mojekwu and Herbert (2012) also examined the relationship between fiscal deficits and inflation in Nigeria, using data over 1970–2006, their results revealed a positive but statistically not significant relationship between inflation and fiscal deficits in Nigeria. There was also no strong evidence linking past levels of fiscal deficits with inflation in Nigeria. Rather, a positive long run relationship between money supply and inflation was reported.

METHODOLOGY

This study intends to examine the relationship between public debt and domestic investment in Nigeria. The relevant data were sourced from Central Bank of Nigerian Statistical Bulletin. Time series data were used and econometric method of data analyses which involves Ordinary Least Square (OLS) were employed. The multiple regressions formulated in this study is based on the theory of financial intermediation and economic growth.

DIVNT = f (DD, EXTD, DS, and DF) ……

(1) Transforming equation 1 above to econometric method, we have:

DIVNT

Where: $= \beta 0 + \beta 1\ DD + \beta 2\ EXTD + \beta 3\ DS + \beta 4 DF + \mu$ …… (2)

DIVNT	=	Gross Domestic Investment
DD	=	Domestic Debt
EXTD	=	External Debt
DF	=	Deficit Financing to Gross Domestic Product
DS	=	Debt Servicing
μ	=	Error Term
β1 – β4	=	Coefficient of Independent Variables to the Dependent Variable
β0	=	Regression Intercept

Estimation Techniques

i. Stationary Test:

Time series data are assumed to be non-stationary and this implies that the result obtained from Ordinary Least Square (OLS) may be misleading (Suleman and Azeeze, 2012). It is therefore necessary to test the stationarity of

the variables using the Augmented Dickey Fuller 1979 test to both level and first difference. The ADF test constructs a parameter correction for higher order correlation by assuming the times series follows an auto regressive process. Mathematically expressed as

$$\Delta y_t = c + \beta_t + \alpha y_{t-1} + \sum_{T-ik} \Delta_j \Delta y_{t-j} + \varepsilon t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 3$$

$$\Delta y_t = c + \alpha y_{t-1} + \sum_{t-i} \Delta_j \Delta y_{t-j} + \varepsilon t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 4$$

Equation 1 is used to test for the null hypotheses of non stationarity of unit root against trend stationaerity alternative in Y_t where y refers to the examined time series. Equation 2 tests the null hypotheses of a unit root against a mean stationarity alternative.

ii. Johansen Cointegration Test

The cointegration test established whether a long run equilibrium relationship exist among the variables. It is generally accepted that to establish a cointegration, the likelihood ratio must be greater than the Mackinnon critical values. The model can be stated as

$$\Delta X_t = \Delta + \Delta_1 \Delta X_{t-1} + \Delta_2 \Delta X_{t2} + \ldots + \Delta_{p-1} \Delta X_t - p + 1 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots 5$$

Where Δ is a constant term.

ΔX_t represents the first cointegrating differences

$$DIVNT = \beta_0 + \beta_1 DD + \beta_2 EXTD + \beta_3 DS + \beta_4 DF + \mu \ldots\ldots\ldots\ldots (6)$$

iii. Granger Causality

To determine the direction of causality between the variables, the study employed the standard Granger causality test (Granger, 196; Anyamaobi & Lucky, 2017). The test is based on Vector Error Correction Model (VECM) which suggests that while the past can cause or predict the future, the future cannot predict or cause the past. Thus, according to Granger (1969) X Granger cause Y if past value of X can be used to the past value of Y, the test is based on the following regression model.

$$DIVNT = \Delta_{2t} + \sum_{j=1}^{k} \Delta_{2j} DD_{t-j} + \sum_{j=1}^{k} \Delta_{2j} EXTD_{1-j} + \sum_{j=1}^{k} \Delta_{2j} DS_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DF_{t-j} \Delta + \Delta \ldots\ldots\ldots\ldots\ldots 7)$$

$$DD = \Delta_{2t} + \sum_{j=1}^{k} \Delta_{2j} DIVNT_{t-j} + \sum_{j=1}^{k} \Delta_{2j} EXTD_{1-j} + \sum_{j=1}^{k} \Delta_{2j} DS_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DF_{t-j} \Delta + \Delta \ldots\ldots\ldots\ldots\ldots (8)$$

$$EXTD = \Delta_{2t} + \sum_{j=1}^{k} \Delta_{2j} DIVNT_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DD_{1-j} + \sum_{j=1}^{k} \Delta_{2j} DS_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DF_{t-j} \Delta + \Delta \ldots\ldots\ldots\ldots\ldots (9)$$

$$DS = \Delta_{2t} + \sum_{j=1}^{k} \Delta_{2j} DIVNT_{t-j} + \sum_{j=1}^{k} \Delta \Delta D_{2j} + \sum_{j=1}^{k} \Delta_{2j} EXTD_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DF_{t-j} \Delta + \Delta \ldots\ldots\ldots\ldots\ldots (10)$$

$$DF = \Delta_{2t} + \sum_{j=1}^{k} \Delta_{2j} DIVNT_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DD_{1-j} + \sum_{j=1}^{k} \Delta_{2j} EXTD_{t-j} + \sum_{j=1}^{k} \Delta_{2j} DS_{t-j} \Delta + \Delta \ldots\ldots\ldots\ldots\ldots (11)$$

iv. Vector Error Correction Model

Co-integration is a prerequisite for the error correction mechanism. Since cointegration has been established, it is pertinent to proceed to the error correction model. The VECM is of this form

$$\Delta y_t = \alpha\alpha y_{t-1} + \sum_{j=1}^{i=1} \alpha_j \Delta y_{t-1} + \alpha + \alpha_t, t = 1,.....,T \quad \text{.....13}$$

Where Y_t is a vector of indigenous variables in the model. A is the parameter which measures the speed of adjustment through which the variables adjust to the long run values and the β is the vectors which estimates the long run cointegrating relationship among the variables in the model. α is the draft parameter and is the matrix of the parameters associated with the exogenous variables and the stochastic error term.

RESULTS AND DISCUSSION

Table 1: Presentation of Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DD	0.711885	0.431385	1.650232	0.1125
EXTD	112.6698	207.9617	0.541781	0.5932
DF	-605.5448	448.0137	-1.351621	0.1896
DS	-36.43218	363.7961	-0.100145	0.9211
C	1018.693	14261.08	0.071432	0.9437

R-squared 0.765688 Mean dependent var 3363.197 Adjusted R-squared 0.606055 S.D. dependent var 8086.706

S.E. of regression 7645.872 Akaike info criterion 20.90371

Sum squared resid 1.34E+09 Schwarz criterion 21.18660

Log likelihood -297.1038 Hannan-Quinn criter. 20.99231

F-statistic 21.664369 Durbin-Watson stat 1.946787

Prob(F-statistic) 0.000000

Estimation Command:

==========

LS DINVT DD EXTD DF DS C

Estimation Equation:

==========

DINVT = C (1)*DD + C (2)*EXTD + C (3)*DF + C (4)*DS + C (5) Substituted Coefficients:

==========

DINVT = 0.711884895914*DD + 112.669761371*EXTD - 605.544783615*DF + 301.41735083*DS + 1018.69343102

Analysis of Regression Results

From the result above, the R^2 and the adjusted R^2 which measures the extent to which the independent variables can predict changes on the dependent variables shows that 76.56% and 6.60% variation in domestic level of investment can be explained by variation in the independent variables. The Durbin-Watson statistics which measures the serial autoregression and colinearity of the variables is 1.946787 which is less than 2.00 and less than 3.00 which indicates the presence of negative serial autocorrelation between the variables. The F-statistics of 21.664369 with the probability of 0.000000 indicate that the model is fit to predict variation in the dependent variable and significant at 5% level of significance. The mean dependent variation and the standard variation

show that the variables vary within the time series. However, the regression coefficient shows that domestic debt and external debt have positive and significant relationship with domestic level of investment while deficit financing and debt servicing have negative and insignificant effect on domestic level of investment. The positive effect of domestic debt and external debt confirm the Keynesian's Theory of external debt and investment but contrary to the classical opinion. This finding is in line with the findings of Maana, Owino, and Mutai (2008) proved that debt and secondary school enrolment have a positive but insignificant effect on economic growth. The increase in domestic debt in this period resulted in an increase in interest payments but this didn't crowd out private investments due to the favourable level of financial development in Kenya. Growth in trade, financial deepening, growth in the private sector and government expenditure on real output have a positive and statistically significant impact on growth, Muhdi and Sasaki (2009) whose findings indicates that domestic debt was found to discourage private investment through the crowding out effect thus decreasing the level of economic growth, Ferreira (2009) who found that public debt and economic growth were found to have a bi-directional causality. The relationship between public debt and economic growth was found to be negative and statistically significant. This implies that high public debt reduces economic growth while low GDP growth may lead to a country incurring a higher public debt, Rother and Checherita (2010) whose study found that there is a concave relationship between public debt and the rate of economic growth with the turning point of debt being around 90-100 percent of GDP, Reinhart and Rogoff (2010) whose study found that economic growth at debtGDP ratios above 90 percent was found to be about 1 percent lower than at debt-GDP ratios below 90 percent. However, this study was disproved by Hendron, Ash, and Pollin (2013) due to errors such as selective exclusion of available data, inappropriate weighting of summary statistics and coding errors that resulted in miscalculations that grossly misrepresented the relationship between public debt and economic growth. However, the negative effect of deficit financing on gross domestic level of investment is contrary to the expectation of the results and contrary to the theory of deficit financing as formulated by the Keynesian's Economist. The negative effect of the variable is confirmed to the findings of Balassone, Francese, and Pace, (2011) whose study found that Debt and investments were also found to have a negative relationship. The study concluded that debt affects economic growth through the investment channel, but confirm the findings of Akram (2011) that the crowding out effect of external debt could not be confirmed as the relationships between investment and per capita GDP to debt servicing was found to be insignificant. The domestic public debt was found to have a crowding out effect on private investments and a negative relationship with per Capita GDP, Maji, Okon, and Denies (2013) whose study found that both domestic and external debt were found to have a positive effect on economic performance but while external debt had a significant impact, domestic debt had an insignificant impact. The impact of external debt on GDI was negative and insignificant while the impact of domestic debt on GDI was positive and significant. This has the implication that external debt and not domestic debt has a crowding out effect on the level of investments in Nigeria. The negative effect of debt servicing confirms the expectation of the study as debt servicing is noted to serve as a capital flight on the economy.

Table 2: ADF Unit Root Test for Stationarity

Differenced Variables	ADF Statistics	McKinnon's Critical Values			Order of integration	Prob.
		1%	5%	10%		Prob.
DIVNT	-3.823565	3.689194	2.97185853	2.625121	1(1)	0.0073

DD	-5.683619	3.689194	2.97185853	2.625121	1(1)	0.0001
EXTD	-6.602233	3.689194	2.97185853	2.625121	1(1)	0.0000
DF	-3.944220	3.689194	2.97185853	2.625121	1(1)	0.0058
DS	-6.133448	3.689194	2.97185853	2.625121	1(1)	0.0000

Source: Author's Computations using E-Views 12.0

The table above analyzes the stationarity test of the result. It shows that all the variables are stationary, this means the null hypotheses of non stationarity is rejected and the alternate accepted.

Table 3: Johansen's Unrestricted Co-Integration Rank

Obs No.	**Series of C E (s)**	**Hypothesized Value**	**Eigen value**	**Maxi-Eigen Statistics**	**Critical P0. 05**	**Prob.****
32	D(DINVT)	None *	0.872486	55.60721	40.07757	0.0004
	D (DD)	At most 2	0.428426	15.10277	27.58434	0.7400
	D(EXTD)	At most 3	0.347508	11.52784	21.13162	0.5946
	D(DF)	At most 4	0.276032	8.721234	14.26460	0.3101
	D(DS)	At most 5	0.035478	0.975301	3.841466	0.3234

Source: Author's Computations using E-Views 12.0

Maximum Eigen value test indicates no cointegrating equation at 5% level denoting rejection of null hypotheses at 5% level of significance. The results of Johasen's maximum likelihood cointegration tests reported in table above do not indicate any full-rank trend. To this extent, the results provide good evidence of multicollinearity among the time cointegration.

Table 4: Normalized Cointegrating Coefficients (standard error in Parentheses)

DINVT	DD	EXTD	DF	DS	C
1.000000	-0.364930	-0.000894	-0.000464	-1.282641	-0.890572
	(0.06874)	(0.00017)	(0.00011)	(0.16264)	(0.09847)

Author's Computations using E-Views 12.0

From the above normalized equation, all the independent variables have long run negative relationship with domestic level of investment. Which means an increase will affect negatively the domestic level of investment.

Table 5: Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
DINVT does not Granger Cause DD	31	0.25468	0.7771
DD does not Granger Cause DINVT		0.83756	0.4441

DINVT does not Granger Cause EXTD	31	1.55973	0.2292
EXTD does not Granger Cause DINVT		0.03064	0.9699
DINVT does not Granger Cause DF	27	1.20248	0.3194
DF does not Granger Cause DINVT		0.49815	0.6143
DINVT does not Granger Cause DS	31	0.99330	0.3840
DS does not Granger Cause DINVT		2.73080	0.0838

Author's Computations using E -Views12.0

The result above shows no causality between the dependent and the independent variables or the independent and the dependent variable. The non-causal relationship means the acceptance of null hypotheses against the alternate which is traceable to poor management of the public debt, investment climate, monetary and macroeconomic challenges.

Conclusion

Public debt is component of fiscal policy but expansionary monetary policy used to bridge the savings investment gap in the government. This study examines public debt and Nigerian domestic investment from 1990 – 2023. The objective is to establish the relationship between the dependent and the independent variables in model. The secondary data collected from Central Bank of Nigeria statistical bulletin, the findings of the study reveal positive relationship between the independent variables and the dependent variables examined in the study. It therefore concludes that there is significant relationship between public debt and Nigerian domestic investment.

Recommendations

i. That Nigerian public debt should properly be invested in the domestic economy and accounted for to enhance Nigerian domestic investment. There is need for overhaul in macroeconomic and monetary policy environment to enhance the effect of public debt on Nigerian domestic investment. Nigerian public debt should be contracted without using third party and the interest rate properly is negotiated to avoid debt overhang.

ii. There is need for proper management of Nigeria public debt and invested in the productive sector of the economy and should not be used to form recurrent expenditures to facilitate the realization of domestic investment in Nigeria. That public debt contracted should be properly utilized and accounted for, to enhance Nigerian's domestic investment and structured and planned policies should be made to guide Nigerian borrowings to avoid poor accountability and poor utilization of foreign debt.

iii. There should be reforms in macroeconomic and monetary policies to fit the public debt policies for better Nigerian economic performance and there should be overhaul in monetary and macroeconomic policies to increase the efficiency of domestic financial market for better utilization of foreign debt.

REFERENCES

Adesola, W.A. (2009). Debt servicing and economic growth in Nigeria: An Empirical Analysis. Journal of Social Sciences, 8(2), 1-11.

Adofu, I., & Abula, M., (2010). Domestic Debt and the Nigerian Economy. Current Research Journal of Economic Theory, 2(1): 22-26.

Ajao, M. G... And Ogiemudia, A. O., (2013). Foreign Debt Management and the Development of Nigeria Economy. Review of Economics & Finance, 99-109

Ajayi, L. B., and M. O., Oke, (2012). Effect of External Debt on Economic Growth and Development of Nigeria. International Journal of Business and Social Science 3(12):297304.

Akomolafe, K. J., Bosede, O., Emmanuel, O., & Mark, A. (2015). Public debt and private investment in Nigeria: American Journal of Economics, 5(5), 501-507.

Akpan, M.S., Awujola, A., Impalure, D.A. (2023). Public Debt and Private Domestic Investment in Nigeria: An Empirical Investigation. International Journal of Economics, Business and Management Research, 7(3), 1-23.

Anayochukwu, O. B., (2012). Fiscal Deficits and Inflation in Nigeria: The Causality Approach. International Journal of Scientific & Technology Research, 1(8):6-12.

Anoke, C. I., Odo, S. I., & Nnabu, B. E. (2021). Public debt and domestic private investment: A crowding effect in Nigeria. International Journal of Research and Innovation in Social Science 5(3), 1-8.

Anyamaobi, C., & Lucky, A. L., (2017). Corporate Characteristics and Value Creation: A Panel

Data Evidence of Nigeria Quoted Manufacturing Firms. World Journal of Finance and Investment Research, 2(1), 31-49

Aschauer, D.A., (1989) 'Does public capital crowd out private capital?' Journal of Monetary Economics, Elsevier, vol. 24(2), pp 171-188.

Barro, R. J., (1974). Are Government Bonds Net Wealth? Journal of Political Economy, 81:10951117

Becker, T., (1995). Government Debt and Private Consumption: Theory and Evidence. The

Economic Research Institute Working Paper Series in Economics and Finance, Paper No. 71.

Beddies, C., (1999). 'Investment, Capital Accumulation and Growth: Some Evidence from Gambia: 1964-1998', IMF Working Paper 1999/117. Developing Country Studies

Blejer, M.I., & Khan, M.S., (1984). 'Government Policy and Private Investment in Developing Countries', IMF Staff Papers, 31, 2, June, 379-403.

Bwire, J.O., (1993). Savings-Investment-Growth Interactions and Macroeconomic Adjustment in Kenya. M. A. Dissertation, Economics Department, University of Nairobi.

Cameron, A. C., and P. K., Trivedi, (2009). Micro econometrics Using Stata. College Station, TX: Stata Press.

Cecchetti, S. G., Mohanty, M. S. and F. Zampolli, (2011). The Real Effects of Debt. BIS Working papers No. 352

Central Intelligence Agency, various issues of The World Factbook, CIA,

Checherita-Westphal, C., and Rother, P., (2012). The impact of high government debt on economic growth and its channels: An empirical investigation for the euro area.

Checherita-Westphal, C., Hallett, A. H. and Rother P., (2012). Fiscal Sustainability using GrowthMaximising Debt Targets. European Central Bank Working Paper Series No. 1472.

Chhibber, A., & Wijnbergen, S., (1988). 'Public Policy and Private Investment in Turkey' Washington, D.C.: The World Bank, Working Papers (WPS 120).

Chinaemerem, O. C. & Anayochukwu, O. B. (2013). Impact of debt servicing on economic growth and development in Nigeria. Research Journal of Finance and Accounting, 4(4), 92-98,

Chinanuife, E., Eze, P., & Nwodo, O.S. (2018). Public debt spiral and domestic investment in Nigeria. Academic Journal of Economic Studies. 4(1), 153– 161.

Cruz, B.O., & Teixeira J.R., (2001). The Impact of Public Investment on Private Investment in Brazil, 1947-1999, Cepal Review 67, April 2000.

Davison, A., C., and Hinkley, D. V., (1997). Bootstrap Methods and Their Application. Cambridge: Cambridge University Press.

De Grauwe, P. (2011). The Governance of a Fragile Eurozone. Working Document 346, CEPS.

Efron, B., (1979). Bootstrap methods: Another look at the jackknife. Annals of Statistics 7: 1–26.

Efron, B., (1982). The Jackknife, the Bootstrap and Other Resampling Plans. Philadelphia: Society for Industrial and Applied Mathematics.

Efron, B., and R. J., Tibshirani, (1993). An Introduction to the Bootstrap. New York: Chapman & Hall/CRC.

Efron, B., and Stein, C., (1981). The jackknife estimate of variance. Annals of Statistics 9: 586– 596.

Efron, B., and Tibshirani, R. J. (1986). Bootstrap methods for standard errors, confidence intervals, and other measures of statistical accuracy. Statistical Science 1: 54–77.

Egert, B., (2012). Public Debt, Economic Growth and Nonlinear Effects: Myth or Reality? OECD Economics Department Working Papers 993, OECD Publishing.

Elmendorf, D. W., and G. N. Mankiw, (1999). Government debt. In Handbook of Macroeconomics, Vol. 1, J. B. Taylor, and M. Woodford (ed.), Elsevier.

Emmanuel, O. O., (2012). An Empirical Analysis of the Impact of Public Debt on Economic Growth: Evidence from Nigeria 1975-2005. Canadian Social Science, 8(4): 154-161

Eric, N., Ndayizeye, L., & Barthelemy, B. (2021). Impact of domestic public debt on private investment in Burundi. Applied Mathematical Sciences, 15(15), 795-716,

Fry M.J., (1980). Saving, Investment, Growth and the Cost of Financial Repression, World Development, vol.8, no.4, pp.317-27.

Ghosh, A. R., J. I. Kim, E. G., Mendoza, J. D. Ostry, and M. S. Qureshi (2012). Fiscal Fatigue, Fiscal Space and Debt Sustainability in Advanced Economies. Economic Journal, Forthcoming.

Ghura, D & Goodwin, B., (2000). Determinants of Private Investment: a Cross-Regional Empirical Investigation, Applied Economics, 32:1819-1829.

Gonzalez, A., T. Terasvirta, and D. Van Dijk, (2005). Panel Smooth Transition Regression Models. Working Paper Series in Economics and Finance 604, Stockholm School of Economics.

Greene, J., & Villanueva, D., (1991). 'Private Investment in Developing Countries: An Empirical Analysis", IMF Staff Papers, 38(1), 33-58, International Monetary Fund, Washington DC

Greiner, A., (2011). Economic Growth, Public Debt and Welfare: Comparing Three Budgetary Rules. German Economic Review, 12(2): 205–222.

Greiner, A., (2012). Debt and Growth: Is There a Non-Monotonic Relation? Working Papers in Economics and Management 04-2012, Bielefeld University.

Greiner, A., (2012). Sustainable Public Debt and Economic Growth under Wage Rigidity. Metroeconomica, forthcoming.

Guan, W., (2003). From the help desk: Bootstrapped standard errors. Stata Journal 3: 71–80.

Hausmann, R., and Panizza, U., (2011). Redemption or Abstinence? Original Sin, Currency Mismatches and Counter Cyclical Policies in the New Millennium. Journal of Globalization and Development, 2(1):4

IMF, (2008). Kenya, Uganda and United Republic of Tanzania: Selected Issues [Online]

Iyoha, M.A., (1999). 'External Debt and Economic Growth in Sub-Saran African countries: An Econometrics Study', AERC Research paper, Nairobi.

Joy, J. & Panda, P. K. (2020). Pattern of public debt and debt overhang among BRICS nations: An empirical analysis. Journal of Financial Economic Policy, 12(3), 345-363,

Kariuki, D.K., (2003). 'Determinants of Fixed Capital Formation in Kenya' M.A. Thesis Makerere University, Kampala, Uganda.

Kehinde, S. J., and Awotundun, D. A., (2012). Debt Burden and Nigerian Development. International Journal of Marketing and Technology, 2(9).

Krugman, P., (1988). Financing vs. forgiving a debt overhang. Journal of Development Economics, 29(3), 253–268.

Levacic, R., & Rebmann, A., 1982, 'Macroeconomics: An Introduction to Keynesian-Neoclassical Controversies', 2nd Edition, Macmillan, and London.

Lucky, A. L., & Uzah, C. K., (2017). Monetary Policy Transmission Mechanisms and Domestic Real Investment in Nigeria: A Time Series Study 1981-2015. IIARD International Journal of Economic and Financial Management, 2 (2), 29 – 59

Mabula, S., & Mutasa, F. (2019). The effect of public debt on private investment in Tanzania: African Journal of Economic Review, 7(1), 109-135.

Magumisi, N. (2021). The impact of public external debt on private investment. Evidence from Zimbabwe under the multi-currency system: Journal of Economic Info, 8(2),

Matin, K.M., & Wasow B.., 1992, 'Adjustment and private investment in Kenya' WPS 878, World Bank, Washington DC.

Matwang'a, LF 2000, 'Determinants and Constraints to Private Investment: The Case of Kenya', African Institute for Economic Development and Planning (IDEP). Dakar, Senegal.

Metwaly, M.M., & Tamaschke, R., (1994). The Foreign Debt Problem of North African Countries', African Review of Money, Finance and Banking, Vol.1, No.2, pp.109-121

Minea, A., and A., Parent, (2012). Is high public debt always harmful to economic growth? Reinhart and Rogoff and some complex nonlinearities. Working Papers 8, Association Francaise de Cliometrie.

Mooney, C. Z., and R. D. Duval. (1993). Bootstrapping: A Nonparametric Approach to Statistical Inference. Newbury Park, CA: Sage.

Ndung'u, NS (2001). The Domestic Debt Problem in Kenya. Discussion Paper, Kenya Public Policy Research and Analysis, April 2001.

Ngerebo-a, T. A., Nwosi, A. A., & Lucky, A. L. (2016). Exports, imports and economic growth. A comparative analysis of Nigeria economy (1918-2014). Nigeria Journal of Financial Research, publication of the Department of Finance and Banking, University of Port Harcourt, 11(1).

Ogbaga, K., & Udede, C.C. (2018). Deficit financing and private sector investment in Nigeria: IDOSR Journal of Banking, Economics and Social Sciences, 3(1) 105-122.

Ogunjimi, J. A. (2019). The impact of public debt on investment. Evidence from development bank of Nigeria: Journal of Economics & Sustainable Growth,

Oke, M., and Sulaiman, L. A., (2012). External Debt, Economic Growth and Investment in Nigeria. European Journal of Business and Management, 4(11): 67-75.

Onwioduokit, E. A., (2012). Fiscal Deficits and Inflation Dynamics in Nigeria: An Empirical Investigation of Causal Relationships. CBN Economic & Financial Review, 37(2): 1-16. Osei, B., (2000). 'Ghana: The Burden of Debt Service Payment under Structural Adjustment', African Economic Research Consortium Paper 33 (Nairobi: Initiative Publishers, 1985).

Oshikoya, T., (1994). 'Macroeconomic Determinants of Domestic Private Investment in Africa: An Empirical Analysis', Economic Development and Cultural Change, 42 (3), 573-96

Ouattara, B., (2004). Modeling the Long run Determinants of Private Investment in Senegal', Credit Research Paper No. 04/05, Centre for Research in Economic Development and International Trade, University of Nottingham.

Paiko, I. I., (2012). Deficit Financing and its Implication on Private Sector Investment: the Nigerian experience. Arabian Journal of Business and Management Review, 1(9):45-62 Poi, B. P., (2004). From the help desk: Some bootstrapping techniques. Stata Journal 4: 312–328.

Ramirez, M.D., (1994). Public and private investment in Mexico, 1950-90: An empirical analysis', Southern Economic Journal 61 (1): 1-17.

Reinhart, C. M., and K. S., Rogoff (2010). Debt and Growth Revisited. VoxEU.org.

Reinhart, C. M., and K. S., Rogoff (2010). Growth in a Time of Debt. American Economic Review, 100(2): 573–78.

Reinhart, C. M., and K. S., Rogoff (2011). From Financial Crash to Debt Crisis. American Economic Review, 101(5): 1676–1706.

Ronge, E., & Kimuyu, P., (1998) 'Private Investment in Kenya: Trends, Composition and Determinants', Institute of Public Policy and Research, Analysis Discussion Paper, No. 009/97

Sachs, J. D., (1989). The Debt Overhang of Developing Countries. In Debt, Stabilization and Development, G. A. Calvo, R. Findlay, P. Kouri, and J. B. de Macedo (ed.). Basil Blackwell, Oxford.

Spencer, RW & Yohe, WP 1970, The "Crowding Out" of Private Expenditures by Fiscal Policy Actions, Federal Reserve Bank of St. Louis, Available at

<http://research.stlouisfed.org/publications/review/70/10/Expenditures_Oct1970.pdf>.

Stine, R., (1990). An introduction to bootstrap methods: Examples and ideas. In Modern Methods of Data Analysis, J. Fox and J. S. Long (ed). 353–373. Newbury Park, CA: Sage.

Thilanka, H.R., & Ranjith, J.G. (2018). The impact of public debt on private investment: Sri Lankan Experience. International Journal of Business and Social Research, 8(8), 01-10.

Tybout, J., (1983). Credit Rationing and Investment Behaviour in a Developing Country', Review of Economics and Statistics 65: 598-607

Uma, K. E., Eboh, F. E., and Obidike, P. C., (2013). Debt and Debt Service: Implications on Nigerian Economic Development. Asian Journal of Social Sciences & Humanities, 2(2):275-284.

Umaru, A., Hamidu, A.A., and Musa, S., (2013). External Debt and Domestic Debt Impact on the Growth of the Nigerian Economy. International Journal of Educational Research, 1(2):7085.

Vance, C., (2006). Marginal Effects and Significance Testing with Heckman's Sample Selection Model: A Methodological Note. RWI Essen: Discussion Papers no. 39 in Nigeria using a Causality Approach" Current Research Journal of Social Sciences 3(4): 320-325.

Wachira, P.M., (1991). The Effect of Public Investment in Kenya: An Aggregate and Sectoral Analyses, MA Thesis, University of Nairobi. 'Wikipedia', Structural Adjustment, (wikipedia article), February 2013.

Wosowei, E., (2013). Fiscal Deficits and Macroeconomic Aggregates in Nigeria. Kuwait Chapter of Arabian Journal of Business and Management Review 2(9):72-82.